Alternative protein: all pillars | Region: Europe | September 2025

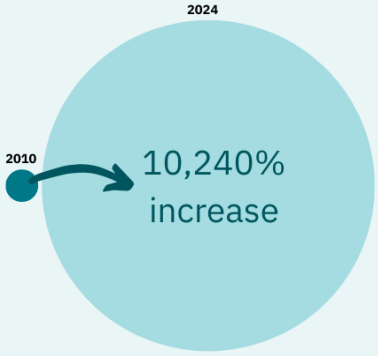
2020 to 2024

Alternative protein Research and Innovation funding landscape analysis

State of the European Alternative Protein Research Ecosystem

gfi Europe

Headline statistics

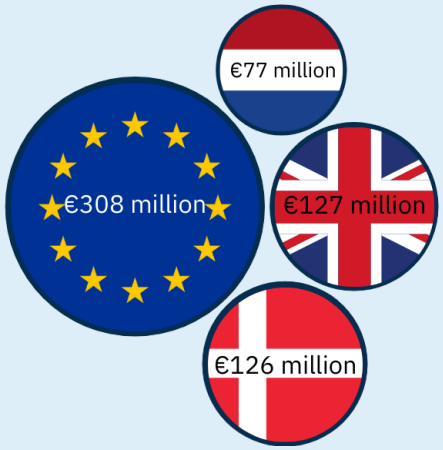


Alternative protein research is undergoing tremendous growth in Europe, with an **average year-on-year growth in funding over five years of 44%**.

Since 2020, when funding for alternative proteins across Europe totalled just over €80 million, the field has seen rapid expansion, to over €320 million allocated in 2024, a **296% increase**.

The top three countries leading the way in investing in alternative protein R&I in Europe between 2020-2024, are the UK (€127 million), Denmark (€126 million) and the Netherlands (€77 million). With €308 million invested since 2020, the European Commission is the highest-funding jurisdiction.

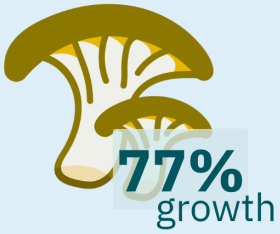
On a per capita basis, some smaller countries such as Denmark, Norway and Sweden significantly outperform their larger neighbours.



Funding has come from more than **67 independent funding bodies**, representing 22 countries across Europe, as well as global funders.

12 of these funders made their first investment into the field in 2024, suggesting a growing number of funders are exploring the area.

Plant-based protein research has received the most funding over the last five years (€444 million), but **fermentation research was the best-funded pillar in 2024 (with over €100 million awarded in that year alone)** and has a higher rate of year-on-year growth over the entire period (77% compared to 27% for plant-based). Cultivated meat remains some way behind, with just €92 million of funding so far.



Introduction

Why alternative proteins?

Diversifying Europe's protein supply to include plant-based, cultivated and fermentation-made meat has enormous potential to help address some of Europe's most pressing challenges. In an increasingly uncertain world, alternative proteins can strengthen the resilience of agrifood supply chains and create hundreds of thousands of jobs. Even a modest diversification of protein production could enable 21% of European domestic farmland to transition to agroecological farming, or be used to boost domestic food production. Compared with conventional meat production, alternative proteins could reduce climate emissions by up to 92%, while public investment in the sector could add €65 billion to the economy in Germany alone.

However, barriers to acceptance for alternative proteins remain: European consumers consistently report taste and price as the main barriers to consuming more plant-based and fermentation-made meat and seafood. This is reflected in consumers' purchasing patterns: in markets across Europe, growth in the plant-based sector is currently being driven by more affordable products, although taste remains another major hurdle. Alternative proteins will require significant investment in research and development to help them overcome technological hurdles, compete on taste, healthiness and price, and deliver on their full potential.

Why does public funding matter, and what role can Europe play?

Globally, investment in all research and innovation (R&I) has been climbing over the past 20 years, but that growth has been largely driven by Asia, and China in particular. The European share of global R&I investment has been decreasing slowly but steadily, from 24% in 2018 to 20.5% in 2023. European investment as a percentage of GDP has been relatively stable over the last decade, but in that same period, China has increased both absolute and relative investment and, as a result, has now overtaken Europe to represent 26% of global investment.

This global state of play has triggered concern in Europe about insufficient public investment in R&I from member states. Economic growth, food security and sustainability are all unlocked through greater public investment in R&I, as it plays a key role in attracting private capital through de-risking technologies.

The importance of public and nonprofit R&I funding in unlocking private investment is particularly true in Europe, where private investment availability has historically trailed regions such as the United States. When done well, however, European funding instruments can be global trailblazers. For example, the flagship public-private partnership, Circular Bio-based

Europe Joint Undertaking (CBE JU), reported that in 2024, for every €1 invested, they unlocked €3.50 in private funding.

Public funding can also ensure a level playing field by making critical discoveries and technological breakthroughs available to the entire research community through open-access publishing requirements. Public funding can also help answer questions that no single company is incentivised to answer, such as field-wide health, sustainability and safety questions.

While governments globally are increasing their investments in alternative proteins (as reported in GFI's annual State of Global Policy report), there remains a significant unmet need. The Global Innovation Needs Assessment for alternative proteins, funded by the ClimateWorks Foundation and the UK's Foreign Commonwealth Development Office (FCDO) in 2021, estimated that an average annual investment of $4.4 billion in the years 2022-2050 would be required to ensure the sector matures and delivers its potential societal benefits. A proportional contribution from Europe would mean an average of €760 million per year of public funding.[1]

What do we hope to achieve with this analysis?

This report is intended to highlight trends in the alternative protein R&I landscape, and by doing so, provide funders, research institutions and researchers across Europe with data-driven insights that can guide more effective investment and research targeted towards the most pressing technological bottlenecks.

In 2024, GFI Europe published our first analysis describing the alternative protein R&I landscape from 2010 to April 2024. Using publicly available data for public and nonprofit funding for alternative proteins awarded over the full period of January 2020-December 2024 inclusive, compiled in GFI's global research grants tracker, this report represents an updated dataset for alternative protein funding in these years. It also reflects an improved methodology for analysing these data. As such, the figures in this report supersede those in the 2024 publication.

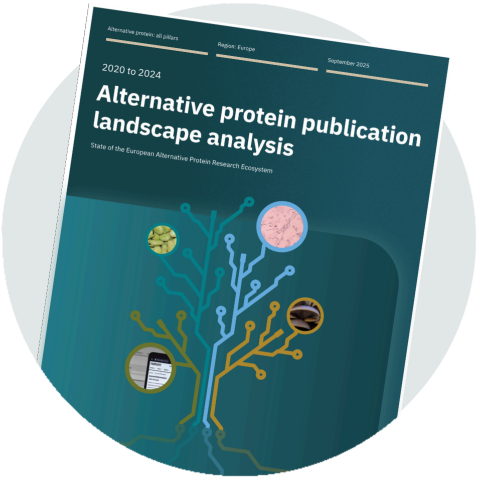
For a full list of countries covered by this report, the full methodology, and the limitations of the analysis, please see the Appendix.

Accompanying reports, the State of the European Research Ecosystem: Publishing landscape analysis, and the Patent landscape analysis, which analyse European research publications patent filings over a similar period to this report, offer a complementary lens and highlight the early impacts of this funding. We would expect the investment shown here to come to fruition, yielding impacts across the research landscape, over the coming years.

[1] This figure is based on Europe contributing a proportionate share of the global investment, using an estimate of Europe's global share of R&I of 20.5%, in 2023.

Dive into the alternative protein research ecosystem

This report is part of our *State of the European Alternative Protein Research Ecosystem* series, which explores the current research and innovation landscape for alternative proteins in Europe and features in-depth analyses of public and nonprofit funding, academic publications, and patents.



Download the publications analysis

Download the patent analysis

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01 What are alternative proteins?

Alternative proteins are meat, seafood, eggs and dairy made using plant-based ingredients, cellular agriculture or fermentation, reducing reliance on intensive animal agriculture and building a more resilient food system. Alternative proteins fall into the following production pillars:

Plant-based

Produced directly from plants but look, taste, and cook like conventional animal products. For the purpose of this report, *traditional fermentation* techniques which use yeast or other microorganisms to modify the flavour, texture, or other characteristics of plant proteins will be considered within the plant-based pillar.

Fermentation

Used in two primary ways: *Biomass fermentation* leverages the fast growth and high-protein content of microorganisms to produce large quantities of protein. *Precision fermentation* uses microbial hosts to produce specific functional ingredients which are important for the manufacture of alternative protein end products.

Cultivated meat

Foods like chicken, pork, beef, and fish that are produced by cultivating animal cells directly, thus replicating the sensory and nutritional profiles of conventional meat and seafood.

Cross-cutting

Research that applies to more than one production pillar. A common example of a cross-cutting research area is cellular agriculture, which often refers to the combined approaches of precision fermentation and cultivated meat development, sometimes in mutually supportive ways. Research which seeks to understand an aspect of the entirety of the alternative protein field, such as a social science question, is also included here.

Image credit (top to bottom): Juicy Marbles, Planted, Onego Bio, Ivy Farm.

Alternative protein research categories

The funding data analysed in this report have been categorised into the following research categories. These have been updated and clarified from the previous year's report, and now include downstream sectors such as environmental impacts. These are used throughout the report, according to the definitions found below (Table 1). Projects that aimed at outcomes across more than one category were classified as "Multiple". For more details, please see the Methodology in the Appendix section.

Table 1. Research categories analysed for this report.

Technology sector	Description	Production pillar(s) that this applies to
Host strain development	Screening and optimisation of novel strains to identify the most efficient pathways for producing targets or modifying substrates.	Fermentation Plant-based
Cell line development	Sourcing, optimising and banking new and existing cell lines to achieve faster cell growth, greater stability and stress tolerance, improved cell line performance (such as adherence and differentiation) and higher cell density in terrestrial and aquatic cell lines.	Cultivated
Target molecule selection	Target identification and validation to broaden the scope of food ingredients produced by precision fermentation.	Fermentation
Cell culture media	Reducing cell culture media costs and increasing their availability by characterising and validating novel sources of growth factors, amino acids, and other media components.	Cultivated
Feedstocks	Innovations in media, including new components, and feedstock utilisation strategies (including the use of alternative feedstocks) to achieve higher efficiency, greater scale, and reduced costs.	Fermentation
Bioprocess design	Innovations in bioreactor design, including improved efficiency, monitoring and control, and both upstream and downstream process innovations.	Fermentation Cultivated Plant-based[2]
Crop development	Breeding of crops and increased use of underutilised protein crops for higher protein yields and functionality.	Plant-based

[2]Refers to the use of traditional fermentation techniques to modulate or enhance the characteristics of plant proteins.

Ingredient optimisation	Improved protein fractionation and functionalisation to achieve higher-quality ingredients with less processing. Also covers the development of novel ingredients to augment nutritional profiles and enhance the sensory experience of alternative protein products.	Plant-based Fermentation
Scaffolding	Improved scaffolding biomaterials that support cell adherence and differentiation to allow the replication of complex animal meat structures.	Cultivated
Texturisation methods	Process innovations, including (but not limited to) novel texturisation methods such as extrusion, electrospinning, 3D printing, and enzymatic processing to match the texture of animal protein.	Plant-based Fermentation Cultivated
End product formulation	Formulation and product design and testing, including fat integration, shelf life and stability testing, evaluations of sensory quality, and nutritional assessment and fortification.	Plant-based Fermentation Cultivated
Health and nutrition	Dietary impacts of alternative proteins, including population-wide studies and systematic reviews, and *in vitro* studies on health impacts, for example, bio-availability.	Plant-based Fermentation Cultivated
Food safety and quality	Toxicological and safety assessments, regulatory improvements such as assay development or validation.	Plant-based Fermentation Cultivated
Consumer and market research	Consumer behaviour research, including nomenclature studies, purchasing intent (including retail and food environments) and market scoping and brand development.	Plant-based Fermentation Cultivated
Environmental and other impact assessments	Impact assessments including life cycle or techno-economic analyses, economic and other broader environmental impact assessments, and social/geopolitical impacts, including policy interventions.	Plant-based Fermentation Cultivated
Other	Assessing educational interventions or legal aspects other than regulatory.	Plant-based Fermentation Cultivated

What kind of funding is included in this report?

This report analyses awarded funding from public and nonprofit sources, such as research and innovation funders, and research-funding foundations to both public and private entities. We do not report funds that have been announced or committed but not yet awarded. We do not report the funding contributions *from* private entities such as companies, even as part of a

co-funded public-private project. As detailed above, this report aims to understand the impact of funding allocated for the public benefit. In addition, this information is not reliably available, and so any reported information would be incomplete.

While the figures presented are the most accurate available from public databases, funding information is less consistently published in some countries than in others. As a result, we are not able to report data from every European country. A full list of excluded countries can be found in the Appendix, alongside more information on the data availability. Funding from some others, such as the Netherlands and Belgium, is included in the analysis though the data is incomplete and therefore likely an underestimate.

Grants from research and innovation (R&I) funders can have several different primary purposes, and this is reflected in the categorisation of "research grant type". Many research grants fall into more than one of these categories, in which case they were added to both. The report excludes funding that is solely aimed at scaling up or building commercial facilities, as this falls outside of the scope of R&I.

Table 2: Types of research grant

Grant type	Description	In scope?
Research and innovation	This category includes all projects that aim to develop new technology, or create or improve products, processes, or services.	Yes
Research infrastructure	This includes equipment purchases, research facilities, and pilot labs where the purpose is aligned with advancing alternative protein research and development.	Yes
Equipment and infrastructure	Includes commercial facilities and equipment to help scale up. For instance, a grant to help build a company's first demo or commercial facility. **Grants that exclusively fell in this category are excluded from the following analysis**. These grants were not excluded in the previous year's report, so some funding figures may be different as a result. Grants of this type that also fall into a second category are still included.	No
Training and Education	Any grants that support one or more studentships (PhD or otherwise) as a primary aim of the project. This also includes projects aimed at knowledge exchange or skills transfer.	Yes
Networking	Grants primarily aimed at connecting members of the research community, including conference attendance or hosting.	Yes

02 Europe-wide trends in alternative protein funding

As predicted in last year's report, 2024 saw the highest-ever levels of public and nonprofit funding in Europe, making it the seventh year in a row of growth in R&I investment for the alternative protein sector, with a record €320 million invested.

While 2020 and 2023 also stand out as bumper years, the variation in year-to-year investment is to be expected, and with an average annual growth rate for the past five years of 44%, it is clear that the academic and innovation sector across Europe is flourishing. In 2024, the growth in funding was driven by the announcement of major research centres across Europe. In the UK, this included both the Bezos Centre for Sustainable Protein (€26 million, USD30 million) and the National Alternative Protein Innovation Centre (NAPIC) (€19 million, £16 million) were funded. In Denmark, BRIGHT, the Biotechnology Research Institute for the Green Transition, received €134 million (DKK 1.05 billion), of which approximately one-third will focus on fermentation.

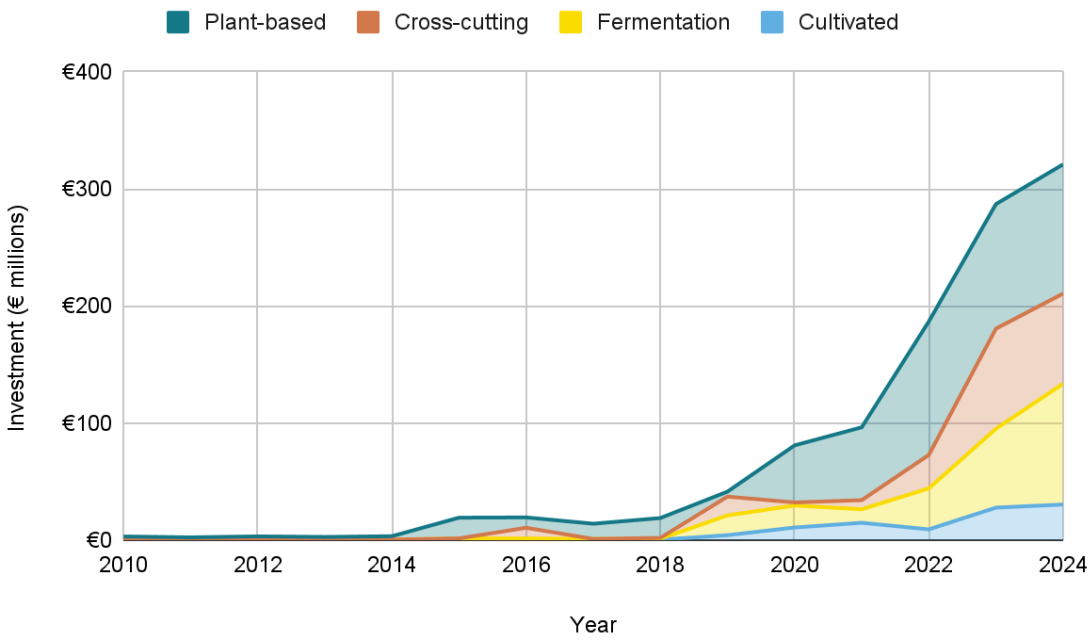


Figure 1: Investment in Europe by public and nonprofit organisations in alternative protein R&I over time, 2010-2024 inclusive. *This analysis is based on data from GFI's research grants tracker, which is a public resource. If you are aware of funding data that is missing, please let us know via europe@gfi.org or submit it directly to the tracker.*

Fermentation has been subject to an even more impressive growth rate, climbing from very low funding figures in 2018 to the best-funded pillar in 2024. With an average growth rate of 77%

year-on-year, there is clear evidence that fermentation technologies have been identified by many public and nonprofit funders as a high-potential technology for Europe. Funding for cultivated meat is also growing, albeit with significant variation in the yearly growth rate, and overall slightly slower (53% average annual growth between 2020 and 2024). Meanwhile, investment in plant-based technologies has slowed significantly, with an average growth rate across the five-year period of 27%, with the record year reached in 2022.

Investment by region

Total investment

Funding has come from throughout Europe and even from abroad: the data presented here are, for the first time, inclusive of international funders who are active in Europe. Indeed, through the establishment of the Bezos Centre for Sustainable Protein, 2024 saw the first significant investment in Europe from a non-European international funder.

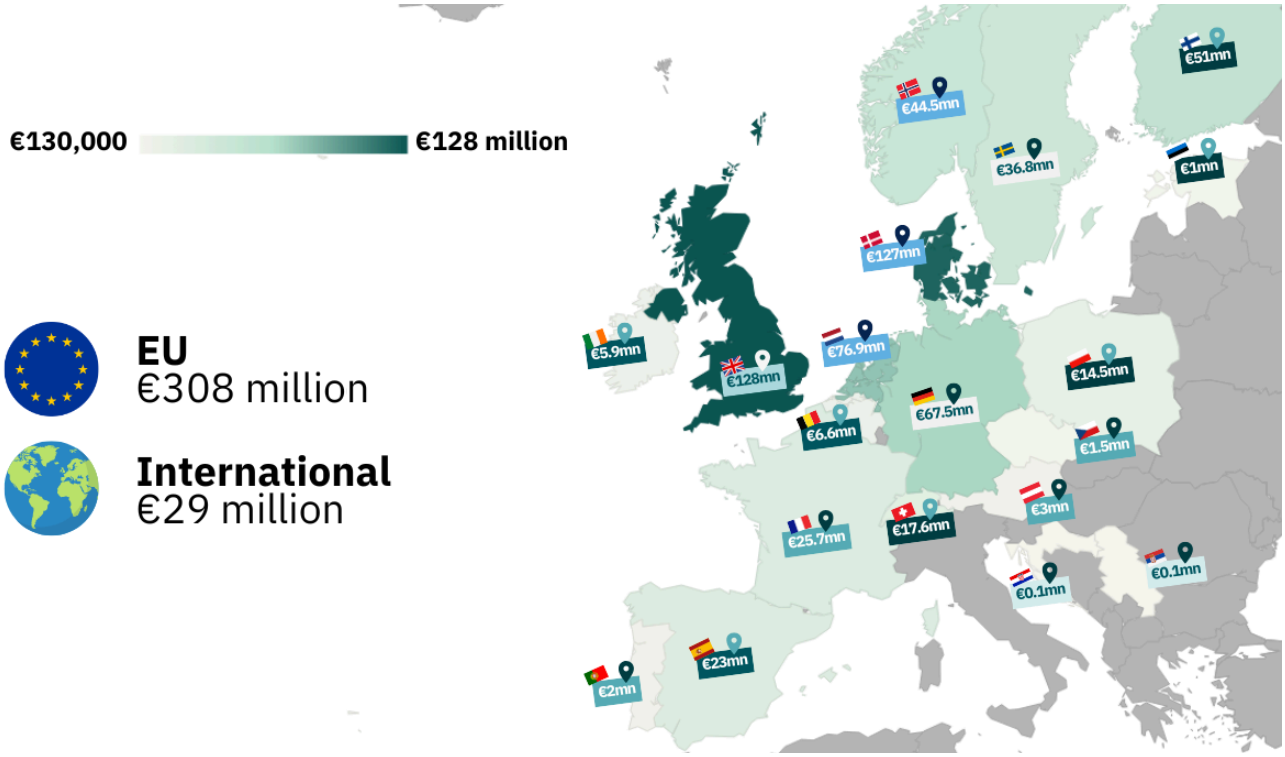


Figure 2: Regionality of public and nonprofit alternative protein R&I investment in Europe (2020-2024 inclusive), by funder jurisdiction. *Due to limitations in available data, some European countries were excluded and others may be underrepresented. See appendix for a full list of excluded countries. This analysis is based on data from GFI's publicly available research grants tracker. If you are aware of funding data that is missing, please let us know via europe@gfi.org or submit it directly to the tracker.*

The European Union is the leading source of funding in the field of alternative proteins. Its research budget is composed of contributions from member states. For the purposes of this

analysis, however, we have treated EU funding as a distinct jurisdiction. This allows a clearer assessment of the influence of EU priorities and the scale of investment made through European Commission funding programmes.

