Funded by the European Union

Achieving impact through a sustainable aquaculture:

a new programme at EIT Food’

Paola Giavedoni, Director Innovation, EIT Food

IMPROVING FOOD TOGETHER

A GUIDE TO EIT FOOD

As Europe's leading food initiative, we are working to make the food system more **sustainable**, **healthy** and **trusted**

OUR MISSION

Our **mission** is to transform how food is produced, distributed, and consumed and to increase its value to European society. We will achieve this by solving the biggest innovation challenges through trusted industry, education and research partners working together with informed and engaged citizens.

OUR ROLE

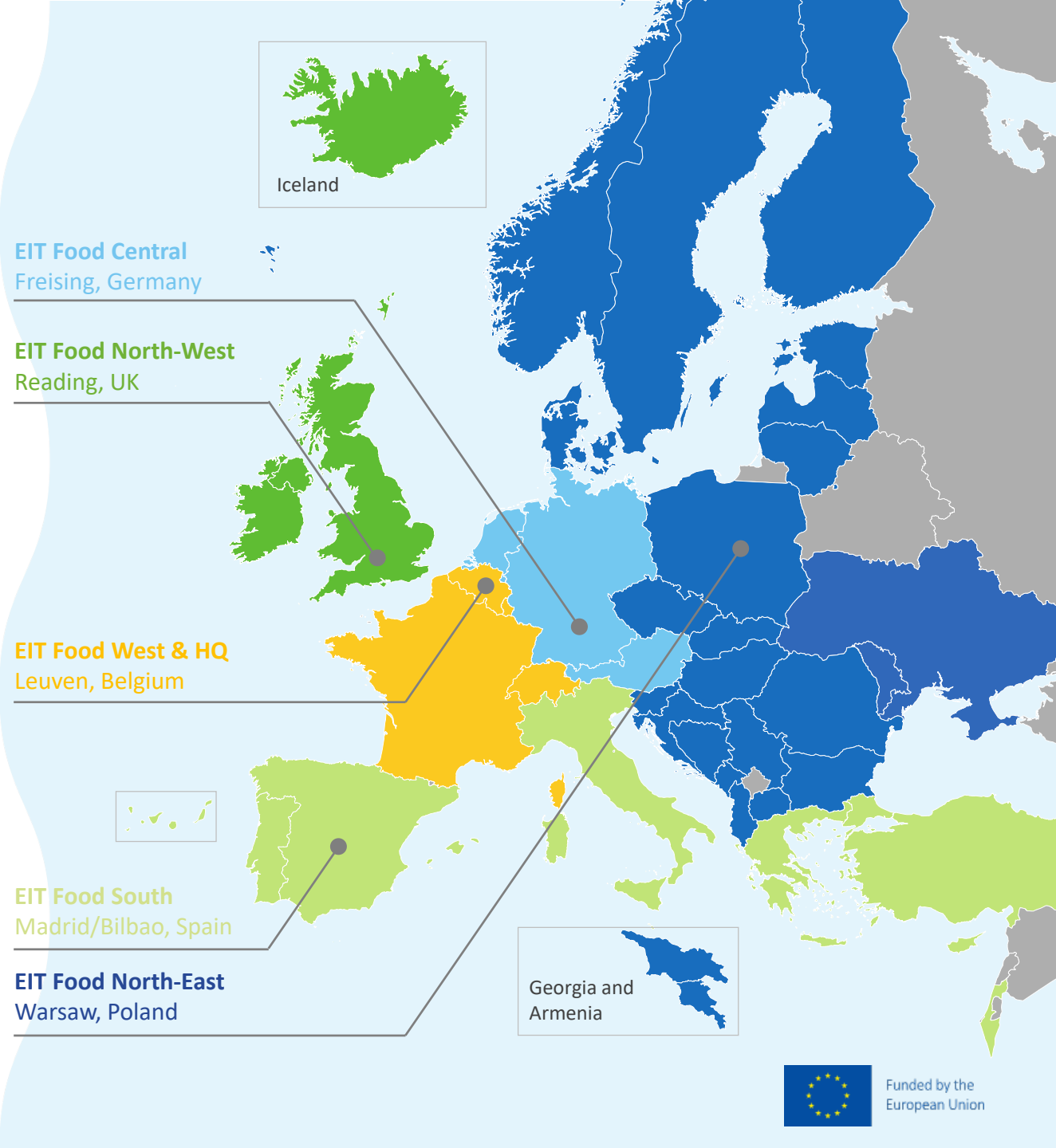
Our role is to bring all players together and guide and accelerate the innovation process that will transform the food system.

