EIT Food Pre-event prior to the Matchmaking Call for Proposals 2022

Innovation Team 25.11.2021

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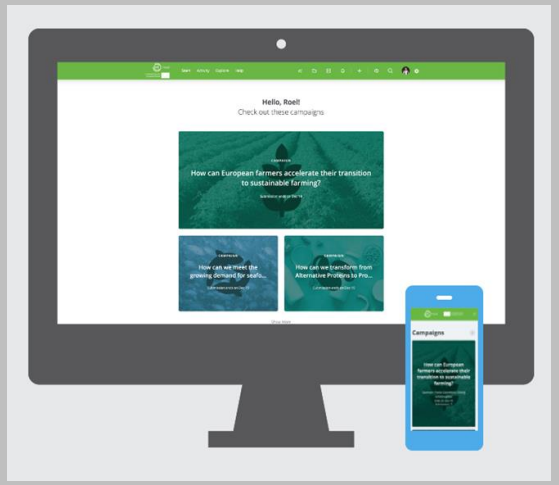
INTRODUCTION TO EIT FOOD FOCUS AREAS

HYPE - EIT Food Open Innovation platform



- open online collaboration platform to create consortia around ideas
  - Business card: advertise your expertise
  - Idea: ask for expertise contribution

- information on Focus Areas and scope of Call 2022

- openinnovation.eitfood.eu

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FOCUS AREAS

ALTERNATIVE PROTEINS

SUSTAINABLE AGRICULTURE

TARGETED NUTRITION

CONSUMER CENTRICITY

DIGITAL TRANSFORMATION OF THE FOOD SYSTEM

SUSTAINABLE AQUACULTURE

DIGITAL TRACEABILITY

CIRCULAR FOOD SYSTEMS

TECHNOLOGIES & INVESTMENTS IN PROTEINS ARE BOOMING

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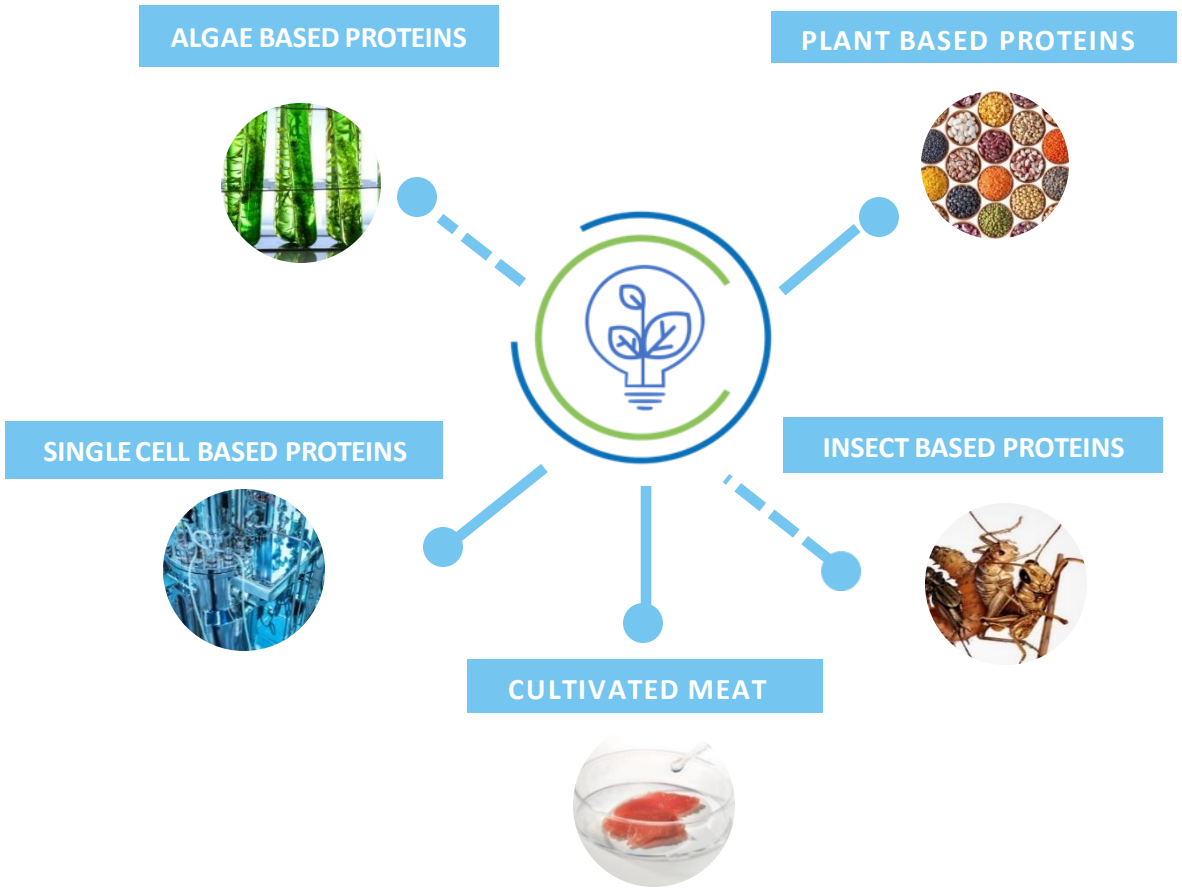
PROTEIN DIVERSIFICATION

