Investing in Europe's Agri-Future – EU funding opportunities for the insect farming sector
Webinar, 28th June 2024

European Innovation Council

Backing visionary entrepreneurs

EIC Accelerator funding opportunities

Ivan Stefanic
EIC Programme Manager for Food Chain Technologies
& Novel and Sustainable Food

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EIC – 10 things you should know about

1. Strong focus on deeptech with disruptive effect on the market

EIC Programmes

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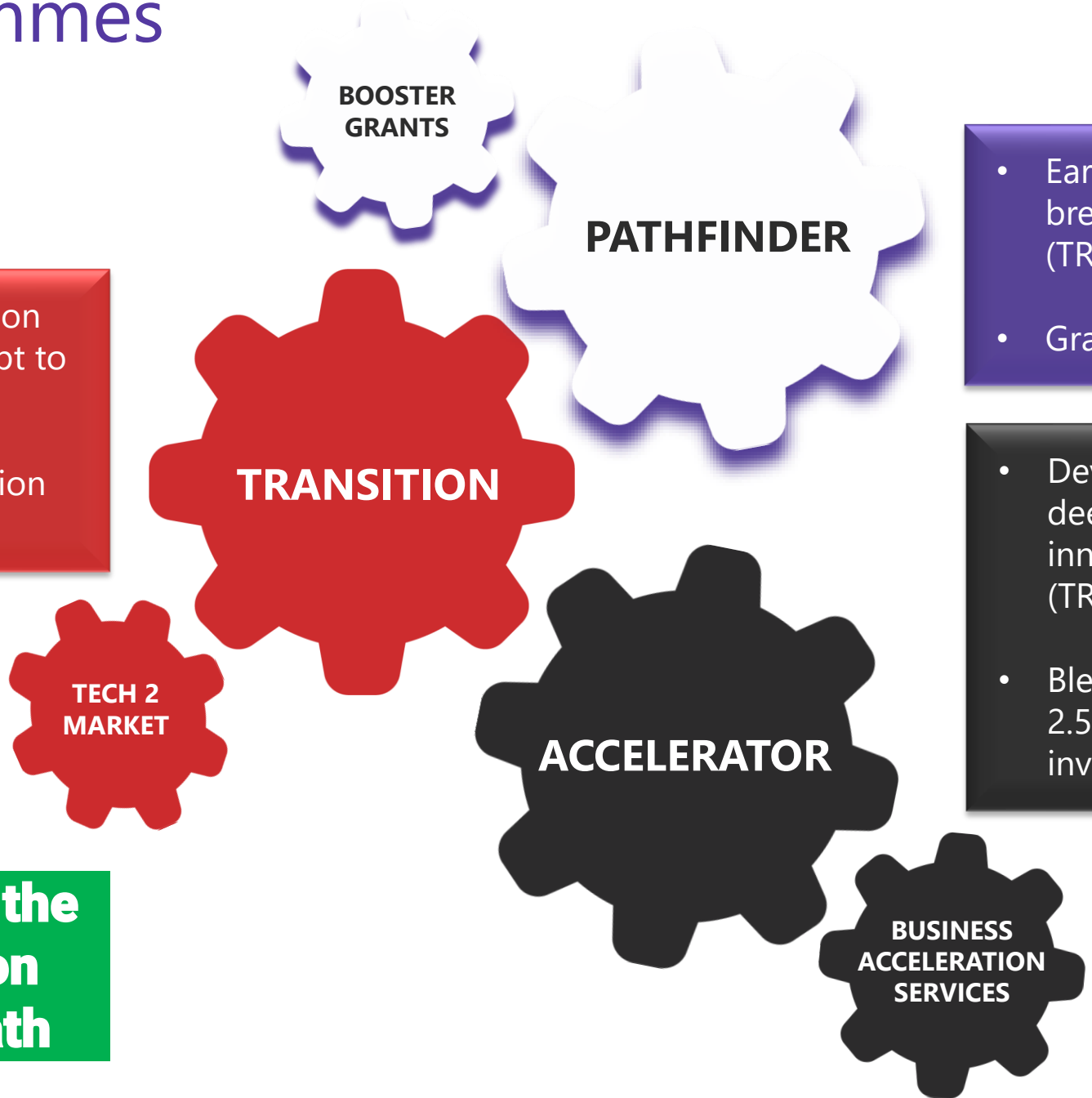


- Early stage research on breakthrough technologies (TRL 1-4)
- Grants up to 3 to 4 million EUR

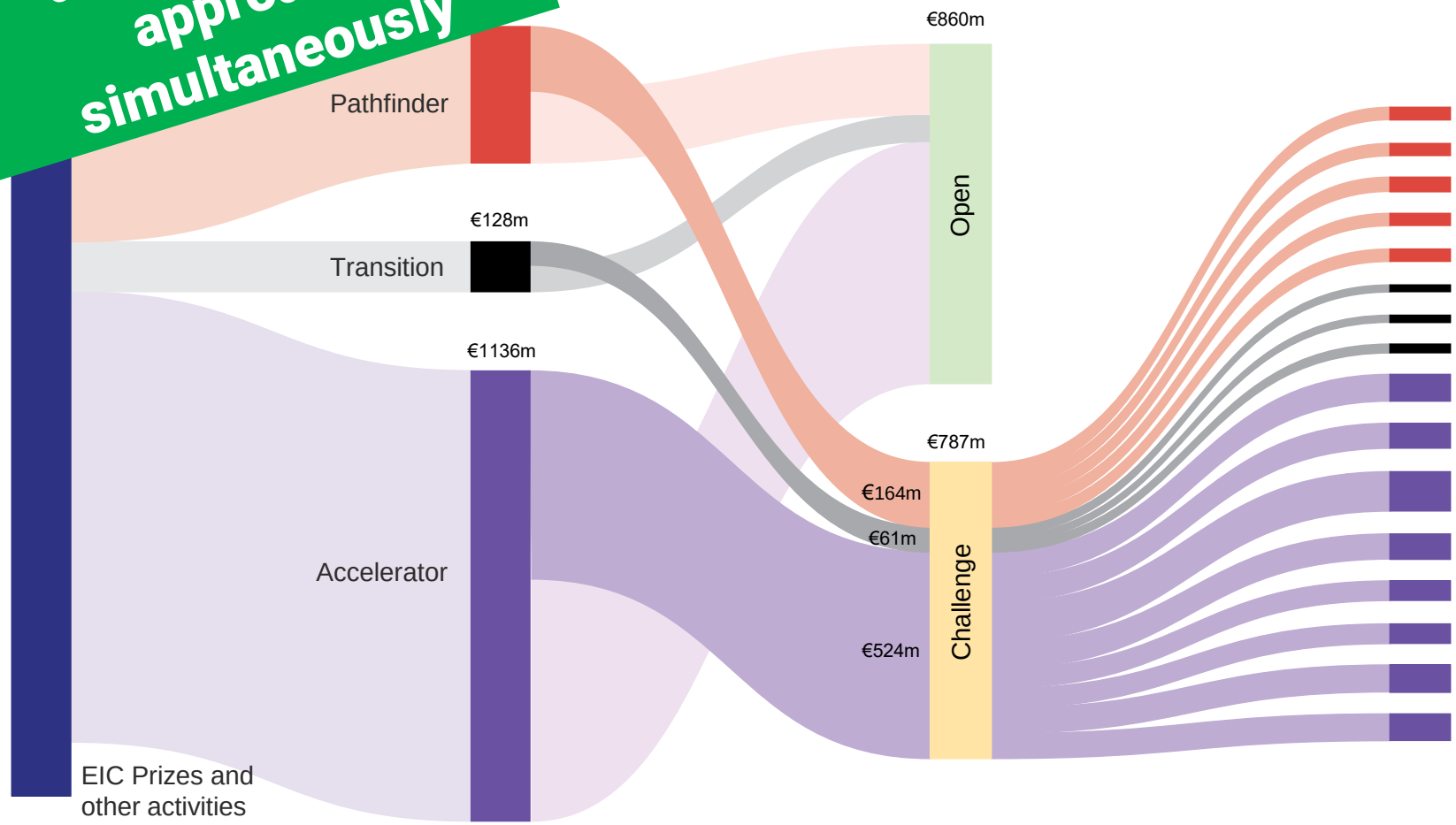
- Technology maturation from proof of concept to validation (TRL 3-6)
- Grants up to 2.5 million EUR