The top four countries funding alternative protein R&I in the period 2020-2024 (the UK, Denmark, the Netherlands and Germany), are also the most consistent, appearing as top funders in each individual year. While there is a gap between the UK and Denmark, and the Netherlands, Dutch funding totals are most likely an underestimate and its investment may be higher than the country's ranking indicates.

In the period 2020-2024, the Nordic countries emerged as spending above average in terms of funding both per capita and GDP, with only the Netherlands rivalling in per capita spending. Estonia and Poland, while not in the top 10 overall funders, have invested €23 and €18 per million dollars of GDP, respectively – placing them in 6th and 7th place, above Germany, France and Spain, in terms of proportional spending. This indicates a concentration of research that can be beneficial for developing regional expertise.

Table 3: Investment from the top 10 European countries or jurisdictions (excluding contributions from international funders), 2020-2024. *We are not able to report data from every European country. A full list of excluded countries can be found in the Appendix. Funding from some others, such as the Netherlands and Belgium, is likely incomplete.*

Country or jurisdiction	**Investment** (€ millions)					**Investment totals relative to country size** (€)		
	Total	Cultivated	Fermentation	Plant-based	Cross-cutting	Per capita[3]	Per dollar of GDP[4]	Per dollar of overall R&D spend[5]
EU	308	24	98	162	24	n/a	n/a	
UK	128	23	35	35	35	€2	€38	€1,243
Denmark	126	3	649	59	2	€20	€299	€11,238
Netherlands	77	13	-	3	62	€4	€69	€2,993
Germany	68	8	4	52	3	€1	€15	€2,424
Finland	51	-	11	9	31	€9	€170	€5,604
Norway	45	-	9	27	9	€8	€75	€5,377
Sweden	37	0.2	3	33	1	€3	€62	€1,695

[3] Population estimates sourced from https://en.wikipedia.org/wiki/List_of_countries_and_dependencies_by_population

[4] 2023 GDP sourced from https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?most_recent_value_desc=true&year_high_desc=true

[5] Annual R&D per country based on 2023 figures, sourced from https://www.oecd.org/en/data/indicators/gross-domestic-spending-on-r-d.html?oecdcontrol-e3f433c5d8-var8=USD_PPP

France	26	-	-	26	-	€0	€8	€325
Spain	23	7	2	7	7	€0	€15	€830

Investment by pillar

Plant-based research continues to lead in total investment Europe-wide, followed by fermentation and then cross-cutting projects (Figure 3). Cross-cutting research is most likely to include projects addressing all three pillars. Cellular agriculture projects, which address both fermentation and cultivated meat, make up slightly less than half of the cross-cutting investment. Traditional fermentation, which is categorised under plant-based, makes up 22% of the total investment in this pillar.

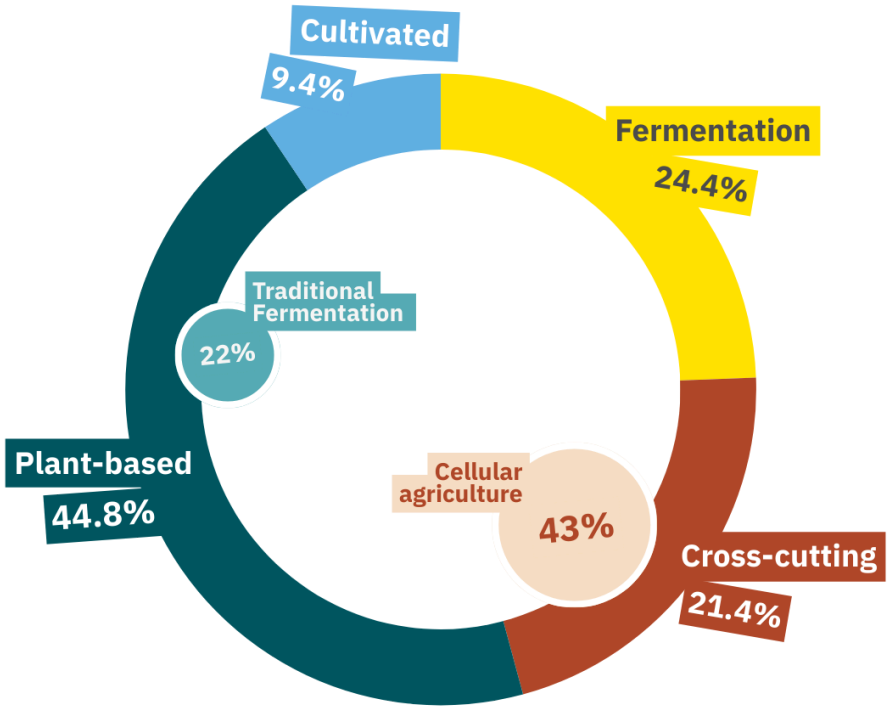


Figure 3: European public and nonprofit R&I investment, broken down by the production pillar of each grant, 2020-2024 inclusive.

Figure 4 demonstrates the specialisation of funders in certain jurisdictions towards specific alternative protein pillars. While Germany and the EU have invested heavily in plant-based, for instance, the UK and the Netherlands have invested heavily in cellular agriculture (part of "cross-cutting"), fermentation and cultivated meat. Denmark, meanwhile, is in the top three jurisdictions for both plant-based and fermentation. While some of this specialisation is driven by the underlying expertise in the country, the explicit push factors of national funders and policy plans are apparent.

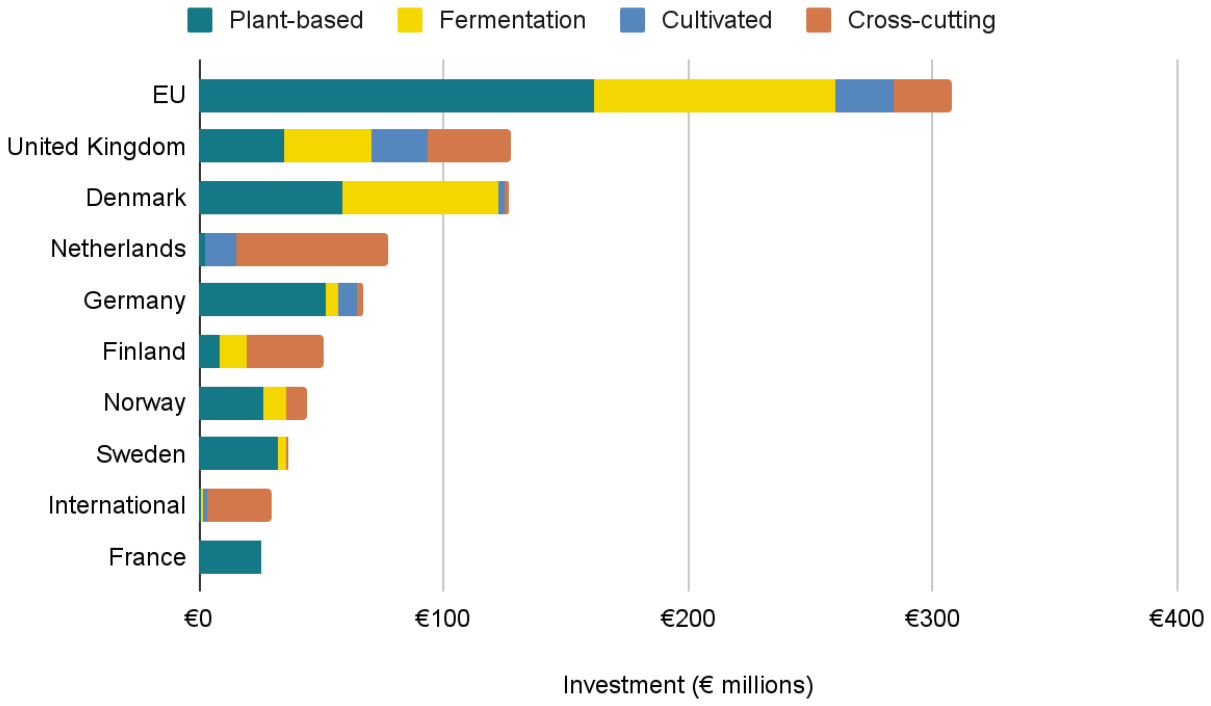


Figure 4: Public and nonprofit investment in Europe into the different alternative protein pillars for the top 10 countries or jurisdictions of funder, 2020-2024 inclusive. International refers to the European investment of funders based outside Europe. *We are not able to report data from every European country and some countries may be underrepresented due to the availability of data. A full list of excluded countries can be found in the Appendix. This analysis is based on data from GFI's research grants tracker, which is a public resource. If you are aware of funding data that is missing, please let us know via europe@gfi.org or submit it directly to the tracker.*

The top funders across the pillars (Table 4) reveal that some major funders drive alternative proteins research across Europe. The European Commission, UK Research and Innovation (UKRI) and the Novo Nordisk Foundation (NNF) are each active in at least two of the three pillars. Some funders are new additions since our previous report, including funders from Poland and Czechia, which are included in the top funders for cultivated and fermentation, respectively.

Table 4: Top 10 funders across each alternative protein pillar, 2020-2024 inclusive. *Acronyms: Austrian Research Promotion Agency (FFG), Center for Industrial Technological Development, Spain (CDTI), Circular Bio-based Europe Joint Undertaking (CBE JU), Dutch Research Council (NWO),*

Flanders Innovation & Entrepreneurship (VLAIO), Foundation for Research Levy on Agricultural Products (FFL), French National Research Agency (ANR), German Federal Ministry of Economic Affairs and Energy (BMWE), German Federal Ministry of Food, Agriculture and Regional Identity (BMLEH), German Federal Ministry of Research, Technology & Space (BMFTR), National Centre for Research and Development, Poland (NCBR), Netherlands Enterprise Agency (RVO), Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (FORMAS), UK Research and Innovation (UKRI)

Rank	Overall	Plant-based	Fermentation	Cultivated	Cross-cutting
1	European Commission	European Commission	European Commission	UKRI	Dutch National Growth Fund
2	UKRI	Novo Nordisk Foundation	Novo Nordisk Foundation	European Commission	UKRI
3	Novo Nordisk Foundation	UKRI	UKRI	RVO	Business Finland
4	Dutch National Growth Fund	BMLEH	CBE JU	BMLEH	Bezos Earth Fund
5	Business Finland	Research Council of Norway	Business Finland	CDTI	European Commission
6	Research Council of Norway	FORMAS	Research Council of Norway	NWO	Department of Climate Action, Food and Rural Agenda of the Generalitat of Catalonia
7	BMLEH	BpiFrance	FFG	NCBR	FFL
8	CBE JU	BMWE	BMLEH	VLAIO	CBE JU
9	FORMAS	CBE JU	State Research Agency (Spain)	Novo Nordisk Foundation	Research Council of Norway
10	Bezos Earth Fund	ANR	BMFTR	BMFTR	BMFTR

Investment by end product focus

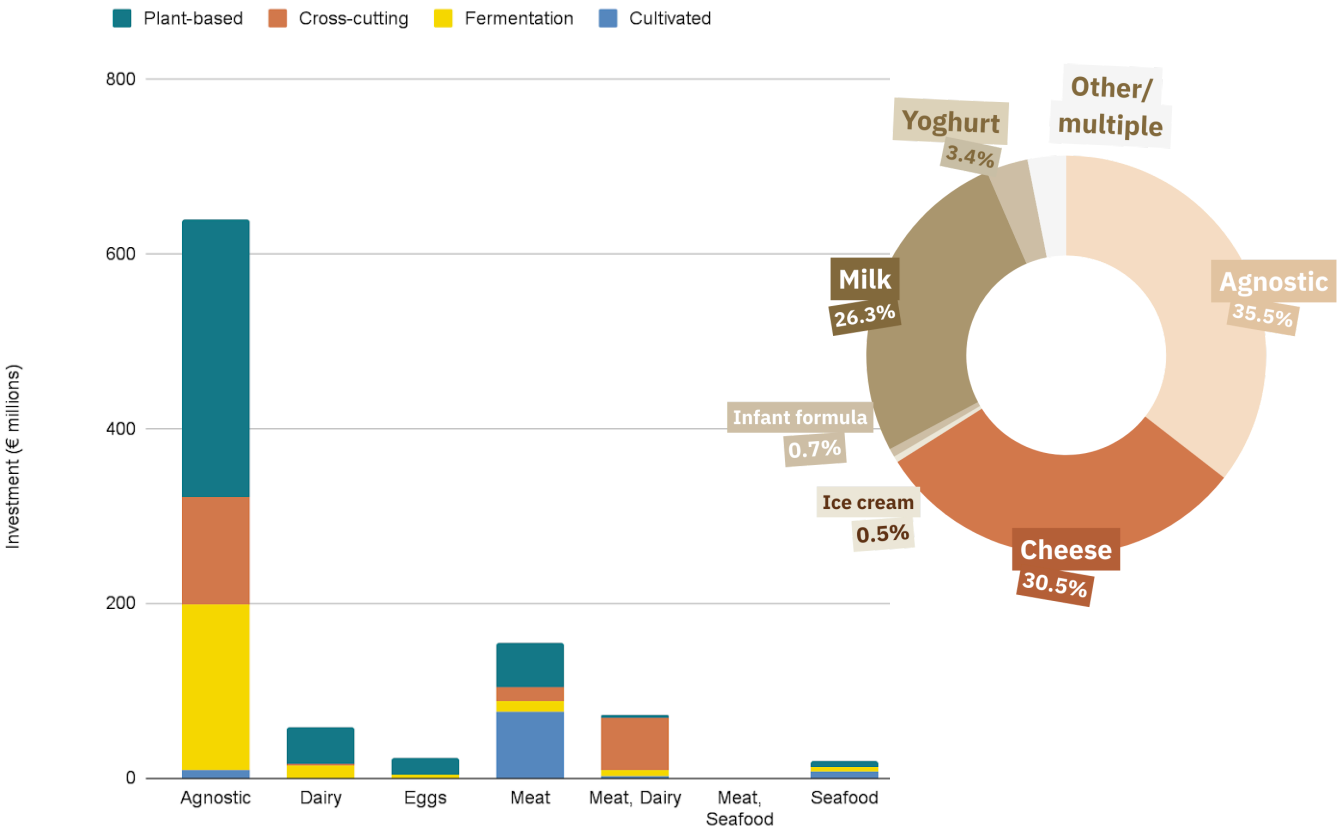


Figure 5: European public and nonprofit R&I investment, broken down by the end product focus of each grant where known, with a spotlight on dairy products, 2020-2024 inclusive.

A majority of the research occurring in Europe (67%) is agnostic as to end product, meaning a particular end product is not specified in the title or abstract of the grant. This includes many grants where the aim is to develop an ingredient, such as a protein powder, where the formulation of an end product is not in scope. While the agnostic approach is appropriate for some early-stage ingredient and process development, a clear use-case and hence the identification of technical requirements (such as colour, functionality and taste of a protein powder) from the outset can improve the translational potential of the research. While both of these approaches are necessary, this analysis shows an imbalance in the current funding available in Europe.

Research within some pillars is more likely to be agnostic than others, however. Only 9% of cultivated research was agnostic, compared to 81% of fermentation research. Meat was the most common end product across all three pillars, followed by dairy.

Research focusing on eggs (which makes up less than 3% of total research funding) was almost four times as likely to be plant-based than fermentation (80% vs 20%), and similarly for dairy (76% vs 20%, with the remainder cultivated). Most dairy research was not specific about the end product, but of the grants that did specify, cheese and milk were the most common end products (15% and 13% of total dairy investment). Very little research funding has gone into products such as spreads, yoghurt, and cream. GFI Europe's analysis of 2024 retail sales data from across Europe highlights cheese and yoghurt as younger but growing markets in many countries, suggesting this may be a missed opportunity.

Only 2% of all research targeted seafood as an end product, an underrepresentation that is reflected in the commercialisation status of seafood alternatives in Europe. Our recent patent analysis found that just 1% of alternative protein patent families in Europe relate to fish or seafood.

