

Europe Food BioFutures



**Let's make Europe a food biotech leader
with EIT Food**



Biotechnologies are the future...

Oct 3, 2023

Today, the Commission adopted a [Recommendation on critical technology areas for the EU's economic security](#). Out of the ten critical technology areas, it identifies **four technology areas that are considered critical** to the future :

- Advanced Semiconductors technologies
- Artificial Intelligence technologies
- Quantum technologies
- **Biotechnologies (techniques of genetic modification, new genomic techniques, gene-drive, synthetic biology).**



March 20, 2024

Today, the Commission has proposed a series of **targeted actions to boost biotechnology and biomanufacturing in the EU**. The Communication on Building the future with nature identifies the challenges and barriers and proposes to tackle them, in line with the Communication on the long-term competitiveness of the EU.



Biotechnologies are the future...

of Food

Biotech will positively impact up to 40% of all food products by 2030



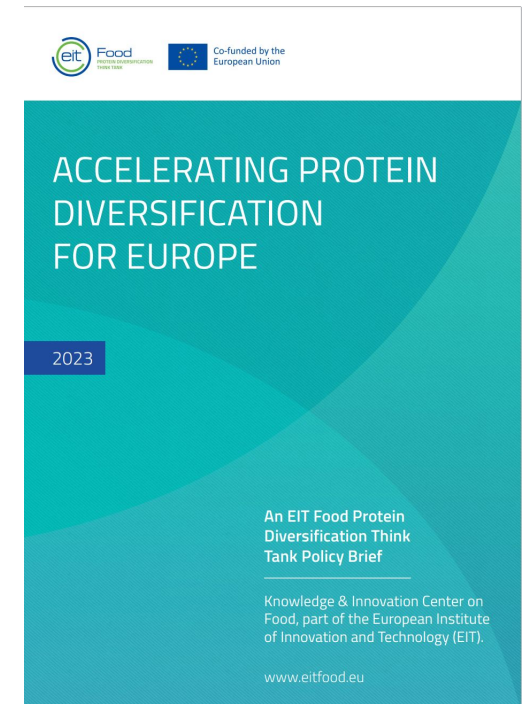
of Europe

In October 2023, EC listed biotechnologies in the top 4 most critical of its future technologies



of EIT Food

In October 2023, the EIT FOOD Protein Diversification Think Tank published its policy paper confirming the key role of biotech



Biotechnologies are natively circular, thus inherently sustainable, more sustainable than most existing food process



World Business Council for Sustainable Development

X

BCG

November 2020

Sustainable raw materials

Agriculture	Cereals (i.e., wheat, maize, barley, other)
	Plants harvested green (i.e., green maize, temporary green grasses, lucerne, other)
	Sugar & starchy crops
	Oil-bearing crops
	Permanent crops
	Vegetables & fruits
	Industrial crops (mainly fibers)
	Energy crops
	Dairy & other animal raw material
	Animal fibers
	Animal leather/skins
	Animal waste/manure
Forestry	Saw log
	Wood pulp
	Other forestry extractions
	Forestry waste/manure
Aquaculture	Fish catch
	Bycatch
	Other aquatic animals & plants

Industrial biomass processing

Crops & other raw material for food use, nutrient additives, & dietetic preparations		
Biodiesel		
Glucose	Bioethanol	
Bioethers		
Biogas		
Other biomass for fuel use		
Starch	Biopolymers (including Bio Polyethylene, Terephthalate, Bio Polyamides, Polylactic Acid, Bio Polyethylene, starch blends, and other biopolymers)	Other Resins
		Construction resins & boards
		Bioyarns (i.e., lyocel, modal)
		Bioplastics as packaging
		Bioplastics vehicle components
		Drug capsules/other pharma
		Other biopolymers products
		Paperboards (i.e., kraftliners)
		Paper (coated & uncoated)
		Wrapping & other packaging
Casein		Panels (i.e., particle-/fiberboards)
		Other wood extractions
Soy & other protein		Adhesives/binders/thickeners
		Dyes/inks
Latex & natural rubber		Emulsifiers
		Lubricants
Cellulose (i.e., cellulose ethers)		Antiseptics & other pharmaceutical use
		Tires & other rubber-based products
Dextrins		Pharmaceutical equipment
Locust bean gum		
Tall oil		
Lignin		
Vegetable oil		
Tannins		

Bio-based products end use

Food, beverages, & tobacco products (including animal feed)
Biofuels
Other bioenergy
Building materials & construction (i.e., civil engineering, installation)
Wood products & furniture
Electronics & electrics (i.e., computers, motors & generators, communication, batteries)
Pulp & paper products (including packaging)
Machinery & equipment
Textiles, wearing apparel, & leather products
Motor vehicles, components, & other transport
Chemicals & bioplastics (including packaging)
Pharmaceuticals
Other bio-based products

Biotechnologies are the solutions that transform biomass, byproducts and residues into valuable components - food & feed, materials & products, biofuel & biogaz - through fermentation or biochemical transformation