- Development & scale up of deep-tech/disruptive innovations by startups/SMEs (TRL 6-9)
- Blended finance (grants up to 2.5 million EUR; equity investment up to 15 million EUR

2. Support along the whole innovation development path

EIC Work Programme 2023

3. Applyng top-down and bottom-up approach simultaneously



€32.7m	P1	Clean efficient cooling
€32.7m	P2	Digitalized construction
€32.7m	**P3**	**Precision nutrition**
€32.7m	P4	Responsible electronics
€32.7m	P5	In-space solar energy harvesting
€20m	T1	Medical micro-nano-bio devices
€20m	T2	Environmental intelligence
€20m	T3	Chip-scale optical frequency combs
€65m	A1	Biomarker-guided cancer treatment
€65m	A2	Aerosol and surface decontamination
€100m	A3	Energy storage technologies
€65m	A4	Digitalized construction
€50m	A5	Fault-tolerant quantum computers
€50m	A6	Semiconductor chip design
€65m	**A7**	**Novel technologies for resilient agriculture**
€65m	A8	Space technologies and services

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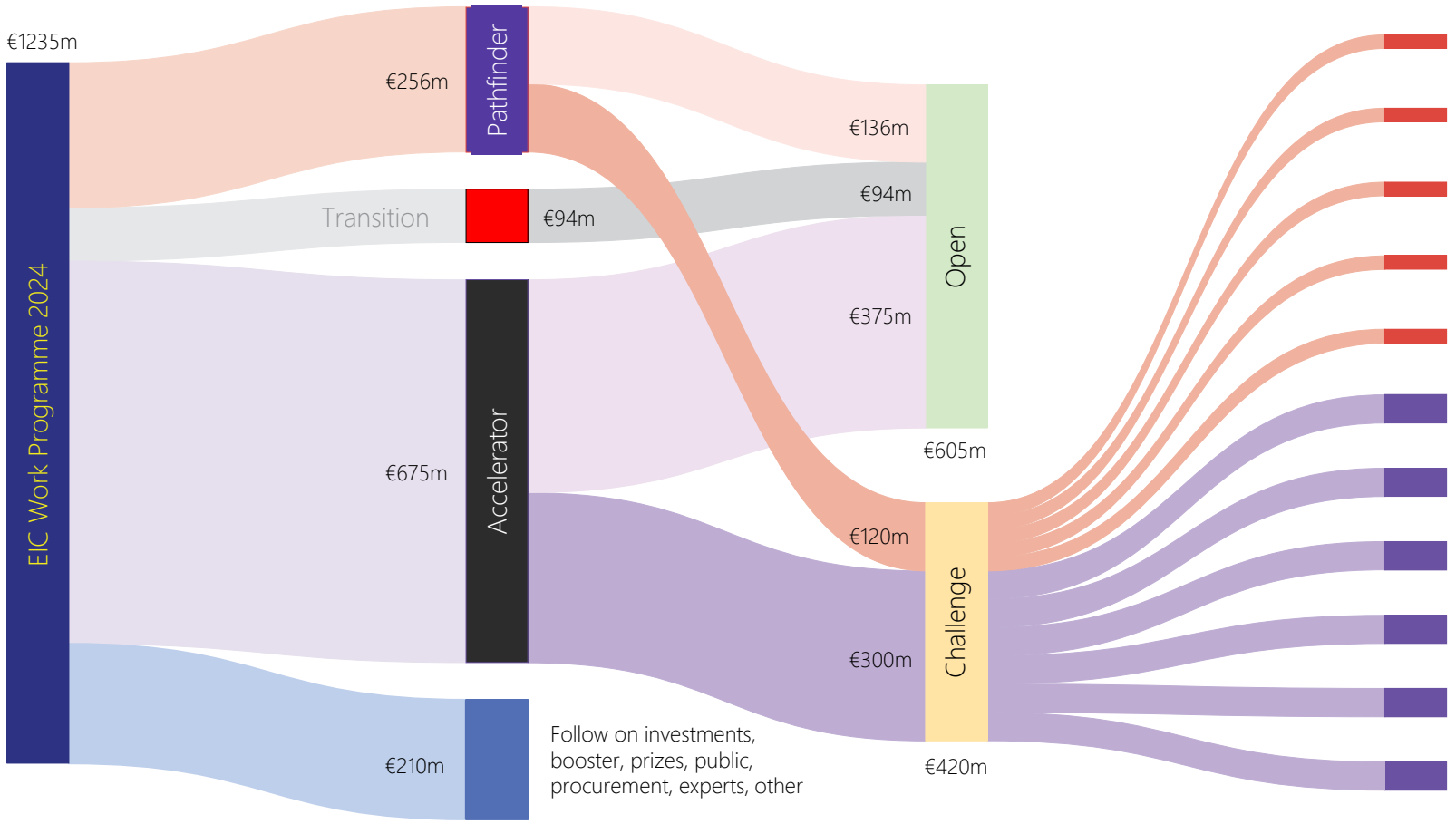
EIC Work Programme 2024

4. New year - new challenges



"Solar-to-X" devices for the decentralized prosumption of renewable fuels, chemicals and materials as climate change mitigation pathway

Towards cement and concrete as a carbon sink

Nature inspired alternatives for food packaging and films for agriculture

Nanoelectronics for energy-efficient smart edge devices

Strengthening the sustainability and resilience of EU space infrastructure

Human Centric Generative AI made in Europe

Enabling virtual worlds and augmented inter-action in high-impact applications to supportthe realisation of Industry 5.0

Enabling the smart edge and quantum technology components

Food from precision fermentation and algae

Monoclonal antibody-based therapeutics for new variants of emerging viruses

Renewable energy sources and their whole value chain including materials development and recycling of components

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Changing Europe one challenge at the time 36 challenges so far

5. Consistency beats intensity and compound effect is one of the secrets to success

2022	
P1	Carbon dioxide and nitrogen management and valorisation
P2	Mid to long term and systems integrated energy storage
P3	Cardiogenomics
P4	Towards the Healthcare Continuum: technologies to support a radical shift from episodic to continuous healthcare
P5	DNA-based digital data storage
P6	Alternative approaches to Quantum Information Processing, Communication, and Sensing
T1	Green digital devices for the future
T2	Process and system integration of clean energy technologies
T3	RNA-based therapies and diagnostics for complex or rare genetic diseases
A1	Technologies for Open Strategic Autonomy
A2	Technologies for 'Fit for 55'
2023	
P1	Clean and efficient cooling
P2	Architecture, Engineering and Construction digitalisation for a novel triad of design, fabrication, and materials
P3	Precision nutrition
P4	Responsible electronics
P5	In-space solar energy harvesting for innovative space applications
T1	Full scale Micro-Nano-Bio devices for medical and medical research applications
T2	Environmental intelligence
T3	Chip-scale optical frequency combs
A1	Novel biomarker-based assays to guide personalised cancer treatment
A2	Aerosol and surface decontamination for pandemic management
A3	Energy storage
A4	New European Bauhaus and Architecture, Engineering and Construction digitalisation for decarbonisation
A5	Emerging semiconductor or quantum technology components
A6	Novel technologies for resilient agriculture
2024	
P1	"Solar-to-X" devices for the decentralized prosumption of renewable fuels, chemicals and materials as climate change mitigation pathway
P2	Towards cement and concrete as a carbon sink
P3	Nature inspired alternatives for food packaging and films for agriculture
P4	Nanoelectronics for energy-efficient smart edge devices
P5	Strengthening the sustainability and resilience of EU space infrastructure
A1	Human Centric Generative AI made in Europe
A2	Enabling virtual worlds and augmented inter-action in high-impact applications to supportthe realisation of Industry 5.0
A3	Enabling the smart edge and quantum technology components
A4	Food from precision fermentation and algae
A5	Monoclonal antibody-based therapeutics for new variants of emerging viruses
A6	Renewable energy sources and their whole value chain including materials development and recycling of components