OUR STRENGTH

Our strength comes from partners, which represent over 150 of Europe's leading agrifood companies, research institutes and universities.

The network also includes the RisingFoodStars Association, bringing together Europe's best agrifood startups and scaleups.

We are headquartered in Leuven and have regional offices in Warsaw, Freising, Reading, Leuven, Bilbao and Madrid.



eit Food

Funded by the European Union

A Strategy for Impact

EIT Food Impact Goals

Improvement in conditions leading to more trust in the food system

Better health outcomes from our diet

Improved food system environmental impact

Enabling transition to a circular, sustainable food economy

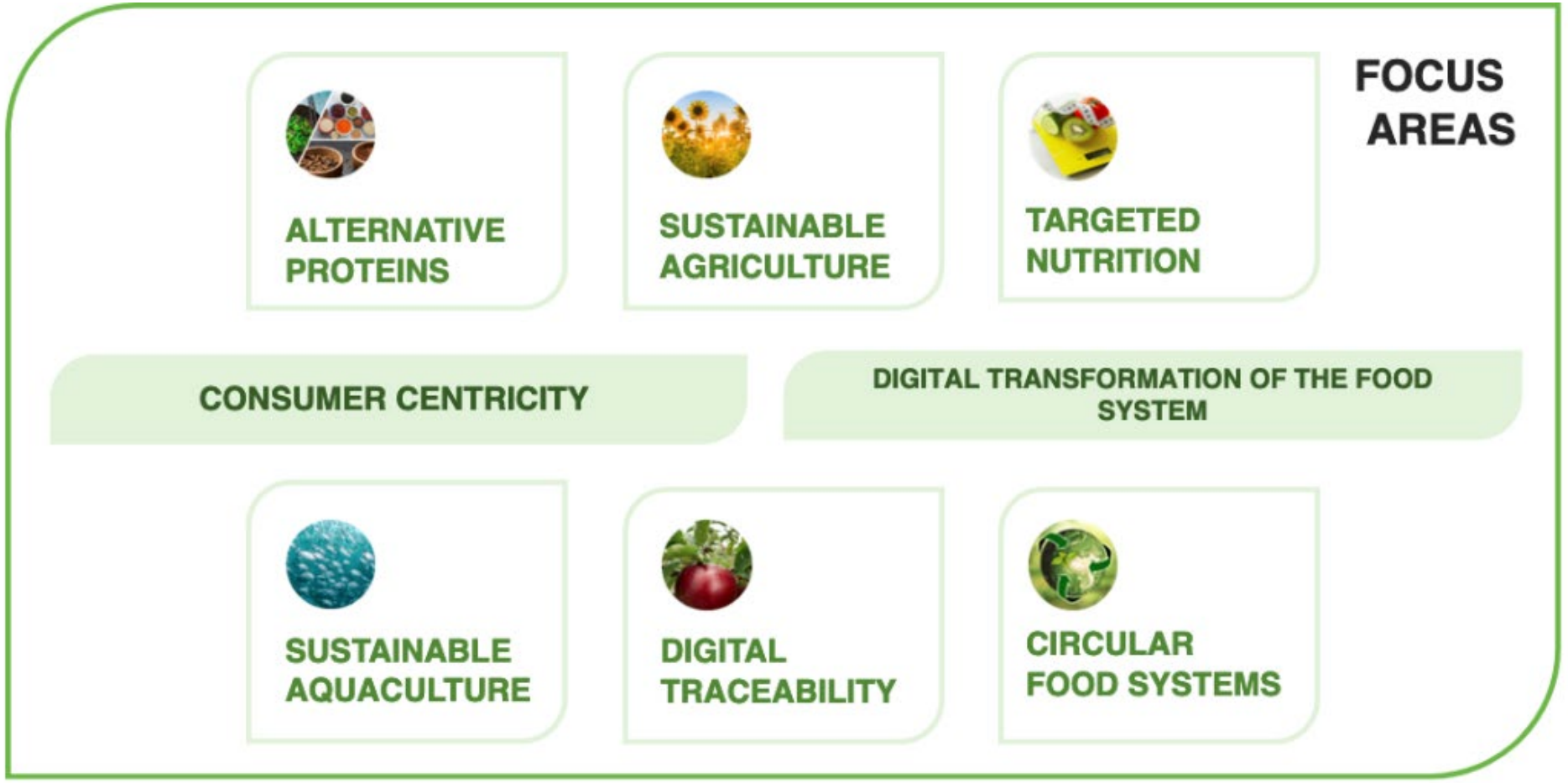
EIT Food Strategic Objectives & Network

1. **Overcome low consumer trust**
   creating a smart food system that is inclusive and reassuring for everyone
2. **Create consumer-valued food for healthier nutrition**
   enabling individuals to make informed and affordable personal nutrition choices
3. **Build a consumer-centric connected food system**
   developing a digital food supply network with consumers and industry as equal partners
4. **Enhance sustainability through resource stewardship**
   developing solutions that create a circular bio-economy
5. **Educate to engage, innovate and advance**
   providing 'food system' skills for students, entrepreneurs and professionals through advanced training programmes
6. **Catalyse food entrepreneurship and innovation**
   fostering innovation at all stages of business creation

eit Food

Funded by the European Union

Thematic Focus areas



Funded by the European Union

IMPROVING FOOD TOGETHER