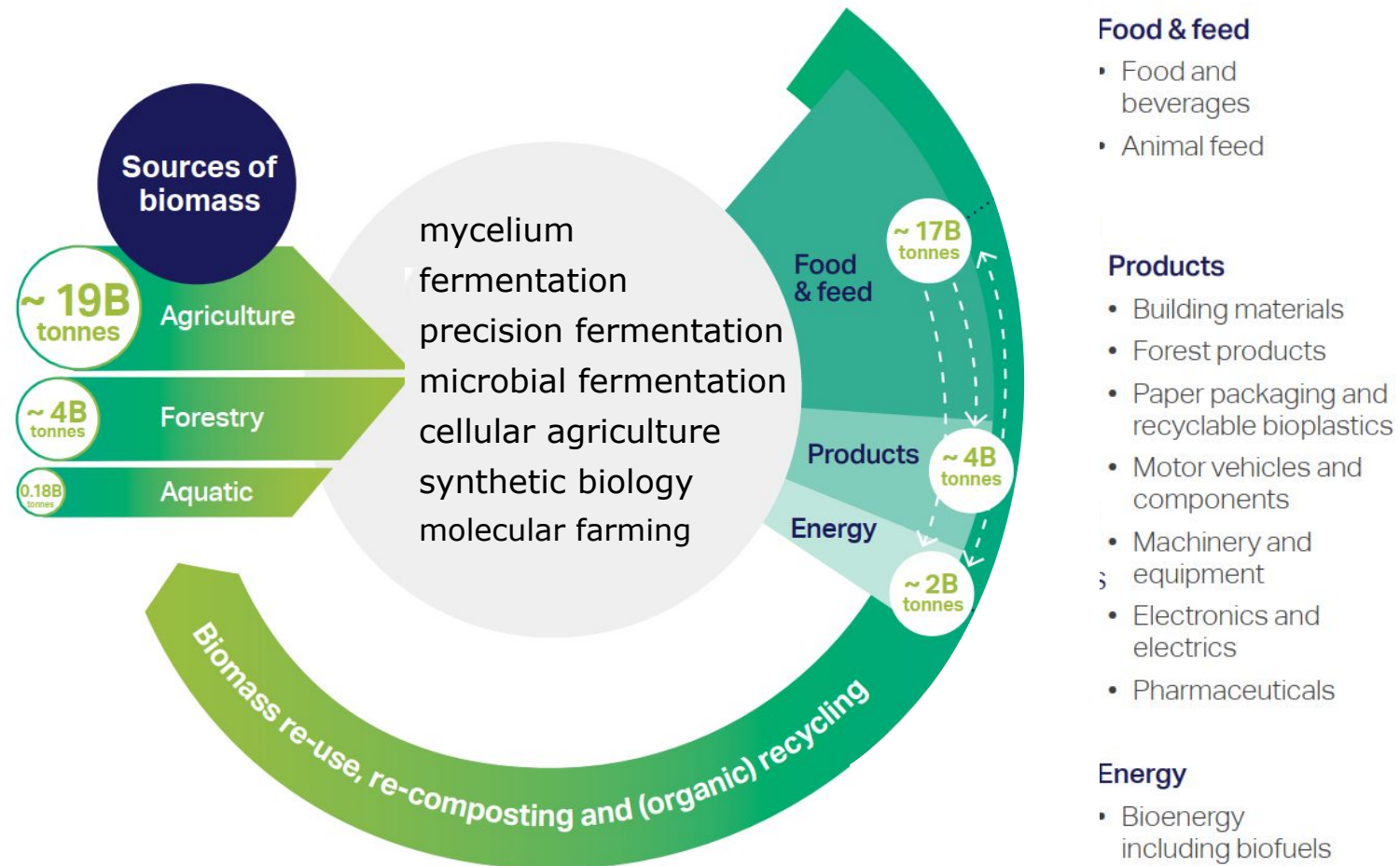


World Business Council for
Sustainable Development

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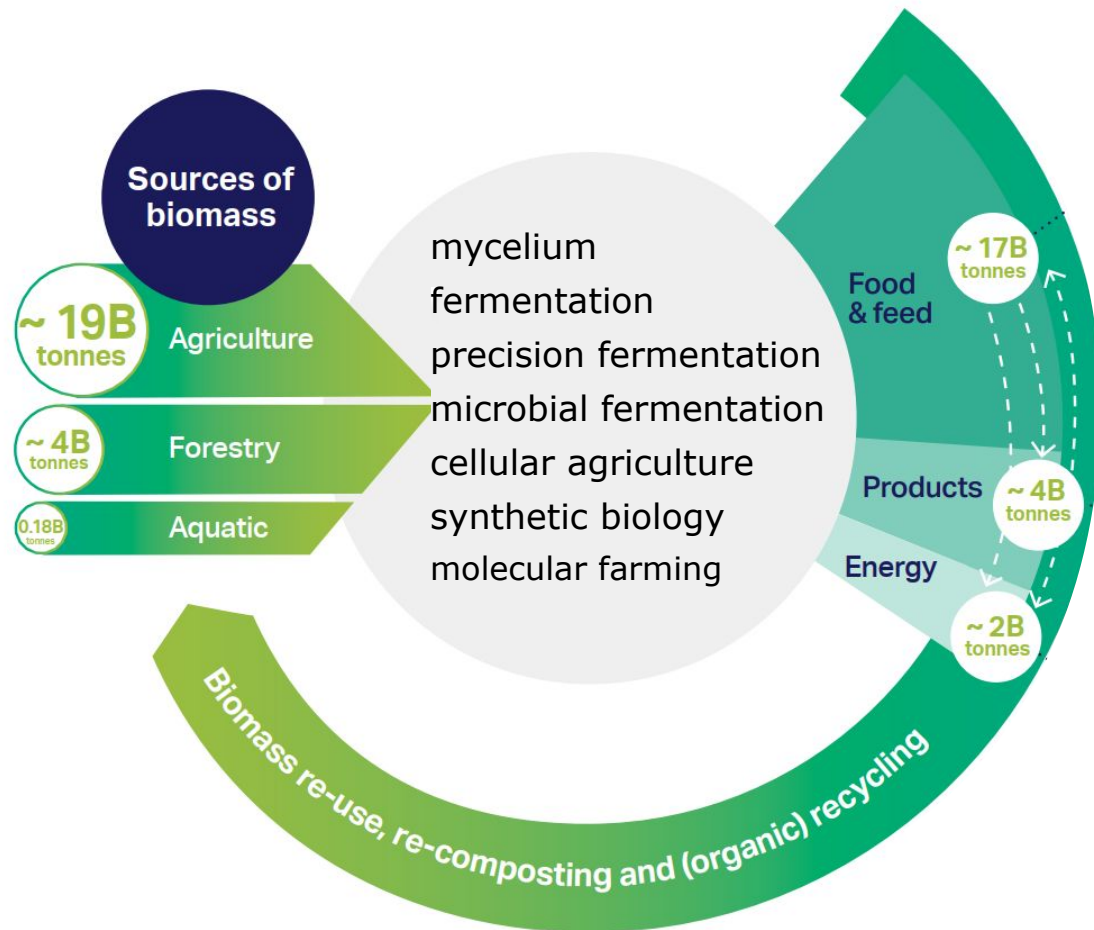
BCG

