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EIT Food – Response to the Call for Evidence for initiative:

New European Innovation Agenda

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Executive summary

Achieving sustainability objectives and increasing the resilience of the European food system in the face of mounting systemic stressors will require that the EU's Innovation Agenda prioritises and channels investment into the correct blend of innovations, not just deep-tech, but also the **acceleration and up-scaling of available solutions**. This is key for the agrifood sector.

EIT Food has identified six Innovation Focus Areas which offer the highest potential to contribute to the transformation of the food system, achieve impact and help the EU achieve its net zero greenhouse gas emissions target by 2050. In most of these areas it is already possible to deploy technologies or innovative approaches at scale. However, to accelerate and bring new solutions to market it's necessary to **reduce costs and regulatory barriers to adoption**. Agrifood innovation is putting the EU regulatory framework to an unprecedented test. It is necessary to launch new programmes of sand boxes and living labs to test new potential approaches to design a regulatory framework which can ease the acceleration and deployment of innovations.

In **access to finance**, the EU is still lagging behind other global competitors. This hampers the EU's innovation capacity and causes many European startups to go to non-EU markets to seek better growth opportunities. These challenges are exacerbated in the agrifood sector. Moreover, the underrepresentation of women in every segment of the sector, especially in decision-making positions, and the risk of negative gender bias towards women entrepreneurs among investors weakens the EU innovation capacity.

Reducing **regional disparities** in agrifood innovation is also key. In 2019, EIT Food established a RIS Policy Council to advance the innovation performance of countries with moderate or modest innovation scores and develop synergies with smart specialization strategies and European Structural Investment Funds (ESIF). However, the actual development and implementation of such synergies is hampered by obstacles which are generating misalignment between EU instruments, risks of inefficiencies and duplication.

In **education and training**, compared to other sectors, agrifood still follows more traditional approaches. Many job seekers are entering the agrifood sector with a deep but narrow technical profile. There is a need to enhance curricula with more trans- and interdisciplinarity to ensure key under-pinning capabilities are available throughout the food system. Moreover, there is a barrier for more innovative curricula in that most jobs that graduates would flow into are more traditional roles. Industry is slow to adapt to the new skill sets that are coming available. EIT Food is addressing these issues through its Competency Framework and associated Certification approach to be able to recognise key innovation and entrepreneurship skills across the sector. EIT Food has also joined the Pact for Skills.

1. Introduction

EIT Food welcomes the opportunity to provide input to the development of a New European Innovation Agenda. As Europe's leading food innovation initiative, working to make the food system more sustainable, healthy, and trusted, EIT Food is fully aware of the central role the sector covers in the green and digital transition. The 6th Assessment Report of the IPCC[1] has highlighted how emerging food technologies such as cellular fermentation, cultured meat, plant-based alternatives to animal-based food products, and controlled environment agriculture, can bring substantial reduction in direct GHG emissions from food production. Additionally, the recent Russian invasion of Ukraine has revealed several fragilities of the EU's food system and further increased the urgency of its transformation[2].

Achieving sustainability objectives and increasing the resilience of the European food system will require that the EU's Innovation Agenda prioritises and channels investment into the correct blend of innovative solutions. Besides investing in deep tech, it is also necessary to take stock of the many existing innovations that can enable and accelerate the transformation and develop pathways for their acceleration. Filling the crucial gap between the lab and the marketplace will be key for the EU to capitalise on the large number of excellent results of projects already funded by Horizon2020 and previous framework programmes.

2. Framework conditions, including legislation: scope for more pro-innovation regulation

The EU has adopted a net zero greenhouse gas emissions target for 2050. It is therefore crucial consider how the broader policy agenda can be aligned with this decision. Innovation will be essential in improving existing technologies and their deployment potential, opening new technology pathways, and creating the attractive new lifestyle choices that will be needed to command public support for the transition. This is particularly important in the agrifood sector, where many innovations will play an important role in reducing the impact of food production and consumption on GHG emissions.

