GIANT LEAPS

PLAN FOR EXPLOITATION AND DISSEMINATION OF PROJECT RESULTS (PEDR) INCLUDING COMMUNICATION ACTIVITIES

Project acronym: GIANT LEAPS

Project title: Gap resolutIon in sAfety, NuTritional, alLergenicity and Environmental assessments to promote Alternative Protein utilization and the dietary Shift

Call: HORIZON-CL6-2021-FARM2FORK-01

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Project no.	101059632
Project acronym:	GIANT LEAPS
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Call:	HORIZON-CL6-2021-FARM2FORK-01
Start date of project:	01.09.2022
Duration:	48 months
Deliverable title:	D8.1 Plan for exploitation and dissemination of project results (PEDR) including communication activities
Due date of deliverable:	28.02.2023
Actual date of submission:	23.02.2023
Deliverable Lead Partner:	**EFFoST**
Dissemination level:	Public

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Document History			
Version	**Date**	**Note**	**Revised by**
01	17.02.2023	Initial version	
02	22.02.2023	Checked document and made small corrections	Ine van der Fels-Klerx

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Executive Summary

This document is the plan for exploitation and dissemination of project results (PEDR) including communication activities (Deliverable 8.1). The report consists of seven chapters namely *Introduction*, *Objectives*, *Target Audiences*, *Levels of dissemination, communication and exploitation*, *Role of Consortium partners*, *Exploitation*, and *Dissemination and communication tools and activities*.

All partners in the project will be involved in communication, dissemination, and exploitation activities with the goal of making the project successful and sustainable. This will be achieved through the active participation of partners as ambassadors of the project.

This deliverable serves as a preliminary step in the development of key exploitable results (KERs) of GIANT LEAPS project. The report provides an exploitation roadmap for evaluating the effectiveness of the project, measuring its impact, and identifying areas where the results can be further utilized. This process can involve commercializing new products, transferring intellectual property to industry, creating new businesses, or implementing new policies or programs that can benefit society and the economy.

The Communication and Dissemination Plan outlines how the project will effectively communicate its activities and outcomes to its diverse target audience using various channels and means.

The report outlines the dissemination strategy and processes for project activities and outcomes, including identifying key messages, target audience groups, and communication tools and channels. Various tools and channels will be employed, such as a project website, articles for technical and target audiences, press releases, e-newsletters, scientific papers, leaflets, social media, and participation in workshops and conferences.

The project aims to increase awareness of the benefits of plant-based proteins and promote their adoption by consumers. It will support businesses that produce alternative proteins, facilitate partnerships between stakeholders, and foster collaboration between researchers, food producers, and consumers.

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List of Acronyms

AB	Advisory Board
BuildERS	Building European Communities Resilience and Social Capital project
D	Deliverable
DoA	Description of Action
KER	Key Exploitable Result
NGO	Non-Governmental Organization
WP	Work Package

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1. Introduction

The consumption of plant-based proteins is rapidly increasing as consumers seek healthier, more sustainable food options. This shift towards plant-based proteins represents a major opportunity to improve public health, reduce the environmental impact of food production, and support the growth of a new industry. To understand the benefits of this dietary shift, it is essential to develop a comprehensive communication, dissemination, and exploitation plan.

Communication, dissemination, and exploitation are key activities in GIANT LEAPS. This plan will aim to increase awareness of the benefits of plant-based proteins, promote understanding of their technological, sensory, and nutritional functionality in foods, safety, digestibility & health, sustainability & climate, and encourage widespread adoption by consumers. It will also support businesses that produce and sell plant-based proteins, facilitate partnerships between key stakeholders in the food and health sectors, and foster collaboration between researchers, food producers, and consumers. Through these efforts, we will work to create a future where plant-based proteins are a staple of the global diet, contributing to the health of individuals and the planet.

Communication refers to the various methods and channels used to share information and promote the project, such as through social media, websites, newsletters, animation videos etc. Effective communication is critical in the GIANT LEAPS project because it helps build trust and understanding among stakeholders and can influence public opinion and behavior.

Dissemination refers to the process of sharing the results and outcomes of the research with others, such as through publications, conferences, and workshops. Dissemination is an important aspect of any research project as it helps maximize the research's impact and influence by making its results widely available.

Communication and dissemination help to ensure that the research findings are communicated to relevant audiences, such as other researchers, policymakers, and the general public.

Exploitation refers to the process of using the results of the research to create new products, services, or processes to ensure that the research findings are used to create new knowledge, products, and services that can benefit society and the economy. Exploitation may include the commercialization of new products or services, the transfer of intellectual property to industry, the creation of new businesses, or the implementation of new policies or programs.

All partners will be actively involved to different degrees in communication, dissemination, and exploitation activities as ambassadors of the project, with the goal of making GIANT LEAPS a successful and sustainable project.

EFFoST is the work package leader for managing the communication, dissemination, and exploitation activities for the GIANT LEAPS project, with Europa Media, Bridge2Food, and FSN providing key supporting roles. While EFFoST will remain the partner responsible for any updating, all partners are encouraged to contribute recommendations and dissemination additions as they occur.

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2. Objectives

The objective of the communication and dissemination activities of the project is to effectively communicate information about the project's goals and outcomes to relevant audiences and to encourage the use of project results by relevant stakeholders.
The specific objectives of GIANT LEAPS project:

- To communicate and disseminate the research findings through publications, conferences, and other dissemination channels, accelerating the dietary shift from animal-based to alternative proteins.
- To inform the general public about the research and its potential impact on society increasing awareness of the benefits of plant-based proteins and the importance of reducing meat consumption for the health of individuals and the environment.
- To increase the visibility and chances of the project being used, cited, and having an impact on society and the economy.
- To facilitate the uptake and use of the research findings by relevant stakeholders in the food and health sectors, such as by providing resources and tools for practitioners to use in their work.
- To create opportunities for networking and collaboration between researchers and other stakeholders including government agencies, industry associations, and non-profit organizations.
- To ensure that the research results are communicated in an appropriate and effective manner, considering the target audience and the goals of the project.
- To support the businesses that produce and sell plant-based proteins, through partnerships and business development initiatives.
- To monitor the progress of the dietary shift towards plant-based proteins and evaluate the effectiveness of the communication, dissemination, and exploitation plan.

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3. Target audiences

GIANT LEAPS will communicate and promote the results of the project to stakeholders. The results of the project will be disseminated to key target audiences. These research outcomes will be disseminated to different target groups including the public sector, end-users, agri-food sector, and scientific communities.

3.1. Consumer Organizations

Consumer organizations are organizations whose primary objectives are to defend and promote the interests of consumers.
Consumer organizations can be a powerful force in promoting the shift towards an alternative protein-based diet and ensuring that the results of GIANT LEAPS are known and used by consumers. Their awareness campaigns, recommendations, and education about health and environmental benefits can influence consumer perception and use of alternative protein products. In addition, they can participate in the regulation and development of standards for these products, helping to guarantee their safety and quality.

An example of these organizations can be Consumers at the International and European levels. Identifying which are the relevant contacts in these consumer organizations is essential to reach them as opinion generators. Once this is done, sending relevant information about the project outcomes and formal invitations to events where the project is presented it's important for disseminating and communicating the project results.

3.2. Non-Government Organizations (NGOs) and advocacy groups

Non-governmental groups that are independent of industry, commerce, and business and which have as their primary objectives and activities the promotion of environmental protection or the health and safety of consumers. Advocacy groups may be concerned with broader, horizontal issues not directly related to food safety such as the place of science in policymaking or transparency in public administration.
These organizations can effectively communicate research findings to the public and raise awareness about the benefits of a plant-based diet, help disseminate information to policymakers, and engage in promoting the adoption of plant-based proteins.
Non-Government Organizations (NGOs) and advocacy groups will be empowered with regionally adapted recommendations to make informed, evidence-based food choices and actively contribute to positive health and environmental impact, increasing public trust as a co-benefit.
When communicating the benefits of alternative proteins to this target audience, it is important to use clear and easy-to-understand language and to present the information in a way that is relevant and interesting to the audience.

In this case, it will be essential to treat this target in the same way as Consumers Organizations. As opinion generators, the key contacts will be identified and approached.

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3.3. Business and food industry

Communication to business and food industry will enable further development and market uptake of the technology. Their role in marketing and mass-producing alternative protein products is significant in making these products accessible and available to the public. Their investment and promotion of research can drive the development of new and innovative products and help to raise awareness and demand for alternative protein options. They can also provide valuable insights and feedback to researchers, which can help improve future studies and research projects. Overall, the food industry has the potential to be a driving force in the shift towards alternative proteins and play an important role in promoting a more sustainable and equitable food system. There should be contact with organizations at European Level such as FoodDrinkEurope. This target audience can be reached through Communication and Dissemination through commercial and research events in the industry. Digital communication also plays an important role in approaching the sector, such as social media or other forms of communication such as press releases, articles, and interviews.

3.4. Distributors and HORECA

Distributors and HORECA organizations represent the interests of stakeholders involved in preparing, distributing, and serving food, such as wholesalers, retailers, hotels, restaurants, and caterers (HORECA).

Distributors and the HORECA sector (hotels, restaurants, and catering) can influence the food options available to consumers and help promote alternative protein products. They can help build demand and increase awareness of alternative protein options by offering these products on their menus. In addition, they can provide valuable feedback to researchers and companies, which can help improve and develop future products. Distributors and HORECA sector have an important role in the promotion of alternative proteins and in building a more sustainable and equitable food system. In this case, it is essential and effective to contact HORECA organizations, which can be done by reaching out to national associations like Spanish Federation of Food and Drink Industries (FIAB) or Association of Manufacturers and Distributors (AECOC) in Spain.

3.5. Practitioners' associations

Practitioners' associations are the organizations representing professionals working in fields relevant to EFSA's food safety and public health remit, such as medical doctors, dieticians, nurses, pharmacists, and veterinarians.

Practitioners' associations serve as trusted sources of information and advice for patients and the general public regarding the safety and health benefits of alternative protein products. They can also help to educate the public on the nutritional value of alternative protein products and provide guidance on how they can be incorporated into a healthy diet. They can work with researchers to ensure that research findings are translated into practical recommendations and can communicate these to patients and the public.

Practitioners' associations can help to promote the adoption of alternative protein products and to encourage their incorporation into public health and dietary guidelines by working closely with researchers, policymakers, and industry. Approaching this target audience can be executed by identifying the key contacts of each association for the dissemination of the latest outcomes that can have an impact on their area of work. It is essential as well through the key channel professional and

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specialized events in the sector. Specialized magazines are also a key channel for reaching this target.

3.6. Scientific and research community

Scientific and research community related to food systems, sustainability, nutrition, health, safety, allergenicity, and food technology.

Communication and dissemination of information about the benefits of alternative proteins to the scientific and research community can be done through a variety of channels including academic journals and conferences, online platforms such as research databases, and social media. Networking and collaboration with other researchers and organizations working in the field can also be effective in spreading awareness and understanding of alternative protein benefits.

To reach research communities and disseminate the latest research outcomes in the sector, scientific publications, and abstract submissions to academic events such as congresses or conferences are effective means. For instance, the Bridge2Food courses are a prime example of such events within the scientific community. The main objective of this approach is to keep the academic and research communities up to date with the latest advancements of GIANT LEAPS project.

3.7. Farmers and primary producers

Farmers' and primary producers' organizations are the organizations representing those at the beginning of the food chain. The farmers and primary producers are responsible for producing and providing the raw materials that are used to create alternative protein products and play an important role in ensuring their quality and sustainability.

Farmers and primary producers can make informed decisions about the crops they grow and the methods they use to produce them by staying informed of the latest research and advancement in the field. They can also help to promote and raise awareness of alternative protein products among their local communities, customers, and other stakeholders.

Approaching this target is probably one of the main challenges of the food industry. To achieve this, it is important to identify specialized magazines in the sector, such as Tierras or Interempresas in Spain, or Farmers Guardian in the UK, and utilize them as key channels for dissemination. Another effective approach is to attend agricultural fairs and exhibitions, which offer an excellent opportunity to showcase the project and engage with the target audience directly. By utilizing these channels, the food industry can effectively raise awareness of its products and services, and ultimately, drive sales and revenue.