November 2020



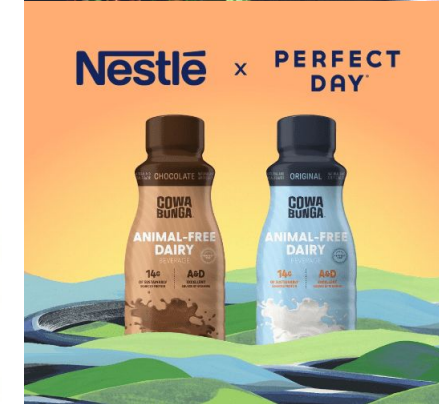
Source: Eurostat; Freedonia; OECD; WU Vienna; WBCSD; BCG analysis; Member companies.

Biotechnologies are the new frontier of food innovation, with a very large panel of promising solutions, some of them already on the market

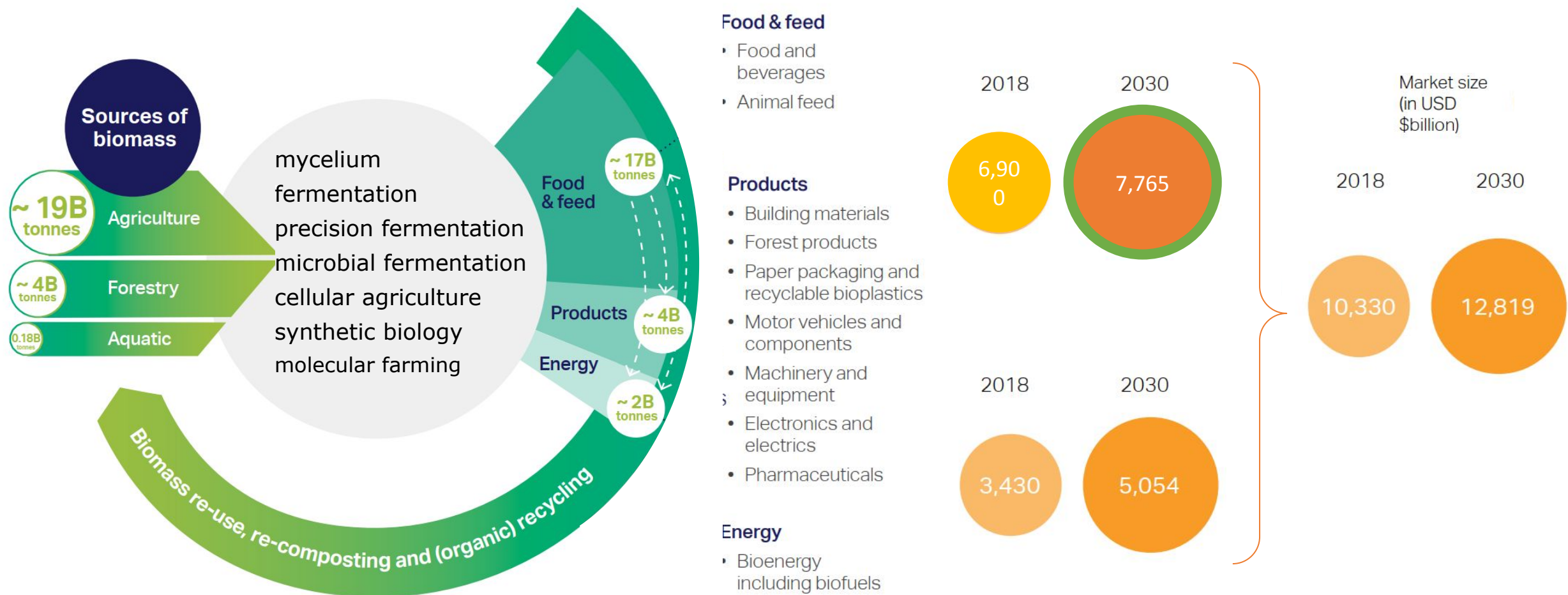


Food & feed

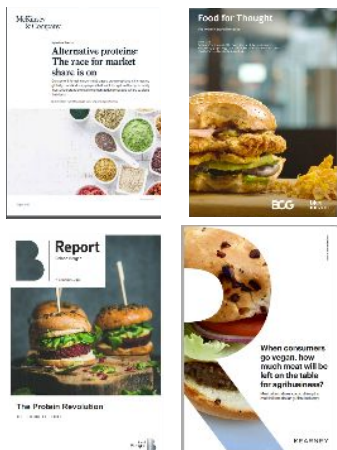
- Food and beverages
- Animal feed



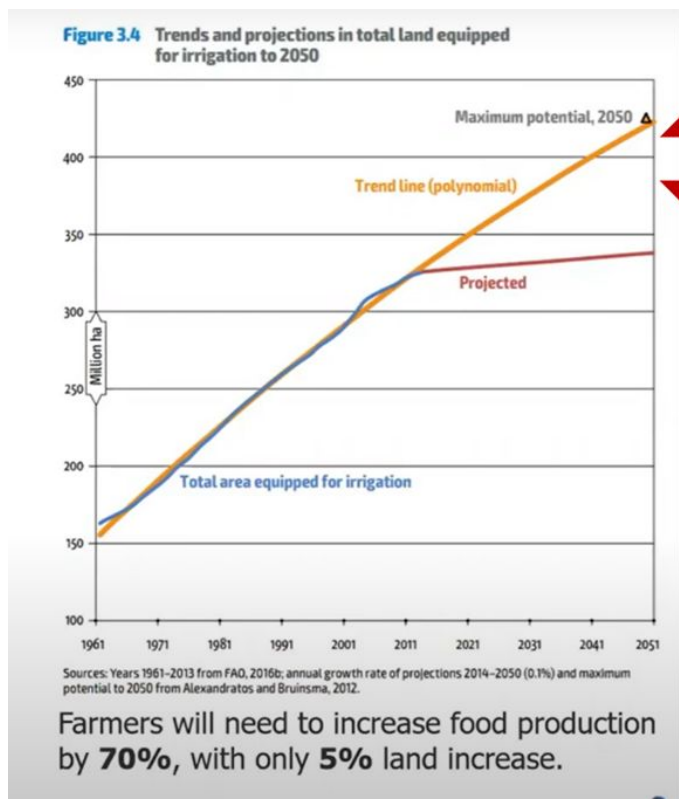
Biotechnologies are the most dynamic emerging market and food biotech shall generate at least \$7,5Tn of business by 2030