Critical Technologies

Recommendation on critical technology areas (europa.eu)

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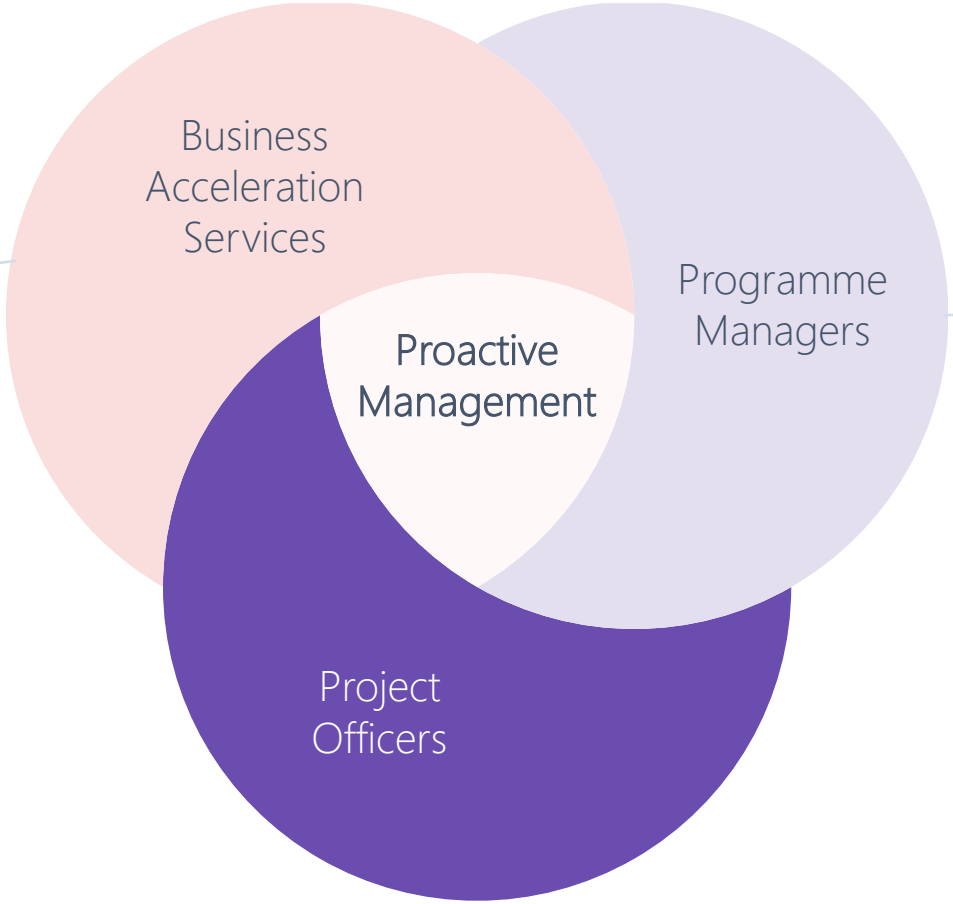
Technology Area	Technologies* *The technologies listed for each area are a likely focal point for risk assessment but are not exhaustive
ADVANCED SEMICONDUCTORS TECHNOLOGIES	•Microelectronics, including processors • Photonics (including high energy laser) technologies • High frequency chips • Semiconductor manufacturing equipment at very advanced node sizes
ARTIFICIAL INTELLIGENCE TECHNOLOGIES	• High Performance Computing • Cloud and edge computing • Data analytics technologies • Computer vision, language processing, object recognition
QUANTUM TECHNOLOGIES	• Quantum computing • Quantum cryptography • Quantum communications • Quantum sensing and radar
BIOTECHNOLOGIES	• Techniques of genetic modification • New genomic techniques • Gene-drive • Synthetic biology
ADVANCED CONNECTIVITY, NAVIGATION AND DIGITAL TECHNOLOGIES	• Secure digital communications and connectivity, such as RAN & Open RAN (Radio Access Network) and 6G • Cyber security technologies incl. cybersurveillance, security and intrusion systems, digital forensics • Internet of Things and Virtual Reality • Distributed ledger and digital identity technologies • Guidance, navigation and control technologies, including avionics and marine positioning
ADVANCED SENSING TECHNOLOGIES	• Electro-optical, radar, chemical, biological, radiation and distributed sensing • Magnetometers, magnetic gradiometers • Underwater electric field sensors • Gravity meters and gradiometers
SPACE & PROPULSION TECHNOLOGIES	• Dedicated space-focused technologies, ranging from component to system level • Space surveillance and Earth observation technologies • Space positioning, navigation and timing (PNT) • Secure communications including Low Earth Orbit (LEO) connectivity • Propulsion technologies, including hypersonics and components for military use
ENERGY TECHNOLOGIES	• Nuclear fusion technologies, reactors and power generation, radiological conversion/enrichment/recycling technologies • Hydrogen and new fuels • Net-zero technologies, including photovoltaics • Smart grids and energy storage, batteries
ROBOTICS AND AUTONOMOUS SYSTEMS	• Drones and vehicles (air, land, surface and underwater) • Robots and robot-controlled precision systems • Exoskeletons • AI-enabled systems
ADVANCED MATERIALS, MANUFACTURING AND RECYCLING TECHNOLOGIES	• Technologies for nanomaterials, smart materials, advanced ceramic materials, stealth materials, safe and sustainable by design materials • Additive manufacturing, including in the field • Digital controlled micro-precision manufacturing and small-scale laser machining/welding • Technologies for extraction, processing and recycling of critical raw materials (including hydrometallurgical extraction, bioleaching, nanotechnology-based filtration, electrochemical processing and black mass)

With proactive management the EIC aims to maximize its support to success of the entrepreneurial journey

- Access to entrepreneurs
- Access to mentoring
- Access to ecosystems
- Access to partners, peers
- Access to trainings
- Access to workshops
- Access to expert advice
- Access to recruitment
- Access to industry



- Health, Biotech
- MedTech
- SpaceTech
- Quantum, electronics
- Greentech materials
- Greentech
- AEC
- Agri-food
- Responsible electronics
- Bio-fuels, E-fuels