3.8. Policymakers & Regulators

Policymakers & regulators use the integrated assessment and recommendations to guide long-term policy (integrated and sectorial) and consumption of alternative proteins. They play an important role in ensuring that plant-based protein products are safe, healthy, and of high quality. This involves setting standards, conducting safety assessments, and monitoring the production and labelling of these products. By providing a supportive and regulatory framework, policymakers and regulators can help ensure that the benefits of plant-based proteins are realized and that consumers have access to safe and healthy food choices.

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The approach is to engage directly with policymakers and regulators through meetings, presentations, and workshops. Ultimately, this will result in a series of Policy Briefs on a variety of topics of relevance, containing information on the advantages and disadvantages of alternative protein foods and dietary shifts on health and the environment, fully supported by science and presented in a tangible format for policymakers to digest.

Advocacy actions can be taken to engage with the relevant competent authorities, including the main bodies of law in different countries or at the European level, such as the Food and Agriculture Organization (FAO). One approach is to send formal invitations to relevant events and congresses in the sector, such as the Bridge2Food Summit Europe, which attracts key industry players including the Major and Head of Sustainability in The Hague. This allows for direct engagement with decision-makers and stakeholders and provides an opportunity to advocate for specific policy changes that can benefit the industry.

4. Levels of dissemination, communication, and exploitation

Key target groups operate at different geographic levels, which will influence which communication tools and media will be employed.

4.1. European Level

At the European level, the communication and dissemination strategy or the outcomes of GIANT LEAPS project includes several key elements:

- *Periodic reporting to the European Commission:* The project results will be communicated to the European Commission via periodic reporting, including mid-term review and minutes of periodical meetings. This information may be used to modify related regulations and to propose collaboration with other ongoing projects.
- *Dissemination to relevant European Technology Platforms*: The results of the project will also be sent to relevant European Technology Platforms, such as Food for Life, to ensure that the project results receive EU-wide visibility.
- *Press communication*: The project results will be communicated to the general public through press communication. This is an important way to raise awareness of the benefits of alternative protein products and eliminate any misconceptions or concerns.

This dissemination strategy is designed to ensure that the results of the research project are communicated effectively to relevant stakeholders and that the outcomes are used to improve the sustainability and health of food systems.

4.2. International Level

At the International level, the communication and dissemination strategy or the outcomes of GIANT LEAPS project includes several key elements:

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- *Communication to international organizations*. The results of the project will be communicated to relevant international organizations, such as Food and Drink Europe, to ensure that they are aware of the project outcomes.

- *Translation of scientific knowledge into practical information*. The scientific knowledge generated by the project will be translated into practical information, guidelines, and regulatory policies. This will help to ensure that the results are accessible and usable by a wide range of stakeholders.

- *Distribution of electronic media resources*. Specific organizations with similar target audiences will be invited to join the mailing list and distribute electronic media resources to raise public awareness. This will help to reach a wider audience and to promote the benefits of alternative protein products.

- *Participation in conferences and workshops*: Scientific journals, conferences, and workshops at both national and international levels, as well as publications in food science and technology portals, will be used for the dissemination of knowledge at both research and industrial levels. This will ensure that the results of the project are communicated effectively to relevant stakeholders.

- *Participation in industrial forums*: The project will also participate in industrial forums, such as exhibitions and trade shows, to promote the results of the project and engage with the industry.

4.3. National and Regional Level

At the national and regional level, the communication and dissemination strategy or the outcomes of GIANT LEAPS project includes several key points:

- *Local knowledge transfer*. The project partners are active in various research and commercial activities at national and regional levels, which will significantly boost local knowledge transfer.

- *Far-reaching and systematic dissemination*. The geographic coverage of the consortium members, who have networks across Europe, will ensure far-reaching and systematic dissemination of the project results.

- *Active involvement of project partners*. Each partner of the project will be actively involved in the communication and dissemination activities of the project, which will enhance the sustainability of the project results.

- *Translation of dissemination materials into local languages*. If necessary, the project partners will translate the dissemination and communication materials into the local languages to ensure that the results are accessible to a wider audience.

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5. Role of Consortium partners

The project partners are expected to be actively involved in the dissemination, communication, and exploitation of GIANT LEAPS outcomes. The partners have allocated time and resources, such as person months in WP8, towards these activities. The aim is to ensure that the stakeholders are engaged throughout the lifetime of the project and that the results are communicated effectively and widely to the relevant audience. Thus, the role of consortium partners in the dissemination, communication, and exploitation of GIANT LEAPS outcomes can include:

- *Active participation.* Consortium partners may be actively involved in the communication and dissemination activities of the project, such as participating in conferences, workshops, and industrial forums to promote the results of the project and engage with stakeholders. Additionally, all public communication and scientific publications will be made open access to facilitate scientific exchange and encourage the widespread dissemination of GIANT LEAPS outcomes.
- *Networking.* Consortium partners may use their networks to ensure far-reaching and systematic dissemination of GIANT LEAPS results.
- *Translation of materials.* Consortium partners may translate the dissemination and communication materials into the local languages to ensure that the results are accessible to a wider audience.
- *Commercialization*. Consortium partners may be involved in the exploitation of the project outcomes, such as commercializing new products and services based on the results of the research project.
- *Support for knowledge transfer*. Consortium partners may support the transfer of knowledge generated by the project to other relevant stakeholders.

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6. Exploitation

Exploitation in a research project refers to the utilization of the project outcomes for further research, product/process development, service creation, and standardization activities. The aim is to make concrete use of the project results and create a substantial impact in different sectors of the food industry. To achieve this, an effective exploitation strategy is needed, involving all consortium partners, and will be further discussed in the sub-chapters. The goals are to build sustainable businesses, lower the environmental footprint, and offer nutritional and health benefits to consumers.

The outcomes of the project will be used to stimulate different sectors of the food industry – from food processors and ultimately finished product manufacturers - to develop new processes and products, thereby creating a substantial impact. In order to achieve this, an effective exploitation strategy, involving all consortium partners, is required and the management for the exploitation will be discussed further in the sub-chapters below.

6.1. Exploitation plan

The main aim of the exploitation plan is to provide strategies for maximizing the impact and value of the technology developed within the GIANT LEAPS project. All partners are expected to contribute to the exploitation through one or more approaches, as they are all involved in generating the results.

The exploitation plan should establish clear ownership of each result and determine if any IP protection is necessary. The plan must balance the ability of each consortium partner to fully exploit their results with the need to promote the market uptake of the technology. The plan should ensure that exploitation does not impede the market acceptance of the technology.

The exploitation plan will consist of three main phases, namely: an exploitation identification phase, an evaluation phase, and a business plan phase. In the first phase, the potential exploitation outputs will be identified based on an individual exploitation plan template that is distributed to every partner. The template has taken into account aspects such as innovation exploitability, exploitation output ownership, exploitation routes, risk assessment, technology readiness level (TRL) status, and business model for the commercial application of the outputs. As a result of the first phase, partners will have key exploitation results identified. The second phase will evaluate in depth those key exploitation results to determine the most potential outputs for commercialization. In this phase, a term sheet will be sent to the partners to identify any Intelligence Property Rights (IPR) issues and other ownership risks, if exists. Most importantly, this phase will identify all relevant IP as well as the owners and the ownership allocated, the means of protection, and the value of IP. The third phase is a business plan that will be developed according to the results obtained from the first and second phases. The business plan will consist analysis of the potential target market for the exploitable outputs, potential competitors of the relevant sector, and strategy towards commercialization.

6.2. Market expectations

As economic prosperity continues to spread, consumers in developed countries are increasingly becoming aware of and interested in alternative protein sources. Meat has been the main source of protein in the developed market for years and the emerging market has recently shown greater interest in traditional protein sources. However, consumers shift their preferences towards healthier, environmentally friendly, and animal welfare-conscious options. Thus, alternative protein sources are rapidly gaining popularity, driving growth in the alternative protein market (Bashi et. al., 2019).

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The global alternative protein market is currently valued at USD 49.70 million in 2021 and is projected to grow at a Compound Annual Growth Rate (CAGR) of 16.90% to reach USD 126.84 million by 2028 (Vantage Market Research, 2023). The main drivers of this trend are the growing prioritization of sustainable food options by consumers in response to climate change and environmental concerns as well as rising demand for health-focused solutions. Furthermore, the alternative protein market is experiencing growth during the forecast period due to increasing awareness of the harmful effects of commercial meat production on personal health and animal welfare.

6.2.1. Leading alternative protein sources

Alternatives are protein-rich ingredients sourced from plants, fungi, algae, insects, and other emerging sources including lab-grown or cultured meat.

Plant proteins. This type of protein is the most well-established and is derived from protein-rich seeds through dry or wet fractionation. The most popular types for consumers are soy protein, pea protein, rice protein, chickpea protein, rapeseed protein, quinoa protein, and lentil protein, among others.

The plant protein segment is estimated to account for the largest share of the alternative protein market. The global plant protein market was valued at approximately USD 18.49 billion in 2022 and is projected to expand at a CAGR of 14.1% during the period 2023-2028, reaching a total value of USD 40.58 billion by 2028 (Market Data Forecast, 2023).

Microbial proteins. Microbial proteins, commonly known as single-cell proteins (SCP), are derived from several species of microorganisms but are most commonly derived from microalgae, fungi, yeast, or bacteria. They have various applications in animal feed, food & beverages, and nutraceuticals.

It is difficult to estimate the industry size of microbial proteins. The report of Mordor Intelligence (2023) estimated the market size value at 22.3 million USD in 2021 and is projected to register a CAGR of 4.15% to reach 27.32 million USD in 2026. On the other hand, Data Intelo (2023) estimated that the microbial protein market is projected to expand at a CAGR of 7.5% from 2022 to 2030.

***Insect proteins*.** Insects are rich in protein and other nutrients and can be produced using less resources and with a smaller environmental footprint compared to traditional livestock. Insect protein is gaining attention as a potential solution to food security and sustainability challenges, particularly as the global population continues to grow and demand for protein-rich foods increases (Henchion et al., 2017).

The report by Fortune Business insight (2023) explains that the market size of insect protein was valued at USD 153.92 million in 2021. The global insect protein market is projected to grow from USD 189.32 million in 2022 to USD 856.08 million by 2029, exhibiting a CAGR of 24.1% in the forecast period.

***Cultured Meat*.** Cultured meat, also known as lab-grown meat, cell-based meat, or clean meat, is grown in a bioreactor under controlled conditions, where it can develop into muscle tissue that can be harvested and used as meat (Ye et al., 2022).

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According to Global Information (2023), the cultured meat market size was valued at 1.64 million USD in 2021 and is estimated to reach 2788.1 million USD by 2030, registering a CAGR of 95.8% from 2022 to 2030.

6.2.2. New generation of products made from alternative proteins

The development of the latest generation of food products made from alternative proteins that closely resemble conventional animal-based products in terms of flavour, taste, and texture is largely driven by innovation in formulation and processing. To mimic the authentic taste and appearance of animal-based products, numerous companies have invested in creating specialized flavouring and colouring solutions to be added to their products made from alternative proteins. In addition, the use of masking agents has been instrumental in mitigating undesirable off-flavours and astringency that can be present in products made from alternative proteins. Binding and thickening agents, such as hydrocolloids, are equally important in creating a texture like conventional products (Hassoun et al., 2022).

Furthermore, advancements in processing technologies have improved traditional methods, like extrusion, while also introducing new tools like electrospinning and 3D printing, all with the goal of creating a meat-like experience by texturizing plant proteins from a globular to a fibrous structure (Boukid, 2021). In addition to developing alternative meat products, the emergence of new alternative proteins is also inspiring upgrades to traditionally consumed products like eggs and dairy.

***Meat alternative*.** “Meat alternative” is a general term, indicating any source of protein (plant, animal, fungi, or microalgae) that can be used as a replacement for the meat in the meal. The term is closely related to the term “alternative protein” and refers mostly to the need to supply proteins and does not include the requirements for precisely mimicking all the nutritional and textural properties. “Meat analogue” or “meat substitute” is a more precise term, referring to the products that mimic meat functionality in terms of processing, nutritional, and sensory attributes (Smetana et al., 2023).