Spotlight on food safety and quality

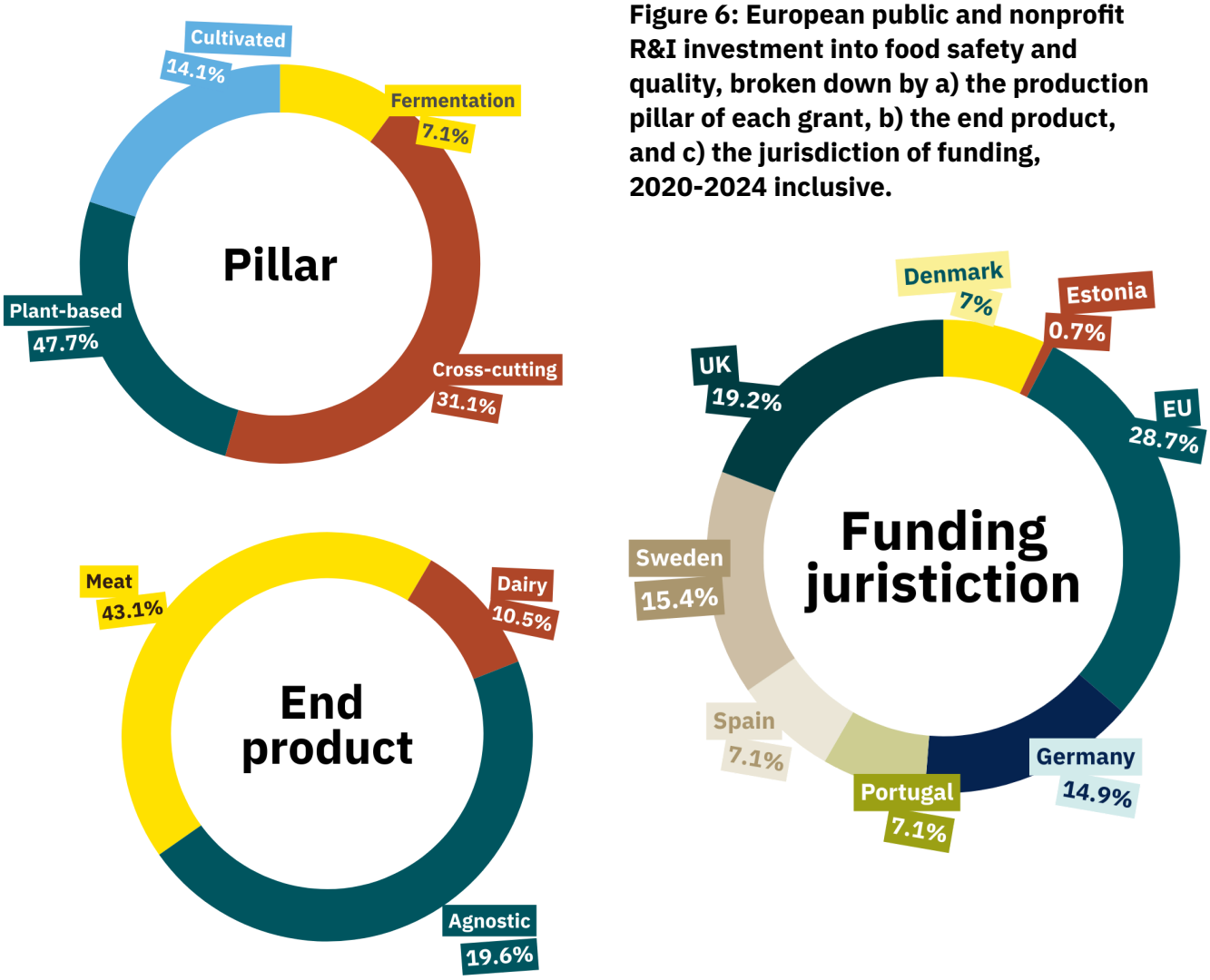


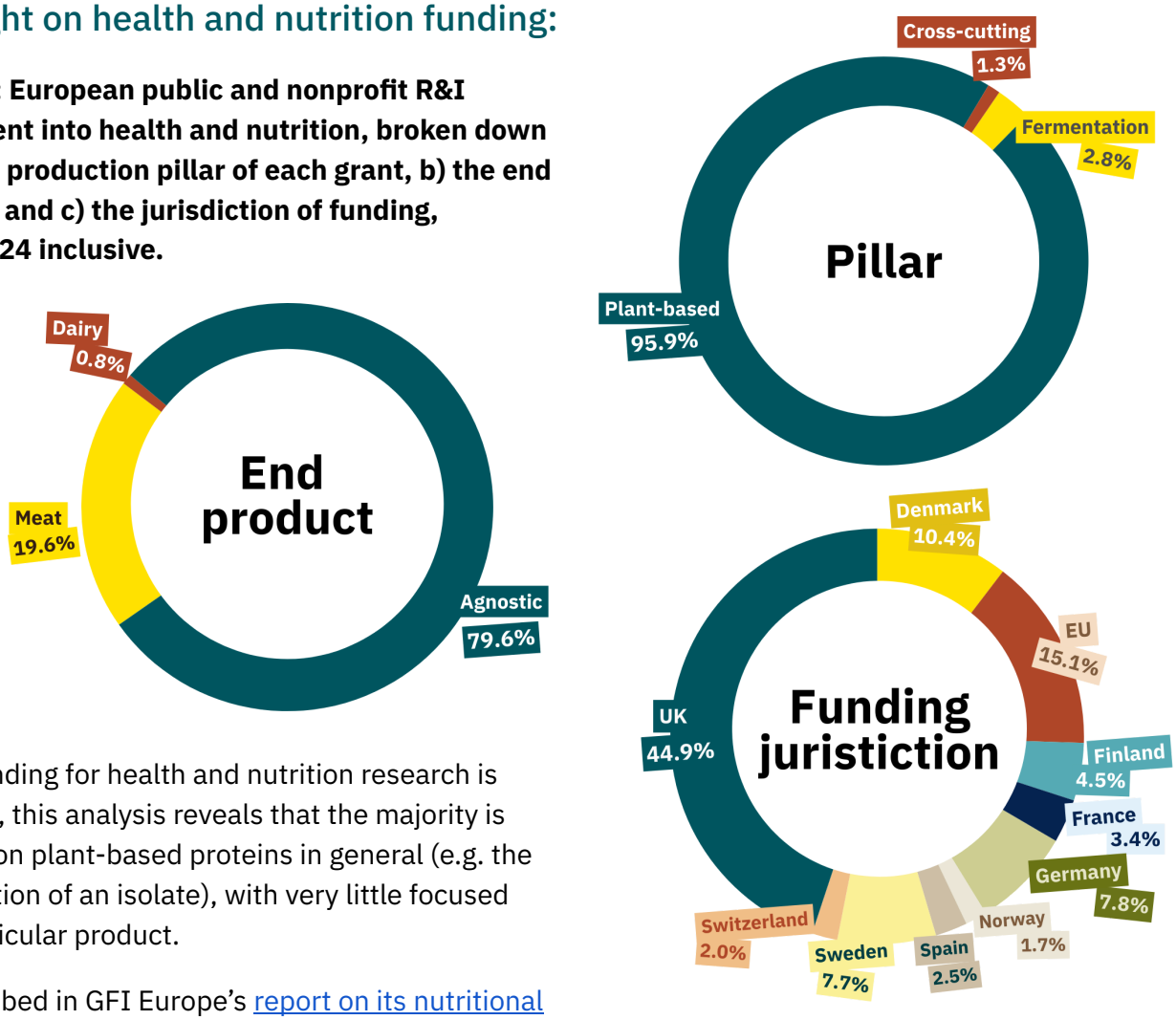
Figure 6: European public and nonprofit R&I investment into food safety and quality, broken down by a) the production pillar of each grant, b) the end product, and c) the jurisdiction of funding, 2020-2024 inclusive.

Academic research into food safety and quality makes an important contribution to informing the regulatory process, as the data is extremely valuable for filling knowledge gaps that individual companies are not incentivised or capable of filling. Only 7% of food safety and quality research is focused on fermentation, compared to 21% of the overall funding, highlighting fermentation food safety as a comparatively neglected area.

Much of the research for food safety and quality is agnostic as to the end product. This is likely where the safety or allergenicity of a particular ingredient is considered. Nevertheless, this highlights the fact that more research into food safety with regard to particular products and formulations is needed, to ensure the research is applicable across common product types.

Spotlight on health and nutrition funding:

Figure 7: European public and nonprofit R&I investment into health and nutrition, broken down by a) the production pillar of each grant, b) the end product, and c) the jurisdiction of funding, 2020-2024 inclusive.



While funding for health and nutrition research is available, this analysis reveals that the majority is focused on plant-based proteins in general (e.g. the composition of an isolate), with very little focused on a particular product.

As described in GFI Europe's report on its nutritional profile, plant-based meat can play a role in improving diet quality without requiring significant behaviour change. However, more funding is needed for public health research that seeks to:

- Expand the evidence base on the nutritional properties of these products – in particular studies using analytical samples rather than surveys of product labels.
- Understand the best approaches for maximising the bioavailability of important nutrients that can be limited in other foods.
- Substantiate the potential of these foods to support the health goals of sub-sections of the population.
- Understand the efficacy of plant-based meat as a tool to support mainstream adoption of healthier and more sustainable eating patterns relative to other approaches.

While initial evidence on these topics is promising, it is as yet preliminary, and this remains a large gap that publicly-funded R&I is well-placed to address.

Investment by research category

Plant-based

Plant-based research investment is distributed through the value chain (Figure 8), but research into ingredient optimisation far exceeds the other research categories. This involves research such as improving fractionation and producing protein isolates and concentrates with a lower degree of processing or improved functionality. The plant-based proteins used derive from various sources such as algae, legume crops and even food waste.

Some areas that had previously been underrepresented have received a boost in 2024, such as host strain development in the context of traditional fermentation, while others, in particular texturisation methods, have not received recent funding and risk dropping further behind.

Health and nutrition and food safety and quality (see the associated Spotlights on pages 19 and 20) have both received less attention than some other categories, possibly because the specific research needs in this area are less well-understood by the research community.

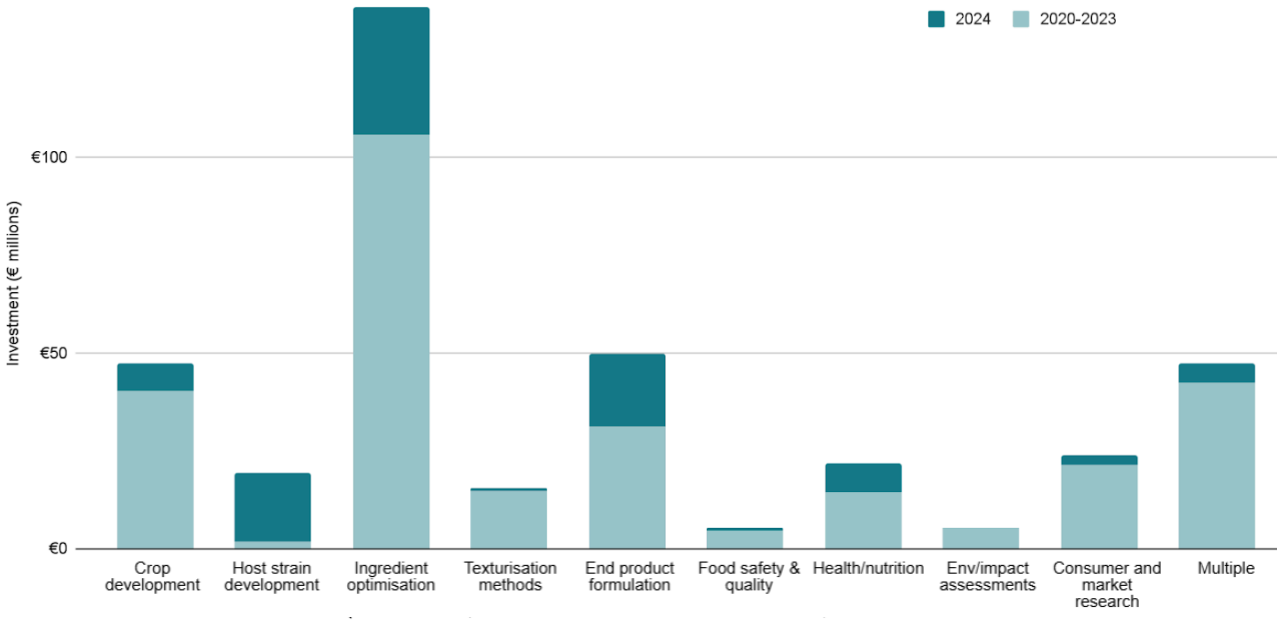


Figure 8: Public and nonprofit investment in plant-based R&I by research category, including funding for traditional fermentation, 2020-2024 inclusive. *This analysis is based on data from GFI's research grants tracker, which is a public resource. If you are aware of funding data that is missing, please let us know via europe@gfi.org or submit it directly to the tracker.*

End product formulation has received a steady amount of funding over the period. This category includes aspects critical to consumer acceptance, such as sensory evaluations and nutritional assessment. EU-funded consumer research has shown that improvements to price, taste and healthiness are needed in order for products to find widespread consumer acceptance.

Cultivated

Cultivated research shows a very different pattern of research investment, focused on very early-stage development. Most funding has gone into either cell line or cell culture media development, with comparatively little for even mid-phase categories such as bioprocessing and cell scaffolding.

This reflects the comparatively less mature sector (cultivated accounts for only 88 patent families in Europe compared to 858 plant-based patent families). Generally, this focus on early value chain R&I is appropriate for such a nascent field, but we would expect to see increasing investment into formulation, food safety and impact assessment questions as the field matures.

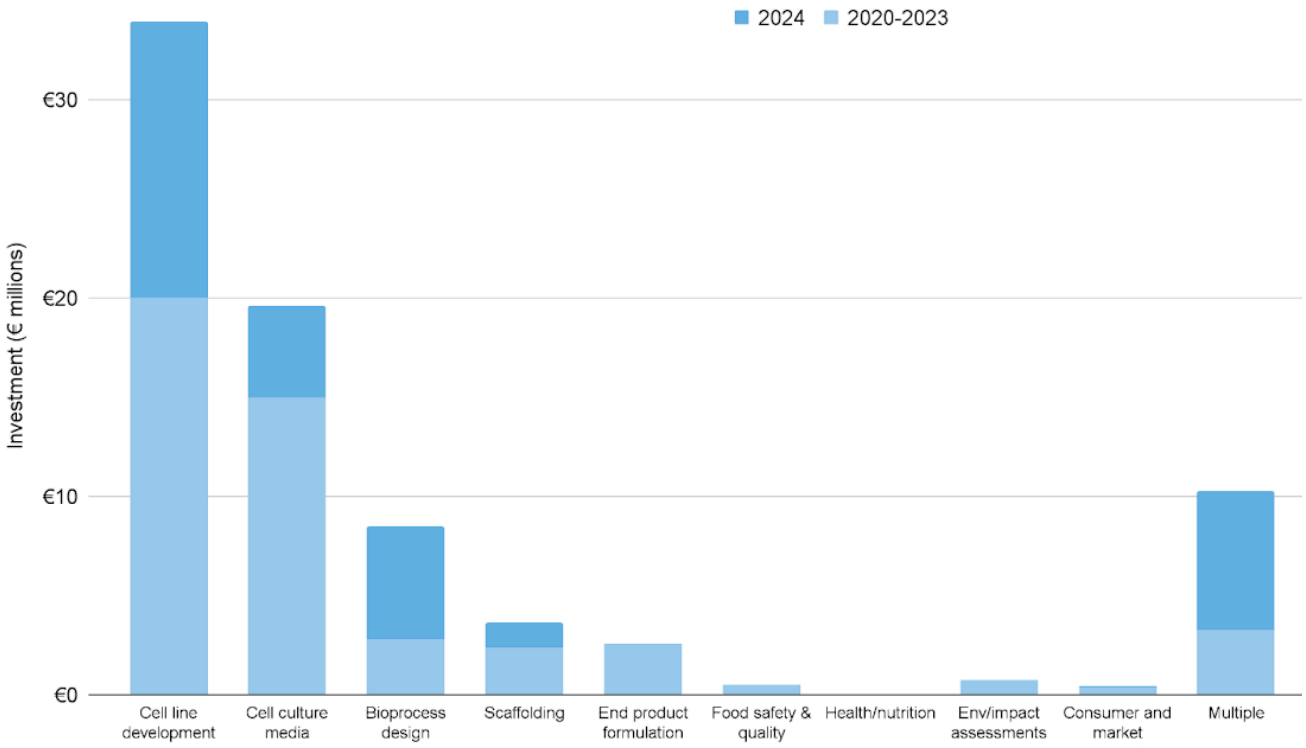


Figure 9: European investment in research on cultivated meat, showing allocation by research category, 2020-2024 inclusive. *Analysis based on data from GFI's research grants tracker, which is a public resource. If you are aware of funding data that is missing, please let us know via europe@gfi.org or submit it directly to the tracker.*

Promisingly, bioprocessing research received more investment in 2024 than it did in all previous years combined (although this analysis excludes some major investments such as the UK's Cellular Agriculture Manufacturing Hub (CARMA) as they fall into the cross-cutting pillar, which nevertheless has individual work packages on bioprocessing).

While it can be difficult to conduct impact assessments on more nascent technologies, some projects are attempting to predict the future health, consumer, and environmental impact of cultivated meat and seafood. Critical to the success of these efforts is the involvement of real industry data, as seen in projects such as EU-funded FEASTS.

Fermentation

The picture for fermentation is more mixed. Target molecule selection has received little to no attention, suggesting that the search for additional targets has not been prioritised. This is also reflected in the State of the European Research Ecosystem: Publications landscape analysis, where it represents approximately 3.5% of the total output. This supports the hypothesis that the field has largely, and perhaps prematurely, focused on a limited number of target molecules. This trend might artificially limit the potential of the technology and risk IP saturation. A recent report by GFI Europe and Arthur D. Little highlighted potential target molecules and their economic potential, but early R&I is critical to validating other potential targets. Identifying and validating new target molecules is likely a longer-term effort than is feasible for a new startup, so academic research has a critical role to play.

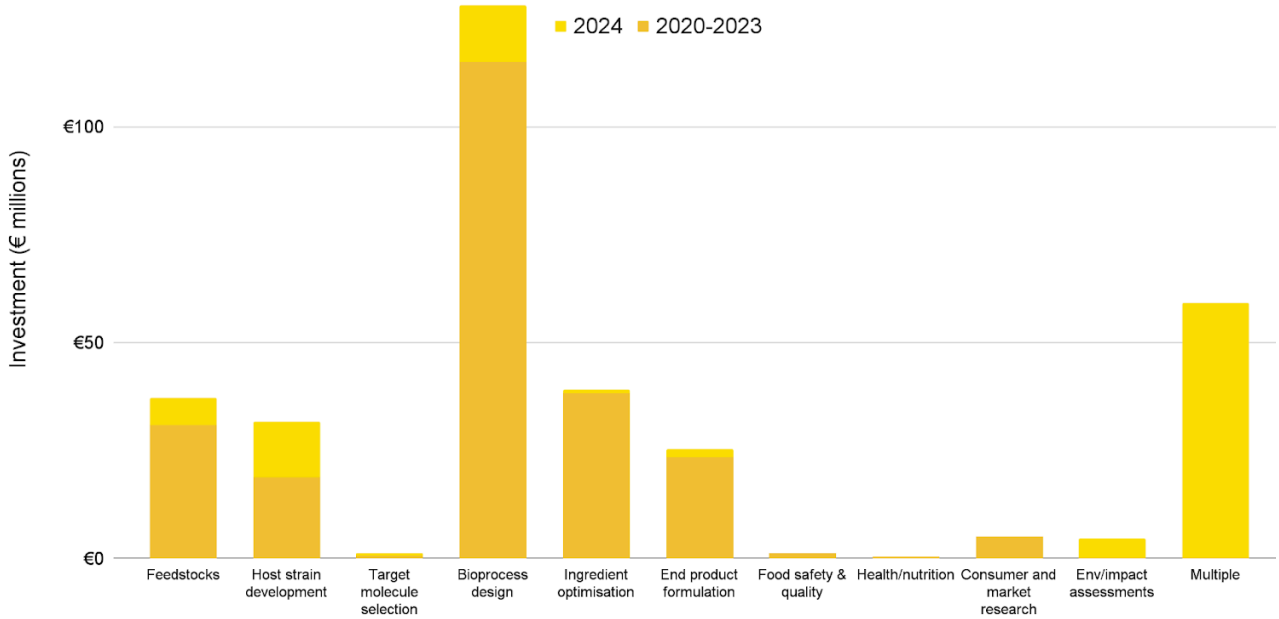


Figure 10: European investment in fermentation R&I by research category, 2020-2024 inclusive. *This analysis is based on data from GFI's research grants tracker, which is a public resource. If you are aware of funding data that is missing, please let us know via europe@gfi.org or submit it directly to the tracker.*

More innovation was funded in feedstock and host strain optimisation than in previous years – a promising sign for the sector.

While biomass fermentation is significantly more technologically mature than precision fermentation, with more than three times the number of patents in Europe, precision fermentation has received more research funding than biomass fermentation (€75 million in 2020-2024, in comparison to €53 million for biomass fermentation). Indeed, the proportion of fermentation funding going towards precision fermentation increased in 2024. This may reflect a sense of potential or novelty by funders and researchers, rather than the relative maturity of the sectors.

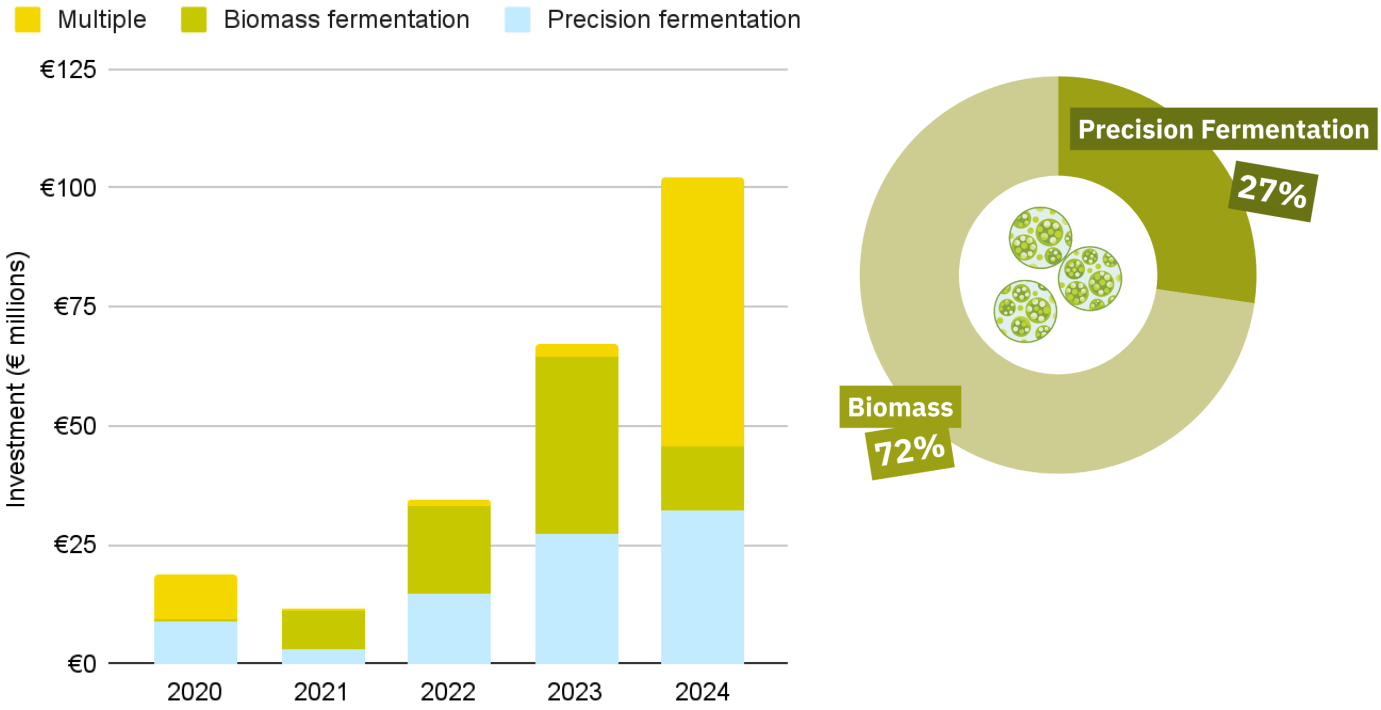


Figure 10: European investment in fermentation R&I by technology, with a spotlight on microalgae, 2020-2024 inclusive. *This analysis is based on data from GFI's research grants tracker, which is a public resource. If you are aware of funding data that is missing, please let us know via europe@gfi.org or submit it directly to the tracker.*

Microalgae research was largely directed towards uses of biomass (Figure 10), with approximately a quarter of microalgae funding directed at expressing a particular target protein or molecule via precision fermentation.