Challenges
Portfolios

6. Proactive portfolio management

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7. New Programme Managers

EIC PROGRAMME MANAGERS

Iordanis Arzimanoglou
Biotechnology & Health

Enric Claverol-Tinturé
MedTech & Medical Devices

Francesco Matteucci
Materials for Energy & Environment

Antonio Marco Pantaleo
Energy Systems

Stella Tkatchova
Space systems & technologies

Federica Zanca *Medical Imaging and AI in healthcare*

Samira Nik
Quantum tech & electronics

Franc Mouwen
Architecture engineering construction technologies

Ivan Stefanic
Food chain technologies, novel & sustainable food

Isabel Obieta
Sustainable electronics

Carina Faber
Renewable energy conversion & alternative resource exploitation

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Role of PMs

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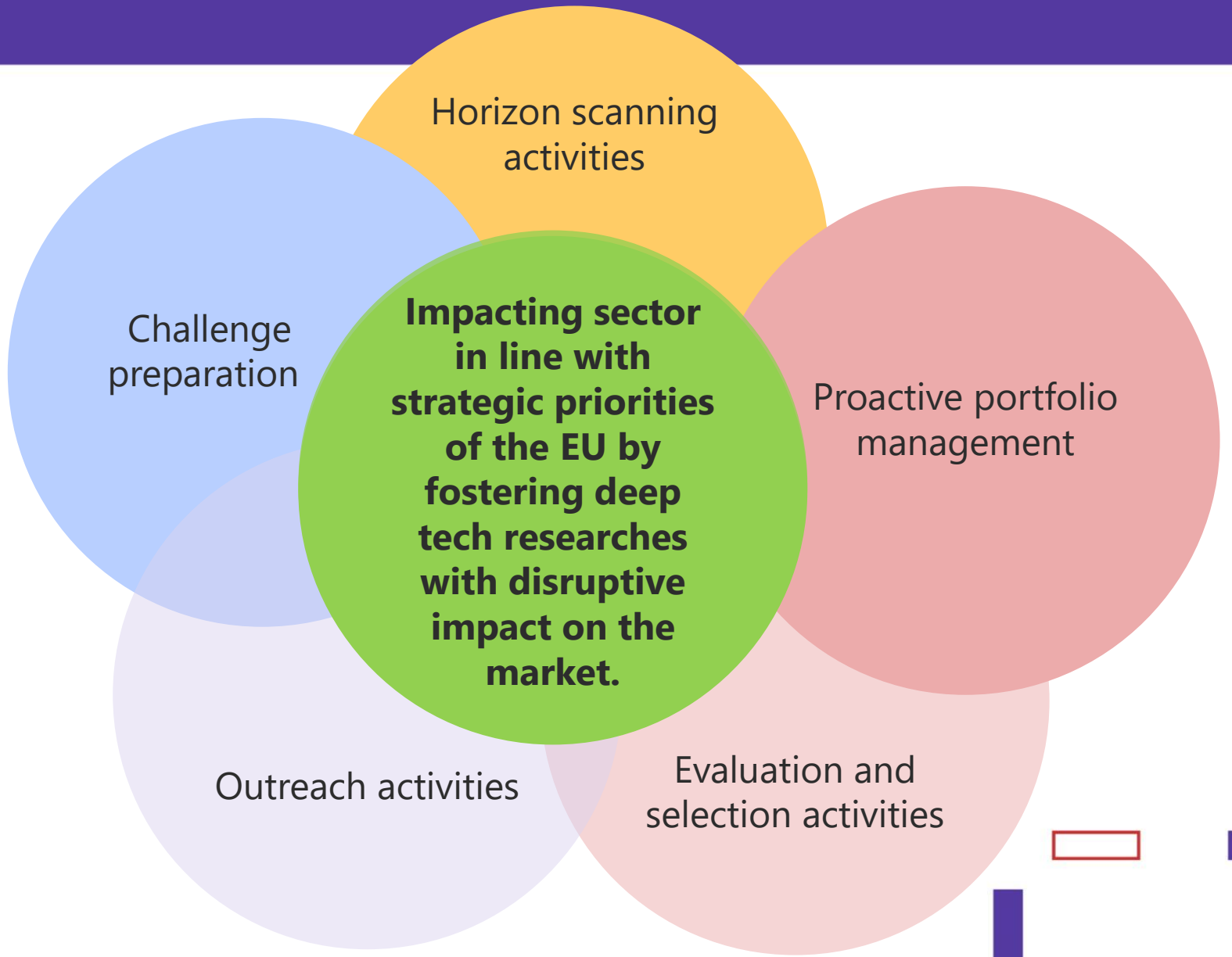

Novel technologies for resilient and sustainable food supply chain
Thematic cross-program portfolio April 2024

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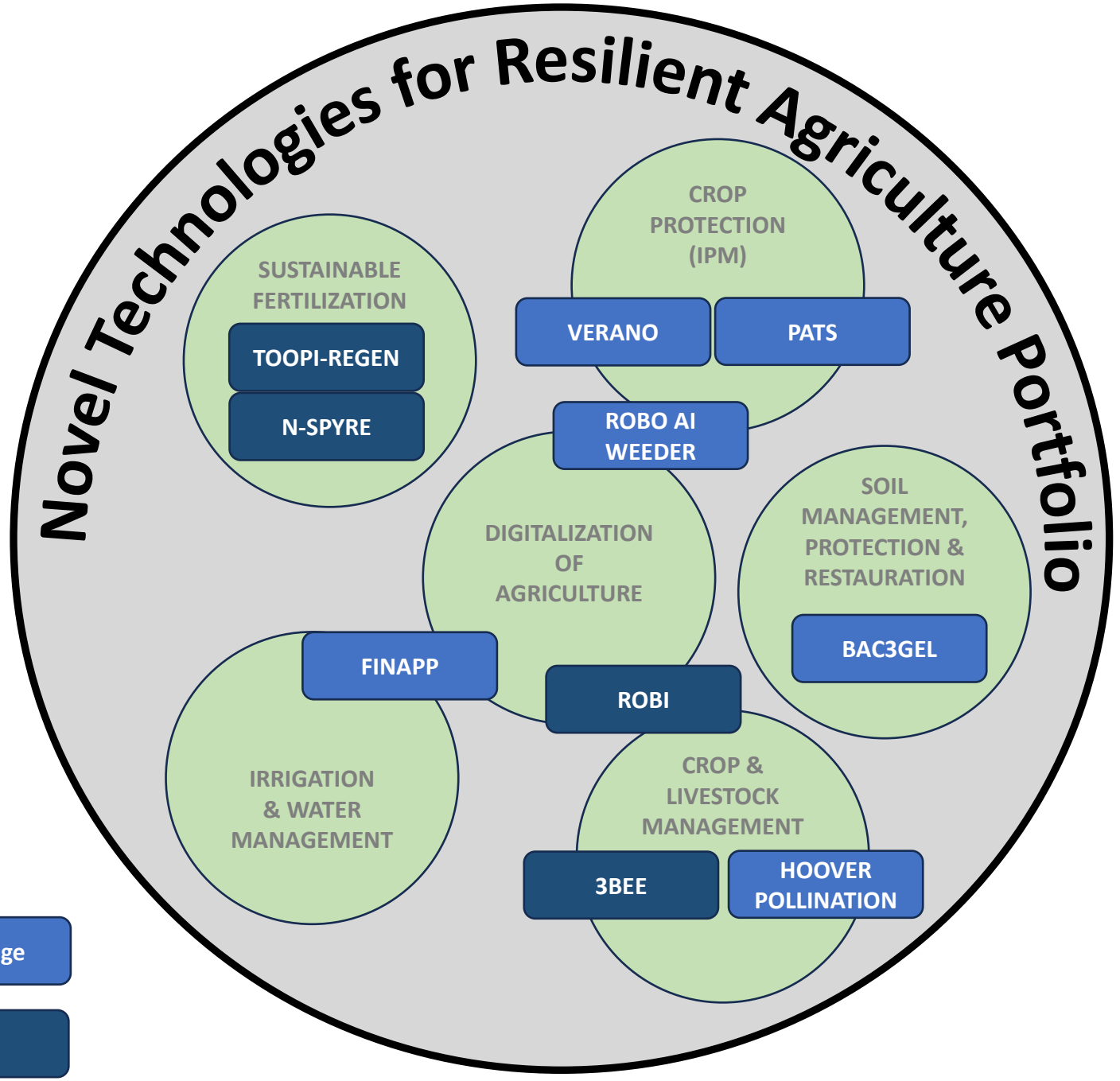
NO PEST (FET OPEN) Novel pesticides: low-impact alternatives to agrochemicals	**FUTURE AGRICULTURE (FET OPEN** Synthetic photorespiration	**CROP4CLIMA** Canola and rapeseed able to assimilate +60% CO_2 requiring -20% of water	**3P TECH** erc erc Tri-parental plants for high yields and climate-robust crops	**SOIL MONITOR** Mini-sensors against the overfertilisation of soils
WATCH PLANT Advanced sensing of plant capacity to utilize light, water and heat	**INFINITE ROOTS (ex MUSHLABS)** Fermentation of edible mushroom roots to create tasty and sustainable food	**ROBI** AI Adviser for Agronomy and Food Safety	**FL'OUR PLANET** Fermentation of food side-streams into food ingredients **LIVESENMAP**	**LIVESENMAP** Real-time plant nutrient sensing for smart mapping of fertilizer needs.
TRAIT4.0 Increasing crop resiliency with Artificial Intelligence Technology	**AGROBIOGEL** Water and fertilizer storage and, slow-release products	**TILKAL** Blockchain-based Supply Chain Traceability & Transparency Platform	**ECOLACTIPACK** A Material to Unlock Plastic-free Paper Packaging for Food	**BIOSOLAR LEAF** Biomimetic technology for large-scale microalgae cultivation
GREEN-DROP (SMEInst-2) Big data for efficient irrigation and fertilization	**GASABATE N-PLUS (SMEInst-2b)** Additive technology to prevent GHG emissions	**BIOWEEDCONTROL (SMEInst-2b)** Weed control via semi-permeable layer within the soil matrix	**AGROSTORE (SMEInst-2b)** Replacing chemical fungicides with plant-based solutions	**SMART NITRO FARM (SMEInst-2b)** On-farm fertilizer production by plasma treatment of livestock slurry
NURSPRAY (SMEInst-2b) Crop treatment against climate stress (drought & heat)	**CYANOBACTERIA (Algaenite) (SMEInst-2b)** Using nitrogen-fixing Cyanobacteria for making Bio Ammonia (organic fertilizer)	**ALAV (SMEInst-2b)** An autonomous lightweight agricultural vehicle, eliminating degradation of soils	**ANTOFERINE (SMEInst-2b)** Antifungal product developed for pre- and post-harvest	**OptiSignFood (FTI)** Data Science and AI assisted holistic software to digitally design food products
SAPHER (FTI) Sensing platform for allergens in food industry	**MEAT4ALL (FTI)** Competitive, sustainable and consumer oriented cultivated meat	**PHOTO-SENS (FTI)** Platform for salmon pathogen detection	**SUSTAINABLE MANURE (FTI)** Fertilizers from air by plasma treatment	**PHAGOVET (FTI)** Controlling Salmonella and Escherichia coli in poultry production
CHILLBACT (FTI) Decontamination with Ice	**PHAGEFIRE (FTI)** Solution to control fire blight disease in pome fruit crops	**ECOXTRACT (FTI)** Biobased plant oil and protein extraction system	**HAYTECH-AI** Data analytics & fermentation control to increase dairy farm milk yield	To be regularly updated…