The term “meat analogue” includes to a complex range of products made from alternative proteins that can be categorized into three groups based on their intended use: (1) those that mimic whole muscle tissue, (2) those that mimic fragmented whole muscle tissue (like minced meat), and (3) those that mimic processed meat products (such as sausage) (McClements and Grossmann, 2021).

According to a market research report (Fortune Business Insight, 2023), the market for meat substitutes is expected to see substantial growth in the coming years, with projections indicating an increase from USD 5.88 billion in 2022 to USD 12.30 billion by 2029, representing a CAGR of 11.11% during the forecast period of 2022 to 2029.

Dairy analogues (substitutes). Dairy analogues (or dairy substitutes) are products made from alternative proteins that are designed to mimic the taste, texture, and nutritional properties of dairy products, such as milk, cheese, yogurt, and butter. Dairy analogues can be used as a substitute for dairy products in a variety of recipes and are often favored by individuals who are lactose intolerant, vegan, or have other dietary restrictions.

Compared to conventional dairy products, dairy substitutes offer numerous appealing benefits to consumers. These include "free-from" properties such as being lactose, cholesterol, and dairy allergen-free, addressing consumer concerns about hormones and antibiotic residues, and featuring vegan-friendly labels (depending on additives). Additionally, dairy substitutes might contain high

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amounts of vitamins and minerals, other bioactive compounds, and phytochemicals, as well as added functionalities like dietary fibre or pre-/probiotic activity (Pua et al., 2022).

According to a market research report (Fortune Business Insight, 2023), the global dairy alternatives market is projected to grow from USD 25.19 billion in 2022 to USD 61.43 billion by 2029, at a CAGR of 13.58% in the forecast period.

***Vegan eggs*.** The development of vegan eggs is aimed at providing a healthier and more sustainable alternative to traditional eggs. This emerging industry is driven by several factors, including the growing prevalence of egg allergies, increased awareness of the environmental impact of traditional egg production, and a shift towards vegan diets. While vegan eggs may not be identical in taste and texture to traditional eggs, they offer a tasty and versatile alternative that can be used in a variety of dishes. At present, this market is still in its infancy stages, and clear regulations of labelling, safety, and risk assessment are deemed mandatory to organize the sector and protect consumers (Boukid and Gagaoua, 2022).

According to a market research report (Future Market Insight, 2023), the global vegan egg market is projected to grow from USD 1.6 billion in 2022 to USD 3.5 billion by 2032, at a CAGR of 8.4% in the forecast period. Vegan egg sales currently account for approximatively 2.9% of the global egg market in terms of value.

6.3. Preliminary exploitation plan per partner

The preliminary exploitation plans of the GIANT LEAPS partners are presented in Table 1, which provides a comprehensive overview of the initial plans. Each partner completed a template created by EFFoST to compile the information, resulting in a detailed summary of their individual plans.

Table 1. Preliminary exploitation plan per partner

WUR	
Key Exploitable Output	WUR is interested in developing a protocol for the identification of immunogenic/allergenic epitopes from novel proteins.
Exploitability level	*Moderately exploitable.*
TRL status	Current status: level 2 End of project: level 4
Exploitation risks	Technological risks: High
Exploitation routes	Fee-for-service. Depending on TRL status at the end of the project, there will still be needed: ○ Additional R&D and/or validation ○ Additional funding

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IRTA	
Key Exploitable Output	IRTA is planning to develop: ○ Functionalized ingredients ○ Meatball analogues ○ Yoghurt analogue
Exploitability level	*Moderately exploitable*
TRL status	End of project: level 6-7
Exploitation risks	Technological risks: Moderate Market risks: Moderate Regulation risks: Moderate
Exploitation routes	*Licensing* – allowing a 3rd party to manufacture and sell the product for a royalty fee *Technology transfer* – selling all rights to a 3rd party If the results are to be brought to the market, there will still be needed: ○ Additional R&D and/or validation ○ Market evaluation ○ Regulatory approval The timeframe for the results to be brought to the market is 2-3 years.
MATIS	
Key Exploitable Output	Possible scientific articles related to: ○ Characterization of raw materials tested in GIANT LEAPS ○ Appropriateness of alternative proteins to fight against climate change ○ Sustainability and biodiversity of production of alternative proteins
Exploitability level	*Weakly exploitable* as there is no market significant.
TRL status	End of project: level 2-3
Exploitation risks	Not applicable for this exploitable outcome
Exploitation routes	The obtained outcomes will be used for further R&D and the scientific articles can increase the knowledge on alternative proteins from a sustainability point of view.
UCC Cork	
Key Exploitable Output	UCC is planning to develop: ○ Functionalization strategies for alternative protein ingredients ○ Innovative egg-replacer for bakery industries ○ Innovative plant-based milk substitutes
Exploitability level	*Moderately exploitable*

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TRL status	End of project: level 4
Exploitation risks	Technological risks: Moderate Market risks: Moderate Regulation risks: Moderate
Exploitation routes	*Selling IP rights and/or technology transfer* to a 3rd party If the results are to be brought to the market, there will still be needed: ○ Additional R&D and/or validation ○ Market evaluation ○ Regulatory approval
VTT	
Key Exploitable Output	VTT will focus on functionalization of WP 2 ingredients by using thermomechanical processes or bioprocessing (enzymatic, microbial) technologies towards improved technological, sensory, and nutritional performance mainly targeted for meat alternatives.
Exploitability level	*Highly exploitable*
TRL status	Extrusion processing and bioprocessing technologies – TRL 4-6 (depending on the case). Food product design - TRL 3-4.
Exploitation risks	Technological risks: Moderate Regulation risks: Moderate Safety risks: Moderate
Exploitation routes	Licensing – allowing a 3rd party to manufacture and sell the product for a royalty fee Also, it's good to mention here that VTT has background IP (PCT/FI2022/050146 Protein-rich extrudates, food products, and processes for making the same" or "PC20089WO Protein-rich extrudates, food products, and processes for making the same) mentioned in the Consortium Agreement. Any derivative IPR or improvements to the particular IP will be owned by VTT and all exploitation is subject to a separate license agreement with VTT. Technology transfer – selling all rights to a 3rd party Fee-for-service – user pays only for services provided
UNA (University of Naples Federico II)	
Key Exploitable Output	○ Implementation of the INFOGEST in vitro oral/gastric/duodenal digestion method with the jejunal phase using Brush Border Membrane enzymes from cell cultures ○ Mass spectrometry mapping of resistant peptides at the bottom end of the simulated digestion to inform the allergenicity and support the *in-silico* methods.

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Exploitability level	*Moderately exploitable*
TRL status	TRL 2 – for the extraction of BBM from Caco-2 cells TRL 3 – for the implementation of BBM in INFOGEST
Exploitation risks	Technological risks: Moderate (high cost associated with the preparation) Market risks: Moderate (competitive projects working towards the same goal using porcine which may be less expensive)
Exploitation routes	Possible patent/standardisation activities for the preparation and standardisation of BBM enzymatic extracts If the results are to be brought to the market, there will still be needed: ○ Market evaluation ○ Regulatory approval
LUKE	
Key Exploitable Output	The Natural Resources Institute Finland (Luke) is involved in the environmental and social sustainability assessment of alternative proteins in this project. Luke will not be involved in commercial exploitation of the results.
Exploitability level	*Not exploitable*
TRL status	*Not applicable*
Exploitation risks	*Not applicable*
Exploitation routes	*Not applicable*
DIL (German Institute of Food Technologies)	
Key Exploitable Output	DIL will develop a data integration platform ensuring interoperability and data access to stakeholders
Exploitability level	*Moderately exploitable*
TRL status	TRL 6-7 by the end of project
Exploitation risks	Technological risks- Moderate Market risks - Moderate Partnership risks - Moderate Management & financial risks - Moderate

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	○ Leasing – short- or long-term rental contracts ○ Licensing – allowing a 3rd party to manufacture and sell the product for a royalty fee ○ Technology transfer – selling all rights to a 3rd party ○ Fee-for-service – user pays only for services provided
Exploitation routes	If the results are to be brought to the market, there will still be needed: ○ Additional R&D and/or validation ○ Additional funding The timeframe for the results to be brought to the market is 3-4 years after project closure, and subsequent validation at TRL9.
INRAE	
Key Exploitable Output	INRAE aims to develop and/or improve *in vitro* models, in replacement of animal models, for the allergenic risk assessment of novel sources of protein. INRAE aims to publish at least two scientific articles in per-review journals. At this moment, INRAE do not expect to generate directly exploitable results.
Exploitability level	*Not exploitable*
TRL status	Not applicable
Exploitation risks	Not applicable
Exploitation routes	Not applicable
MUS (Medical University of Sofia)	
Exploitation plan	In silico models for prediction of peptide binding to the proteins of the most common HLA alleles related to food allergenicity. The derived models will be incorporated into allergenicity risk assessment toolbox.
Exploitability level	*Moderately exploitable*
TRL status	TRL 2
Exploitation risks	Technological risks: Moderate
Exploitation routes	Fee-for-service. If the results are to be brought to the market, there will still be needed: ○ Additional R&D and/or validation ○ Additional funding
AZTI	
Key Exploitable Output	An open cloud platform with Artificial Intelligence algorithms for protein properties screening and their potential for sustainable integration in diets
Exploitability level	*Moderately exploitable*

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TRL status	TRL 7: System prototype demonstration in operational environment at pre-commercial scale Test the pre-commercial product with potential target customer and modify accordingly the feedback received
Exploitation risks	Technological risks: Low IPR/legal risks: Moderate Partnership risks: Moderate Management & financial risks: Moderate
Exploitation routes	Fee-for-service – user pays only for services provided If the results are to be brought to the market, there will still be needed: ○ Additional R&D and/or validation ○ Market evaluation ○ Regulatory approval ○ Additional funding
IRIS	
Key Exploitable Output	Stakeholder digitalized platform for cooperative use of the consortium to achieve impact in the gap knowledge of alternative plant proteins.
Exploitability level	*Moderately exploitable*
TRL status	TRL 6
Exploitation risks	Technological risks: Low IPR/legal risks: Moderate Partnership risks: Moderate Management & financial risks: Moderate
Exploitation routes	Leasing – short- or long-term rental contracts Fee-for-service – user pays only for services provided
VM (Viva Maris)	
Key Exploitable Output	Information giving about technologies for developing sustainable, healthy, and delicious foods as meat alternatives from alternative proteins.
Exploitability level	*Moderately exploitable*
TRL status	Start of Project – Level 3 End of Project hope to achieve – Level 7
Exploitation risks	Market Risks: Moderate (to implement the product on the market) Technological Risks: Moderate (in market production) Safety risk: Low
Exploitation routes	Direct sales – products sold directly to the customer Additional funding will be needed to enter the market with a new product.