03 European Union

Summary

The European Union, via the European Commission, has allocated over €300 million to alternative protein R&I over the past five years. Horizon Europe, which began in 2021, kicked off a trend of higher spending in this area than over the course of Horizon 2020 (which was active from 2014 to 2020).

Total funding

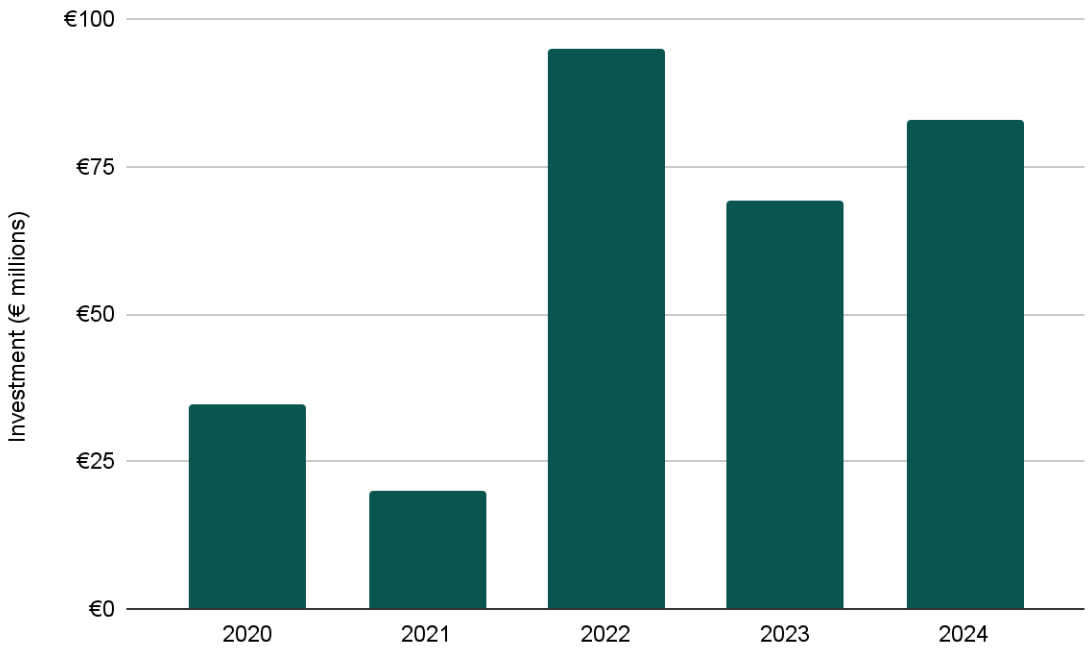


Figure 11: Investment by the European Union, 2020-2024 inclusive. *This analysis is based on data from GFI's research grants tracker, which is a public resource.*

Funding from the European Union has been focused on plant-based and fermentation research, and with a particular focus on traditional fermentation, investing over €60 million into that research category over the five years this report covers.

The European Commission has also made some leading cross-cutting investments, such as the project Giant Leaps and AgriLoop, the latter of which aims to valorise agricultural residues into protein sources, among other end products.

Funders

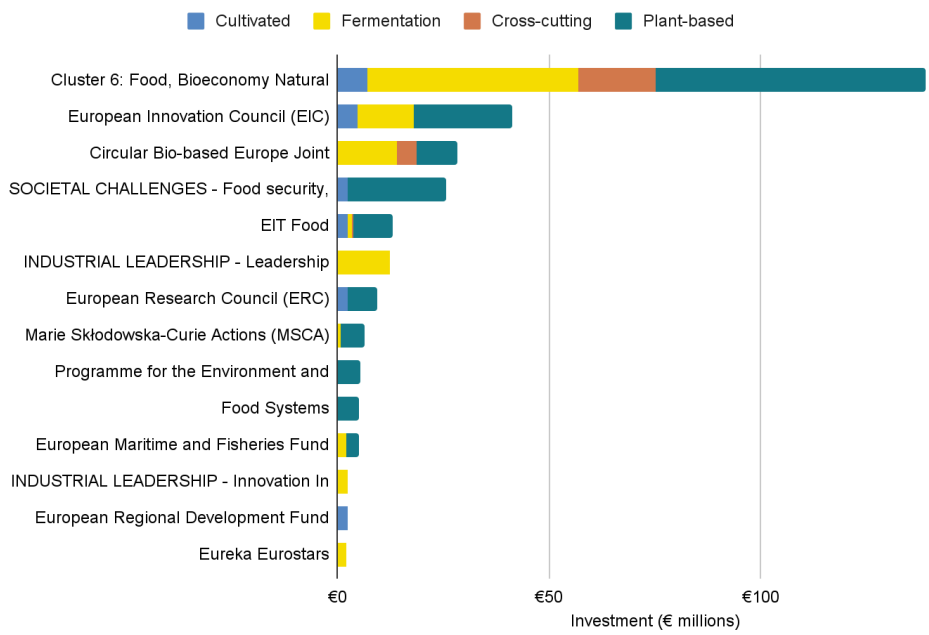


Figure 12: Investment by the European Commission, showing instrument and alternative protein pillar, 2020-2024 inclusive. *This analysis is based on data from GFI's research grants tracker, which is a public resource.*

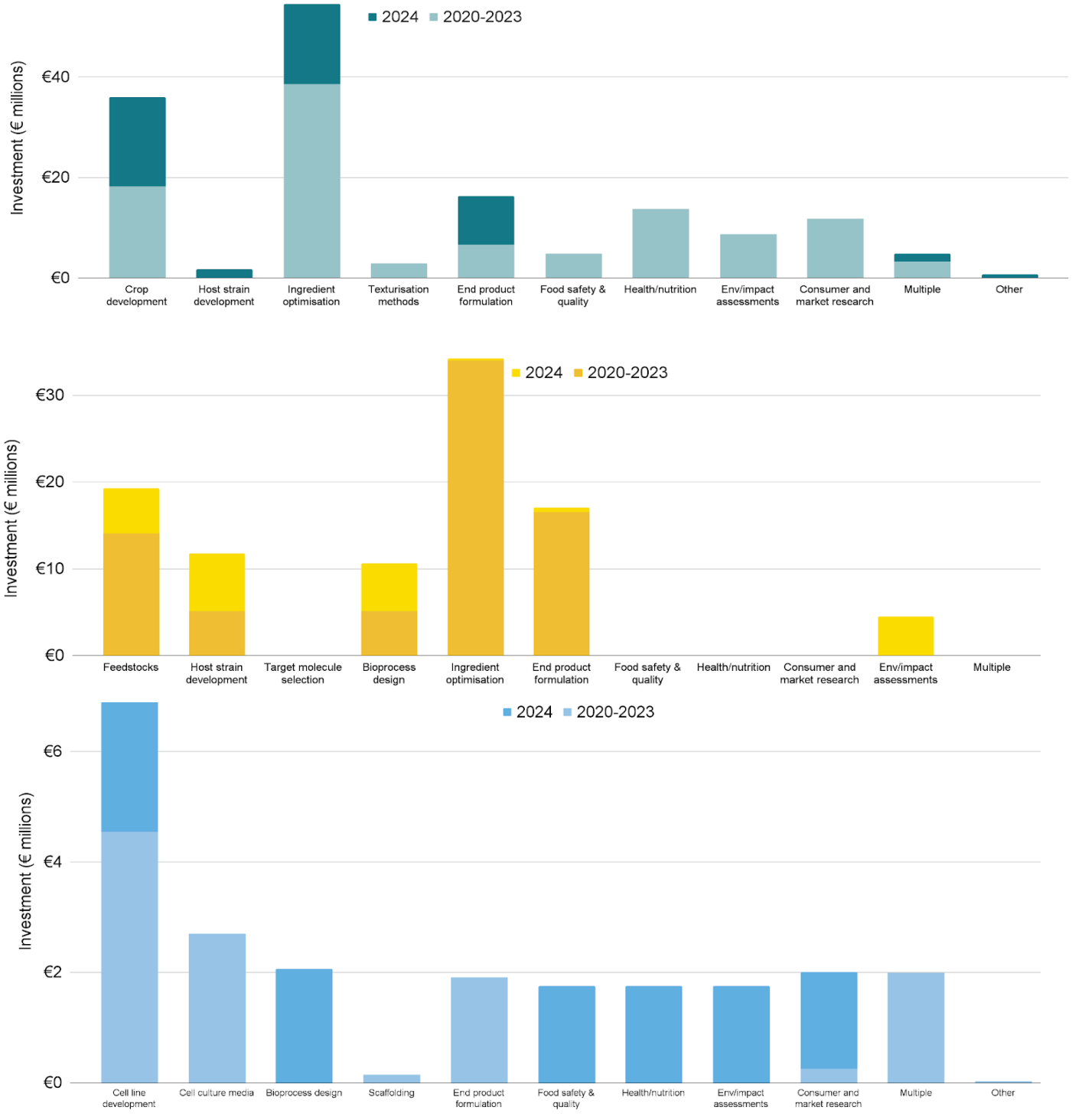
In recent years, the European Innovation Council (EIC), a funding arm of the Commission that aims to identify and scale up new technologies by supporting startups, has stepped up its funding in this area. 2024 funding from EIC represents more than 60% of the body's all-time funding into alternative proteins. There has also been significantly more money coming into the field for training from the EU, with almost 70% of all Marie Sklodowska-Curie Action funding for alternative proteins allocated in 2024.

On the other hand, Circular Bio-based Europe Joint Undertaking (CBE JU) and Cluster 6, which focuses on "Food, bioeconomy, natural resources, agriculture, and environment", funding have stayed relatively steady over the period. Calls focused on food and food biotech topics from both funding sources are notoriously oversubscribed. In 2024, the solitary food biotech call from CBE JU received 20% of all submissions (out of 18 topics), with a combined funding request of 28 times the available funding. While the FutureFoods Partnership is just beginning, and so is not yet visible in these data, the first call received 275 applications. This is significantly higher than many other fields, demonstrated by the figures released about applications for Cluster 6 calls in 2024. One call, on new plant-based foods, received the joint highest number of applications of any of the Cluster 6 calls in that year, with 59 applications (excluding this call, the average across the others was 20). Of these, 37 were assessed as above the threshold for funding, but ultimately only three could be funded. As such, it is clear that the European research community is highly active and able to effectively absorb more funding than is currently made available through these funding instruments.

EU investment across the three pillars

Figure 13: European Commission investment by research category, 2020-2024 inclusive, highlighting 2024 investment for a) plant-based, b) fermentation, and c) cultivated.

Cross-cutting investments are not shown. The FEASTS investment has been split across relevant areas. This analysis is based on data from GFI's [research grants tracker](), which is a public resource.



The research category breakdown reveals that the investment into plant-based food in 2024 was largely continuing to focus on areas with a high level of existing funding: crop and ingredient optimisation, and end product formulation. No new investments were made specifically into texturisation or downstream categories such as impact assessment.

In fermentation, the Commission is increasingly directing funds towards upstream steps like strain development and, promisingly, bioprocess design, a neglected research category in Europe-wide funding. Cultivated meat, though receiving less funding than the other two pillars, saw the first funding towards downstream impact assessment activities through the FEASTS project (Table 4).

Table 4: Spotlight on major European Commission-funded projects

Project name	Description
FEASTS	Coordinated out of the Technical University of Lisbon, in Portugal, this €8 million project aims to perform a social, environmental and economic impact assessment of cultivated meat.
AgriZest	DTI in Denmark is leading this €5.9 million project to apply AI technologies to fungi production.
Delicious	Sweden's RISE Processum will coordinate this €4.5 million project to enhance plant-based dairy products using microbial products.
FAIROmics	This €3.7 million MCSA grant, coordinated by INRAE in France, aims to enhance the data interoperability of omics data for the fermentation of plant-based meats and dairy.
MEATLOW	This European Innovation Council-funded project, worth €2.4 million, aims to optimise the dry fermentation technology of Swedish startup Millow.

EU funding by region

The European Commission is a critical funder driving research activities throughout Europe. It is therefore of interest where European funding in alternative proteins has been allocated over time. Some regions have academic communities that are particularly active in European projects – which is especially true where there is a relative scarcity of domestic funding for alternative protein research.

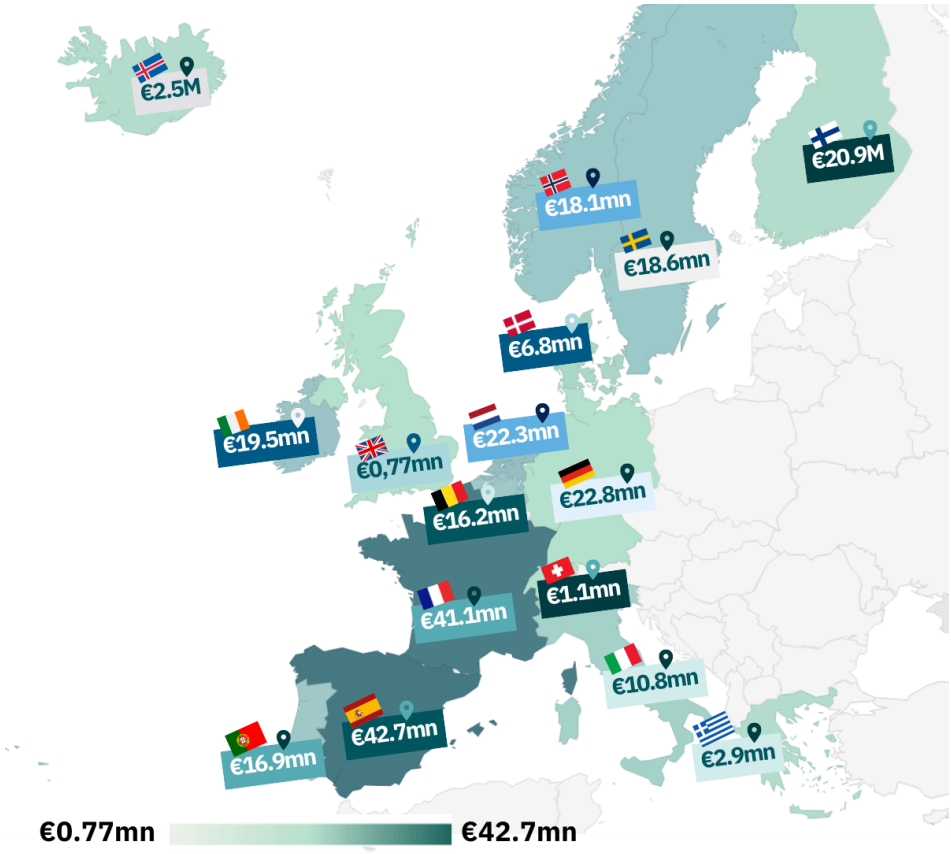


Figure 14: Total value of EU funding received by each European country based on the project lead, 2020-2024 inclusive. *This analysis does not take into account the breakdown of funding between the project leads and subsidiary consortium members (which are often spread across Europe) and is therefore only a rough approximation of the research occurring in many countries. UK funding via the Horizon Europe Guarantee is not included.*

Countries like Italy and Ireland are case studies for this, where the State of the European Research Ecosystem: Publishing landscape analysis shows a vibrant community of academic researchers, but where we have little to no funding data for national funders, suggesting that the activity is being driven by European Commission funds and therefore by EU priorities. The scale of the impact of this funding is not to be underestimated: Italy hosts the most individual researchers in this field of any country in Europe, while two Irish institutions are in the top 10 in Europe by number of publications.

If you are aware of funding data that is missing, please let us know via europe@gfi.org or submit it directly to the tracker.

04 Nordics (Denmark, Finland, Norway, Sweden)

Summary

The Nordic region as a whole, having invested more than €250 million over the past five years, is unquestionably a leading region for alternative protein research in Europe. However, the trend is not all positive. While funding is increasing in Denmark and Finland, Sweden is approximately steady in year-to-year investment, and Norway has decreased after a peak in 2022. Overall, however, 2024 was a very strong year for the region, and the funding made available will continue to make an impact over the coming years.

Total funding

All four countries are in the top 10 in Europe, making for a notable combined regional strength and high per capita expenditure (Table 3). Denmark leads the way in total funding over the past five years, with public and nonprofit funders making over €121 million available. In the same timeframe, Finland has invested just over €51 million.

While they have shown very different patterns of investment, Norway and Sweden have allocated a similar total amount of funding over the period (€44 million for Norway and €36 million for Sweden).

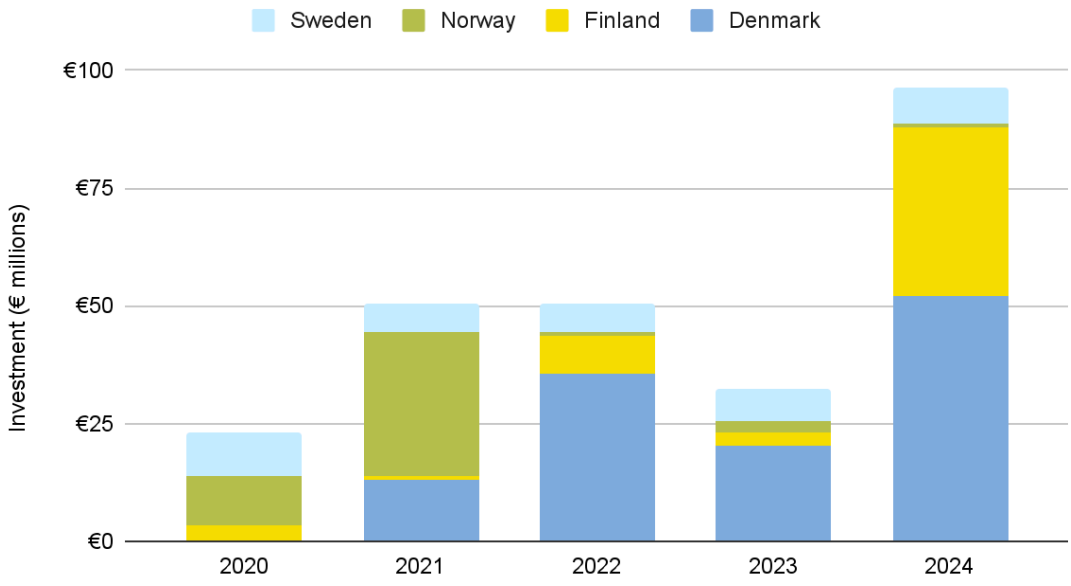


Figure 15: Investment by Nordic public and nonprofit funders, 2020-2024 inclusive. *This analysis is based on data from GFI's research grants tracker, which is a public resource. If you are aware of funding data that is missing, please let us know via europe@gfi.org or submit it directly to the tracker.*

Funders

These funding data, particularly for Finland, show a slightly different picture than previously reported in this report series. This is due to the exclusion of equipment and infrastructure grants (see What kind of funding is included in this report, above), of which Business Finland is a significant funder. Therefore, many of the Finnish fermentation scale-up projects that are active in the region are not captured here. Despite this, Business Finland is still the second most active funder in the region, but the Novo Nordisk Foundation (NNF) has pulled further ahead of other Nordic funders. In addition, the Danish government's 'Plantefunden' commitments have been adjusted to now report only the funding actually awarded to alternative protein research, resulting in a lower figure, as analysis of the awards revealed much of the funding has gone to research that doesn't directly advance the science of alternative proteins.

The strength of the investment from the Novo Nordisk Foundation, more than twice the next largest funder, is now driving fermentation research in the region. This includes two landmark centres: Aarhus's CO2 Research Centre, which received a major grant (co-funded by the Bill and Melinda Gates Foundation) to collaborate with Washington University and expand research into food production from CO2; and BRIGHT, hosted by the Technical University of Denmark (DTU), which aims to scale green biotechnologies including fermentation.