Note: EIC Pathfinder projects are marked purple, EIC Transition red and EIC Accelerator and similar are black.

SME Instrument – Phase II, Fast track to Innovation (FTI) and FET Open projects are also included in the portfolio.



Accelerator challenge 2023: Novel Technologies for Resilient Agriculture

Novel processes, materials, equipment, management practices, microorganisms adapted to harsh environments, climate adaptation needs and resource scarcity, diversification of crops, mixed farming systems, interseasonal cropping and technologies to increase crops adaptation to climate changes.

Food Chain Technologies & Novel and Sustainable Food

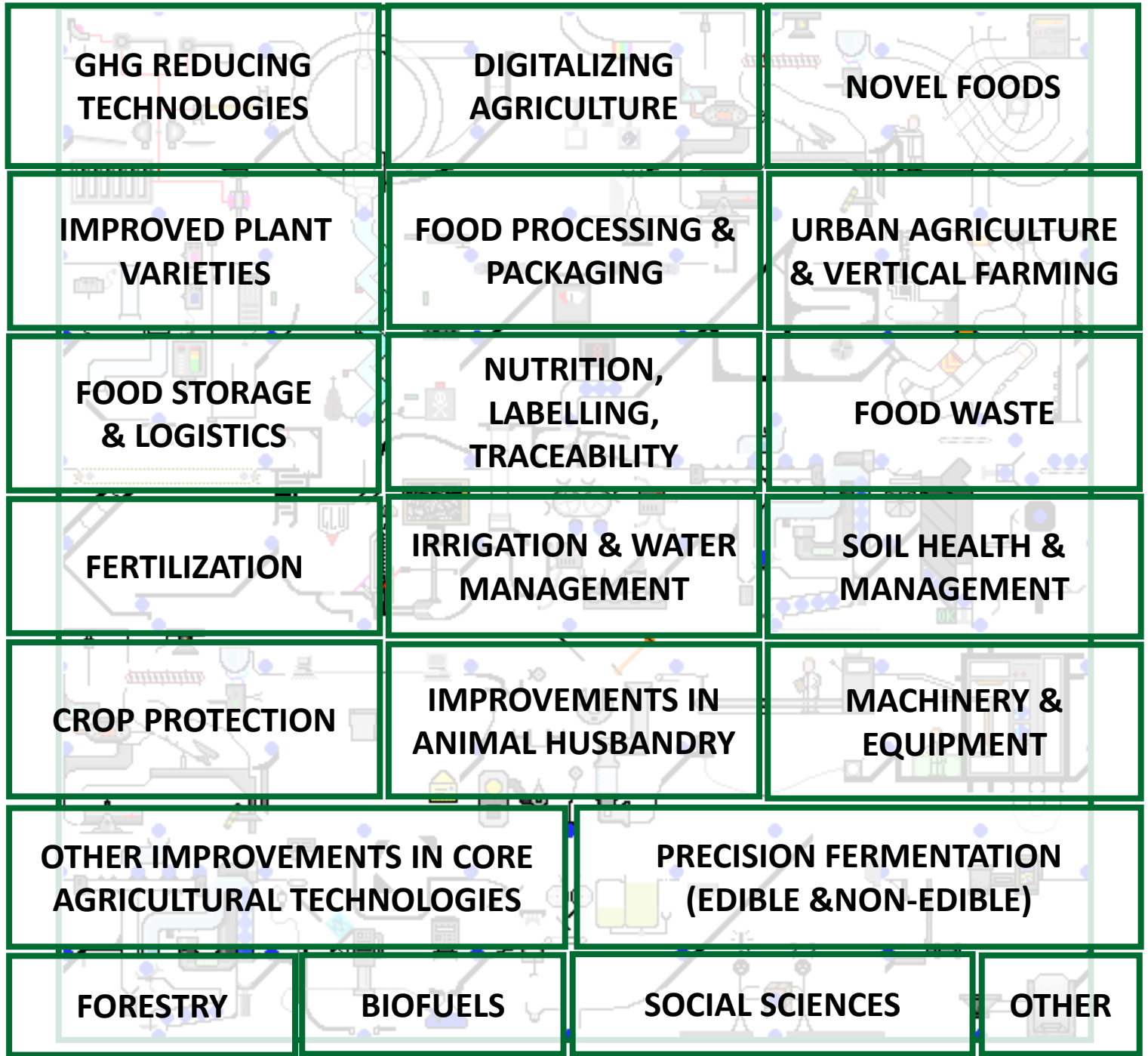
- state of the art -

Different alternative proteins

Sources: Gahukar (2016); Kyriakopoulou, Dekkers & van der Groot (2019); Post et al. (2020)

Complexity in:

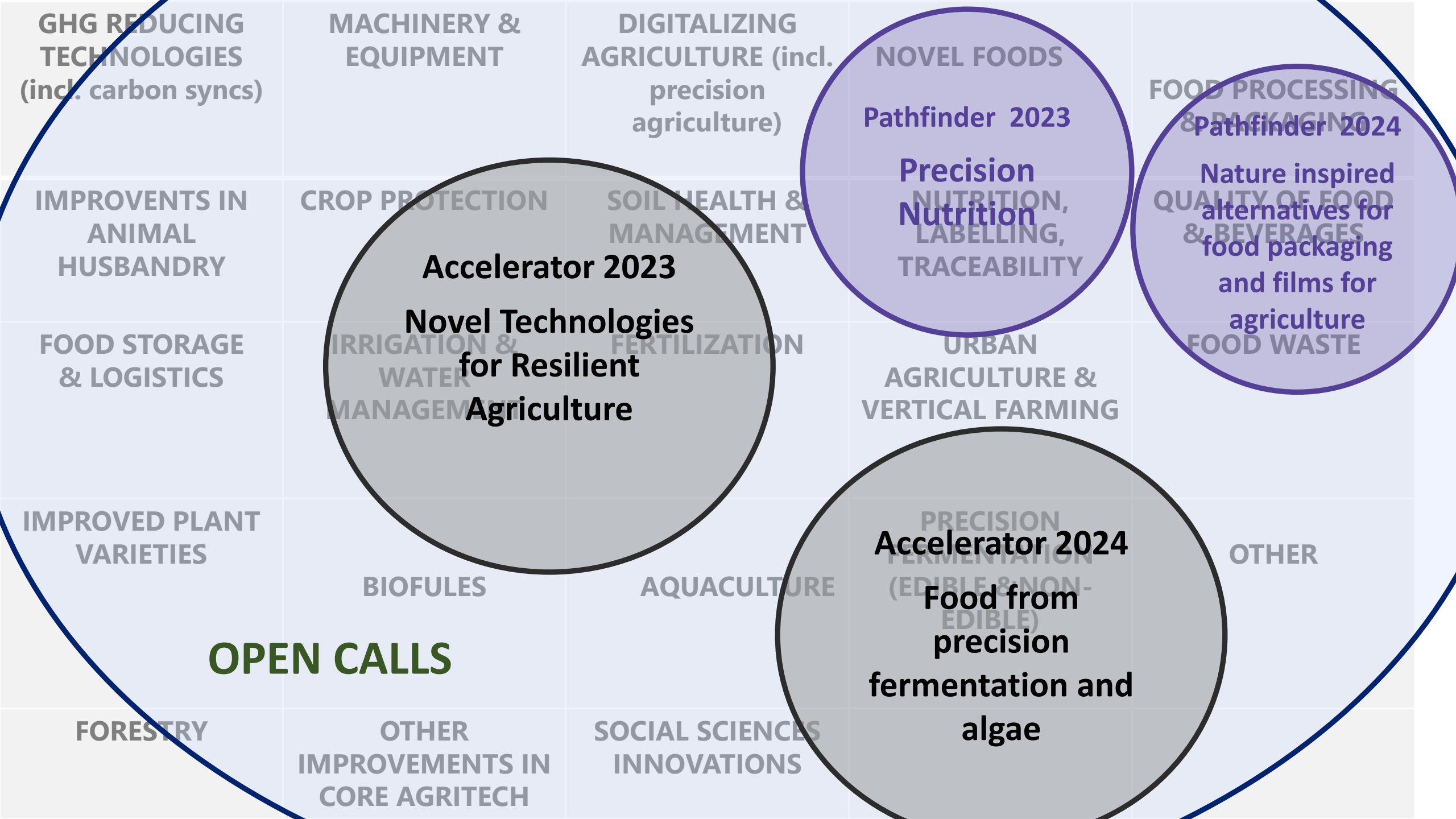
- Food Chain Technologies and
- Novel & Sustainable Food