- Shifts away from an over-reliance on resource intensive animal proteins
- Towards lower impact protein ingredients, and variety of products
- Considers both Agriculture & Agro industry

UN SDGs

Benefits for Society

- Healthier Protein Options
- Circularity & Resource Efficiency
- New Innovations, New Competencies & New Jobs
- Diversified Protein Production
- Improved Animal Welfare



"Alternative protein revenues will reach $290 billion in 2035"

Food for Thought - The Protein Transformation, March -21 Boston Consulting Group & Blue Horizon Corporation

"Ranked #5 out of the Top 20 Transformational Technologies for 2020"

Lux Research

Alternative Proteins Challenges 2022

CHALLENGES ADDRESSED	
Protein Sources / Materials	Evaluation and creation of novel alternative protein raw materials and ingredients, also considering valorisation of different side-streams to drive positive environmental impact, reduction in CO2, water and energy consumption and / or reduction in food waste & food loss.
Product development	Creation of diverse selection of consumer end-products using alternative proteins. Hybrid products made from alternative and traditional proteins sources can be considered. Target in cleaner labels and shorter ingredient lists. Changes in consumer acceptance and behaviour as well as effective communication of the benefits of alternative proteins are essential objectives of the solutions to be provided.
Process optimization	Optimization of processes for the production of alternative proteins and the manufacturing of consumer end-products, to facilitate upscaling and implementation in production environment, reducing complexity and costs. Creation of solutions to remove roadblocks to the adoption of new processes is also included.
Quality improvement	Improvement of sensorial and functional properties, nutritional profile of alternative protein-based ingredients and consumer end-products via improved, novel processes and technologies. Cross-cutting emphasis on co-creation methodologies with consumers.

Digital Traceability

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REASONS for Action

- Food trust concerns
- Food safety concerns
- Consumer want more info on origin, sustainability, etc.
- Need for optimization of supply chain connectivity

BENEFITS for Society

- Safety – ability to preserve health (risk management)
- Efficiency – optimize supply chain and everything produced is consumed/used
- Track of environmental, economic, health and social consequences of food processes / supply chains
- Transparency and authenticity of food
- Reduce food loss / waste

Our vision is to

Digitalisation of traceability can improve the safety, efficiency and sustainability of food and increase consumer trust. Moreover, it is one of the steppingstones in the digital transformation of food systems.

Digital Traceability is part of the solution

Develop transparent and traceable food supply chains to make the food system (1) safe, (2) efficient, (3) sustainable and (4) transparent to consumers and food actors by increasing investments and use/adoption/development of digital tools/ technologies and by addressing the barriers to user acceptance and increased confidence. This will allow us to achieve our strategical long term impact goals.

Digital Traceability Challenges 2022

CHALLENGES ADDRESSED
*Develop efficient and affordable digital solutions and technologies to ensure **food safety** by increasing the **speed of response**, without compromising **quality***
*Create efficient and affordable digital tools to **boost transparency** across the food chain, increasing **consumer confidence** in the food system and **reducing fraud***
*Build systems to **improve coordination across the food chain** in order to **optimize adaptation** to consumer demand and **reduce food loss and waste**; this includes assessing and monitoring environmental, economic, societal and health indicators to support achievement of SDGs.*

THE IMPORTANCE OF TARGETED NUTRITION

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Reasons for Action

Individuals /population groups respond differently to food

Consumers demand customisation and seek personalised solutions

Specific population groups have different dietary needs

Most non-communicable diseases can be prevented through nutrition management

Benefits for Us

Provide balanced-diet solutions for individuals with specific needs

Reduce risk factors and prevent non-communicable diseases.