Food biotechnologies will become a geostrategic matter, as they will serve to reduce a projected protein gap and ensure the resilience of our food system

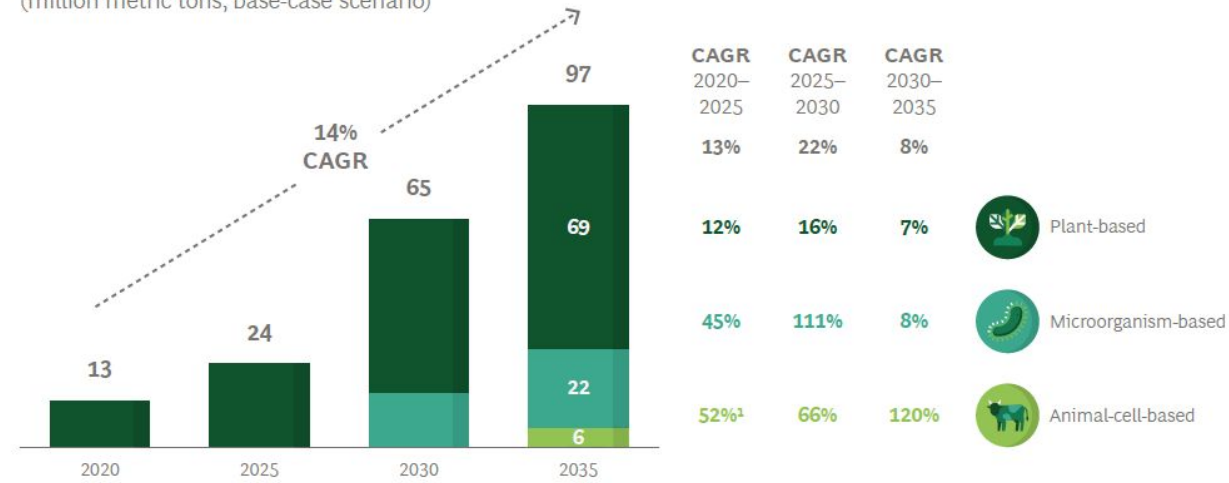


McKinsey, Roland Berger,
BCG, At Kearney
2020-2022



Alternative Protein Consumption Will Grow in Three Waves

Consumption of alternative proteins by protein source (million metric tons, base-case scenario)



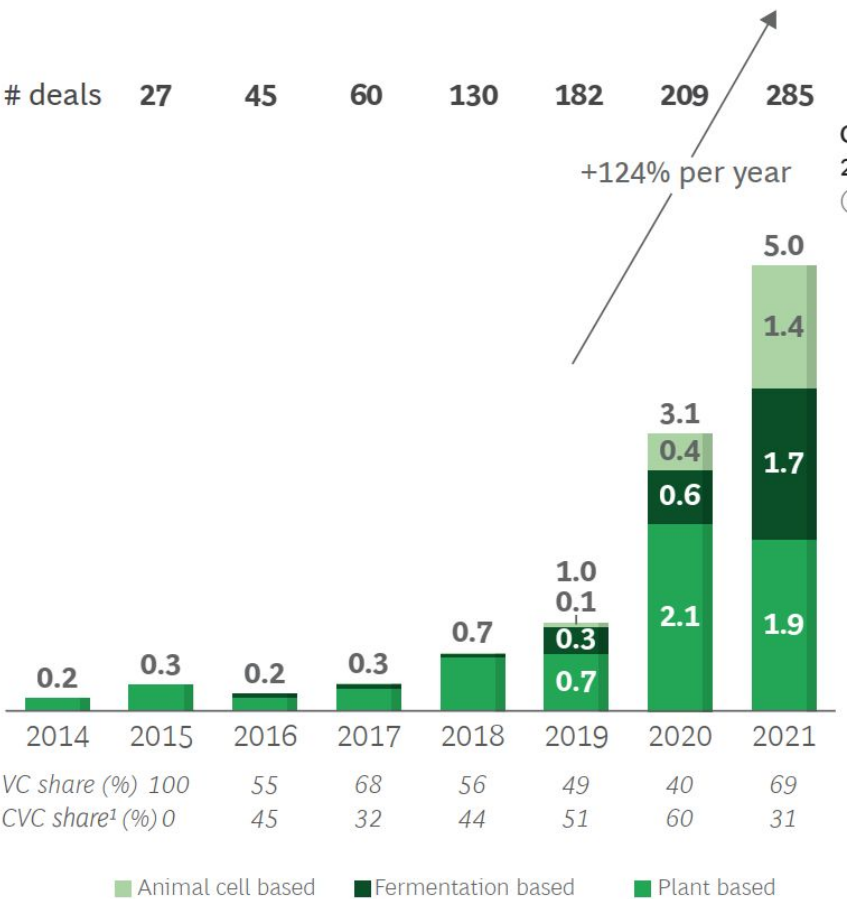
Sources: US Department of Agriculture; Euromonitor; UBS; ING; Good Food Institute; expert interviews; Blue Horizon and BCG analysis.
¹CAGR from 2022 to 2025, starting from market entry.