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SF (Solar Foods)	
Key Exploitable Output	Developing and selling new or existing products by learning consumer attitudes towards microbial proteins we maximize the attraction of their current ingredient. Solein® is regarded as a safe high-quality ingredient in our daily meals. We learn how it metabolizes in human body. Solein interacts with other alternative proteins gaining advantage to the application for example in textural, taste or nutritional perspective.
Exploitability level	*Highly exploitable*
TRL status	TRL 4
Exploitation risks	○ *Technological risks* – Moderate: There is a new process that is currently in scaling up phase. There is always a risk even though similar processes are currently in a big scale. ○ *Market risks* - Moderate risk: Consumer adoption for new protein sources and the speed of adoption. Risk is that consumers are not willing to switch to alternative protein sources. ○ *Partnership risks* – Moderate: Customers not willing to partner with new ingredient producers. ○ Management & financial risks - High: uncertainty with start up financials. Funding uncertain. ○ *IPR/legal risks* – Moderate: Someone stoles our patented process. ○ *Environmental risks* – Low – our environmental footprint is very low. However, some risk what comes to gas fermentation and storage of the explosive materials. ○ *Regulation risks* – Moderate: Without permission, no sales. However one approval already received (Singapore). ○ *Safety risks* – Moderate – on a process for novel food approval in EU. However, with same material approval gotten in Singapore and profound safety measurements done by Solar Foods.
Exploitation routes	Direct sales – products sold directly to the customer If the results are to be brought to the market, there will still be needed: ○ Additional R&D and/or validation ○ Market evaluation ○ Regulatory approval ○ Overcoming other barriers identified during the project ○ Additional funding
GCL (GreenCoLab)	
Key Exploitable Output	Evaluation of nutritional gaps of microalgae biomass. Development of new food products.
Exploitability level	*Highly exploitable*
TRL status	TRL 4

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Exploitation risks	Technological risks: Moderate Regulation risks: Moderate Safety risks: Moderate
Exploitation routes	Leasing – short- or long-term rental contracts Licensing – allowing a 3rd party to manufacture and sell the product for a royalty fee If the results are to be brought to the market, there will still be needed: ○ Additional R&D and/or validation ○ Market evaluation ○ Regulatory approval ○ Overcoming other barriers identified during the project
Mosa Meat	
Key Exploitable Output	Knowledge of consumer attitudes towards cultivated beef from cells.
Exploitability level	*Highly exploitable*
TRL status	TRL 4 Roadmap towards TRL 9: Applying for regulatory approval in multiple geographies, building pilot production facility now and planning for industrial scale facilities in the near term.
Exploitation risks	Technological Risks: Moderate Market Risks: Moderate Regulation Risks: Moderate Safety Risks: Moderate
Exploitation routes	Direct sales – products sold directly to the customer If the results are to be brought to the market, there will still be needed: ○ Additional R&D and/or validation ○ Market evaluation ○ Regulatory approval ○ Overcoming other barriers identified during the project ○ Additional funding The timeframe for the results to be brought to the market is 2-3 years.
NFB (Napiferyn Biotech)	
Key Exploitable Output	The main result that is expected is to confirm that rapeseed proteins can be successfully applied as ingredients in tasty food products, e.g. meat and dairy alternatives. Developing new products & cooperation agreement – activities above may lead to developing new products and/or cooperation agreement with partner(s)
Exploitability level	*Highly exploitable*
TRL status	TRL 3 (in terms of food with rapeseed proteins)

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Exploitation risks	Technological risks - Moderate Market risks - Low Management & financial risks - Moderate Regulation risks - Moderate
Exploitation routes	Licensing (in terms of protein production) If the results are to be brought to the market, there will still be needed: ○ Additional R&D and/or validation ○ Market evaluation ○ Regulatory approval ○ Additional funding
CAPNUTRA	
Key Exploitable Output	Create a future diet in the Central and Eastern European (CEE) region that incorporates alternative protein sources while still adhering to national dietary guidelines, cultural differences, and typical consumption habits and making policy recommendations.
Exploitability level	*Moderately exploitable*
TRL status	Not applicable
Exploitation risks	Not applicable
Exploitation routes	Not applicable
FrieslandCampina	
Key Exploitable Output	Improved Plantaris faba isolates or new application suggestion for Plantaris faba isolates by innovations on functionality and/or nutrition & digestion preferably with impact on diet level.
Exploitability level	Moderately exploitable
TRL status	TRL 4
Exploitation risks	Technological Risks - Moderate Market Risks – Moderate
Exploitation routes	Direct sales – products/services sold directly to the customer (=another company who will make a consumer product out of it) If the results are to be brought to the market, there will still be needed: ○ Additional R&D and/or validation ○ Market evaluation ○ Regulatory approval Finishing the faba application suggestion and bringing this to customers (other companies which will make a product out of if), will take 1-2 years.

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DAAB (Deutcher Allergie- und Asthmabund)	
Key Exploitable Output	Recommendation for communicating risks derived from novel food ingredients with regards to food allergies to consumers.
Exploitability level	Highly exploitable
TRL status	Not applicable
Exploitation risks	Regulation Risks – Moderate to High The risk for implementation and use of the reporting-adverse-reaction platform is low to moderate depending on the accessibility, use and dissemination strategies.
Exploitation routes	If the results are to be brought to the market, there will still be needed: ○ Regulatory approval ○ Overcoming other barriers ○ Additional funding
Roquette Feres	
Key Exploitable Output	Contribute to the standardization and harmonization of in vitro/in silico methodologies for evaluating the nutritional quality (bioavailability and digestibility) of alternative proteins, particularly plant-based ones, and to assess their risk of allergenicity and toxicity.
Exploitability level	Highly exploitable (internal Roquette)
TRL status	Not applicable
Exploitation risks	Not applicable
Exploitation routes	Not applicable
Bugging	
Key Exploitable Output	The output can lead to the development of new consumer products containing house cricket powder. The exploitation routes require project output (e.g. novel production methods, recipes) that are safe and, can be implemented at scale, commercially sound (i.e. production costs match the price consumers are willing to pay) and within the scope of EU regulations (i.e. are within existing Novel Food permits or the market potential of the product warrants a new Novel Food application).
Exploitability level	*Highly exploitable*
TRL status	TRL 6 Roadmap towards TRL9: Incorporating into existing manufacturing processes at scale and determining market fit.

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Exploitation risks	Technological risks - Low Market risks - Moderate Regulation risks - Moderate Safety risks- Moderate
Exploitation routes	Direct sales – products sold directly to the customer If the results are to be brought to the market, there will still be needed: ○ Additional R&D and/or validation - incorporating solutions into consumer products ○ Market evaluation - testing market fit, price point, etc. ○ Regulatory approval **-** depending on whether the output is covered by existing Novel Food permits ○ Overcoming other barriers identified during the project ○ Additional funding The timeframe for the results to be brought to the market is 3-6 months of further R&D, if the output can be scaled, production costs match price point and there are no regulatory issues.

ETH (Swiss Federal Institute of Technology Zurich)	
Key Exploitable Output	The perception and acceptance of different alternative proteins and trade-offs related to the consumption of these products will published in per-reviewed journals with open access. Thus, the project output is not commercially exploitable.
Exploitability level	*Not exploitable*
TRL status	*Not applicable*
Exploitation risks	*Not applicable*
Exploitation routes	*Not applicable*

AGT (AGT Food and Ingredients)	
Key Exploitable Output	As an ingredient supplier, AGT Foods would be interested in all relevant outputs from the project especially on pulses, value addition, nutritionals, functionality, and application. As a dormant partner in the consortium, AGT Foods do not have an active role in the project other than sending samples of ingredients for research.
Exploitability level	Moderately exploitable
TRL status	Not applicable
Exploitation risks	Not applicable
Exploitation routes	Not applicable

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UnMan (The University of Manchester)	
Key Exploitable Output	(1) Case studies for “Safety by Design” of alternative protein ingredients. (2) Novel in vitro digestion and uptake methods and associated readouts for safety assessments. (3) Novel cell-based methods for allergenicity risk assessment, linking HLA types and B-cell activation (4) Protocols, questionnaires, and online tools constituting an online “Observatory” for post-market monitoring of allergic reactions to alternative protein ingredients.
TRL status	○ Novel in vitro digestion and uptake methods and associated readouts for safety assessments. Level 3 ○ Novel cell-based methods for allergenicity risk assessment, linking HLA types and B-cell activation. Level 3 ○ Protocols, questionnaires and online tool constituting an online “Observatory” for post market monitoring of allergic reactions to alternative protein ingredients. Level 3
Exploitation risks	Partnership risks: need to be managed proactively through having a publication plan with a code of conduct for authors. This is essential to avoid barriers to publication. Likelihood: Likely if not proactively managed; Impact: Significant if not proactively managed. Overall impact**:** **HIGH** Other: Sustainability plan for the Observatory has a risk that no funder or organisation will be found who will support the maintenance or further development of the tool. Likelihood: Likely; Impact: Significant. Overall impact: **HIGH**
Exploitation routes	Only the training aspects will likely have a commercial basis and would be under a “fee for service” basis. ○ **Case studies for “Safety by Design” of alternative protein ingredients**: these will be published and placed in the public domain; teaching material developed maybe exploited through, for example, development of CPD courses run by academic partners, to train the sector in developing safety assessments. ○ **Novel in vitro digestion and uptake methods and associated readouts for safety assessments**. These will be published and placed in the public domain; again teaching material developed maybe exploited through, for example, development of training courses run through, for example, InfoGEST. ○ **Novel cell-based methods for allergenicity risk assessment, linking HLA types and B-cell activation**. These will be published and placed in the public domain. ○ **Protocols, questionnaires, and online tools constituting an online “Observatory” for post market monitoring of allergic reactions to alternative protein ingredients**. These will be

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published and placed in the public domain and it maybe, if successful, a plan will need to be developed for the sustainability of the Observatory with, for example EFSA or National Authorities involved in food safety management.

UL (Unilever)	
Key Exploitable Output	The knowledge gained in this project will improve their existing knowledge of alternative proteins and generating new opportunities for their brands and plant-based targets.
Exploitability level	*Moderately exploitable*
TRL status	TRL 6
Exploitation risks	Technological risks - Low Market risks - Low Partnership risks - Low Management & financial risks - Low IPR/legal risks - Low Environmental risks - Low Regulation risks - Low Safety risks - Low
Exploitation routes	Direct sales – products/services sold directly to the customer If the results are to be brought to the market, there will still be needed: ○ Additional R&D and/or validation

6.4. GIANT LEAPS will be a success for our organization when…

This information was provided by GIANT LEAPS partners for the kick-off meeting. The information was categorized by EFFoST in "Impact for society" and "Impact for project" and will be used in combination with other means to identify the key exploitable results of GIANT LEAPS.

Table 2. Information collected from GIANT LEAPS partners during the kick-off meeting

Category	Partner	GIANT LEAPS will be a success for our organization when…	Summary
Research organizations	WR	*High impact:* - We can optimize the diet shift - We achieve scientific and societal impact *Impact for project:* - We can fill the knowledge gaps regarding alternative protein sources - We manage the project effectively; all deliverables will be of high quality and submitted on time - We ensure effective and inspiring collaboration - We ensure high engagement of scientists, companies, and other stakeholders involved	- Optimize the diet shift and achieve scientific and societal impact by filling knowledge gaps on alternative protein sources. - Make the alternative proteins appealing, safe and healthy, contribute to sustainable food systems, asses their sustainability impacts and evaluate their techno-functional and sensory

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	- We ensure effective dissemination and communication	properties, best production and use methods. - Apply knowledge on alternative proteins and contribute to their promotion and acceptance in the CEE region, while creating new connections and partnerships for future collaboration. - Develop a Data Management Platform with project-generated data to identify the proteins' properties and the impact on safety, sustainability, and health of protein sources. - Develop alternative methods to reduce animal testing for allergenicity and toxicological risk assessment of novel food. - Allergenicity risk assessment, consumer-friendly labeling, and a post-market surveillance system will be established. - Publish scientific papers in high-impact journals describing toolbox, improved methods, standardized and validated models on digestion, health, and sustainability. - Engagement and strengthening the network of scientists, companies, and stakeholders involved.
IRTA	*Impact for society:* - Developing new food products as alternatives to dairy and culinary products with excellent nutritional & sensory properties *Impact for project:* - Obtaining new protein fractions from alternative sources with a wide range of techno-functional properties ..and spend a good time while strengthening our international network.	
MATIS	*Impact for society:* - Help to make alternative proteins **yummy, trendy and mainstream** - Contribute to the transition to **sustainable food systems** of the future *Impact for project:* - Assess the sustainability **impacts** of alternative protein production - Enable their comparison to conventional protein sources to help to determine what **role they can play in the sustainability transition** - Examine properties of alternative protein ingredients and the **best way to produce and use them**	
VTT	*Impact for society:* - In collaboration with research and industry partners we develop new product innovations closing the gaps between animal and plant proteins - We co-create together with various stakeholders *Impact for project:* - We develop further our IPR portfolio in the domain of alternative proteins and disseminate by publishing in high impact factor journals	
LUKE	*Impact for project:* - Through the international collaboration, we can improve and harmonize the methodological framework for sustainability assessment of biobased production	
DIL	*Impact for society:* - A new concept of cyber-physical food systems will be applied, allowing for the combination of data analytics and physical properties of food to solve food safety problems, transparency, traceability, and sustainability. *Impact for project:* - A new Data Management Platform will be operable	