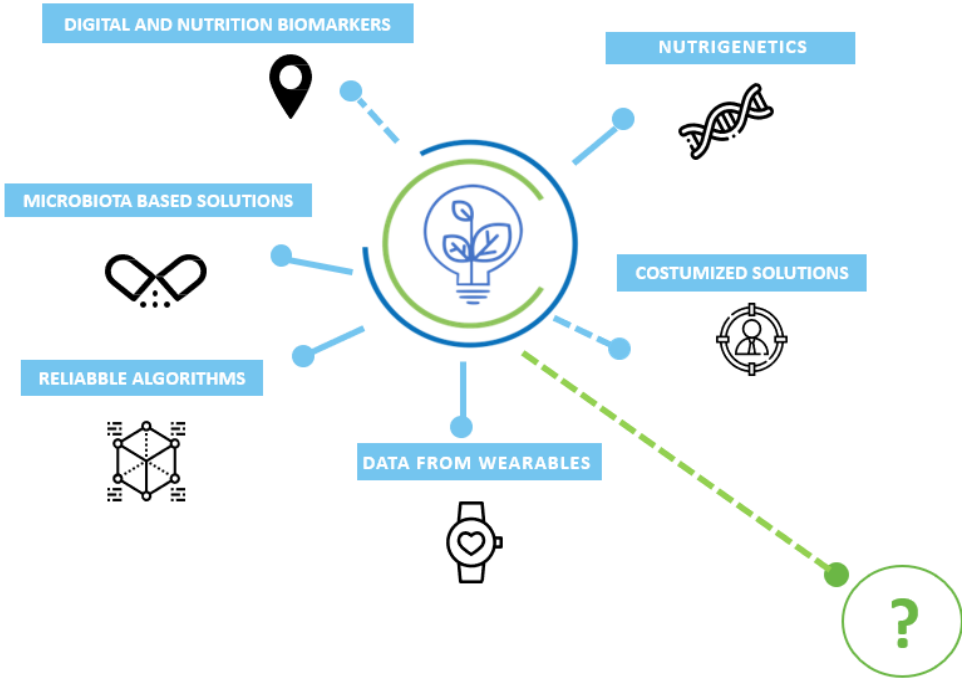
Contribute to mental and physical wellbeing

Combat macro and micronutrient deficiencies.

Provide affordable healthy foods

Help the ageing populations to retain/regain specific functions

SOLUTIONS AND TECHNOLOGIES



Lower costs and more effective solutions are needed – targeted nutrition a high potential mechanism to fulfill this need

UN SDGs

"Consumers' Relationships With Health Evolve Toward Prevention and Personalization"

Targeted Nutrition Challenges 2022

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CHALLENGES ADDRESSED	
Targeted Nutrition – Ingredients and products	Limited offer of delicious, **nutritious and affordable food ingredients and products that support reduction of risks factors for NCDs** and micronutrient deficiencies in different target populations.
Targeted Nutrition – empowerment tools	Lack of non-invasive and scientifically reliable diagnostic **tools, monitoring devices, consumer empowerment tools** and user interfaces to help provide ongoing and **actionable personalized nutrition guidance** to consumers and healthcare professionals.
Targeted Nutrition – scientific modeling	Need for commercial solutions based on a robust and **scientific modeling** that incorporates multiple indicators of an individual's health, including but not limited to **biomarkers, genetics, and microbiome.**

Sustainable Agriculture

Environment: Set higher ambitions for environmental and climate action;

Economy: Secure a fair deal and stable economic future for farmers;

Society: Safeguard agriculture´s position at the heart of Europe´s society.*

Develop Solutions to Tackle Environmental, Economic and Societal Challenges: "Support European farmers in meeting **sustainability requirements** by co-creating climate-neutral, fair, resilient and economically viable farming practices."

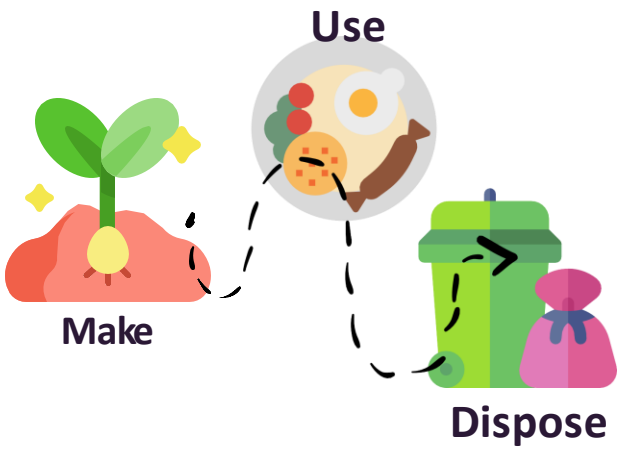
- Enabling **sustainable and maximised resource use** across agriculture;
- Producing **more with less** by offering predictable and efficacious alternative inputs;
- Reducing outputs of **losses and waste** (e.g., packaging);
- Increasing **adoption and uptake of innovation** in the agricultural sector.