SUSTAINABLE AQUACULTURE IS PART OF THE SOLUTION

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

But European seafood supply is currently insufficient and the current systems/practices could come with a high environmental cost.

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

Impact

- **3 million tons of fish and molluscs– European Continent**
- **1,32 mill. tons in EU (provides 17% of Europe's total fish production)**
- **Its value is around EUR 4 billion (USD 4.7 billion)**

Source: European Market Observatory for fisheries and aquaculture products- The EU Fish Market- 2020 Edition

Funded by the European Union

SUSTAINABLE AQUACULTURE: CONTRIBUTION TO IMPACT

UN SDGs

EIT Food Strategic Objectives

SO 1 Address low consumer trust in food

SO 2 Enabling healthier and more sustainable individual consumer choice

SO 3 Build a consumer-centric connected food system across Europe

SO 4 Enhance sustainability through resource stewardship

SO 5 Educate to engage, innovate and advance

SO 6 Catalyse food sector entrepreneurship and innovation across Europe

Impact KPIs

CO-CREATION

ALTERNATIVE SOURCES

CO2 REDUCTION

WASTE IN VALUE

DIGITAL SOLUTIONS

IMPROVED NUTRITIONAL PROFILE

Funded by the European Union

SUSTAINABLE AQUACULTURE: MISSION AND CHALLENGES

Funded by the European Union

Our mission is to

Support initiatives fostering the development of solutions/ products that enable the transformation and expansion of current aquaculture sector into a sustainable form of food production, reducing food system climate change footprint, ensuring food security & safety and enabling transition to a circular economy through capacity building.