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TEAGASC	*Impact for project:* - High impact publication –methods, hard data on digestion - New industry links - Alignment with other “alternative protein” projects and networks e.g. ValPro (EU project lead by Teagasc), Uprotein (Irish project lead by Teagasc), etc.
INRAE	*Impact for society:* - Contribution to the knowledge for a safe and successful dietary shift *Impact for project:* - Development of effective alternative methods to reduce the use of animal experimentation - Establishment of productive interactions with GL partners
AgroParisTech	*Impact for society:* - Integrated view of the best food protein sources that will participate to protein transition in humans
AZTI	*Impact for society:* - Impact of alternative protein dietary shifts - Dietary shifts complying health and environmental requirements *Impact for project:* - AI solutions to identify alternative proteins properties
GCL	*Impact for project:* - Significant knowledge gathered on the nutritional gaps of improved phenotypes of Chlorella vulgaris - Algae potential as a sustainable and feasible alternative source of proteins for food development is enhanced - Improved integration between the stakeholders (algae producers and protein/food industry) is achieved
Capnutra	*Impact for society:* - We contribute to promotion and acceptance of alternative proteins in CEE region *Impact for project:* - We enlarge and apply the knowledge on alternative proteins - Our network creates connections with new organisations and partners for future collaboration

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	DAAB	*Impact for society:* - ... consumer friendly allergen risk communication and labelling is adopted - ... a post market surveillance system for novel food is established and permanently implemented - ... in general, more awareness for food allergies in the context of novel food is created *Impact for project:* - ... allergenicity risk assessment for novel food is developed and applied	
Universities	University Of Naples	*Impact for society:* - Contributing to the development of new methodological approaches that would support the introduction of novel foods in the market *Impact for project:* - Successfully meeting the deliverables within timeframe and budget - Engaging in fruitful interactions with the other partners and novel food stakeholders - Learning novel approaches and strategies and mentor postdocs involved in the project to a successful future career in the research	- Scientific publications in peer-review journals - Develop educational content for students - Provide mentorship and supporting the development of early career researchers such as PhD students and postdocs. - Engagement in productive interactions and collaboration with other partners and novel food stakeholders - Gain insight on the impact of protein transition in different domains and understand the consumer's view on protein alternatives. - Development of new methodological approaches for the introduction of novel foods in the market. - Develop algorithms for allergenicity risk assessment, provide evidence-based approaches for food labeling, and establish a post-market monitoring system for food allergies.
	Wageningen University	*Impact for project:* It results in: - the graduation of the PhD students - scientific publications - content for our education - inspiring collaboration with other research institutes - gained insight in how the protein transition impacts the different domains	
	Medical University of Sofia	*Impact for project:* - We have successful models to describe the route of a food protein to peptides with an allergenic potential. - We have in silicoderived models validated with in vivo and in vitro data. - We have an algorithm to assess the risk for de novo sensitisation to a novel protein. - We have an algorithm to assess the risk for cross-reactivity of a novel protein to known allergens.	
	ETH Zurich	*Impact for society:* - Help understanding consumer's views on protein alternatives - Are used to promote environmentally friendly lifestyles *Impact for project:* - Are successfully published in peer-reviewed journals and highly cited - Provide input for the projects of other partners	

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	Manchester University	*Impact for society:* - Develop evidence-based approaches for labelling novel foods which help allergic consumers make safe food choices *Impact for project:* - Unravel the role of HLA binding in predisposing some foods, like peanut, becoming allergenic compared to others, like maize. - Deliver an Observatory to support post-market monitoring of food allergies across Europe and beyond - We have fun building a community and supporting development of ECRs in the project	
Companies	IRIS	*Impact for project:* - We deliver a sustainable open platform with stakeholders who exchange experiences and knowledge on the production of alternative protein foods, the dietary shift and policy measures exploitable commercially as product b2b to stakeholders (including food industry, associations, NGOs, public authorities, policymakers at EU and national level).	- Improve the ability to make delicious, safe, healthy and high quality products from alternative proteins. - Increasing the knowhow and understanding of the nutritional's, functionalities, and applications of alternative proteins. - Develop a sustainable open platform for exchange of knowledge and experiences on alternative protein food production, dietary shift and policy measures. - Develop new partnerships and cooperation's to accelerate substitution of animal proteins by alternative proteins in the diets of consumers to lead to a healthier diet. - The EU recognizes cellular agriculture as a tool to achieve its goals, and the project leads to better consumption of alternative proteins for consumers and the planet. - An agreed framework for safety assessment of plant-based proteins and validation of in-vitro digestibility models are also achieved.
	Bridge2Food	*Impact for project:* - When we have created 'unity' - > Project members are satisfied with inputs - > Stakeholder Board…90% satisfied - When we have created new networks and connections - When we have had a lot of joy...	
	Viva Maris	*Impact for society:* - A high innovative meat alternative with high protein basis will be successful on the market afterwards. - We have developed a high innovative meat alternative with high protein basis.	
	Solar Foods	*Impact for society:* - Alternative proteins form a safe, healthy, high-quality component in our daily meals - We gain understanding of consumer attitudes towards alternative proteins *Impact for project:* - Superpowers of Solein as well as other alternative proteins are characterized	
	FSN	*Impact for project:* - Contribution to societal challenges ... - Protein ... - Novel Foods ... - Food Safety & Nutrition - Science! - Publications! - Network! - & fun...	
	Mosa Meat	*Impact for society:* - Europeans begin to shift their consumption patterns to alternative proteins better for them and the planet.	

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	- The EU includes cellular agriculture as a tool to achieve the goals of the Farm to Fork strategy and European Green Deal - Value chain actors accelerate the uptake of cultivated meat based on data produced by this consortium.
NapiFeryn Biotech	*Impact for society:* - Nutritious and delicious food prototypes are obtained with use of our Raptein ingredients - More Europeans are convinced to alternative proteins and plant-based foods *Impact for project:* - Project results confirm that rapeseed protein can be successfully applied as ingredient in tasty food products, e.g., meat and dairy alternatives - NapiFeryn makes new valuable contacts, partnerships and get to know new friends who care about our planet as much as we do.
Friesland Campina	*Impact for project:* - The consortium will lead to new or improved Plantaris application suggestion by innovations on: - Functionality (WP2) - Nutrition & digestion (WP4) with impact on diet level (WP7)
Roquette	*Impact for society:* - ...It will allow the creation of open-access, updated and comprehensive dataset facilitating the proportion and understanding of how alternative proteins, especially plant-based ones, are relevant of future gastronomy and diets, and address this information to audiences including the scientific community, farmers, producers, and the general public. *Impact for project:* - ...We will be able to settle and harmonize in vitro/in silico methodologies to evaluate the nutritional quality (bioavailability, digestibility) of alternative proteins, especially plant-based ones, and methods to predict their risk of allergenicity / toxicity.
Bugging	*Impact for project:* - ...we improve our ability to make delicious (WP2) and safe (WP3) products from dehydrated crickets
AGT Foods	*Impact for project:* ○ Expanding the knowledge around applications with legumes/pulses ○ Increasing the knowhow and understanding of the nutritional's and functionalities in legumes/pulses ○ Expanding opportunities beyond legumes/pulses ○ Developing new partnerships and cooperation's to improve societal eating consumption patters to lead to a healthier diet

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	Unilever	*Impact for project:* - Identify novel protein ingredients with exceptional structural functionalities and/or limited off-flavours beyond what is currently available on the market at the right costs. - An agreed framework for safety assessment of plant-based proteins (avoiding additional animal testing). - Validation of in-vitro digestibility models to assess protein quality and mineral bioavailability of complex plant-based protein rich foods.	
Non-profit organizations	EFFoST	*Impact for society:* - the results have been successfully exploited, meaning they have been utilized in a practical way to bring value to the stakeholders involved *Impact for project:* - the outcomes have been effectively communicated and disseminated to relevant stakeholders - the publications, presentations to conferences, commercialization of research results or transfer of knowledge outreach a wider community	- The outcomes have been effectively communicated to relevant stakeholders and utilized to bring value. - The results disseminated through publications, presentations, commercialization and transfer of knowledge will reach a wider audience. - A user-friendly website and successful eLearning are also planned to help achieve the expected impact. - Collaborate and extend the network to promote dietary shift in Europe.
	Europa Media	*Impact for project:* - create a user-friendly website - reach our target audience - prepare a successful eLearning - help achieving the expected impact - can collaborate with all of you successfully (actively and regularly) and extend our network together to promote dietary shift in Europe	

6.5. Identification of Key Exploitable Results (KERs)

The information gathered during the Kick-off meeting when partners answered the question, "GIANT LEAPS will be successful for our organization when...", as well as the information collected using the pre-assessment template (exploitation plan per partner), provides a solid foundation for identifying the key exploitable results. This information will be discussed and updated with WP leaders on a bi-yearly basis. The following products/services already emerged as possible KERs:

- Developing safe, sustainable, and healthy food products based on alternative proteins (e.g. meat analogues, dairy, and egg replacers) through innovative food processing and formulation approaches.
- Obtaining new functional ingredients from alternative proteins with a wide range of techno-functional properties and/or limited off-flavours beyond what is currently available on the market.

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- Developing thermomechanical processes or bioprocessing (enzymatic, microbial) technologies towards improved technological, sensory, and nutritional performance mainly targeted for meat alternatives.
- Developing protocols, questionnaires, and online tools that address toxicological concerns, allergenic risks, and effective post-market surveillance by implementing a “safety by design” approach.
- Enhancing knowledge about the nutritional content, quality, digestibility, and health benefits of alternative protein ingredients and derived foods. This will result in the development of novel and improved protocols for the determination of protein quality, digestibility, and bioavailability.
- Developing a data integration platform ensuring interoperability and data access to stakeholders.
- Developing an open cloud platform that incorporates Artificial Intelligence algorithms for screening protein properties and evaluating their potential for sustainable integration into diets.

6.6. Exploitation Roadmap

The KERs will undergo further development through the implementation of a business model. The business model outlines the strategy for creating a successful solution delivery and achieving impact. It defines the target customer segment, the product or service being offered, the sources of revenue, and the financing details. The model explains how value can be derived from a feasible R&D outcome and quantifies the impact that will be generated.

6.6.1. The Lean Canvas

Lean Canvas is a useful tool to create an effective Exploitation Plan (business model) for an R&D result and determine the revenue model. Out of various canvas models available, the Lean Business Model Canvas is particularly well-suited for R&D projects. It is a powerful tool for partners to further refine the description of their KERs, create discussion points for Consortium meetings, and draft an effective Exploitation/Business Plan for their KERs.

The Lean Canvas is designed to enhance and fine-tune the exploitation strategy for a KER by considering the following 4 critical questions:

1. Who is my “customer”?
2. What is “her/his” problem?
3. How does “she/he” solve the problem now?
4. Is our solution more efficient than the current one?

The main goal of Lean Canvas is to present the information in a clear and concise manner so that uninformed third-party can comprehend the purpose and use of a KER. This includes understanding the problem being addressed, the target customer segments, the proposed solution, its differentiation from competitors, and the value proposition. The Lean Canvas is very important for successful dissemination efforts, so it is essential to avoid the use of highly technical language and abbreviations that may hinder third-party understanding of the KER.

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The main steps to draft the Lean Canvas are described below:

1) **PROBLEM** – find 3 main problems you are addressing

Explain: ***What*** is the problem and ***why*** is it a problem?

Endeavor to add numerical data or quantifiable metrics that clearly demonstrate the magnitude of the issue.

Describe EXISTING ALTERNATIVES – discover the current methods being employed to address the issue.

2) **CUSTOMER SEGMENT** – identify who has the problem, define target customers (do not confuse with users)

Clearly specify the geographical location of your target customers and the industry they belong to and link them to the relevant problem.

Identify EARLY ADOPTERS – identify a small, highly impacted niche that experiences the most significant challenge and would be most likely to embrace the new solutions. These individuals will serve as the initial customers of your solution. Therefore, it is important to gather as much information about them as possible. Specify their geographical location, relate them to the problem, explain why they are likely to be the first adopters, and detail your existing relationship with them, among other factors.

3) **UNIQUE VALUE PROPOSITION**

Define your Unique Value Proposition (UVP) by contrasting it with current alternatives, highlighting what makes your product/service more advantageous for customers. The UVP should be a concise and persuasive statement that clearly communicates why your offering is superior, with features that are aligned with customer needs and requirements.