https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy_en

Sustainability Agriculture Challenges 2022

CHALLENGES ADDRESSED
Agriculture remains a high demand industry for natural and industrial resources: Develop systemic and digitally enabled solutions for a more **sustainable use of resources** (e.g., energy, water and land) based on, for example, the development and optimisation of smart and precision farming technologies.
Realising the potential of crops while reducing the connection between potentially harmful residues and the demand for shelf and nutritional quality requires alternative predictable and efficacious inputs: Develop alternative solutions to **enhance crop yield and resilience** making use of more sustainable soil and/or crop management as well as other practices to increase plant tolerance to stress (abiotic, biotic) including climate change.
Livestock production is the most significant source of GHG emissions from agriculture, but emission reduction must be paired to an efficient, high quality and animal-friendly production system: Develop solutions that substantially **reduce GHG emission from live stock**. Solutions can include precision livestock management and/or alternative feed ingredients and should be coupled with additional benefits such as an increase in animal welfare and quality and reduction in the use of medicines and vaccines.

Circular Food Systems



We have to shift from our current linear model to a circular food system in which resources are used optimally and the amount of waste is reduced.

Vision

The creation of a **circular economy** in which food is grown, processed, transported, prepared, and by-products managed in ways **that benefit the health of people and natural systems.**

Food is designed to cycle, so the by-products (side and waste streams) are reduced to the minimum and what still remains is re-utilized. Resources are reused and nutrient recycled, as a result natural systems regenerated and GHG emissions as well as water and land use reduced.

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Circular Food Systems Challenges 2022

CHALLENGES ADDRESSED	
	Food loss and waste avoidance through an improved control of the food value chain • Lack of a system approach to value-chain pain points to ensure optimal resource use and to mitigate food loss and waste. • Extended use of non-optimal and non sustainable preservation technologies for food spoilage. Lack of natural and environmentally friendly preservative solutions or technologies to extend shelf life and reduce food spoilage.
	Efficient side stream valorisation • Lack of environmental & sustainable management of side-streams and related processes, to obtain their efficient valorisation and an optimized use of resources.
	Active and sustainable packaging approaches • Lack of functional packaging concepts and sizes to enable shelf-life optimization; lack of sustainable packaging alternatives with a suitable balance among packaging performance, cost, performance of processing and end of life
	Stakeholders & consumers awareness and incentivization • Lack of stakeholder awareness including consumer behaviour and incentive interventions.

SUSTAINABLE AQUACULTURE IS PART OF THE SOLUTION

By 2030, two thirds of the seafood requirement could come from aquaculture. *(Joint report by the World Bank, the FAO, and the International Food Policy Research Institute, 2014)*

But European seafood supply is currently insufficient; current practices come with a high environmental cost.

As seafood consumption increases, sustainable aquaculture must keep up with demand while providing many economic, social, and environmental benefits

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SUSTAINABLE AQUACULTURE: MISSION AND CHALLENGES

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1- Optimization of production system and supply chain: Solutions and technologies to optimize farm management and supply chain (from product processing, collaboration platforms and transportation systems) and minimize inputs and pre- and post – harvest losses	**2- New emerging sustainable production systems and aquaculture species:** Adaptation of existing systems to new species or production of species in currently underexploited areas. Scale up of systems for production and processing of seaweed.	**3- Sustainable and healthy ecosystems:** Develop environmentally friendly solutions (and tools) for animal and plant health, including alternative (and sustainable) raw materials and micronutrient for fish and feed production, waste management, animal health and welfare	**4- Product safety and quality, consumer awareness and trust:** Develop safe and high-quality aquaculture products, including innovative transformations and preservations technologies and digital tools to engage consumers through health and green claims, traceability and transparency
Top three impactful technologies : ▪ Livestock behaviour monitoring ▪ Feed monitoring ▪ Environment monitoring	**Top three impactful technologies :** ▪ Off-shore production systems ▪ Aquaponics/multitrophic ▪ RAS Cultivation	**Top three impactful technologies :** ▪ Fish meal alternatives ▪ Antibiotics alternatives ▪ Renewable energy	**Top three impactful technologies :** ▪ E-commerce platforms ▪ Smart packaging and POU sensors ▪ Supply chain transparency

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THANK YOU!

Improving food together.

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