Food biotech is a new & burning topic of investment and Europe is already lagging behind

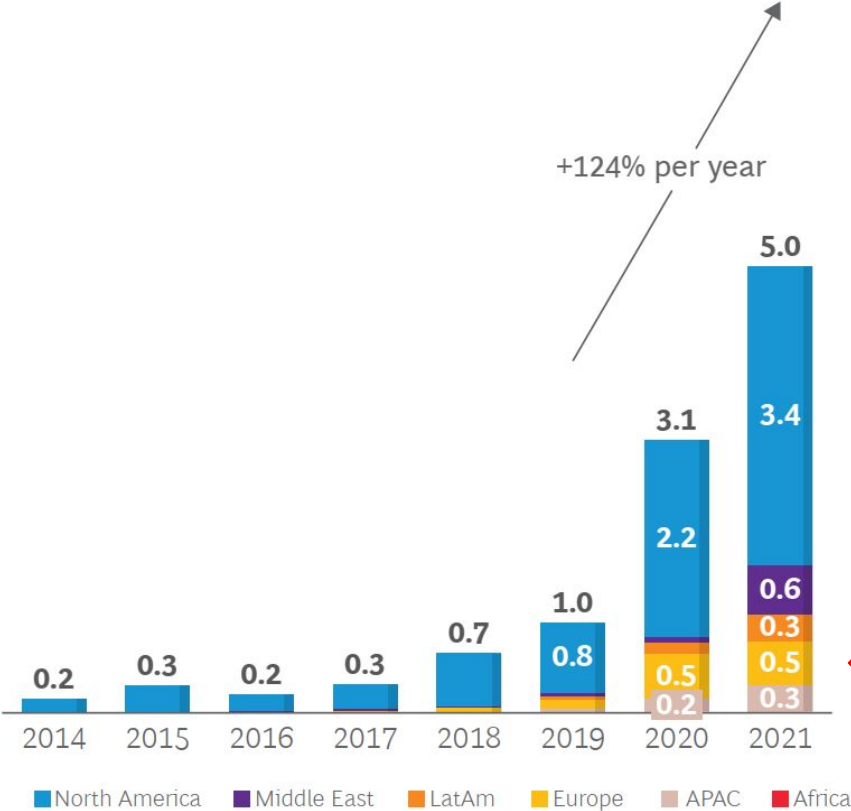


BCG & Blue Horizon
2022

VC/CVC invested capital by protein types (\$billions)



VC/CVC invested capital by regions (\$billions)



EU
share
< 10%

Sources: The Good Food Institute; Pitchbook; BCG analysis.

Every continent is rushing to set the foundation of a local competitive food biotech environment

USA

end 2022, J. Biden issued a cohesive programmatic investment plan with \$3+B

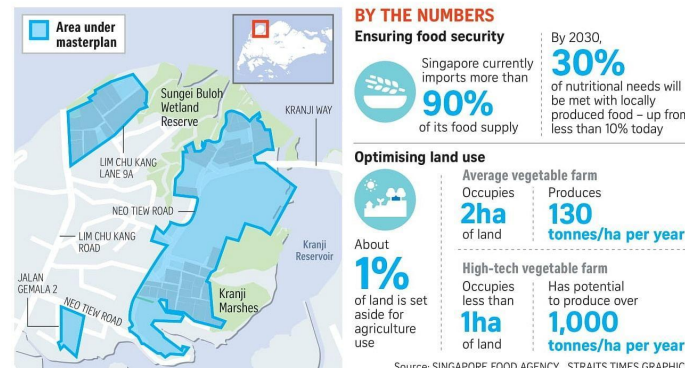


Singapore

Since 2020, Singapore is pioneering and deployed 250M\$ in its FoodStory R&D program



Plans for Singapore's food bowl



China

in May 2022, China unveiled its first Bioeconomy' 5-Year Plan, ambitioning the sector to reach \$3,3Tn by end 2025

China to boom a \$3.28-trillion bioeconomy by 2025 for better biosafety



China unveils the country's first five year plan on bioeconomy, May 10, 2022. /CFP

China unveiled the country's first five-year bioeconomy plan on Tuesday, aiming to create a 22-trillion-yuan (\$3.28-trillion) economy by the end of 2025, with focuses on healthcare for epidemic prevention and low-carbon growth.



The Netherlands & the UK are actively developing their own plans

NL

In April 2022, the Dutch National Growth Fund decided an allocation up to 450M€ to local food biotech



Rijksoverheid

Nationaal Groeifonds

Dutch government agrees to invest € 60 million toward building full cellular agriculture ecosystem

This financial impulse represents a first step towards funding a larger growth plan proposing to invest € 252 - € 382 mln in cellular agriculture, specifically stimulating cellular agriculture education, academic research, publicly accessible scale-up facilities, societal integration (including farmers and consumers) and innovation. The



UK

In April 2023, UKRI created the national center of cellular agriculture at Uni Bath



University of Bath to lead £12M project on revolutionising food production

The EPSRC-funded Cellular Agriculture Manufacturing Hub will develop new approaches to making food products.

In Dec 2023, the UK Government announced a 10-y. food biotech investment plan with £2B



Policy paper

National vision for engineering biology

Published 5 December 2023

World-leading R&D: We will target public investment towards world-class R&D on the critical challenges and foundational research that will enable innovation breakthroughs and the creation of new products. **We will invest £2 billion over the next 10 years in engineering biology.**