Make sure to clearly articulate how your solution distinguishes itself from alternative options and the compelling reasons that will attract customers to your offering; Explain the uniqueness of your solution.

Include factual data and statistics to demonstrate the superiority of your product compared to alternative solutions. For example, present metrics such as a 20% improvement in efficiency, a 10% reduction in energy consumption, or a 30% decrease in development costs, etc.

4) **SOLUTION – outline the main features of your solution**

In a competitive market where products have similar features, it is the unique differences that set solutions apart. Emphasize the aspects of your solution that distinguish it from others and are most valuable to customers.

Ensure to clearly describe the format of your solution, whether it is a machine, equipment, software, service, or process, and explain its functionality and the mechanism behind it.

5) **CHANNELS** – What is your plan for reaching and engaging with your target customers?

Make sure to evaluate the suitability of the selected channels for your customer base and determine if they will provide enough exposure to build a strong market reputation.

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6) **KEY METRICS**

Identify the key performance indicators you will track to measure the success of your solution (e.g. units sold, number of registered users, user retention, paying customers, and customer feedback).

7) **UNFAIR ADVANTAGE** - Determine your unique advantage over the competition - something that sets you apart and cannot be easily replicated or acquired

This could include IPR, being first movers on a new technology that takes years to develop, etc. Be sure to clearly explain how the listed points provide you with a competitive advantage, as it may be challenging for those without extensive knowledge of your industry to fully comprehend.

8) **COST STRUCTURE**

Identify and outline the key cost components associated with bringing your solution to market, including customer acquisition costs, distribution costs, hosting costs, personnel costs, and any other relevant expenses. Provide an estimate of total costs after 6 months and 1 year, along with a breakdown of each cost category. This will help to establish a clear link between your projected revenues and costs.

9) **REVENUE STREAMS**

Define the primary sources of revenue when your solution is ready for market entry, outlining how each will generate revenue and providing estimated figures for each revenue stream.

Estimate the seed stage revenue projections for 6 months and 3 years by quantifying the amounts and prices. Provide specific details, such as the expected number of services provided and their respective prices, the number of licenses sold and their associated costs, etc.

Once you've completed the exercise, it's important to validate your assumptions by testing your hypothesis with at least 2 real potential customers. Assess the following assumptions to ensure the relevance and effectiveness of your solution:

- Does the market actually face the problems you have identified, and does your solution effectively address them?
- Does your solution offer the features that the market demands and desires?
- Is the information provided in the canvas clear and comprehensive enough for the customer to fully understand your project?

Be sure to document the feedback received and make necessary revisions to the canvas to optimize your solution based on this input.

An example of Lean Canvas template is shown in Table 3.

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Table 3. Lean Canvas template

<table>
<tr>
<td rowspan="2">Problem
1)

Top 3 problems
His main problem
Which job has to accomplish
What and why?

4)
Existing alternatives to address the same problems</td>
<td>Solutions
4)
Top 3 features Based on the VP (why it is better than others)
Use MVP to test assumptions
Remember: the first sentence should clarify what it does, how it does it.</td>
<td rowspan="2">Unique Value Proposition
3)

Why you are different and worth buying
(How you help customer doing his job, accomplish his mission
Improve his position
…. better than others.
Provide
Explain how you differentiate from alternative solutions and thus the uniqueness of your solution.
Provide numbers to the performance of your solutions.</td>
<td>Unfair Advantage
7)

Can it be easily copied or brought?
What is the customer retaining costs?
Acquisition costs
Switching costs</td>
<td rowspan="2">Customer Segment
2)

Who are they?
Distinguish between users and customers (customers buy, users “use”)
Split into vertical segments
Pick the strongest customer segment
Remember geographic location, Industry and connection to the problem.
Early adopters
Remember geographic location, Industry and connection to problem.
+ why are they early adopters? What is your relation to these etc.</td>
</tr>
<tr>
<td>Key Metrics
6)

Key aspects/activities you need to measure for a feedback.</td>
<td>Channels
5)
How you contact your customers/early adopters,
How you deliver value
How you promote value</td>
</tr>
<tr>
<td colspan="3">Cost structure
8)

Prototyping
HR costs, Eng. costs, MFG costs, marketing costs etc.
Estimate costs for each “cost_entity”
Estimate costs after seed stage 6 months and 3 years.</td>
<td colspan="2">Revenue Streams
9)

The different revenue streams How each stream generates revenue Estimation of how much each stream will generate Estimation of revenue at seed stage 6 months and 3 years.</td>
</tr>
</table>

6.7. IPR Management

Management of Intellectual Property Rights (IPR): a project Innovation and IPR (IIPR) manager (WR) has been appointed. Dr Stacy Pyett, WR Program manager Proteins for Life, has taken up the role of the IIPR manager. She will evaluate the results and innovations from GIANT LEAPS, as early as possible, for their novelty, and possible patentability and protection of the results under fair conditions between the involved partners. Also, project partners will inform the IIPR manager and Project Coordinator upon identification of possible IPR. Where an IPR (e.g. patent) application is required, it will be filed and reported.

The consortium will seek to make best use of the exploitable results of the project, with special focus on seeking IPR protection for innovation-type results. For new or improved methodologies,

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technologies and datasets, the aim is to pursue open access and open science practices (see also section 1.2 Open Science & Data Management). When considering IPR, the following should be emphasized for consolidating sustainable value creation in the EU:

- The high relevance of this project lies in the fact that “alternative protein sources” solutions are provided, considering positive economic and social impacts in addition to the environmental aspects, for widespread use across the food sector, along the entire food chain, and not limited to the EU alone.
- The high technical quality of the project is associated with innovative technologies with large potential to valorize at the end of the project, requiring sufficient freedom to operate by the exploitation partners.

The partners acknowledge the strategic importance and sensitive nature of back- and foreground knowledge provided by any other partner, and that disclosure of such information will be subject to specific obligations concerning confidentiality and use. The signed Consortium Agreement details the relations and regulations regarding IPR between the partners. This enables all partners to carry out their work on the project and/or exploit the results obtained in accordance with the Grant Agreement. IPR guidelines (WP9) will be developed by the IIPR manager at the beginning of the project, distributed to and agreed upon by the consortium partners.
A system for monitoring the results generated during the implementation of the project is created to have a common repository shared between the partners, serving as a collective knowledge management and exchange system. Partners and WP leaders periodically send preliminary results to the Executive Committee (ExC) for evaluation of possible exploitation or dissemination, including communication between the partners, externally with the SB, other dissemination and/or communication of the activities carried out, through the publication of scientific articles, etc. The ExC will always respect the appropriate protection of IP rights in the various dissemination-exploitation routes, and the information will be shared with all partners in the reserved area of the project portal/collaboration site.

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7. Dissemination and communication tools and activities

Several dissemination tools and channels will be used, including a project website, articles targeted at both a lay and a technical audience, press releases, e-newsletters, scientific papers and leaflets, social media presence, and participation in workshops/conferences.

7.1. Content Management System

For internal dissemination purposes, consortium partners have access to a MS Teams site which contains the proposal, consortium agreement, grant agreement, budget, deliverables, periodic reports, meeting and workshop reports, and other relevant documents. MS Teams will also be used for communication purposes between the different groups of the consortium, including the preparation of interim and final reports, dissemination of joint project results, and teleconferences. A dedicated section for GIANT LEAPS on MS Teams hosted by Wageningen University & Research will be used as the project's content management system. Regular updates on the progress of the project will allow both internal monitoring of the project as well as rapid dissemination of the achievements.

7.2. Visibility – European flag and funding statement

Unless otherwise agreed with the granting authority, communication activities of the beneficiaries related to the action (including media relations, conferences, seminars, and information material, such as brochures, leaflets, posters, presentations, etc., in electronic form, via traditional or social media, etc.), dissemination activities and any infrastructure, equipment, vehicles, supplies or major result funded by the grant must acknowledge EU support and display the European flag (emblem) (see Fig. 1) and funding statement (translated into local languages, where appropriate).

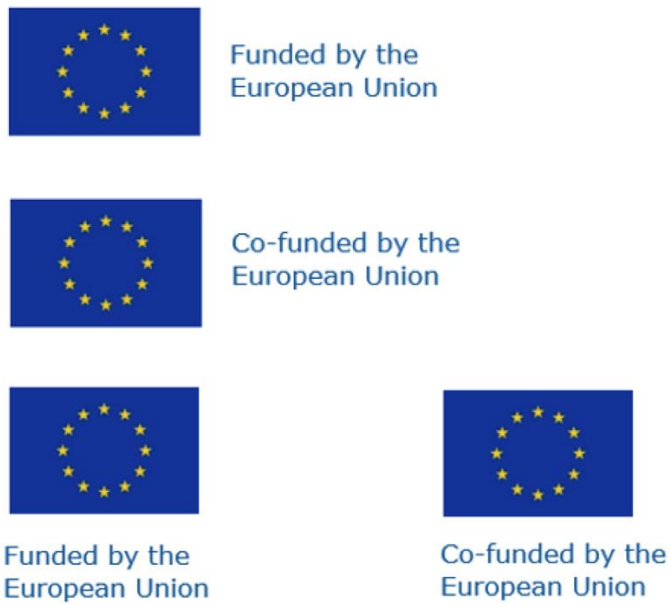

Figure 1. The EU flag (emblem)

The emblem must remain distinct and separate and cannot be modified by adding other visual marks, brands or text.

Apart from the emblem, no other visual identity or logo may be used to highlight the EU support.

When displayed in association with other logos (e.g. of beneficiaries or sponsors), the emblem must be displayed at least as prominently and visibly as the other logos.

For the purposes of their obligations under this Article, the beneficiaries may use the emblem without first obtaining approval from the granting authority. This does not, however, give them the right to exclusive use. Moreover, they may not appropriate the emblem or any similar trademark or logo, either by registration or by any other means.

7.3. Key messages

The main message in communication activities is to promote the transition from animal-based to alternative dietary proteins. This is key for reducing the environmental impact of our food system in terms of greenhouse gas emissions, energy and water consumption and land use, and for improving the health and well-being of people, animals, and the planet.

Positioning statements are developed in collaboration with the entire consortium in order to establish a unified message and strategy for sensitive topics before any communication activities are carried out. This ensures that all parties are on the same page and that the messaging is consistent across all communication channels. Thus, it is important to identify key messages for different target stakeholders. These key messages should be tailored to the specific interests, concerns, and needs of each group, and should be communicated in a clear, concise, and compelling way.

The key messages of the GIANT LEAPS project will be:

- GIANT LEAPS promotes a shift towards more sustainable dietary options, using strategic innovations, methodologies, and open-access datasets.
- GIANT LEAPS aligns with the Farm-to-Fork strategy and works towards the goal of achieving climate neutrality by 2050 as part of the European Green Deal.
- The consumption of meat and meat products is associated with several environmental concerns, such as deforestation, water scarcity, and greenhouse gas emissions.
- Plant proteins are no longer considered alternatives but are becoming mainstream due to growing awareness of the environmental health impacts of traditional animal agriculture.
- The advances in food technology made plant-based meat alternatives more similar in taste and texture to traditional meat.
- Safe and nutritious alternative proteins can be made more widely available and accessible to consumers through R&D, regulations, labeling and transparency, education and awareness, investment in production, and collaboration among stakeholders.
- GIANT LEAPS helps to overcome the potential barriers to consumer acceptance of alternative proteins due to the health and environmental benefits, as well as improved taste and texture of these products, making them more affordable and accessible.
- GIANT LEAPS identifies policies that can be implemented to achieve a shift in replacing animal protein foods with plant-based alternatives and they are acceptable to consumers.