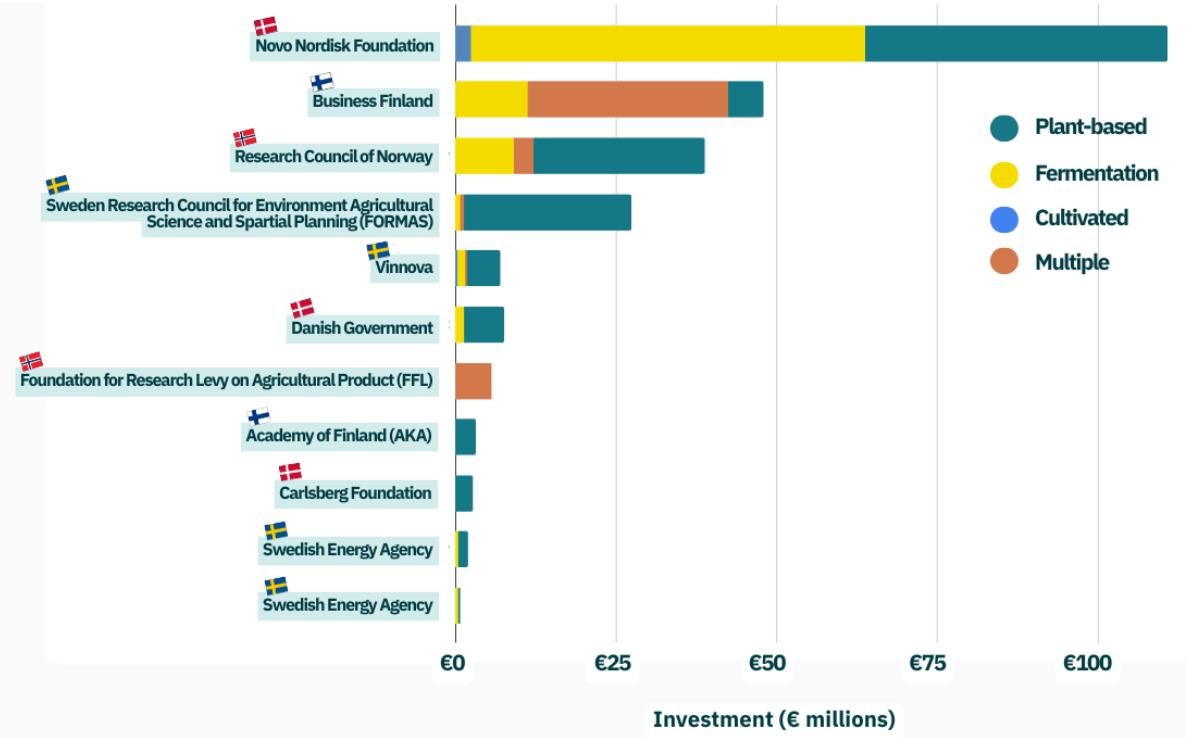
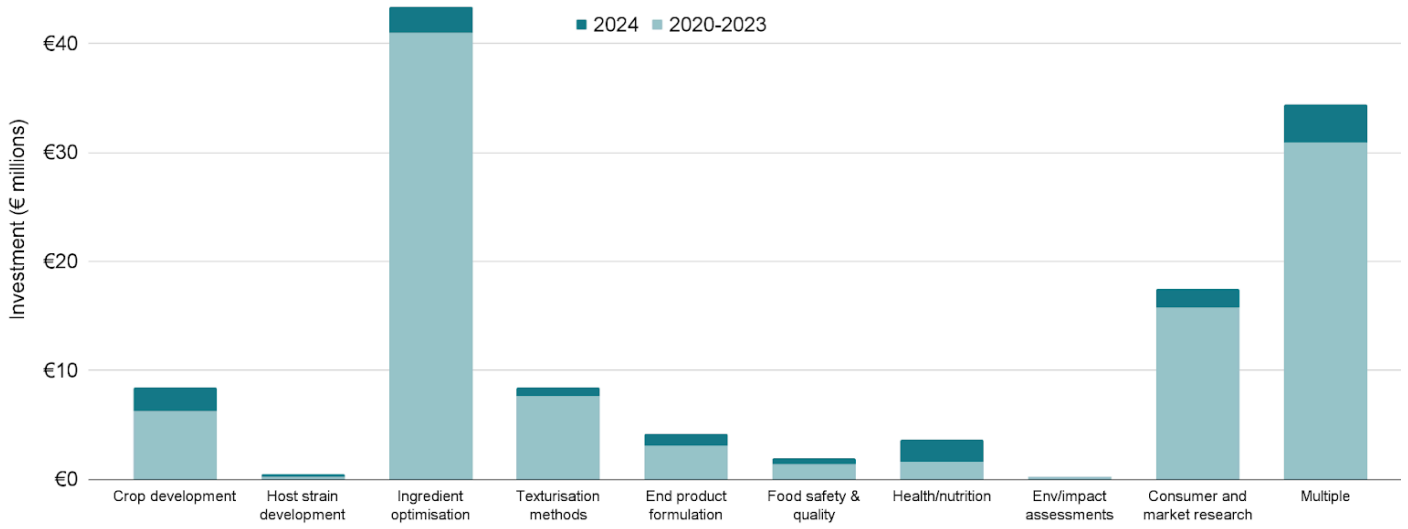
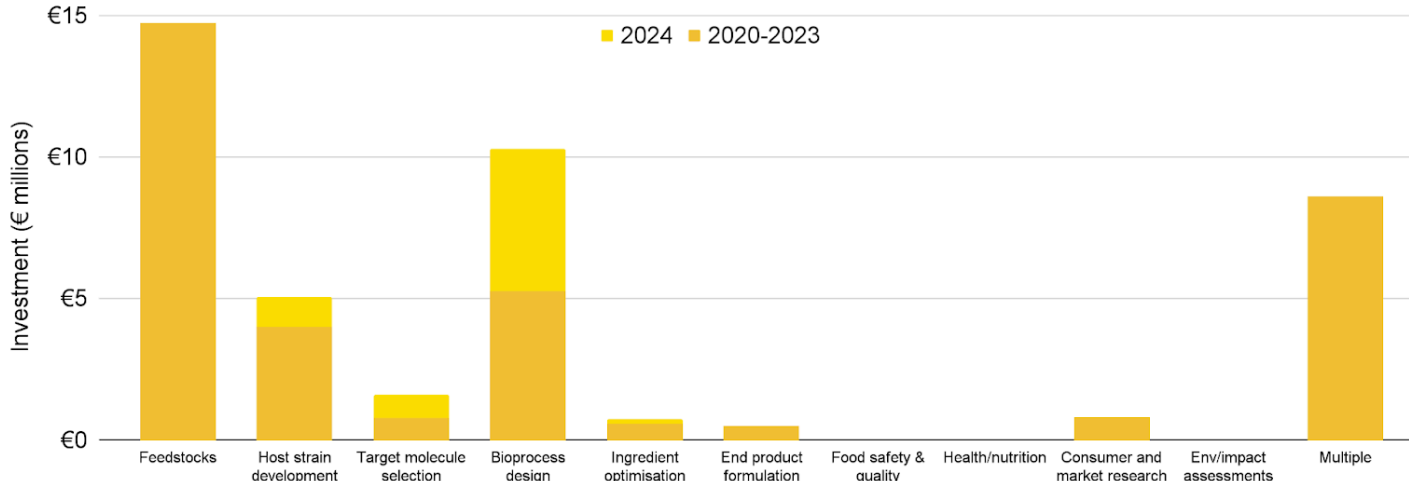


Figure 16: Investment by public and nonprofit funders in the Nordic region, 2020-2024 inclusive. *This analysis is based on data from GFI's research grants tracker, which is a public resource. If you are aware of funding data that is missing, please let us know via europe@gfi.org.*

Nordic region investment across the three pillars

Figure 17: Total Nordic investment into R&I by research category, 2020-2024 inclusive, for a) plant-based, b) fermentation, and c) cultivated. *Cross-cutting investments are not shown. The BRIGHT centre is not included in this analysis as no detailed breakdown of workpackages was available. This analysis is based on data from GFI's research grants tracker, which is a public resource.*





Cultivated meat investment in the region is noticeably thin on the ground, with only €2.5 million directly invested. Much of the region's investment in cultivated meat has come in the form of projects targeting cellular agriculture as a whole (€8.8 million), suggesting some hesitation on the part of Nordic funders to fund projects that focus exclusively on cultivated meat or seafood.

The regional strengths in cultivated meat and fermentation lie in early and mid-stage research, such as feedstocks, cell line development and bioprocess design. In contrast, ingredient optimisation has attracted the most attention in plant-based, alongside end-user categories like consumer research. Very limited funding has been available for impact assessments in the region.

If you are aware of funding data that is missing, please let us know at europe@gfi.org or submit it directly to the tracker.

05 DACH (Austria, Germany, Switzerland)

Summary

Austria, Germany and Switzerland have collectively invested €76 million in public funding since 2020. Increasingly, the region's alternative protein research is being driven forward by Germany,[6] with almost 90% of the total funding coming from German funders.

The region continues to specialise in plant-based research, with expertise throughout the value chain but notably in texturisation, an area neglected by many other European regions.

Total funding

Total investment in 2024 did not equal the heights of 2023 in the DACH region. 2023 was a bumper year, with a significant portion of previous government commitments being allocated, while 2024 funding appears to have returned to a baseline level similar to the years 2020-2022 inclusive. Against the background of recent elections in Germany and the fact that the newly formed governing coalition committed to supporting alternative proteins in its coalition agreement, the German government has the opportunity to back up this commitment with concrete actions in the area of public R&I investments.

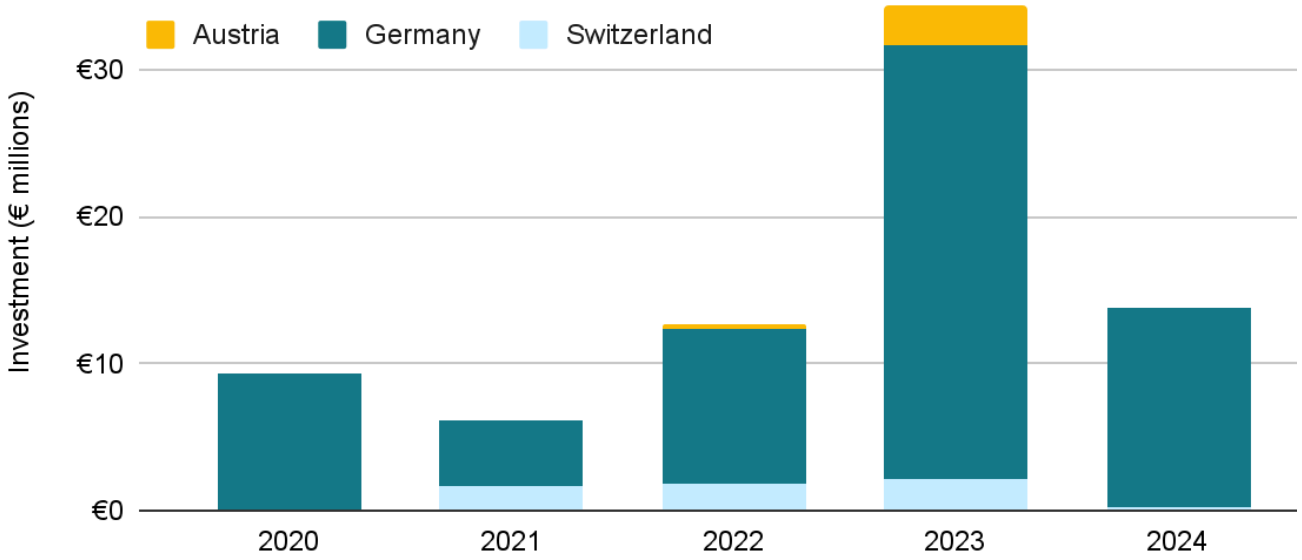


Figure 18: Investment by Germany, Austria and Switzerland, 2020-2024 inclusive. *In this region, Austrian figures may be understated due to availability of data. This analysis is based on data from GFI's research grants tracker, which is a public resource.*

[6] The German federal government reports public investment of €111 million between 2021 and 2025. This higher figure is due to the fact that it also includes investment in feed and insects, as well as projects that are not classified as technical research and are not the focus of this R&I report (see the methodology for more detail on the inclusion and exclusion criteria for this analysis).

Germany is the fourth-highest ranking country for total alternative protein R&I investment in Europe, and is ranked second for plant-based, behind only Denmark. Switzerland has a similar level of focus on plant-based, while Austrian funding has largely been directed towards fermentation.

Funders

Due to the dominance of Germany in the region's funding, the top three funders are federal ministries, for agriculture (BMLEH), economic affairs (BMWE) and research and technology (BMFTR), respectively. BMLEH and BMFTR have both made significant investments in fermentation and cultivated research, alongside funding for plant-based. They have also been the most consistent funders over time, contributing a growing percentage of the region's funding. In 2024, those two funders alone accounted for 97% of the funds allocated in the region.

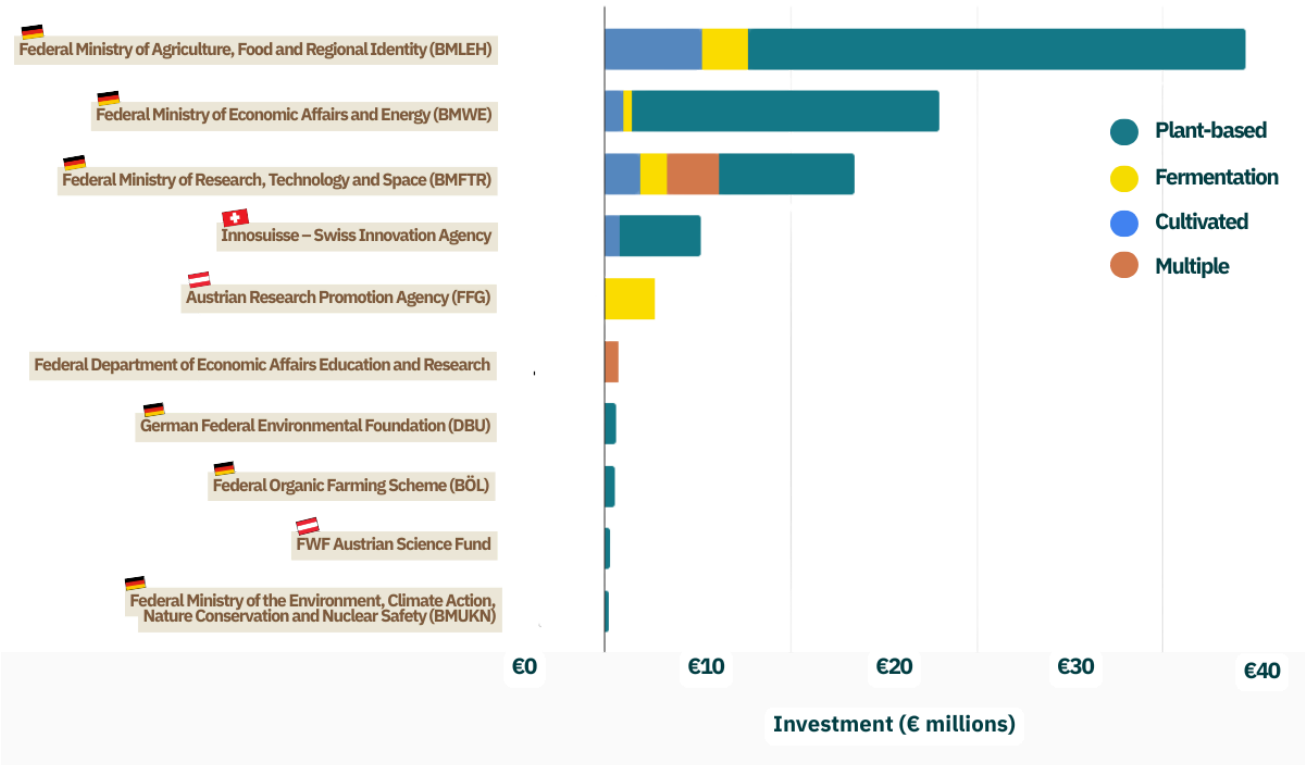


Figure 19: Investment by public and nonprofit funders in the DACH region, 2020-2024 inclusive. *This analysis is based on data from GFI's research grants tracker, which is a public resource. If you are aware of funding data that is missing, please let us know via europe@gfi.org or submit it directly to the tracker.*

The limited availability of dedicated funding in Switzerland might reflect an academic funding structure that is less reliant on project grants and has more available funding via its home institutions than other regions of Europe. However, this is less true of smaller, applied universities, where the lack of publicly available funding shown here is likely to be a limiting factor for academics in alternative protein research.

Switzerland ranks in the middle of European countries (14th) in terms of scientific publications on alternative proteins, but really stands out when it comes to commercialisation and intellectual property. This can be explained by the fact that Switzerland is home to several of the most active private entities, particularly in plant-based. These factors might mean that the available information on public funding underestimates the overall research activity in the country, which is primarily privately driven. The bulk of the funding in Switzerland has come from Innosuisse, the innovation agency, rather than the Swiss National Science Foundation, perhaps reflecting the underlying situation in the region. If research expertise exists but is largely not publicly funded at this point, additional public funding might be hugely impactful in opening up some of those research insights to advance the whole field.

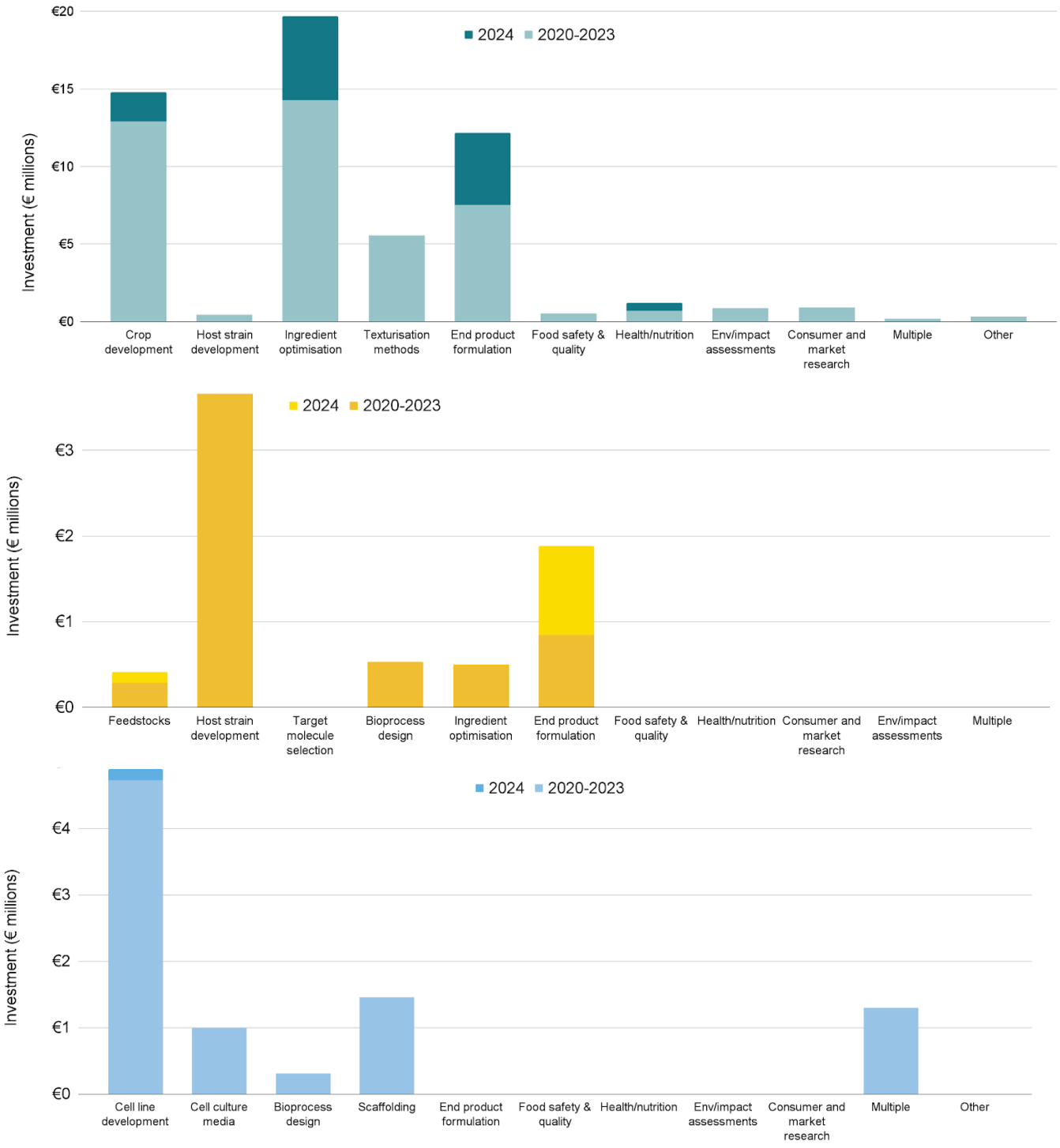
The German Research Foundation (DFG) and Austrian Research Promotion Agency (FFG) do not publicly release their funding allocations, and are therefore only included where information on individual projects was available elsewhere. Only limited analysis of Austrian investment is therefore possible, and figures are likely to be an underestimate.

DACH region investment across the three pillars

Very little research into cultivated meat was funded in the region in 2024, and fermentation funding has largely been directed to late-stage research, such as end product formulation. Plant-based funding has been spread across more research categories. Crop development expertise has been actively cultivated through Germany's Chanceprogramm Höfe, which aims to support farmers interested in protein diversification. Downstream of this, Germany has also invested in characterising the technofunctional properties of proteins, expertise that will help identify which crop may be suitable for which application.

If you are aware of funding data that is missing, please let us know via europe@gfi.org or submit it directly to the tracker.