In consultation with its partners and stakeholders, EIT Food has identified six Innovation Focus Areas which offer the highest potential to contribute to the transformation of the food system and deliver impact: sustainable agriculture, sustainable aquaculture, protein diversification, digitalisation of traceability, targeted nutrition and circular food systems. In most of these areas it is already possible to deploy technologies or innovative approaches at scale. However, to accelerate and bring new solutions to market, which should become mainstream, significant 'learning by doing' will be required to improve their performance and reduce costs and barriers to adoption. This learning process shall also inform the EU policy and regulatory framework governing the agrifood sector, where the deployment of new solutions and technologies is putting the existing framework to the test. The question is whether existing legislation needs revising and

[1] Intergovernmental Panel on Climate Change, 2022. *Climate Change 2022: Mitigation of Climate Change*. Assessment Reports. IPCC. Available at: <https://www.ipcc.ch/assessment-report/ar6/>

[2] The Communication on Food Security issued by the European Commission on 23 March 2022 further emphasised the pivotal role of innovation in building a sustainable and resilient food system.

updating in light of technological developments, because European law may impact the transformative potential of several important new solutions, in particular:

- In the field of **alternative proteins** – plant, insect and algae-based novel proteins, single-cell proteins and cultured meat – which is key to stimulate dietary changes and thereby reduce the impact of livestock production. There is a high proportion of non-CO2 emissions from soil and livestock which will be difficult to abate without changes to consumption patterns;
- In the adoption of **carbon removal solutions** that capture CO2 from the atmosphere and store it either in ecosystems through nature protection and carbon farming solutions, or in other storage forms through industrial solutions;
- In the use of **new genomic techniques** in plants, animals and micro-organisms for agrifood;
- In the development and adoption of new solutions to measure and communicate to consumers, through new food **labelling** methodologies, the environmental footprint of food production. Public policy and regulation will be key to stimulate the adoption of new solutions and at the same time ensure the EU follows a harmonized approach, eliminating the plethora of sustainability claims and labels which may confuse European consumers.
- In the overall synergies between both the innovation and policy agenda, especially with regards to the upcoming EU legislative framework for sustainable food systems.

Many other examples can be identified in addition to those listed here.

Considering the above, it will be essential to launch new programmes of sand boxes and living labs to test new potential approaches to design a future-proof regulatory framework which can ease the acceleration and deployment of agrifood innovations. These programmes should be accompanied by a broad multi-stakeholder dialogue to engage all players in the value chain, as well as citizens and public authorities, in an open debate on the transformation of food systems. Special attention must be paid to strengthening the dialogue between policymakers and innovators, so that the latter can bring evidence and voice the problems they encounter with sector-specific regulations. In this context, EIT Food welcomes the launch of the joint JRC/CARTIF IN-PACT study ("Sustainable Innovation and Innovative practices in the Agri-food supply chain") which aims to explore the drivers and barriers to agrifood innovation, and which policies are needed to support this transition[1].

[1] CARTIF, 2021. *IN-PACT. Sustainable Innovation and Innovative practices in the Agri-food supply chain*. Available at: <https://www.cartif.es/en/in-pact-en/>

3. Access to finance: scale-up gap | Fragmentation of the EU innovation ecosystem

Startups are typically the bearers of the necessary pattern-breaking and standard-setting innovation. However, with high scaleup potential come greater risks: hence, the existence of a **financial ecosystem** that is conducive to their growth is crucial for their survival and their chances at scaling up. While progress has taken place over the last decades, **the EU is still lagging behind other global competitors**. This hampers its innovation capacity and causes many European startups to go from their home EU market to other non-EU market (such as the US) to seek better growth opportunities.

As highlighted in the study on equity investments in Europe produced by the European Commission in 2021[3], a significant part of the problem is the **high level of fragmentation** of the EU's innovation ecosystem, with member States applying different regulatory regimes on intellectual property, market authorisations, labour, taxation, and more. Dealing with this level of complexity is beyond the capacity of most emerging innovative businesses, typically operating on limited staff and financial resources. Another, equally important piece of the puzzle are the obstacles that European startups face in **accessing finance**, both because of regulatory fragmentation, and because of the generally small size and number of funding rounds for high-risk capital, dwarfed by comparisons with international competitors such as the US.