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- GIANT LEAPS defines clean-label strategies that can improve plant-based proteins in terms of technology, sensory, and nutrition, making them more appealing to consumers.
- Designing healthy, sustainable, and delicious meat, dairy, and egg alternatives can be achieved through innovative food processing and formulation approaches.
- GIANT LEAPS develops a “safety by design” approach for alternative proteins using in silico and in vitro methods that can predict the allergenicity, toxicity, and nutritional properties of proteins, as well as their stability and functional properties.
- GIANT LEAPS communicates and engages with regulatory bodies and other stakeholders in the process, to ensure that the information provided is accurate and reliable and any safety concerns are addressed.
- Developing effective post-market surveillance approaches is crucial in understanding the impact of the paradigm shift in dietary proteins on adverse reactions, particularly food allergies
- The knowledge gained in GIANT LEAPS can be used to create a "nutritional passport" for each alternative protein ingredient and derived food, providing a detailed understanding of their nutritional value and bioavailability.
- GIANT LEAPS assesses the downstream health effects of alternative proteins, their ingredients, and formulated foods evaluating their safety and effectiveness.
- GIANT LEAPS uses a comprehensive sustainability framework offering direction for sustainable growth within the selected alternative protein systems to promote sustainability, circularity potentials, resilience, and climate neutrality.
- GIANT LEAPS collects existing and generated data and integrate them into a cloud architecture platform that ensures interoperability and data access to stakeholders.
- The Artificial Intelligence (AI) algorithms developed by GIANT LEAPS can be useful in identifying promising alternative proteins and in understanding their properties for sustainable integration in diets.
- The optimal dietary shift towards alternative protein sources includes consumer acceptance and provides safe, nutritionally adequate, and sustainable food options for consumers.

7.4. Project Identity

A recognizable project identity has been developed to help increase visibility and awareness about the project. This includes creating a project logo and accompanying style guide. These will be consistently used by all project partners for the project website as well as other communication materials, such as flyers, banners, and videos; and templates such as PowerPoint, Word, posters and EC Reports.

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Figure 2. *GIANT LEAPS logo*

Figure 3*.* GIANT LEAPS logo with tagline

7.4.1. Logo usage on background

The logo is available in 3 versions:

- ***Color version*** - Visibility above all. Use the color version of the logo on white/light background and on light color photos.

Figure 4. GIANT LEAPS logo (color version)

- ***White version*** - Use the white version of the logo on black/ dark background, on vivid colors, or on dark photos.

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Figure 5. GIANT LEAPS logo (white version)

- ***Black version*** - Use the black version of the logo only in those cases when it is not possible to print colorful materials.

Figure 6. GIANT LEAPS logo (black version)

7.4.2. Colour pallete

The logo consists of three elements and colours. The logo colours are harmonised with the colours used on all project materials. Colour codes of the GIANT LEAPS logo:

Primary colours

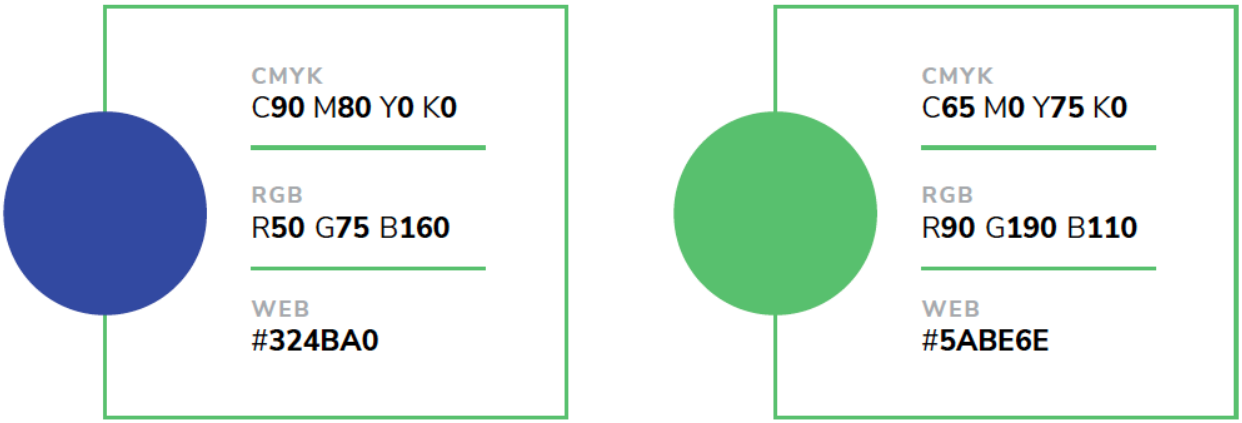

Figure 7. Primary colours of GIANT LEAPS logo

Accent colour

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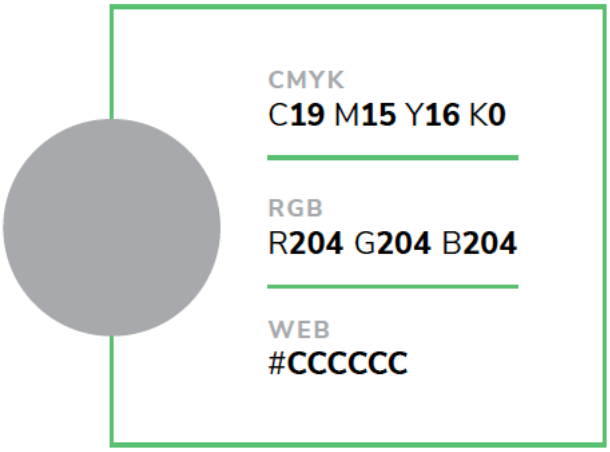

Figure 8. Accent color of GIANT LEAPS logo

The project Brand Manual & Guidelines inform partners of how they can use the recognizable project identity. The communication and dissemination templates ensure that the project branding is used consistently. Other graphic elements are available for project partners on the GIANT LEAPS SharePoint.

7.5. Project Website

GIANT LEAPS has an up-to-date and user-friendly project website. It is the primary source of information for external parties, providing updates on project activities and achievements. The aim of the website is to inform all target audiences, including the scientific community, bio-based and associated industries, and the general public about project developments. The project website can be accessed at www.giantleaps.eu

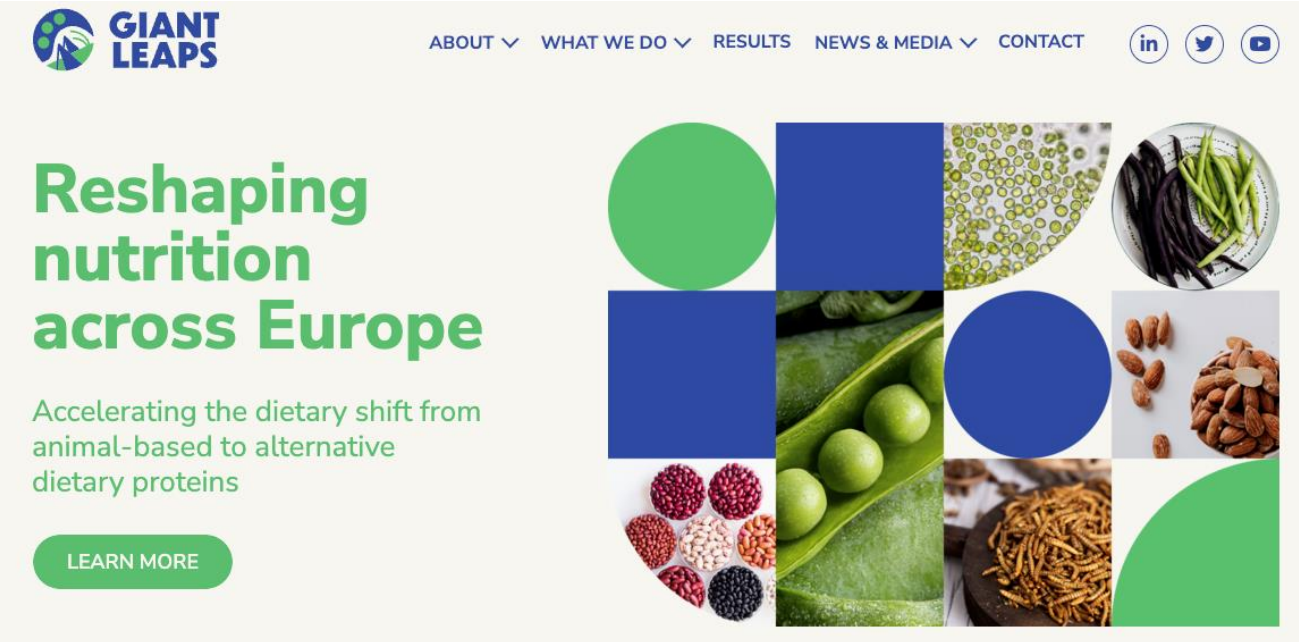

Figure 9. Screenshot of the GIANT LEAPS website

All partners will contribute to the website by providing relevant project information in accessible language (laymen terms). All communication efforts by project partner, for example on social media,

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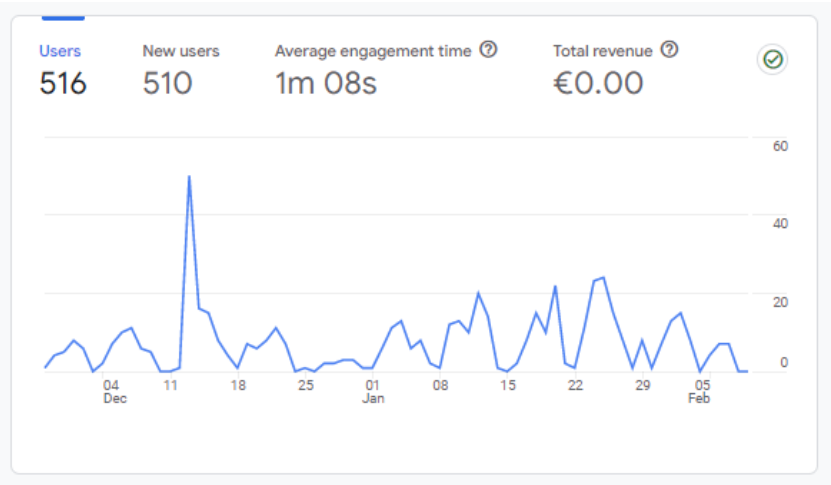
will be redirected to the GIANT LEAPS website. Traffic to the website will be further increased by creating mutual links between the partners' websites and other relevant websites.

The project website contains the following information:

- About – includes Our Story, Partnership, Stakeholder Board and Related initiatives
- What we do – includes Methodology, Alternative proteins and Co-creation
- Results
- News & Media – includes News & Events and Media Kit
- Contact
- Social media links/buttons/live feeds

The website was launched on December 1st, 2022. It will be maintained by Europa Media for the duration of the GIANT LEAPS project and kept online for 3 years after the completion of the project. The website will be integrated with the e-learning platform, allowing to follow the learning curve of interested participants. E-learning for children and wider public will use games. Statistical data about the website visitors and traffic are collected and analysed regularly and included in the project reports. The website is responsive to work on a variety of devices and screen sizes, such as smartphones, tablets and desktops.



As of February 9th, 2023, the GIANT LEAPS website had 516 unique users, over 6500 event counts and almost 2000 page views. The most popular webpages include the Homepage (673 views), Partnership (194), News & Media (178) and Our Story (158). 1/4 of the total users are from the Netherlands, 8% from Finland and another 25% equally distributed amongst Spain, Italy, France and United Kindgdom.

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	Country	Users	New users	Engaged sessions	Engagement rate
		516 100% of total	510 100% of total	351 100% of total	22.31% Avg 0%
1	Netherlands	126	126	86	28.38%
2	Finland	41	41	10	18.87%
3	Spain	33	32	36	31.3%
4	United States	33	33	6	12.5%
5	Italy	29	29	25	44.64%
6	France	27	27	9	12.68%
7	United Kingdom	24	24	19	34.55%
8	Germany	20	19	20	24.69%
9	Hungary	19	16	14	3.68%
10	Austria	18	18	1	4.35%

Figure 10. *Screenshots of the GIANT LEAPS website's analytics*

7.6. Social Media

GIANT LEAPS social media presence has been set up since the project kick-off. To ensure wider dissemination to different age groups and target audiences and exchange information about project developments and gather their views on specific aspects of the project, two social media channels have been established: Twitter and LinkedIn. In addition, a YouTube channel has been created to host the project's promotional videos, interviews and audiovisual outputs that will be produced throughout the project. When the project has video material, it will be embedded on the website using YouTube.