Europe has a long term and efficient plan to invest in biotechnologies

2014-2020



2021-2027



142 projects



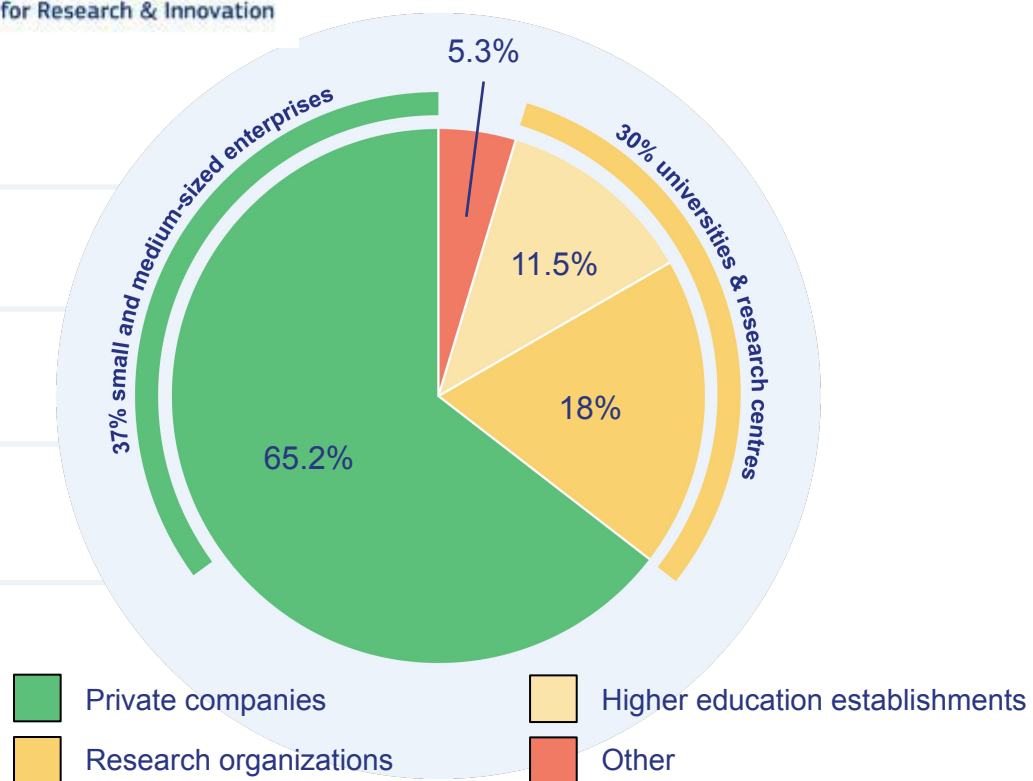
1,055 beneficiaries



€822 million BBI JU funding



39 countries



Circular Bio-based Europe Joint Undertaking

CBE JU is a €2 billion partnership between the **European Union** and the **Bio-based Industries Consortium (BIC)** that funds projects advancing competitive circular bio-based industries under Horizon Europe, the EU's research and innovation programme. CBE JU is the legal and universal successor of BBI JU.

Europe has a long term and efficient plan to invest in biotechnologies, but food (as an outcome) is out of scope



Circular Bio-based Europe Joint Undertaking

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3.5 Scope of activities

The industrial sectors that convert bio-based feedstock into materials and products that are used by other industries or by final consumers, cut across many traditional industrial sectors²³. The partnership will include all the economic and industrial sectors of the bioeconomy, therefore those that use biological resources and processes to produce food, feed, bio-based products, energy, and services. However, because the challenges for bio-based innovation in these sectors are quite broad and different, it was agreed by the partners that the scope of the partnership will focus on the production of bio-based chemicals, materials and products **other than biofuels and bioenergy, food and feed** (food and feed ingredients and soil nutrients are in the scope), pharmaceuticals and medical devices.

Food biotech ecosystems are emerging everywhere but neither Europe, nor EIT Food are really prepared



No region or country has all the solutions to date

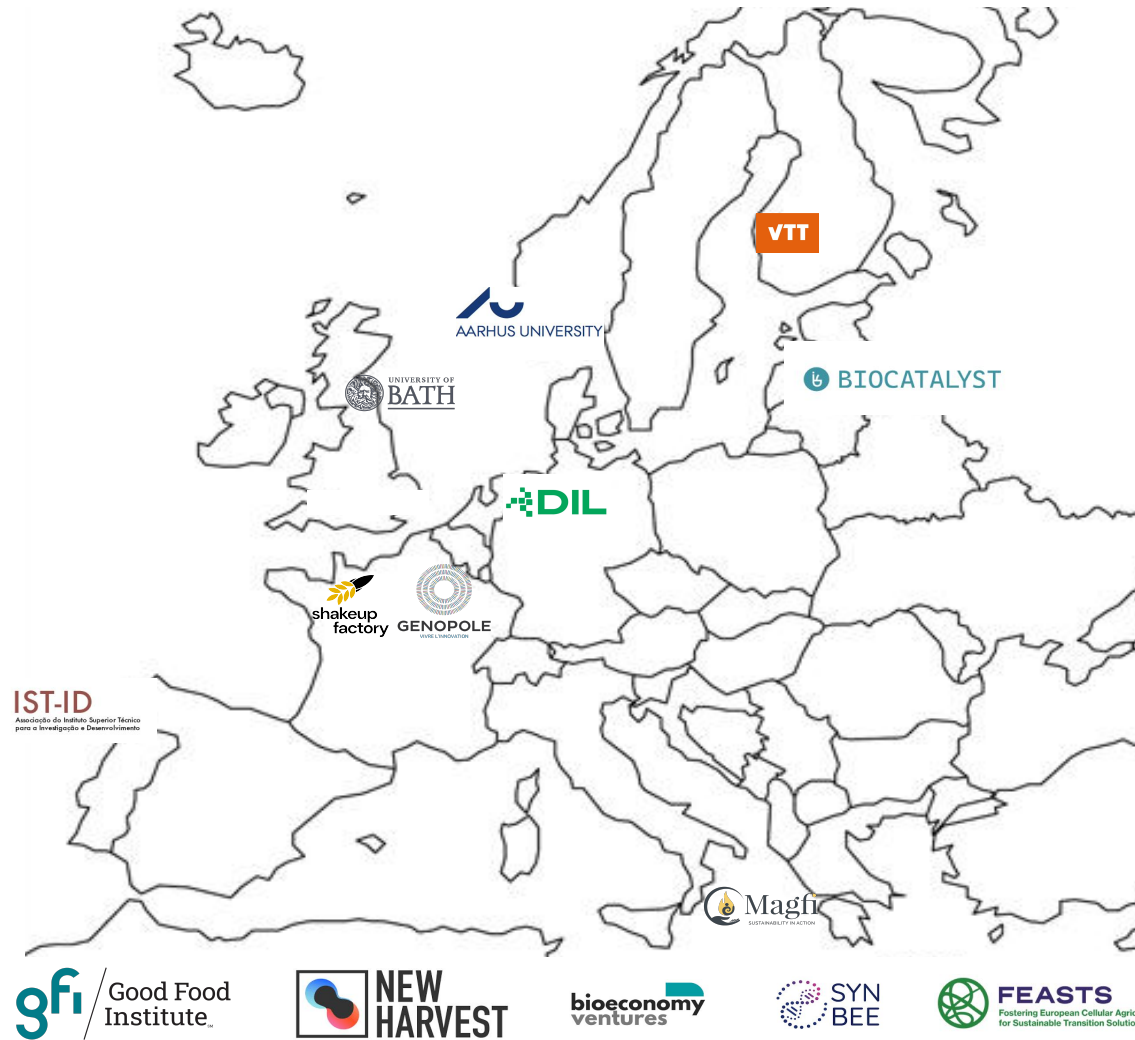
We analysed all existing initiatives to inform our powerful approach