Comparing alternative proteins

	Environment	Health	Animal welfare	Consumer acceptance
Whole Plant Foods	Very good.	Very good.	Very good.	Very limited.
Plant Based Meat	Very good.	Good.	Very good.	Good.
Cultured Meat	Good.	Same as meat?	Good, potentially very good.	Moderate.
Insects	Moderate.	Moderate.	Very bad.	Very limited.

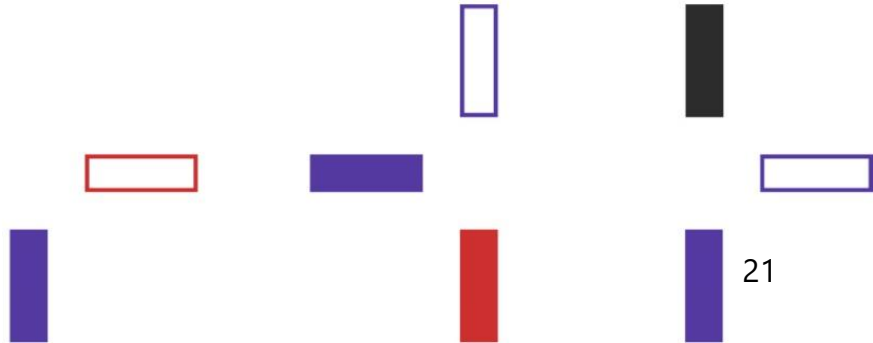
Sources: Bryant & Barnett (2020); Bryant et al. (2019); Craig (2010); Crimarco et al. (2020); Eilenberg et al. (2015); Fraeye et al. (2020); Godfray et al. (2018); Gomez-Luciano et al (2019); Heller & Keoleian (2018); Klein & Barron (2016); Lundy & Parrella (2015); Mishyna, Chen & Benjamin (2020); Odegard & Sinke (2021); Saerens et al. (2021); Willett et al. (2019)


GHG REDUCING TECHNOLOGIES (incl. carbon syncs)
MACHINERY & EQUIPMENT
DIGITALIZING AGRICULTURE (incl. precision agriculture)
NOVEL FOODS
FOOD PROCESSING & PACKAGING
Pathfinder 2023
Precision Nutrition
Pathfinder 2024
Nature inspired alternatives for food packaging and films for agriculture
IMPROVENTS IN ANIMAL HUSBANDRY
CROP PROTECTION
SOIL HEALTH & MANAGEMENT
NUTRITION, LABELLING, TRACEABILITY
QUALITY OF FOOD & BEVERAGES
Accelerator 2023
Novel Technologies for Resilient Agriculture
FOOD STORAGE & LOGISTICS
IRRIGATION & WATER MANAGEMENT
FERTILIZATION
URBAN AGRICULTURE & VERTICAL FARMING
FOOD WASTE
IMPROVED PLANT VARIETIES
PRECISION FERMENTATION (EDIBLE & NON-EDIBLE)
OTHER
BIOFULES
AQUACULTURE
Accelerator 2024
Food from precision fermentation and algae
OPEN CALLS
FORESTRY
OTHER IMPROVEMENTS IN CORE AGRITECH
SOCIAL SCIENCES INNOVATIONS

What we want - Principles

Agri-food Challenge Proposals are defined

- using holistic approach,
- using life-cycle approach,
- to foster the EU technological autonomy and leadership,
- with an account of EU strategic plans and relevant initiatives.
  - EU Soil mission
  - EU Green Deal,
  - Farm to Fork strategy,
  - Fit for 55, and
  - REPowerEU policy actions.



What we don’t want - Long-term detrimental effect

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- Dichlorodiphenyltrichloroethane was first synthesized in 1874 by Othmar Zeidler under the supervision of Adolf von Baeyer (recipient of the **Nobel Prize** in Chemistry in 1905).

- Swiss chemist Paul Hermann Müller discovered the high efficiency of Dichlorodiphenyltrichloroethane as a contact poison against several arthropods in 1939 and was awarded the **Nobel Prize** in Physiology or Medicine in 1948 for that.
- From 1950 to 1980, was extensively used in agriculture as Anofex, Cezarex, Chlorophenothane, Dicophane, Dinocide, Gesarol, Guesapon, Guesarol, Gyron, Ixodex, Neocid, Neocidol and Zerdane. More than 40,000 tonnes each year worldwide, in total more than 1.8 million tonnes have been produced globally since the 1940s.
- In the 1970s and 1980s, agricultural use was banned in most developed countries, beginning with Hungary in 1968, USA in 1972, UK in 1984.
- The story of DDT

How to assess the long-term impact of the innovation?