Social media should be used as a tool to announce project developments, but most importantly drive traffic to the project website. LinkedIn and Twitter are continuously updated with the most recent and relevant information

LinkedIn and Twitter accounts have been established and content related to GIANT LEAPS will be posted regularly to increase outreach.

GIANT LEAPS social media accounts:

www.twitter.com/giantleapse

www.linkedin.com/company/giantleapseu

www.youtube.com/@giantleapseu

The social media platforms will be monitored and gather information about the numbers, sources, types of content, and individuals/organizations that are promoting or disseminating project messages. This information will be used to optimize and target communications for maximum outreach. The

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results of this monitoring will be included in interim reports and a final dissemination report. This process will help the project team to effectively reach its target audience and ensure that project messages are being disseminated effectively through online media platforms. The social media accounts will be managed by Europa Media and Bridge2Food with support from the partners.

Through the sharing of articles, videos, and other media, social media users can spread awareness about the health, environmental, and ethical benefits of alternative proteins. Additionally, social media can help to build a strong community around the topic, allowing people to connect with others who share their interests and values and position GIANT LEAPS as a leader in accelerating the dietary shift from animal-based to alternative dietary proteins. This can help to attract new followers and establish a reputation for high-quality, relevant, and engaging content.

Figure 11. *Screenshot of GIANT LEAPS Twitter profile as of February 9th, 2023*

As of February 2023, the GIANT LEAPS Twitter profile has 60 followers, mainly project's partners, researchers in the protein sectors, EU-funded projects, and relevant stakeholders such as @EITFood.

Twitter is one of the most popular social media platforms, and it is broadly used by local, national and European stakeholders to communicate with their audience and other experts. Furthermore, being the most used social media by EU institutions and decision-makers and by other alternative protein-related projects and initiatives, it provides an excellent platform to build relationships and carry out online communication campaigns.

Twitter promotes the project's key concepts through short messages, including visuals and/or external links. Retweets and likes to make it possible to reach new and wider audiences.

As of February 2023, the GIANT LEAPS LinkedIn profile has 461 followers, 2531 views, 779 unique visitors, and 23577 impressions.

These followers and visitors consist of project partners, academic institutions, research institutes, companies involved in the research and development of sustainable protein sources. In addition to these groups, the project has also gathered interest from EU-funded projects and organizations that support innovation in sustainability and alternative protein sources.

LinkedIn is a social media platform where the business community and other professionals can engage with relevant stakeholders. The use of multimedia content including infographics, videos, images, posts will help to communicate and disseminate research outcomes.

7.7. Dissemination Materials

Dissemination materials will be produced and distributed to partner networks and at conferences, exhibitions, and other events. This is an effective way to share the results of GIANT LEAPS project with a wider audience.

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The dissemination materials include two project leaflets (one presenting the project's main elements, and one summarising the project's main achievements), one infographic, and two animation videos. Having multiple formats of materials such as leaflets, infographics, and animation videos, makes it easier to cater to different preferences for consuming information and reach a wider audience. The leaflets will be written in accessible language to reach the widest possible audience.

Distributing promotional materials to interested partners, customers, and investors can help to increase the visibility and impact of GIANT LEAPS. By sharing information about GIANT LEAPS and its outcomes, stakeholders can gain a better understanding of the work being done and the results that have been achieved. The participation of all partners in the distribution of promotional materials can be important to ensure that the information reaches a wider audience and that all partners contribute to the success of GIANT LEAPS.

Project partners can translate the information on the posters, leaflets, and fact sheets into their own language. The templates are available on the project content management system.

7.8. Newsletters and Press Releases

Electronic newsletters (every 6 months), popular articles will be written during the project and include project updates, announcements, interviews, and other information related to GIANT LEAPS. These items are distributed to stakeholders and partner networks and posted on the project website. It is also posted on social media to enable sharing more easily by the project partners to their network. Moreover, project updates will also be published in the EFFoST newsletters, which are distributed electronically to food scientists and technologists throughout the European food industry.

Press releases will be published to announce the launch of GIANT LEAPS and other newsworthy developments throughout the lifespan of the project. They will be written in English and sent to the European press and national journalists, with the help of the project partners.

7.9. Scientific Journals

The GIANT LEAPS project aims to develop scientific excellence and technology advancements that will be the foundation for publishing scientific articles. The articles will be disseminated to the scientific community, food technologists, policymakers, and industry partners.

Before publication, the IP requirements will be clarified with the consortium partners.

The articles will be published in high-impact, peer-reviewed journals and will be made available as open access for other researchers. Examples of journals that could publish the results of GIANT LEAPS include Innovative Food Science & Emerging Technologies; Food Control; Current Opinion in Food Science.

A more comprehensive overview of relevant scientific journals can be found in Annex 2.

7.10. Trade Magazines

Dissemination of project results will be enhanced by the publication of articles in trade magazines. These will be shorter, journalistic-style articles prepared for the (online) consumer and trade magazines, such as Taste of Science and New Food. This will enhance dissemination to SMEs, opinion leaders/ regulators, the media, food manufacturers' associations, consumer organizations,

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and the public. Articles will also be published in specialized newsletters, and industry-focused magazines/trade journals targeting specific audiences.

7.11. Participation in Conferences, Workshops, and Events

Project partners will attend sector-related events, trade shows, conferences, and workshops to meet target audiences and raise awareness about the project objectives and results. GIANT LEAPS partners will provide information through posters, presentations, and the distribution of flyers. These events provide access to target audiences at local, national, European, and international levels. The scientific partners are from different disciplines; therefore, they will disseminate project results to diverse scientific forums.

A yearly workshop inside the Consortium will be organized by B2F with all project partners. Four online webinars will be organized by EFFoST in the last two years of the project.

The industrial sector communities will also be informed of GIANT LEAPS's achievements at international conferences, trade shows and through activities organised for the project's Stakeholder Board. Where possible attention will be paid to linking GIANT LEAPS to other EU projects for joint workshops and exhibitions, this was for example achieved at the 36th EFFoST International Conference where GIANT LEAPS organized a special session together with two other EU projects. A few examples of events, conferences and trade fairs that are of interest for the GIANT LEAPS project are as follows:

- Conferences and events: EFFoST International Conference, The Future of Protein Production Summit, Food Safety & Quality Summit, Food Digestion Conference, Food4Future
- Trade fairs: Anuga Food Fair, Food Ingredients, Health Ingredients, Vitafoods, Natural & Organic Products, Natural Products Scandinavia, Functional Food Expo

A more comprehensive list of events, trade fairs, and conferences that may be interesting in the results of the project and where project partners may undertake dissemination activities, can be found in Annex 3.

7.12. Final Conference

At the end of the project, a final conference will be organized in M48. The purpose of the conference is to present the project results and future plans to stakeholders from various fields including industry, science, regulation, and others with an interest in the field. The presentations will analyse and reflect upon the developments of the project, outline the plans for a possible follow-up project and provide a roadmap for eventual exploitation and/or technology transfer.

7.13. Timeline

This first phase of the project aims to increase public knowledge and understanding of the benefits of a dietary shift towards alternative proteins. The focus will be on communication activities that build awareness and educate people on this topic.

The public deliverables from the GIANT LEAPS project will be made accessible on the CORDIS website and through various communication channels. EFFoST, Europa Media, and Bridge2Food will work with partners to extract important messages and share interesting findings through short and easily understandable articles posted on the website. Social media campaigns will also be used to

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drive traffic to the website and promote access to the project's documents. The timeline of communication and dissemination activities will align with the deliverable's timeline. It is expected that communication of each deliverable will take place one month after the deadline. Social media updates will be coordinated with updates on the project's progress and activities on the website, which will serve as the main platform for communication and dissemination.

The communication timeline will have high activity during key milestones and events where the target audience is expected to be present. EFFoST, Europa Media, Bridge2Food and consortium partners will work to keep the project in the public view through regular and special event activities throughout the project duration. Communications will include announcing events, as well as providing summaries and digital content after the event has taken place. The aim is to maintain a consistent level of visibility and engagement with the target audience throughout the project.

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Annexes

Annex 1. GIANT LEAPS Dissemination and communication tools

Dissemination tool	Target audience			KPI	Means of verification
	Scientific community	Industry & SMEs	Public at large		
Project website	Y	Y	Y	10000 visitors + 25000 page views. 30% spending more than 1 minute on the website.	Web traffic statistics collected and documented in the activity reports
Project materials (leaflets, brochures, A/V publications)	Y	Y	Y	3 videos with over 750 online views per video; 1000 project leaflets distributed	Tracking spreadsheet: input from partners and YouTube views
Newsletters	Y	Y	Y	7-8 newsletters share with our existing mailing lists	Newsletters distributed and published via the project website and shared with our partners' mailing lists
Scientific publications	Y	Y		6-10 conference papers and journal articles	Activity reports
Participation at scientific conferences, fairs and events	Y	Y	Y	40+ attended 20+ talks	Activity report and tracking spreadsheet: input from partners
Civil society and consumer engagement	Y	Y	Y	1 event/country, 2 European food events (fairs, festivals), 500+ citizens engaged	Activity report and tracking spreadsheet: input from partners
Stakeholder and International network engagement	Y	Y	Y		Activity report
General audience articles/media		Y	Y	10+ non-scientific journal news	Activity report, press releases
Social media (LinkedIn, Twitter, YouTube)	Y	Y	Y	150+ project-specific tweets via consortium partners 500+ members on GIANT LEAPS LinkedIn group page	Twitter/LinkedIn analytics and statistical reports
Radio/television broadcasting	Y	Y	Y	At least 1 national presence/country	Recorded sessions
e-learning courses	Y	Y	Y	At least 3 modules within 2-3 chapters/module 1 chapter with 10-15 min length	Number of completed chapters followed in the LMS
Policy briefs/fact sheets	Y	Y		9 Policy briefs and/or fact sheets distributed to >100 policymakers	Tracking spreadsheet: input from partners
Press kits	Y	Y	Y	25 media kits downloaded	Activity report
Press conferences and press releases	Y	Y	Y	4+ press releases	Activity report
Practice abstracts		Y		6 practice abstracts	Uploading to the EIP-AGRI website
GIANT LEAPS final conference	Y	Y	Y	> 120 participants > 7 speakers	Online social media and website communications. Registration list.

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Annex 2. Scientific Journals relevant for GIANT LEAPS

Sustainable Production & Consumption

Food Science & Technology

Food Research International

Food Chemistry

Food Quality and Preference

Trends in Food Science & Technology

Journal of Functional Food

Journal of Food Process Engineering

Food & Chemical Toxicology

Food Toxicology

Appetite

Frontiers in Nutrition

Nature Food

Nature Protocols

Nature Methods

Food & Function

Molecular Food & Nutrition

Allergy

Journal of Cleaner Production

LWT

Clinical and Experimental Allergy

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Annex 3. List of Events Relevant for GIANT LEAPS Dissemination

Events Relevant for GIANT LEAPS Dissemination			
Event name	**When**	**Where**	**Level**
EFFoST International Conference	Annual	International	International
Bridge2Food – Plant-Based Foods & Proteins Course	22-23 March 2023	Wageningen	Europe
Bridge2Food – Plant-Based Foods & Proteins Summit	7-8 June 2023	The Hague	Europe
Bridge2Food – Plant-Based Foods & Proteins Summit	Annual	Asia	International
Bridge2Food – Plant-Based Foods & Proteins Course	Annual	Americas	International
Bridge2Food – Plant-Based Foods & Proteins Summit	Annual	Americas	International
Food4future	Annual	Bilbao, ES	International
International Conference on Food Digestion	3-5 May, 2023	Cork, IE	International
The Future of Protein Production Summit	Annual	Online	International
Food Allergy Management	24 October 2023	Brussels	International
International Conference on Food Digestion	TBD, 2024	Porto, PT	International
Vitafoods Europe	9-11 May 2023	Geneva	European
Free from Food & Health Ingredients	30-31 May 2023	Barcelona	European
Free from Food & Health Ingredients	21-22 Nov, 2023	Amsterdam	European
Food Ingredients Europe	28-30 Nov, 2023	Frankfurt	European
Anuga FoodTec	19-22 March, 2024	Cologne	International
Natural & Organic Products Europe	TBD, 2024	London	International
Nordic Organic Food Fair	TBD, 2024	Malmo	Local

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