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 underrepresented 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 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

SUSTAINABLE AQUACULTURE: CALL FOR PROPOSALS 2021

- 85 Business Cards submitted to our Sustainable Aquaculture Campaign in HYPE
- 32 proposals submitted
- 7 proposal were selected

19 new Partners for EIT Food

All exploiting Parties are SMEs

<u>Total EIT funding for the</u>

2021	2022	2023
3.451.346,0	2.416.802,0	1.058.370

Funded by the European Union

INNOVATION PROJECT PORTFOLIO IN SUSTAINABLE AQUACULTURE 2018-2021

Technologies to optimise farm management

Rapid and portable monitoring tools for a better control of fresh whitefish

A commercialised technology (RAS) that improves Atlantic salmon welfare and product quality (Just add water)

A revolutionary environmentally friendly system for fish health management (Breeze)

Emerging sustainable production, processing and transportation systems

Scale and adapt an environment friendly, land-based recirculating aqua system (RAS) technology for Atlantic Bluefin Tuna reproduction (Next Tuna)

Seaweed supplementation to mitigate methane (CH4) emissions by cattle (SeaCH4NGE)

A new technology for transportation and storage of live seafood

A model of sustainable production of pre-growth seeds of Ruditapes philippinarum (Manila clam) and Ruditapes decussatus (Palourde clam) to meet the demand of farmers and consumers (DELTA Futuro)

A natural, healthy, sustainably produced and safe food blue food colouring (Thermoblue)

A novel processing technologies that extend the shelf life of seafood without relying on additives or heat treatment (SUSEAPro)

Digital marketplace, supply chain solutions, and collaboration platforms

An AI-based collaborative platform to interact between stakeholders (Agape)

Alternative and sustainable raw materials for fish feed

2 novel and more sustainable feeds for marine dish covering hatchery and on-growing (Seafeed)

An enhanced insect protein for aquaculture (MetamorphoSIs)

A highly nutritious bivalve feed product from microencapsulated particles (MISDA)

Protein enrichment and fractionation of side streams by dry tribo-electrostatic separation technology (Tribotec)

Production of health promoting bioactive ingredients in feed by microbes and anaerobic microbial processes applying marine macroalgae feedstock

A sustainable source of protein & lipid from omega-3 rich microalgae cultivated using clean power sources (Energy2Feed)

Last update: October 2021

CONSUMER CENTRICITY & DIGITAL TRANSFORMATION

Funded by the European Union

MANY ACTIVITIES INITIALIZED ACROSS THE BOARD

Innovation

- Improving trust on fish chain
- METAMORPHOSIS– enhanced insect protein for aquaculture
- Development and implementation of new technology for transportation and storage of live seafood
- Seaweed supplementation to mitigate methane (CH_4) emissions by cattle (SeaCH4NGE)
- Fermented seaweed based novel feed additives - SEAFEED
- MIDSA - MIcroencapsulated Diets for Sustainable Aquaculture
- Energy-to-Feed (E2F)
- Thermoblue
- TriboTec: Protein enrichment and fractionation of side streams by dry tribo-electrostatic separation technology
- Development of highly sustainable less/zero competing-food aquafeeds for European aquaculture using low carbon and zero waste ingredients
- Sustainable Seafood Processing (SUSEAPRO)
- Next Tuna: Creating a Sustainable Tuna Industry
- BREEZE: A revolutionary eco-friendly system for fish health management
- Just Add Water
- DELTA FUTURO: shellfish juvenile production model
- AGAPE: Aquacultural Global AI Platform for Europe's Skills Passport

Public Engagment

- UN Food Systems Summit 2021: Dialogues on Aquaculture - Can It Sustainably Feed The World?

Education

- Extracurricular programmes
  - Algal biotechnology 2020 – techniques and opportunities for the sustainable bioeconomy
- MOOCs
  - Building Student skills in micro-algae processing, component characterization and innovative product development
- Summer School
  - The Inspire Sustainable Aquaculture Autumn School

Business Creation

EIT FAN / Seedbed incubator

GENUFEED · Seawater Solutions · TETIS · HOOKED · ALG DEHA · Biotic · algacraft · BIOFEYN · KYTOS · Revo FOODS · PURE ALGAE DENMARK ApS

Last update: Oct 2021

EIT FOOD PARTNERS INVOLVED IN SUSTAINABLE AQUACULTURE

eit Food

Funded by the European Union

Scaleups

SafetyNet TECHNOLOGIES

MARINE FEED

SuSea

VAXA impact nutrition

Partners

UNIVERSITY OF CAMBRIDGE

azti tecnalia

CSIC Consejo Superior de Investigaciones Científicas

next tuna

TECHNION Israel Institute of Technology

Alma Mater Studiorum Università di Bologna A.D. 1088

BIOAZUL AGUA • ENERGÍA • MEDIO AMBIENTE

stichting Zeeschelp

Universitas Arhusiensis

100 ΓΕΩΠΟΝΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ AGRICULTURAL UNIVERSITY OF ATHENS

matís

DTU

WAGENINGEN UNIVERSITY & RESEARCH

seafarming systems

cewatech.