Figure 20: Investment by funders in Austria, Germany and Switzerland by research category, 2020-2024 inclusive, broken down into a) plant-based, b) fermentation, and c) cultivated. *Cross-cutting investments are not shown. This analysis is based on data from GFI's [research grants tracker](), which is a public resource.*



06 UK & Ireland

Summary

Over €145 million (£127 million) has been invested in alternative protein R&I in the UK and Ireland over the past five years, with the vast majority, €140 million (£122 million), going to the UK. International funders made their mark for the first time in the UK in 2024, with a major investment from the Bezos Earth Fund to establish the Bezos Centre for Sustainable Protein at Imperial College London, supporting the UK on its steep growth trajectory.

Total funding

Irish funding has dropped further behind, with minimal new funding recorded in 2024. In contrast, funding from UK funders or directed to UK recipients topped €90 million (£79 million) in 2024 alone, meaning the country had the greatest amount of alternative protein R&I funding available in Europe by a significant margin that year.

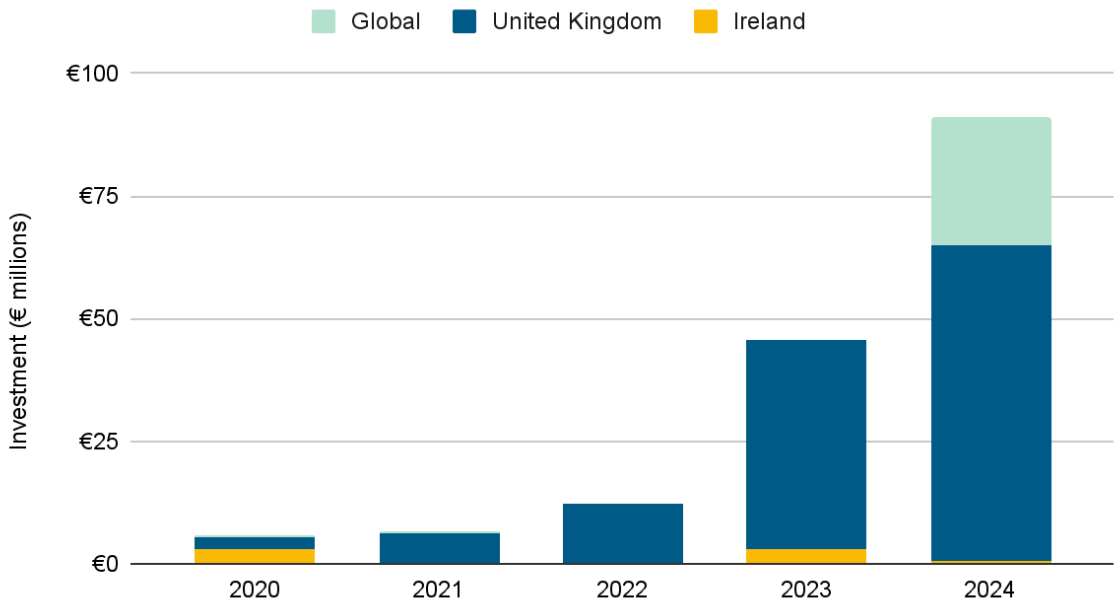


Figure 21: Investment by public and nonprofit funders in the UK and Ireland, 2020-2024 inclusive. International funders are included where the recipient is in the region. *This analysis is based on data from GFI's research grants tracker, which is a public resource. If you are aware of funding data that is missing, please let us know via europe@gfi.org or submit it to the tracker.*

As mentioned above, the Irish alternative protein research community is stronger than the state of domestic funding shown here would seem to suggest, which could be due to success in securing European Commission funding (see Table 14). What funding there has been from the Irish government in previous years has been directed towards plant-based and fermentation.

Funding landscape in the UK

Funders

The majority of funding in the UK over the past five years has come from the various arms of the national funder, UK Research and Innovation (UKRI). However, 2024 marked the first major contribution from an international funder. The funding from the Bezos Earth Fund for the Bezos Centre for Sustainable Protein at Imperial College London accounts for 18% of the total funding from the past five years in the region. However, such is the intensity of funding in 2024 that this only makes up a third of the total funding in the UK for that year.

The partnership between Innovate UK and the Biotechnology and Biological Sciences Research Council (BBSRC) remains the driving force behind UKRI funds, with £68 million (€79 million)[7] coming from those combined funders over this period.

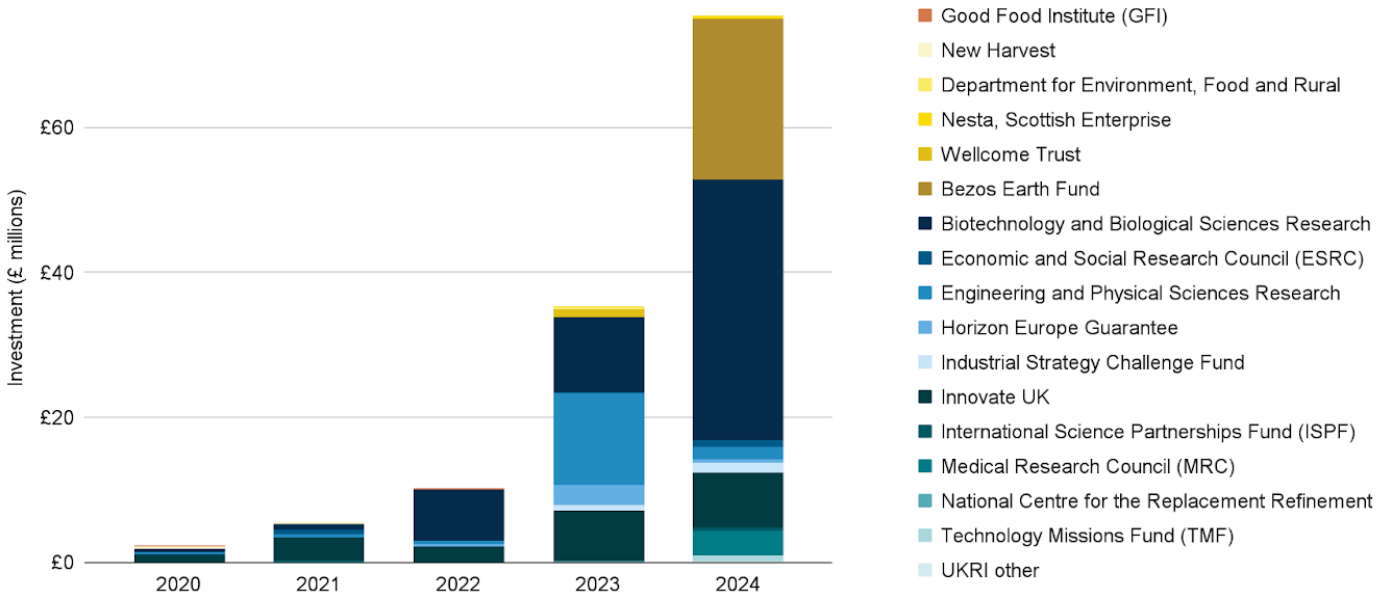


Figure 22: Investment by UK or international funders in the UK by pillar, 2020-2024 inclusive. *Irish funding is not included in this figure due to the limited data available. This analysis is based on data from GFI's research grants tracker, which is a public resource. If you are aware of funding data that is missing, please let us know via europe@gfi.org or submit it directly to the tracker.*

As a result of the increasing intensity of funding in the region, most of the investments shown here are still active. This is a significant growth in funding for a region to absorb over the course of a few years, and suggests that the UK research community will be worth watching in the near future.

[7] Figures in this section are reported in GBP. See Annex for more details on currency conversion rates.

UK investment across the three pillars

Between the major centres, CARMA (£12.3 million), the Microbial Food Hub (£12.6 million), NAPIC (£16 million), and the Bezos Centre for Sustainable Protein (£23.6 million), approximately £65 million has gone into the UK research ecosystem via research hubs. This comprises more than half of the all-time investment in the UK (52%) and 73% of the investment in 2024.

As a result of this, funding for cross-cutting projects has grown exponentially in the past few years. The way these funds are distributed is likely to have a big impact on which of these technologies and research categories will develop and flourish in the UK.

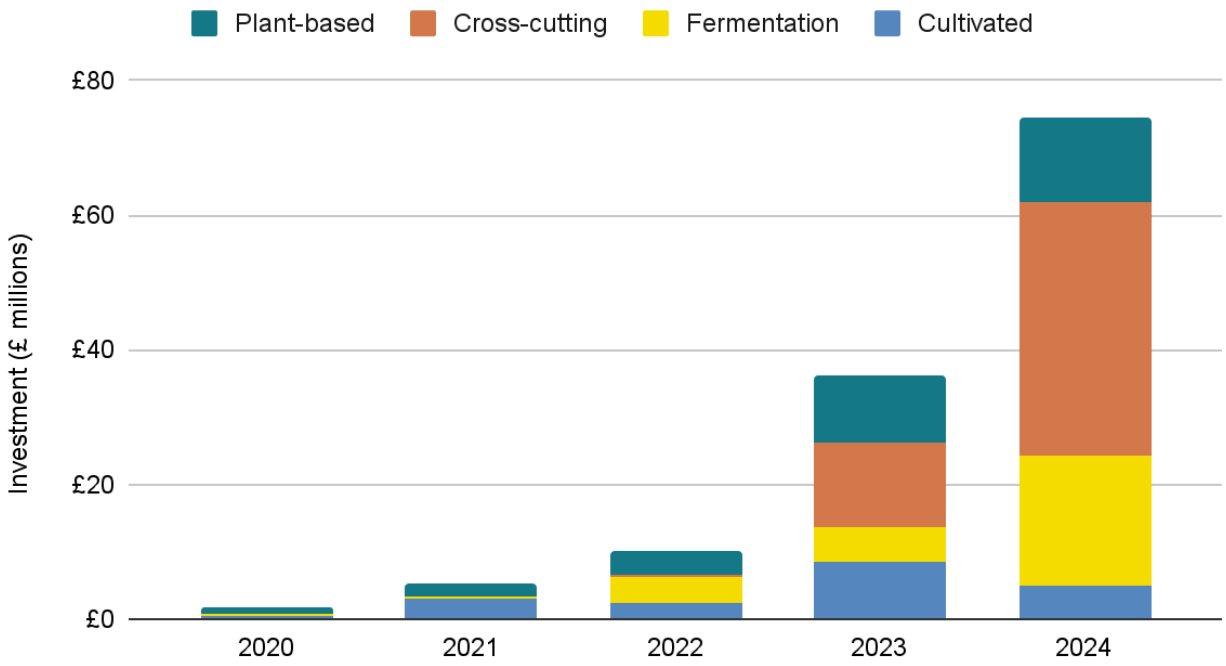


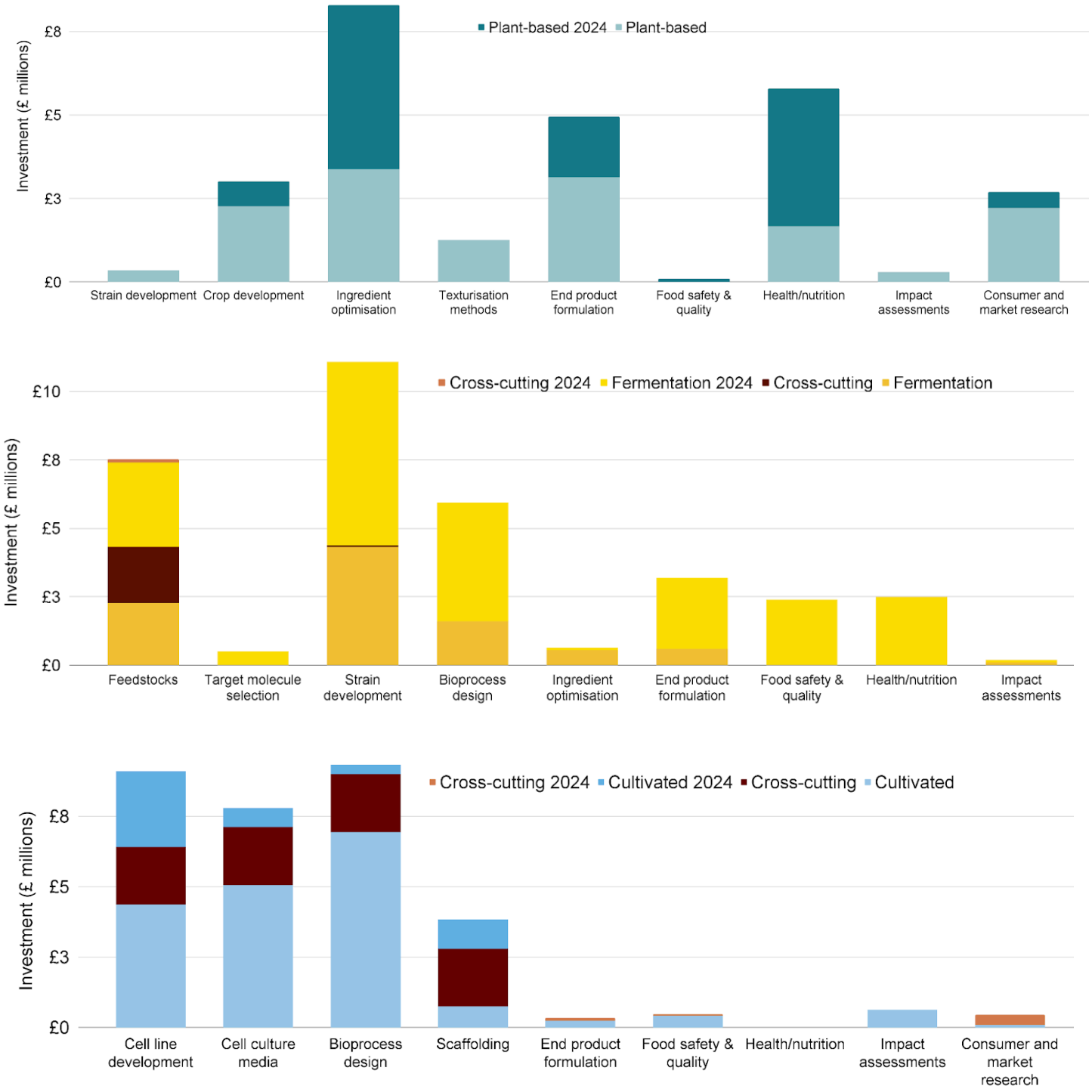
Figure 23: Investment by funders in the UK by production pillar, 2020-2024 inclusive.

The UK specialises in bioprocess design, as well as research involving strain and cell line development for fermentation and cultivated, respectively. Due to the surge in funding in 2024, many of these categories have received significant funding very recently.

Gaps remain, however, including in areas neglected across Europe generally, such as target molecule selection and texturisation methods.

If you are aware of funding data that is missing, please let us know via europe@gfi.org or submit it directly to the tracker.

Figure 24: Investment by funders in the UK by research category, 2020-2024 inclusive, broken down into a) plant-based, b) fermentation, and c) cultivated. *Cross-cutting investments are distributed to the pillar of greatest relevance. Major investments including the Microbial Food Hub and CARMA are split across categories where possible. Funding allocated to NAPIC and the Bezos Centre for Sustainable Protein is not shown, as both work across the value chain and so cannot be split up. This analysis is based on data from GFI's [research grants tracker](), which is a public resource.*



07 South-west Europe (France, Portugal, Spain)

Summary

More than €50 million has been allocated from funders in the south-west Europe region. France, Portugal and Spain have all seen some level of funding over the past five years, but while Spain has been the most consistent over time, France is leading in total funding, representing just over half of the region's total. The region's investment has been driven by different levels of strategic influence: in France, by the French national plant protein policy, and in Spain, by regional governments.

Total funding

Funding from France, Portugal and Spain dropped off in 2024. While this may reflect the actual state of play, there is also a possibility that, due to the mixed methodology involved in sourcing funding information (see the Methodology section for more information), there may be more of a delay in the publication of data for some countries than others. There may be a lag in public funding reported here for this reason.

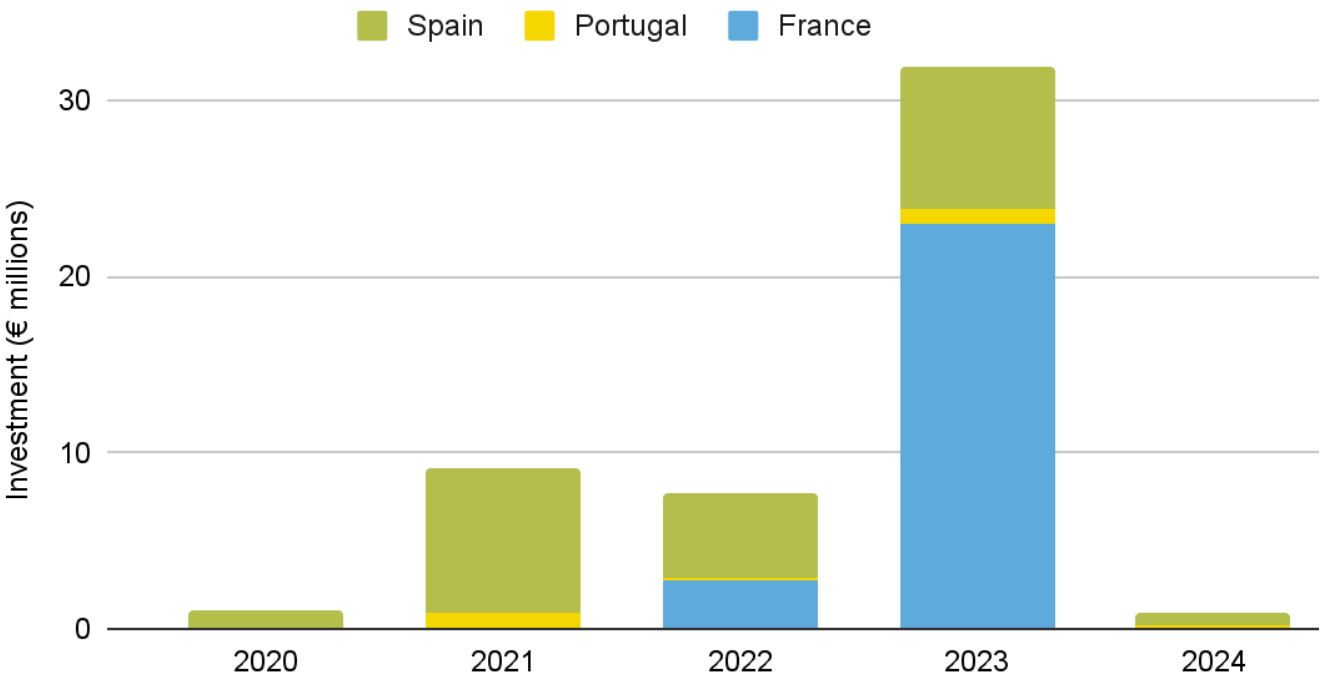


Figure 25: Investment by France, Portugal and Spain, 2020-2024 inclusive. *Funding from Portugal is likely an underestimate, due to the limited availability of public funding data. This analysis is based on data from GFI's research grants tracker, which is a public resource.*

Funders

The funding total for France has been impacted by the changes to the exclusion criteria regarding infrastructure and equipment grants. While BpiFrance is still the largest single funder in the region, some of the previously reported funding to private companies for the purpose of scaling up was excluded from this analysis.