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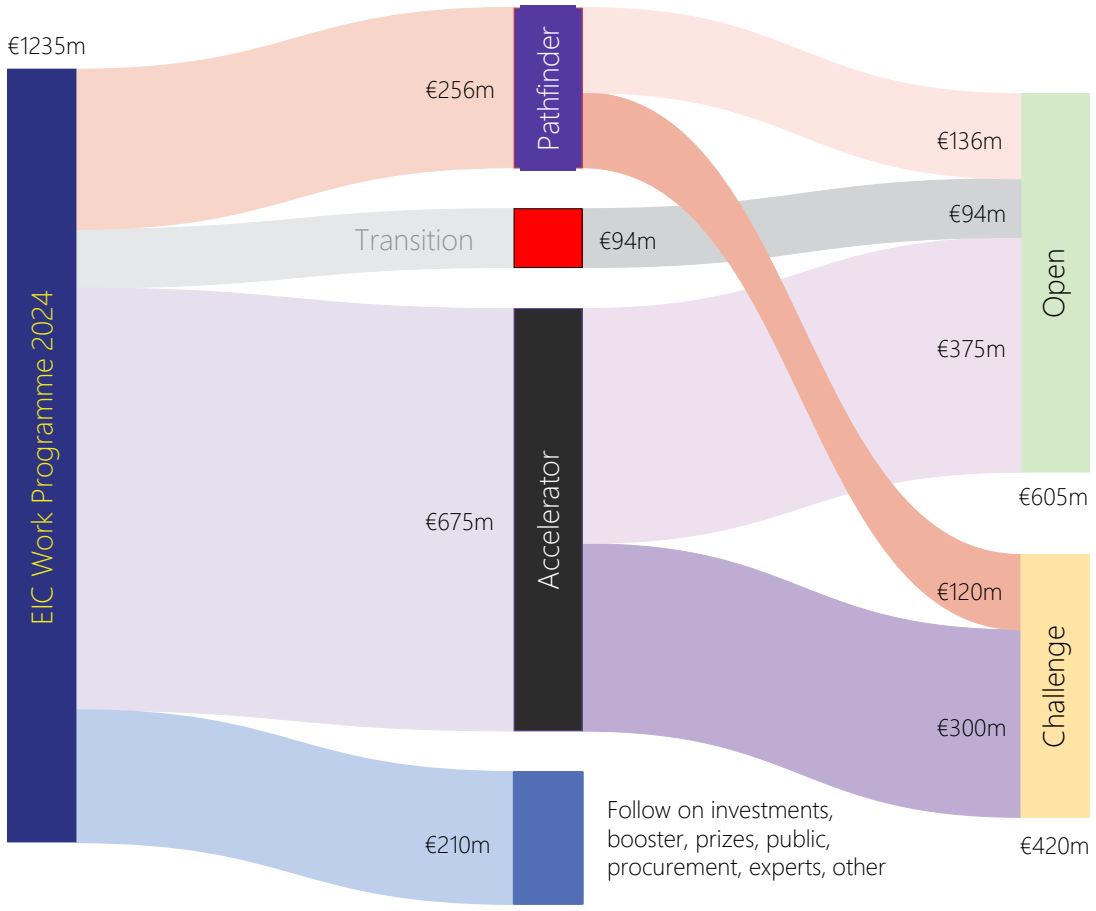
- **Thomas Midgley Jr.**
- **Serial and awarded innovator** (William H. Nichols Medal 1922, Longstreth Medal 1925, Perkin Medal 1937, Priestley Medal 1941, Willard Gibbs Award 1942)
- **One-man environmental disaster** at the same time.
- Most important innovation: **leaded gasoline and freon**.
- It took 30+ years and global effort to fix the ozone layer.
- AI is a perfect tool to facilitate the solution.

EIC Work Programme 2024



8. Unlearn obsolite things. Learn new ones.

Pathfinder:
Open: 7. March 2024
Challenge: 16. October 2024

Transition Open: 18. September 2024

Accelerator:
Short applications: continuous
Full applications: 13. March 2024
3. October 2024

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Why we really need EIC Programmes?

12 reasons why we really need EIC?

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1. Better understanding of your business
2. State of the art evaluation
3. Grant
4. Booster grants for Pathfinder, T2M for Transition projects, BAS - Business Acceleration Support grants for Accelerator + EIC Scaling Club
5. Equity financing
6. Guidance & support by PMs
7. Visibility, promotion & networking
8. Increased credibility with possible investors
9. EIC support to women innovators
10. Possibility to improve the application (in next cut-off date)
11. Seal of excellence (leading to eligibility for EIC service catalogue and post-grant care)
12. Fast track procedure

2018 EU Bioeconomy Action Plan

14 actions in *three priority action areas*

Selected successes of the Bioeconomy Action Plan

Strengthen and scale up the bio-based sectors, unlock investments and markets

- CBE-JU
- ECBF
- Blue bioeconomy forum

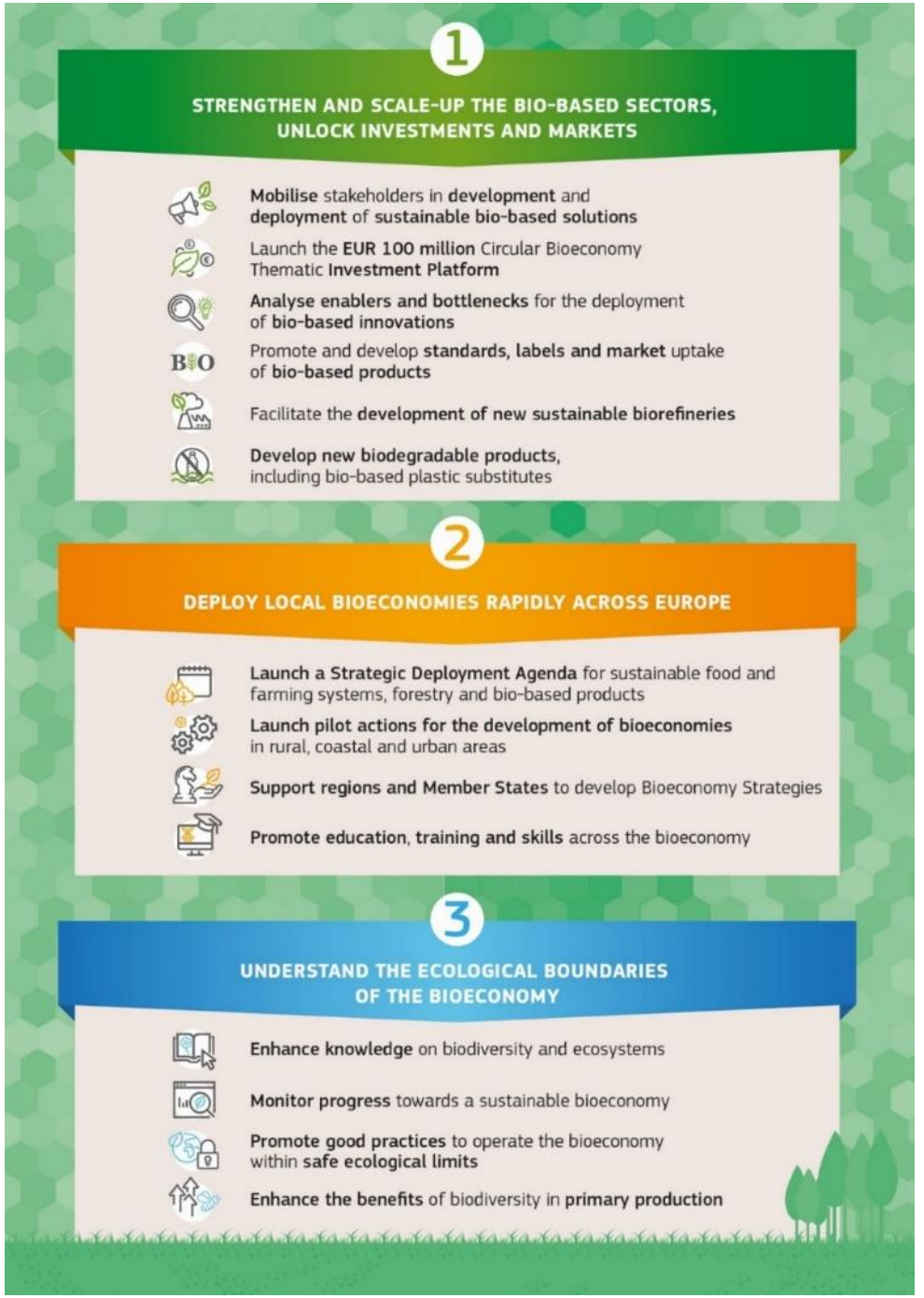
Deploy local bioeconomies rapidly across the whole of Europe

- European Bioeconomy Policy Forum
- BIOEAST
- Promoting education, training and skills