AQUA PHARMA

NTNU

UNIVERSITY of STIRLING

PULCEA

FISHFROM

DELTA FUTURO

BIO RES

FOCOS FOOD CONSULTING... STRATEGICALLY

HIT HUB INNOVAZIONE TRENTINO

MILCOOP BENEFIT IN BUSINESS

Consortium Gargano Pesca arl

FEDERPESCA

Last update: July 2021

Just Add Water

Impact goals: Improved Circularity & Environment

Focus Area: Sustainable Aquaculture

THE PROBLEM

- The UN FAO predicts that the world's population will be 9.7 billion by 2050, with demand for food set to increase by 50%. Fish, particularly farmed salmon, offers one solution to meet this increased demand while helping manage and maintain wild fish stocks and the ocean's biodiversity.

THE INNOVATION

- Grow Atlantic Salmon from egg to 5kg in land-based Recirculating Aquaculture Systems (RAS).
- Commercialise a technology that improves :
  - ✓ PRODUCT QUALITY: The fish will be of the highest quality, and supplied fresh to customers every week without vaccines or antibiotics use.
  - ✓ ANIMAL WELFARE: Farmed in highly oxygenated, temperature controlled, pristine water, ensuring healthy fish, free from pathogens and parasites
  - ✓ CIRCULAR ECONOMY: Recycling 98% of all water, using sustainable feed ingredients, with waste products captured, reused, and valorised. Farmed close to market, reducing food miles and packaging.

THE IMPACT

- Resource stewardship, reduce water consumption, and carbon footprint by using solar renewable energy
- Technology's scalability for larger farms especially those located in vulnerable social environments
- Ensure food security and safety and improve the consumer's healthy diet
- Contribution to eliminating the use of vaccines and antibiotics that directly improves the safety and quality of food as well as fish welfare
- Demonstration of economic viability of Photocatalytic Ozonation (PO) in industrial RAS

eit Food

FISHFROM

HUB INNOVAZIONE TRENTINO

Funded by the European Union

AGAPE

Impact goals: Digital marketplace, Circular economy

Focus Area: Sustainable Aquaculture

THE PROBLEM

- Expansion of the aquaculture sector across the EU creates the need for formal engagement toward more effective communication systems among stakeholders.
- Rapidly changing workforce requirements in the Aqua sector, exacerbated by the pandemic at a global scale.
- more than 50% of all workers in the sector need up-skilling

THE INNOVATION

AGAPE: an innovative Aquaculture Global AI Platform for Europe's Skills Passport

- A collaborative AI platform that will promote intelligent interactions among a multitude of stakeholders, from catch to consumer
- Provide Professional Training Courses for the aquaculture workforce
- Certification for AGAPE courses and skill development
- Support companies to understand the capabilities of their workforce, compare those against industry benchmarks

THE IMPACT

- Leading the aquaculture sector through a deep expertise to support the EU to become the international leader in high value differentiated products
- Satisfy the growing demand for healthy, safe, responsibly and sustainably produced seafood
- Develop essential technical and behavioural skills of the aquaculture workforce over the next 10 years
- Identify emerging and future skills, and address gaps in the aquaculture sector

eit Food

Consortium Gargano Pesca arl

FOCOS FOOD CONSULTING... STRATEGICALLY

MILCOOP BENEFIT IN BUSINESS

FEDERPESCA

Funded by the
European Union

Thank you for your attention

Next Call for Proposals 2022: https://www.eitfood.eu/opencall2022