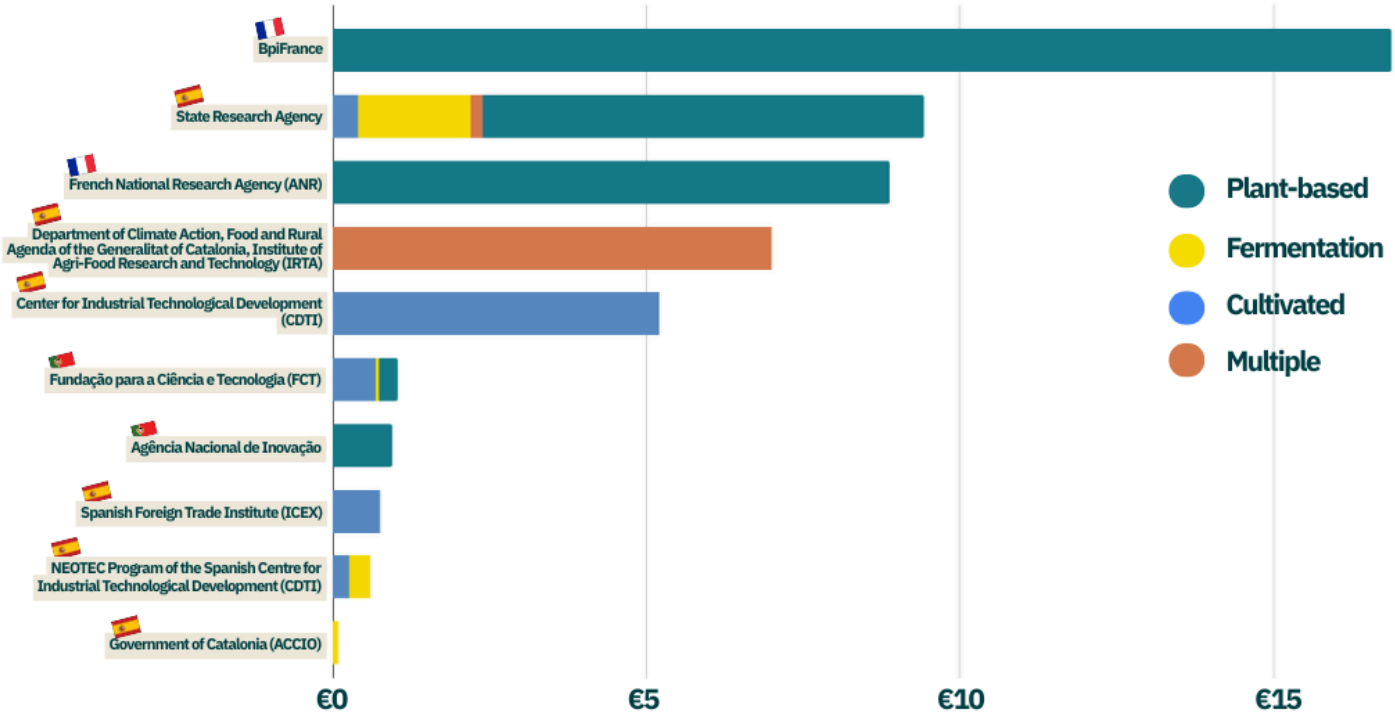


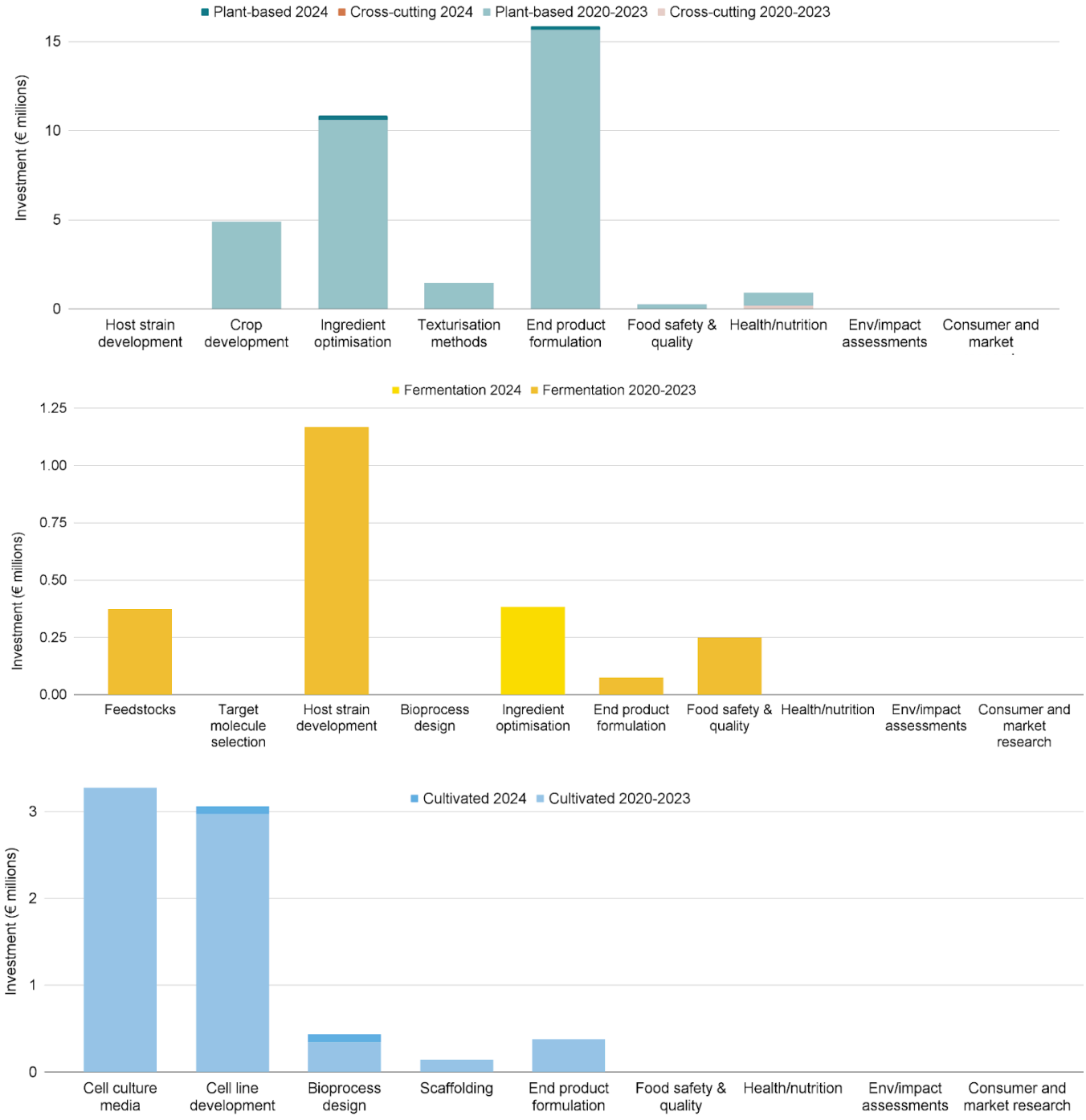
Figure 26: Investment by funders in France by pillar, 2020-2024 inclusive. *This analysis is based on data from GFI's research grants tracker, which is a public resource. If you are aware of funding data that is missing, please let us know via europe@gfi.org or submit it directly to the tracker.*

Both major funders in France, BpiFrance and Agence Nationale de la Recherche (ANR), have almost exclusively funded plant-based research. This may reflect the strength of agricultural research institutions in France, such as INRAE, as well as the explicit government funding priorities. By contrast, Spanish funders vary from focusing entirely on cultivated (Centre for Industrial Technological Development, CDTI), through to focusing primarily on plant-based (State Research Agency). In Catalonia in particular, cross-cutting research initiatives are dominant. Regionalities are still driving investment in Spain, which could be due to the largely non-thematic approach to funding from the Spanish national government funding bodies. This could also have an impact on reporting funding, as it is much more complex to track regional government funding in Spain, so actual figures could be higher.

South-West Europe investment across the three pillars

Figure 27: Investment by funders in France, Portugal and Spain by research category, 2020-2024 inclusive, broken down into a) plant-based, b) fermentation, and c) cultivated.

Cross-cutting awards are distributed to the pillar of greatest relevance. This analysis is based on data from GFI's research grants tracker, which is a public resource.



The bulk of cultivated meat funding is going into cell line development and cell culture media. The majority of cultivated research in the region focuses on cultivated seafood, driven largely by Portugal. However, due to the overall level of investment, Germany still outspends Portugal in that area.

If you are aware of funding data that is missing, please let us know via europe@gfi.org or submit it directly to the tracker.

08 Belgium and the Netherlands

Summary

Belgium and the Netherlands are home to a strong biotech and food science community, and have been actively funding alternative protein research for more than five years. These results show the importance of the major National Growth Fund investment by the Dutch government, as well as the steady underlying commitment to this research field by other funders in the region.

Total funding

Due to the lack of published funding information in Belgium and the Netherlands, this section examines the region by the number of projects rather than invested funds, except where noted.

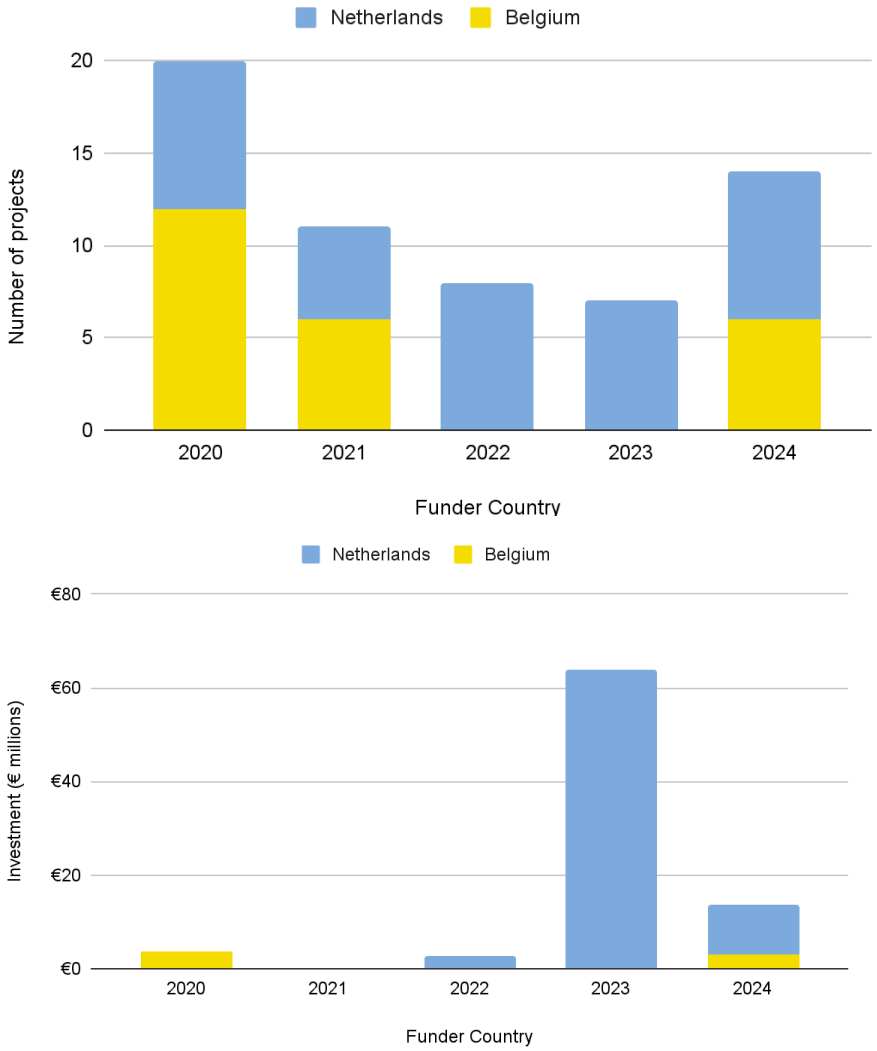


Figure 28: Research funded in Belgium and the Netherlands, 2020-2024 inclusive, by a) number of individual awards and b) total funding amount. *Due to the absence of funding information for Flanders Research Foundation and BELSPO, funding totals for Belgium are significantly understated. The 2023-2024 information for Belgium is likely an underestimate, as there is a delay in grant information being published. This analysis is based on data from GFI's research grants tracker, which is a public resource.*

Funders

The picture revealed by considering the number of projects is centred on plant-based research. The size of the National Growth Fund investment, listed here as cross-cutting due to the focus on cellular agriculture, ensures that this is among the top regions for funding cultivated meat and fermentation.

However, the majority of individual research projects in the region, particularly those funded by the most consistent funder, the Dutch Research Council, are plant-based. The region is also notable for the share of funding coming from research rather than innovation funders.

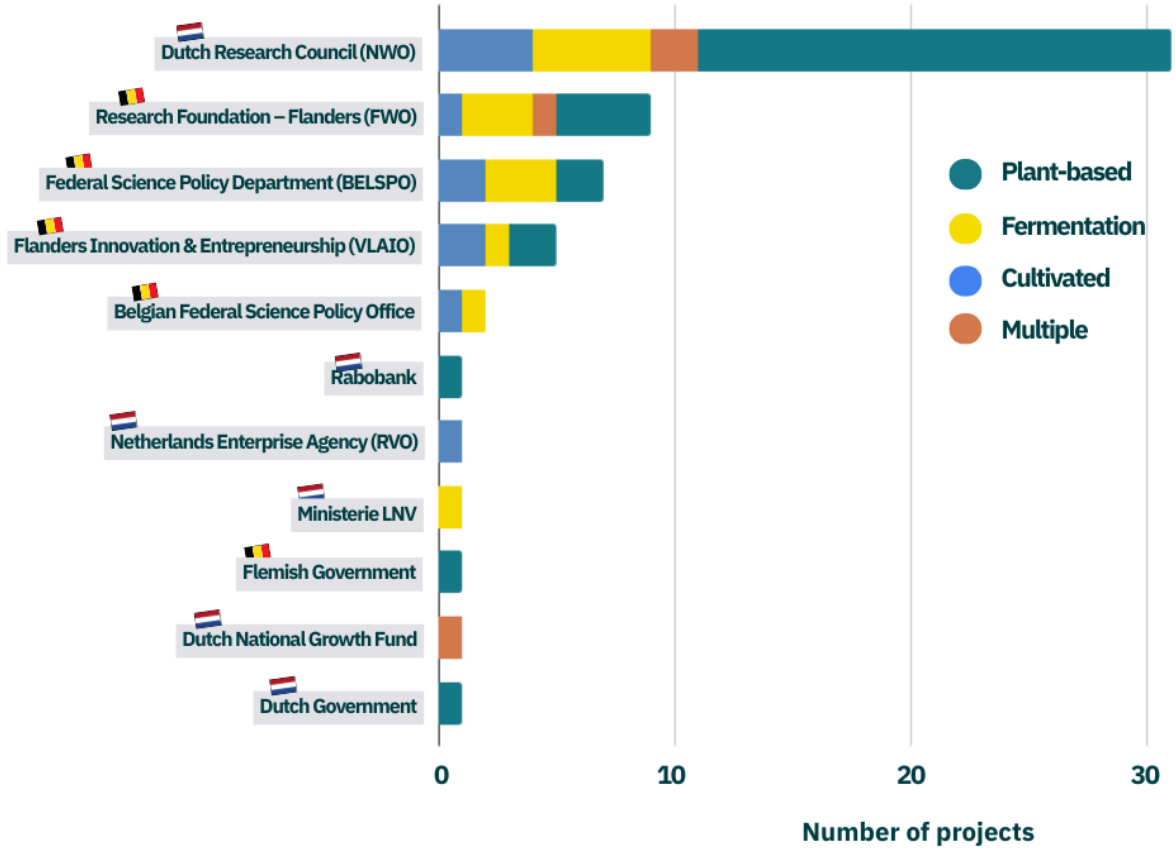
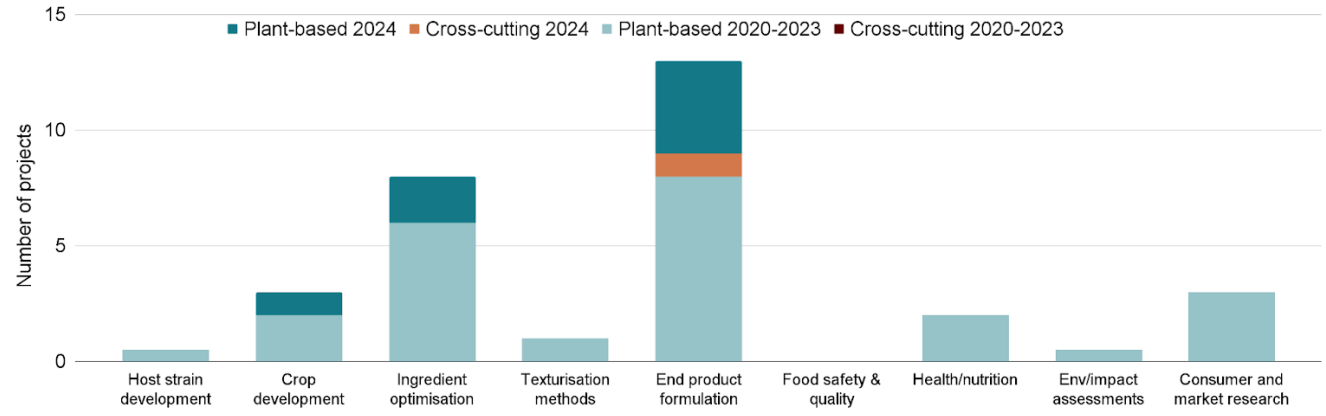


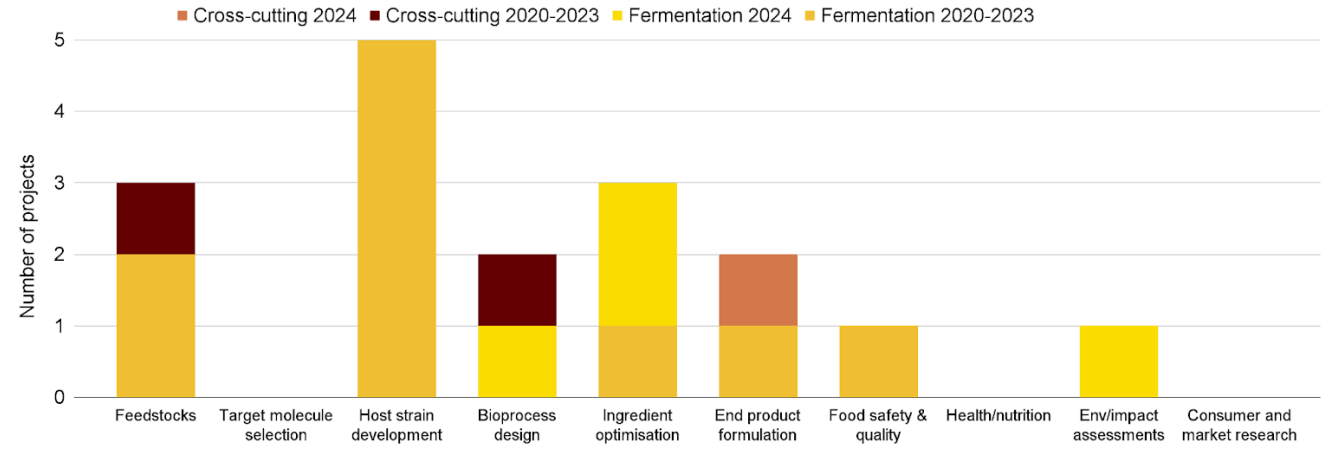
Figure 29: Number of research projects funded by public agencies in Belgium and the Netherlands, 2020-2024 inclusive. *This analysis is based on data from GFI's research grants tracker, which is a public resource. If you are aware of funding data that is missing, please let us know via europe@gfi.org or submit it directly to the tracker.*

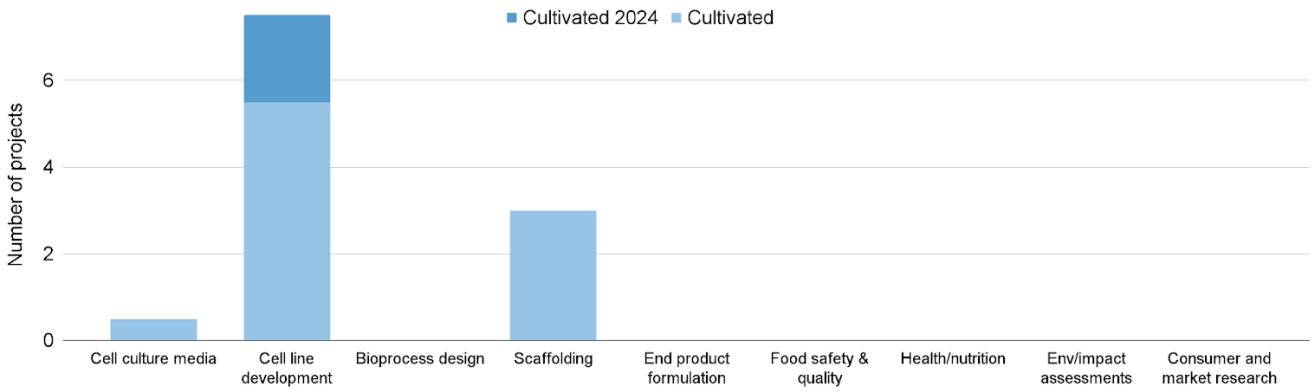
This is likely to change as the Dutch Research Council delivers the research funding component of the Cellular Agriculture Netherlands programme. The first two calls, launched in 2025 and focused on scale-up solutions and sidestream opportunities for cellular agriculture, will shift the portfolio towards the newer technologies.

Belgium and Netherlands investment across the three pillars

Figure 30: Number of projects funded in Belgium and the Netherlands by research category, 2020-2024 inclusive, broken down into a) plant-based, b) fermentation, and c) cultivated. *Cross-cutting awards are distributed to the pillar of greatest relevance. The Cellular Agriculture Netherlands award is not included. This analysis is based on data from GFI's [research grants tracker](), which is a public resource.*







The research categorisation could reflect the fact that a major strength of the region is in traditional food science approaches, such as ingredient optimisation and end product formulation. This has also led to a relatively strong focus on downstream areas in plant-based such as health and nutrition and consumer research, perhaps reflecting the industry concentration in the region. In fermentation, there is a lot of research into host-strain development and feedstocks, but little into traditional fermentation. The research landscape for cultivated is significantly more nascent, as little downstream or impact assessment research has yet to be funded.

If you are aware of funding data that is missing, please let us know via europe@gfi.org or submit it directly to the tracker.