Geography	Europe	UK	NL	Israel	USA	Singapore	APAC	Japan
Ecosystem	++	+++	++	++	+++	+++	++	++
Education	+	+++	++	+++	+++	+	+	+
Knowledge / R&I	++	+++	+++	+++	+++	+++	+	+
Consumers	++	++	+++	++	++	+++	++	
Facilities	+++	+++	++	++	+++	+++	++	+
Support	+	++	+	+++	++	+++	+++	+++
Funding	€ 2B	£ 2B	up to 450M€	120M€ to date	\$ 2+1B	250M€ to date	25M€ to date	
Scope	all biotechs but food	food biotech	Cell Ag	food biotech	all biotechs incl. food	food biotech	food biotech	Cell Ag

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ECOSYSTEM



KNOWLEDGE



EDUCATION



CONSUMERS



SUPPORT



FACILITIES



FUNDING



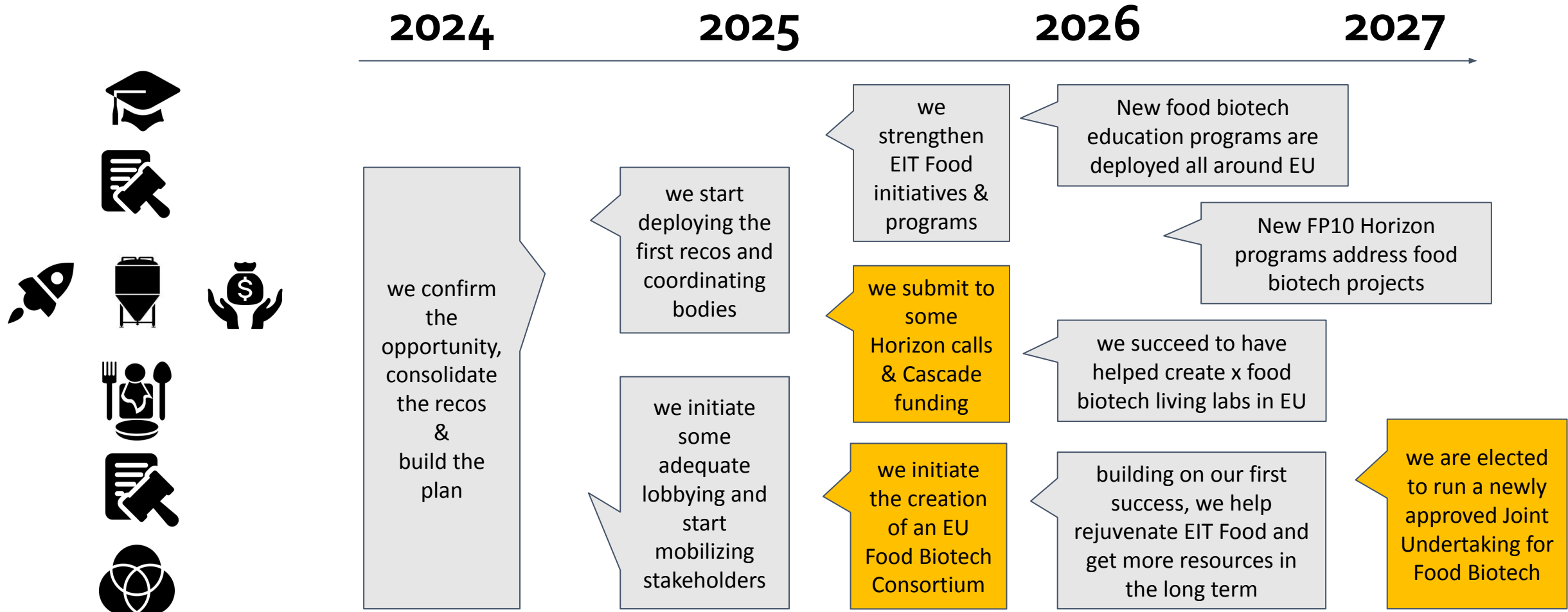
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We want to make Europe a food biotech leader
with EIT Food