Understand the ecological boundaries of the bioeconomy

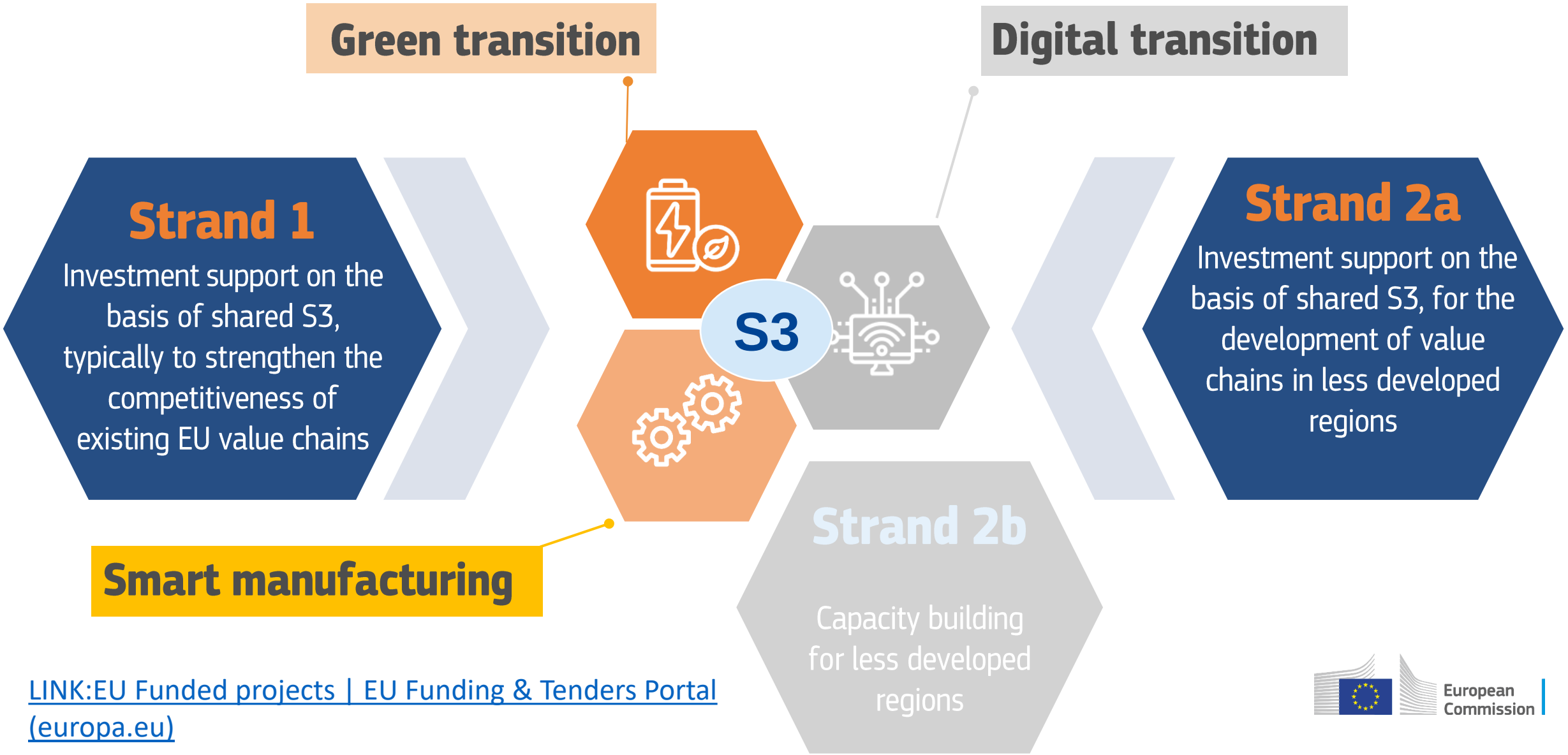
- Knowledge Centre Bioeconomy
- Bioeconomy Monitoring System

Horizon 2020 + Horizon Europe WP



Interregional Innovation Investments (I3) Instrument

Thematic priorities



LINK:EU Funded projects | EU Funding & Tenders Portal (europa.eu)

European Commission

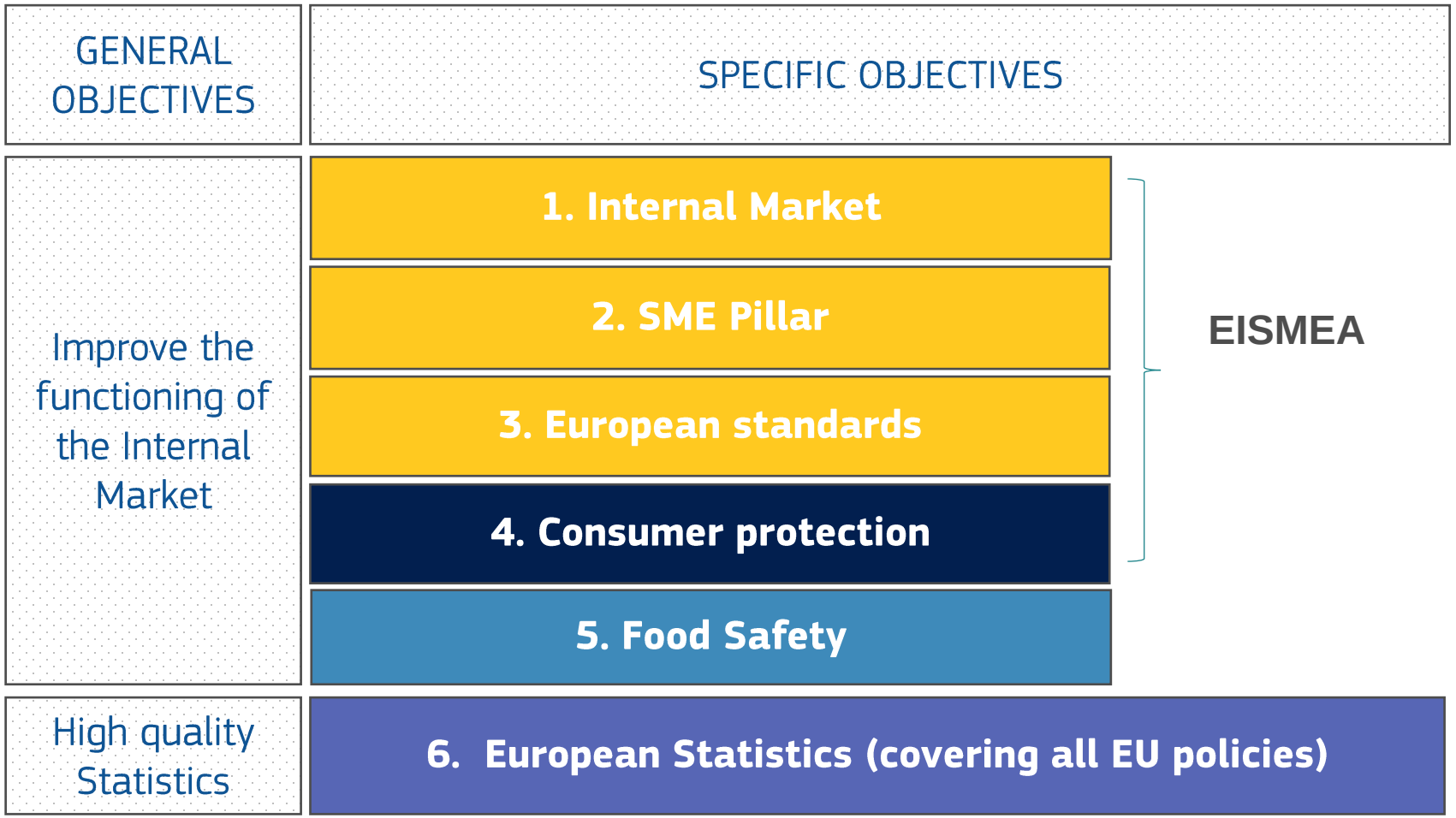
What is the Single Market Programme (SMP)?

The **Single Market Programme (SMP)** is the EU funding programme to help the single market reach its full potential. The Single Market is the largest market in the world, where people, goods, services and money can move almost as freely as within a single country. Consumers can buy safe products on the market and enjoy a high level of food safety.

For the long-term EU budget 2021-2027, the Commission proposes a dedicated €4.2 billion programme to empower and protect consumers and enable Europe's many small and medium-sized enterprises (SMEs) to thrive.

European Commission

SMP structure and objectives



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the world's largest support Network for innovative SMEs with international ambitions

We give companies **free support**

via 450+ Network Partners in 40+ countries worldwide.

Thanks to our expertise,

EVERY SINGLE DAY

835
small companies get help to innovate and grow internationally

525
companies receive specialised guidance and training sessions

112
enterprises benefit from our experts' in-depth tailored advice

5
companies sign partnership agreements

Resulting in 92% client satisfaction!

< *YOUR COMPANY* >

EIC Beneficiary

9. Decide & Act!

< *YOUR NAME* >

Member of the EIC thematic portfolio

Novel Technologies for Resilient Food Supply Chain

< *Your contact details* >

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10. Enjoy the journey!

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Innovation
made in Europe

Thank you

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