09 Central and Eastern Europe (Croatia, Czechia, Estonia, Poland, Serbia)

Summary

Central and Eastern European countries have now invested over €17 million in alternative protein R&I, driven predominantly by a ramp-up in available funding from Poland. However, Croatia, Czechia, Estonia and Serbia have also funded research and development in the region, making for a lively regional bloc with significant future potential. While none have yet made it into the top 10 overall countries, Estonian and Polish investment is the 6th- and 7th-highest by GDP/capita, respectively, and Polish funder National Centre for Research and Development (NCBR) joins the top 10 overall funders for 2024.

Total funding

While the region's funding has not been consistent over the past five years, the jump in funding in 2024 suggests that alternative protein research is gaining momentum, particularly in Poland and Czechia, where the bulk of funding has come in a single year.

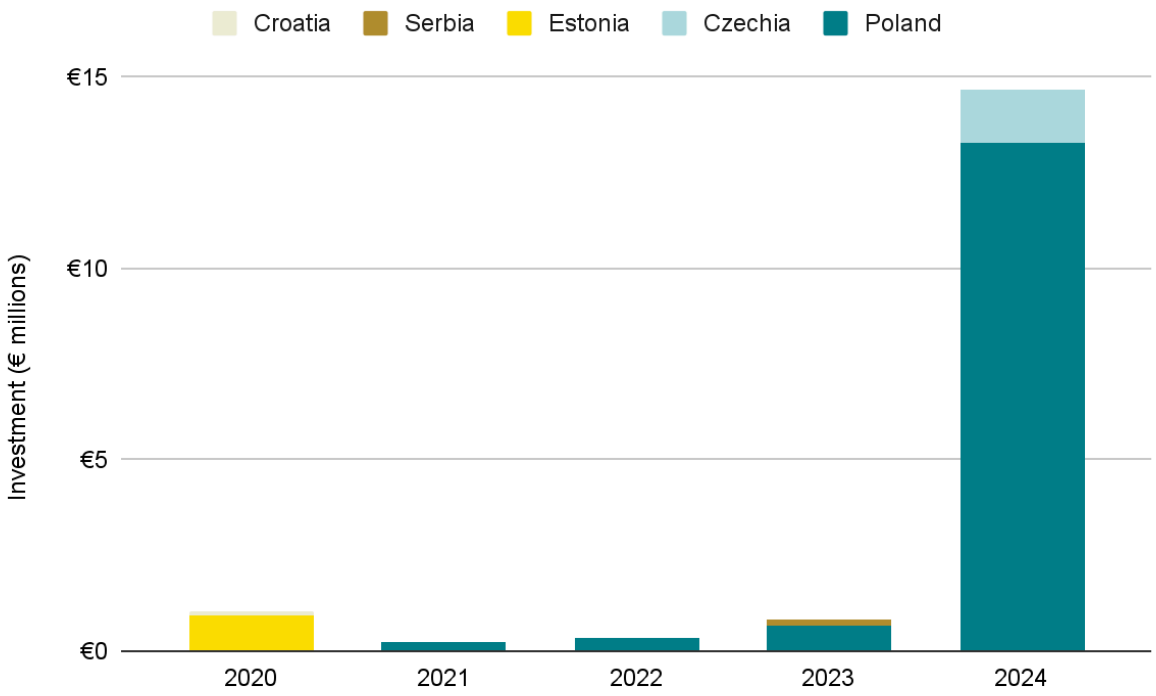


Figure 31: Investment by Croatia, Czechia, Estonia, Poland and Serbia, 2020-2024 inclusive. *This analysis is based on data from GFI's research grants tracker, which is a public resource.*

Funders

The Polish funder, National Centre for Research and Development (NCBR), leads the region by some margin, reflecting their strategic prioritisation of research in the area, which covers both fermentation and cultivated. Another Polish funder, the National Science Centre, places second, closely followed by Estonian and Czech funders. The region's funding comes from a range of research and innovation funders, as well as government ministries, suggesting a range of strategic and non-thematic funding approaches.

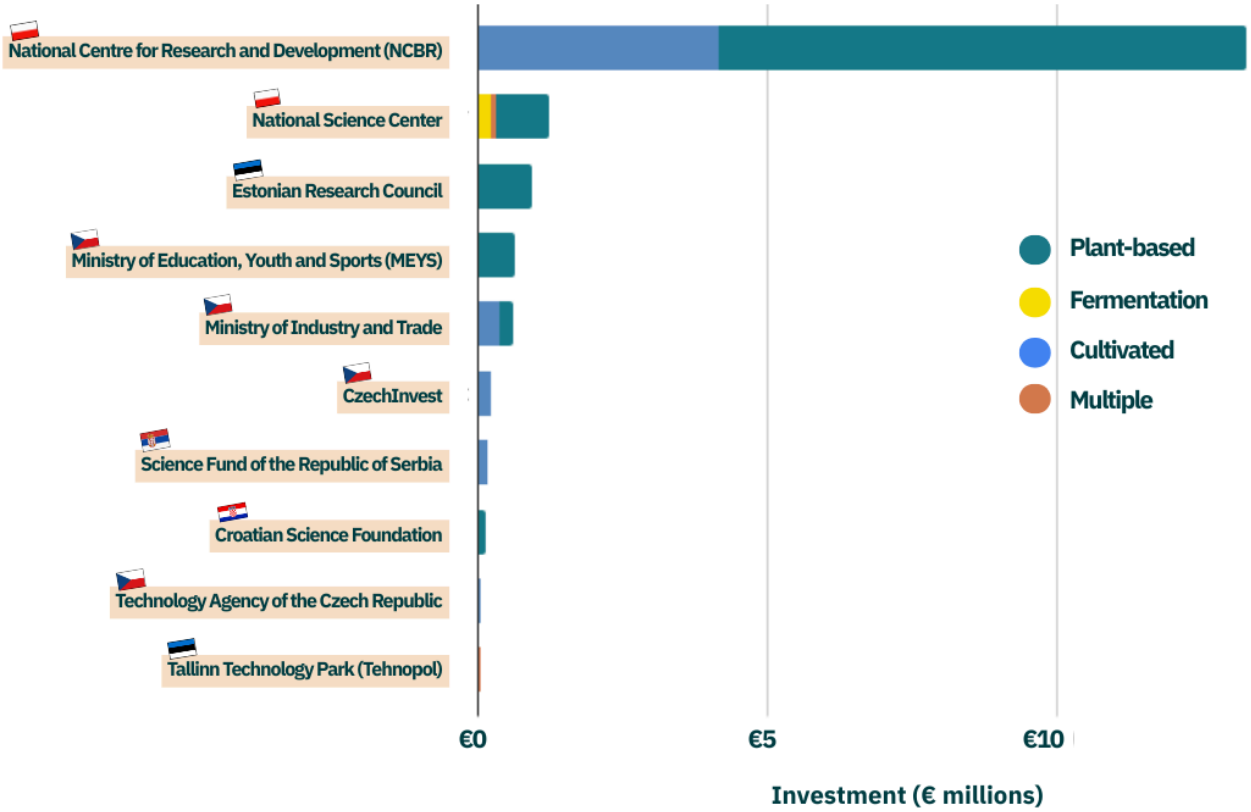


Figure 32: Investment by funders in Croatia, Czechia, Estonia, Poland and Serbia by pillar, January 2020-April 2024 inclusive. *This analysis is based on data from GFI's research grants tracker, which is a public resource.*

The recent investments from NCBR dominate, making cell culture media and bioprocess design the top categories to receive funding in cultivated meat, and ingredient optimisation and end product formulation the top categories for plant-based.

If you are aware of funding data that is missing, please let us know via europe@gfi.org or submit it directly to the tracker.

10 Conclusions

2024 was a record year for alternative protein research and innovation funding in Europe, making it the fifth consecutive year to top the annual funding record. Maintaining this growth is critical to building the capacity of the research community and ensuring Europe has a strong and stable alternative protein sector.

While this state of play is positive, a significant step up is still required over the next five years if Europe is to meet the requirements of the Global Innovation Needs Assessment for and reap the benefits of protein diversification. With investment now over €300 million a year, it would need to more than double to reach the required average annual investment of €750 million by 2050, which approximately represents the European share of the global total. The global R&I landscape is competitive, and Europe risks being left behind if the overall trend of decreasing R&I share for the bloc isn't turned around. Europe's expertise in food biotechnology means it is well-placed to lead the world in alternative protein development.

Between the three pillars, the promising new technologies of fermentation and cultivated meat are increasingly receiving more attention than plant-based, which has seen funding stabilise rather than grow over the past two years. Yet there are still technological roadblocks in the field of plant-based, such as improving the taste and texture of products, which only sustained R&I funding can overcome. Governments should continue to invest in this area as part of a cohesive strategy towards protein diversification, supporting the significant plant-based research community that is now present in Europe.

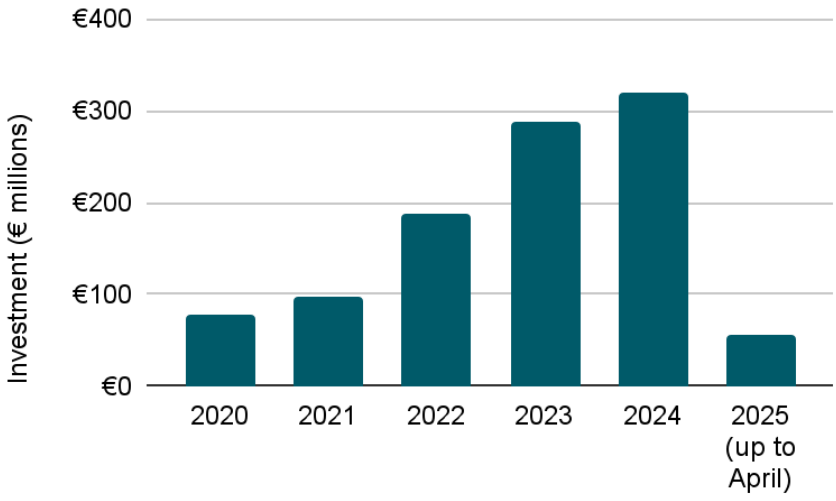


Figure 33: Investment by European public and nonprofit organisations in alternative protein R&I over time, January 2020-April 2025.

The 2025 State of the Alternative Protein Landscape: Publishing analysis shows a corresponding increase in the size and capacity of the European research community over the same period. As the field grows and matures, we can expect that growth to compound, as researchers experience more success in competing with established fields to secure funding through competitive grant processes.

About this report

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With appreciation to Kernel Science, who contributed to the data collection for this report.

About the Good Food Institute Europe

The Good Food Institute Europe is a nonprofit and think tank helping to build a more sustainable, secure and just food system by diversifying protein production.

We champion the science, policies and investment needed to make alternative proteins delicious, affordable and accessible across Europe.

Our SciTech team develop open-access research and resources, educate and connect the next generation of scientists and entrepreneurs, and fund open-access research across the field.

By advancing plant-based foods, cultivating meat from cells and producing ingredients through fermentation, we can boost food security, meet our climate targets and support nature-friendly farming. GFI Europe is powered by philanthropy.

11 Appendix: Methodology

Data source

Data was sourced from a combination of public funding databases, manual information curation, and from Dimensions, an interlinked research information system provided by Digital Science (https://www.dimensions.ai).

For public databases, searches were conducted using a series of keywords relating directly to alternative proteins to generate a shortlist of grants that contained these keywords (ie, in the title or description of the project). These keywords were:

1. alternative protein; sustainable protein; fake meat; meat substitutes; clean meat; slaughter-free meat; animal-free meat; meat analogue; vegan meat; meat alternative; animal-free; animal substitute; smart protein; future food; protein production; non-animal; sustainable food; fake fish; fish substitutes; animal-free seafood; smartfish; non-animal ingredient; fake seafood; seafood substitutes;
2. plant-based meat; vegetable-based protein; plant-based protein; plant-based seafood; plant-based fish; plant protein; plant based; plant-based; algae protein; algal protein; macroalgae protein; kelp protein; microalgae protein; seaweed protein; plant-based milk; non-dairy milk; oat milk; soy milk; rice milk; plant-based cheese; vegan milk-breast; plant-based dairy; vegan dairy; cashew cheese; plant-based egg; plant based egg; egg substitute; egg replacement; plant-based seafood;
3. cultured meat; cell cultured; lab-grown meat; lab grown meat; cell-based meat; cell based meat; cellular agriculture; synthetic meat; artificial meat; clean meat; cell-grown meat; cellular meat; stem cell meat; cultivated seafood; cultured seafood; lab-grown seafood; cell-based seafood; lab-grown fish; cell-based fish; cell-cultured fish; cell-cultured seafood; cellular aquaculture; cell-grown seafood; cell-grown fish; cellular seafood; muscle tissue engineering; cultivated fat; cultured fat; serum free medium; in vitro meat; cultured animal cells;
4. precision fermentation; fermentation-derived protein; biomass fermentation protein; precision fermentation protein; traditional fermentation protein; mycoprotein; fungi-based meat; fungi-based protein; single cell protein; single-cell protein; microbial protein; fusarium protein; quorn; fusarium venenatum; fungus protein; mycelial protein; mycelium protein; mycelium meat; recombinant protein; microbial cell factories; recombinant expression; microalgae protein; yeast protein; edible filamentous fungi; bacterial protein; hydrogen-oxidizing bacteria; microbial biomass;

Given the interdisciplinary nature of alternative protein research and the wide range of potentially relevant grants that could fall under that definition, complex search terms were devised for Dimensions that allowed us to trigger grants that may be relevant to our analysis. These search teams were:

5. "food" AND ("protein") AND ("plant" OR "plant based" OR "plant based meat" OR "vegetable" OR "vegetarian" OR "vegan" OR "plant based seafood" OR "plant based fish" OR "algae" OR "algal" OR "macroalgae" OR "kelp" OR "microalgae" OR "seaweed" OR "crop"
6. ("plant based milk" OR "non dairy milk" OR "oat milk" OR "soy milk" OR "rice milk" OR "plant based cheese" OR "plant based dairy" OR "vegan dairy" OR "vegan cheese" OR "vegan milk" OR "dairy substitute" OR "milk substitute" OR "dairy alternative" OR "milk alternative" OR "dairy replacement" OR "milk replacement" OR "cashew cheese" OR "plant based egg" OR "egg substitute" OR "egg replacement" OR "egg alternative" OR "vegan egg"
7. "food" AND ("protein") AND ("precision fermentation" OR "fermentation derived" OR "fermentation made" OR "biomass fermentation" OR "fermentation" OR "mycoprotein" OR "single cell" OR "microbial" OR "fusarium" OR "quorn" OR "fusarium venenatum" OR "fungus" OR "fungi" OR “fungal” OR "mycelium" OR "mycelial" OR “recombinant protein” OR “microbial cell factories” OR “recombinant expression” OR "microalgae" OR "microalgal" OR "yeast" OR "cellular agriculture" OR "synthetic biology" OR "edible filamentous fungi" OR "fungal hyphae" OR "bacteria" OR "bacterial" OR "engineering biology" OR "hydrogen oxidizing bacteria" OR "microbial biomass" OR "saccharomyces cerevisiae"
8. "cultivated meat" OR "cultured meat" OR "cell cultured meat" OR "lab grown meat" OR "cell-based meat" OR "cellular agriculture" OR "synthetic meat" OR "cell grown meat" OR "cellular meat" OR "stem cell meat" OR "cultivated seafood" OR "cultured seafood" OR "lab grown seafood" OR "cell based seafood" OR "lab grown fish" OR "cell-based fish" OR "cell cultured fish" OR "cell cultured seafood" OR "cellular aquaculture" OR "cell grown seafood" OR "cell-grown fish" OR "cellular seafood" OR "in vitro meat" OR "cultivated fat" OR "cultured fat"

The time period was limited to 2010-2024. Countries selected for analysis were Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Norway, Switzerland, United Kingdom.

All data downloaded from Dimensions.ai on 29 May 2025 and screened offline in a spreadsheet format.

Data screening

Results of the grants searches from each data source were compiled, checked for duplicates, and then screened against a set of inclusion/exclusion criteria to determine whether they were in scope for this study.

Grants on plant-based, fermentation-made, or cultivated proteins and ingredients that satisfied the following **inclusion criteria** were considered to be within the scope of this analysis:

Grants on the classification or characterisation of a plant, algal or microbial species or cultivated animal cells as a source of protein or other ingredients (including, but not limited to, lipids, enzymes, or fibres) which can contribute to improving the sensory and techno-functional properties of an alternative protein ingredient or product with a stated use case for human food.

Grants on how the processing of plant, algal, microbial, or cultivated animal tissue affects protein functionality or quality for use as a food.

Grants on crop or strain optimisation or agronomic or bioprocessing practices, which examine or aim to improve protein quality or yield, or improve ease of processing.

Grants on the characterisation and/or optimisation of alternative feedstocks or cell culture media or bioprocessing methods, which examine strategies for their utilisation, including life cycle assessments, with the aim of improving the sustainability, efficiency, and/or economic viability of the process.

Grants on the characterisation of hybrid products where the stated aim is the reduction or substitution of animal products and/or the improvement of the functionality of plant, microbial, or cultivated proteins.

Grants which compare the functional properties of plant, microbial, or cultivated protein ingredients or products with conventional animal proteins, where the findings are relevant for optimising the techno-functional attributes of the alternative protein ingredient or product.

Grants on the biochemical properties (flavour, aroma, nutritional properties, allergenicity) of plant, algal, microbial or cultivated proteins.

Grants on the societal, policy, and regulatory aspects or studies which relate to consumer acceptance or techno-economic analysis of alternative protein foods.

Grants that met one or more of the following **exclusion criteria** were judged to be outside the scope of this analysis:

Grants on broad-spectrum comparisons of animal- and plant- or microbial-based protein diets, or consumer attitudes towards these diets, where the outcomes are not relevant for the development of alternative protein products.

Grants on the classification or characterisation of a plant, algal, microbial species, or cultivated animal proteins, with a stated use case for pet food or animal feed only, where there was no aim or potential for the improvement of the functionality of plant, microbial, or cultivated proteins for human consumption.

Grants on the general characteristics of underutilised plant, algal, or microbial species as foods where protein is not a focus or is only a minority focus.

Grants on the characterisation of blended or hybrid products where the aim is the improvement of the functionality of animal products or ingredients.

Grants on the characterisation of a plant, algal, or microbial protein ingredient functionality where the stated aim is the development of nutraceuticals, bioactive peptides, or some other health-promoting ingredient.

Grants on the characterisation of plant, algal, or microbial proteins, or associated processing techniques, where the stated aim was the development of a food which does not substitute animal proteins (eg, bread, pasta, snacks).

Grants on the biochemical properties (flavour, aroma, nutritional properties, allergenicity) of plant, algal, or microbial proteins where the stated use case is not a substituting protein-based food (meat, egg, dairy analogues).

Grants on the development of plant-, algal-, or microbial-based foods as medical nutrition solutions or grants on the development of alternative protein products where the stated end user is a vulnerable person (eg, end users with a diagnosed medical condition).

Grants on any other topics not listed in the inclusion criteria.

Caveats and limitations

Included/excluded countries	While the initial data collection covered a broader list of countries, some were later excluded as a result of absence of data. The final list of included countries in this report is more limited, as follows: Austria, Belgium, Croatia, Czechia, Denmark, Estonia, Finland, France, Germany, Ireland, Malta, Netherlands, Poland, Portugal, Spain, Sweden, Norway, Switzerland, United Kingdom. Excluded: Bulgaria, Greece, Republic of Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Italy, Romania, Slovakia, Slovenia.
Funding is reported by the jurisdiction of the funder	It is important to note that the regional analysis above was performed on the basis of the jurisdiction of the funding body. The exception is the UK, where the contribution of international funders was included in the reporting. This means that the total funding in a given region will not reflect all the funding that has gone into that region from external funders, and excludes all funding from the European Commission. For the purpose of this report, funding from the European Commission was analysed as a separate jurisdiction, as the EU. In the case of the UK, for the period of non-association with Horizon Europe, funding for EU-awarded projects is listed under the UK total as funded under the Horizon Europe Guarantee.
Inconsistent levels of public funding data	For some countries, data coverage is significantly less extensive than others (particularly where the public funder does not release detailed funding information). This is noted throughout the report where applicable. Factors that influenced data availability for this report included the presence or absence of funding databases for national and nonprofit funders, the sensitivity of those funding databases to our chosen keywords (partly but not exclusively linked to the language of the database), and the architecture of the funding database (including the availability of funding information). Dimensions.ai was used to supplement the data available from public databases, but many of the same limitations apply.

Subjectivity of scope decisions	While all efforts have been made to ensure the data presented in this report is accurate and consistent, the decision about the inclusion of a given project is subjective. While the decision-making rubric is provided in the methodology section, the following limitations apply: • Relevance to alternative proteins may only become clear from the results of a project. Many fundamental research projects may ultimately have applied relevance. • Not all projects with relevance are described in language (in the project title) that makes this obvious to the reader. • Relevant research may occur under the umbrella of larger research grants, in which case the relevant aspect of the research may not be identified.
Reported currency	All currencies were reported in Euros except where otherwise mentioned. Currency conversions were performed using the average annual exchange rate for the given year of the award, or for figures not specific to a given year, the 2024 rate.