Europe Food BioFutures

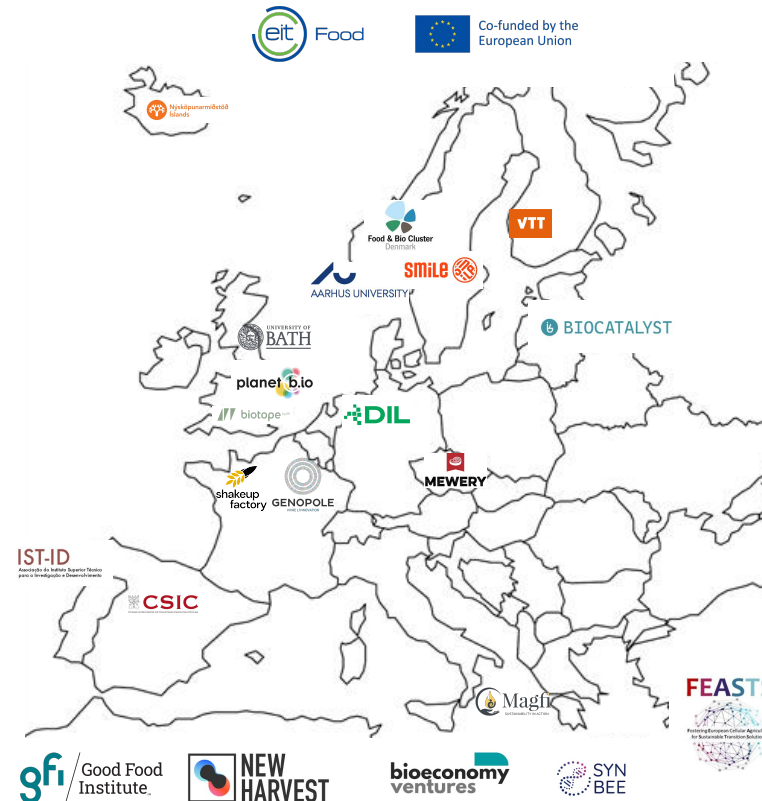
We build **the roadmap to make Europe a food biotech leader**
with EIT Food



**We want to gather together and support
the future EU Food Biotech Champions**

Europe Food BioFutures

We want to **create**
The EU Food Biotech Consortium



startups

organizations

facilities

corporates

investors



2. KNOWLEDGE



1. EDUCATION



5. ENTREPRENEURSHIP



3. FACILITIES



4. CONSUMERS



6. FUNDING

Europe Food BioFutures

Building the most powerful consortium of leading actors
to make **Europe a food biotech leader**
with EIT Food



academia - research centers - accelerators - Horizon projects

organisations - startups - facilities - corporations - investment funds

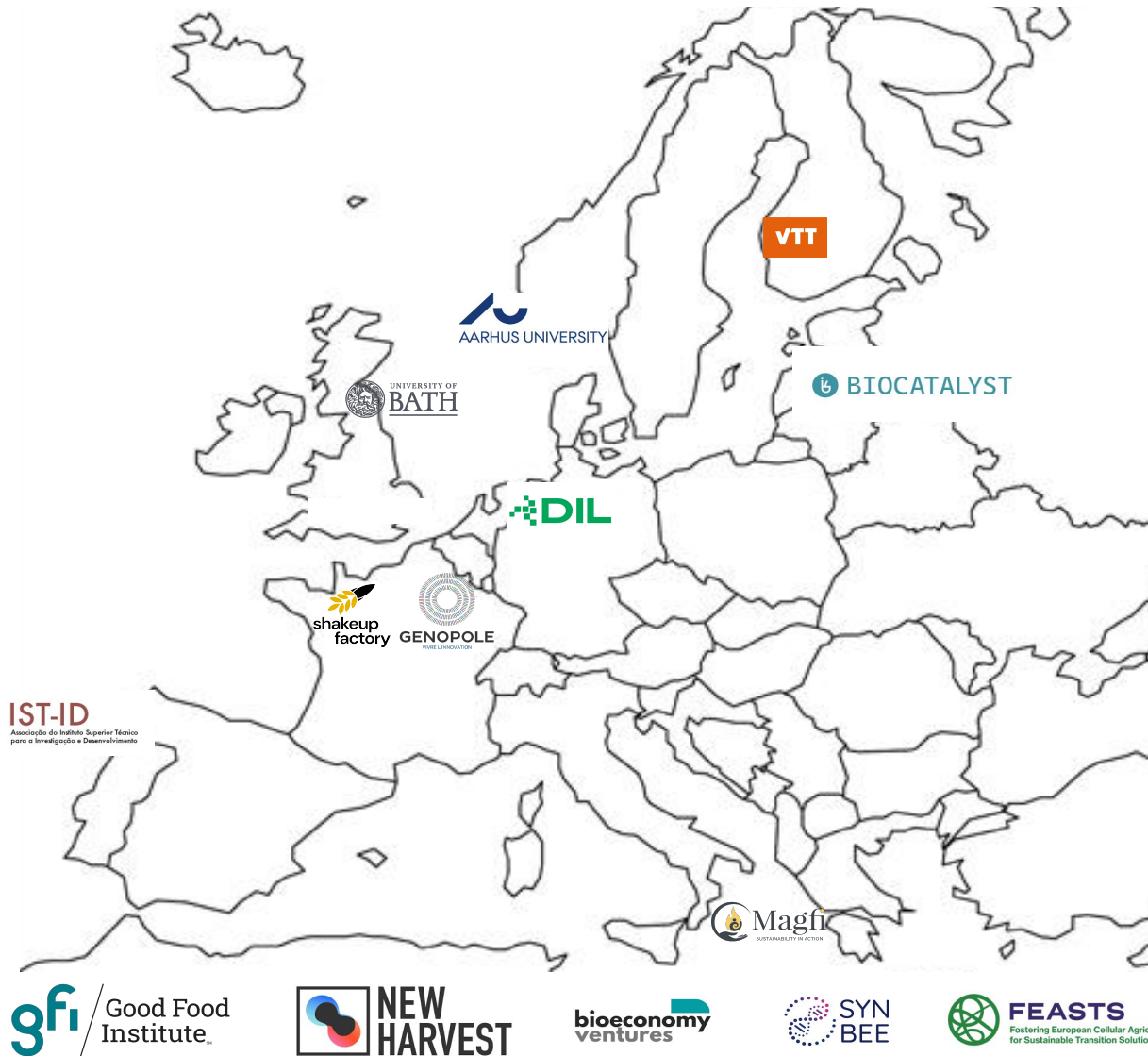


Do you want to learn more or to join us ?

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