These challenges are exacerbated in the agrifood sector, as detailed in a 2019 report from the European Investment Bank[4]: annual private investment in agrifood R&D stands at only €3 billion (by contrast, the US overspend the EU in agrifood innovation by about €20 billion per year). This scarce level of private investment, combined with and old – and aging – population of European agricultural workers, results in a scarce level of innovation: less than half of the EU's agrifood companies have undertaken innovation activities in the past 3 years, and only 9% innovated in core areas such as technology, products, and processes. Price competition, combined with low margins and long payback periods, limits the appetite and possibilities for innovation and risk-taking. Convincing farmers, averagely risk-averse and conservative, of the added value of innovation and to take up new technologies requires consistent effort in education and solid incentives.

The **financing landscape for innovation in agrifood** is particularly complex, and dominated by specialised investors and financiers, with only little presence of equity investors. Small-scale agrifood innovators mainly look for investors with industry knowledge and relevant networks, which are in scarce supply in the EU. The high level of fragmentation in the range of funding instruments available at European, national, and regional levels creates confusion for the applicants, who must face widely differing conditions. Obtaining financing for growth is very challenging, and applications are often rejected on the grounds of an "unclear or unproven business model", limited financial track record and regulatory uncertainty.[5]

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[3] European Commission, 2021. *Study on Equity Investments in Europe: Mind the Gap*. Independent Expert Report. Luxembourg: Publications Office of the European Union.
[4] Innovation Finance Advisory, 2019. *Feeding future generations: How finance can boost innovation in agrifood*. European Investment Bank.
[5] Ibidem.

Another crucial reason for the low rate of innovation in the EU's agrifood sector is the **underrepresentation of women** in every segment, especially as concerns decision-making positions[6]. Most notably, as testified by a large study published in 2021 analysing funding in Central and Eastern Europe, women are severely underrepresented among VC decision-makers active in the region, amounting to only 15%[7]. The report shows how this negatively affects woman-led agrifood tech enterprises: in 2018, only 16% of the agrifood tech deals were closed with startups with at least one female founder, and only 7% with entirely female-led startup teams – despite data pointing to averagely stronger performances shown by woman-led companies. Reinforcing this conclusion, a **recent EIT Food study** into gender equity in agrifood entrepreneurship revealed that 83% of women surveyed who have experience raising investment report having encountered negative gender bias when pitching to investors[8].

EIT Food's business creation programme offers wide-ranging support to the most promising startups and scaleups in the EU: facilitating their access to new partners and synergies, providing access to the market, facilitating the market launch of pilot projects, and providing access to the funding necessary for their growth and scale-up through our Business Creation programme. From our Seedbed Incubator, to our Accelerator Network, to our RisingFoodStars network of mature scaleups, we support these innovators by compounding direct investment by EIT Food in the form of SAFEs and equities (impact fund) with external investment, of which its startups attracted €170 million in 2020. Since its inception in 2018, EIT Food has supported over 350 companies, from early entrepreneurs to companies scaling internationally.

However, EIT Food has limited financial capacity to support these companies in their development. It is therefore key to improve collaboration and coordination with other EU-funded instruments: most notably, the **European Innovation Council (EIC)** and the **Enterprise Europe Network (EEN)**. In January 2021, the EIC signed a MoU with the EIT to set the terms of their cooperation. However, so far the opportunities to develop such collaboration have been limited, and this requires stronger coordination between the Commission and the relevant bodies.

4. Innovation performance: differences among EU regions

Reducing innovation disparities in agrifood innovation is also key. In 2019, EIT Food established a **RIS Policy Council**, an advisory body consisting of stakeholder representatives from 21 countries with moderate or modest innovation capabilities, covered by the EIT Regional Innovation Scheme (RIS). The Council supports EIT Food in the developing collaboration with national and regional authorities that select agri-food-related

[6] As testified by data from the European Institute of Gender Equality analysing the relevance of gender in agriculture and rural development available online at this link.

[7] European Women in VC; Unconventional Ventures; Experior Venture Fund, 2021. *Funding in the CEE region - through the lens of gender diversity and positive impact*.
Further investigation is necessary to quantify to what extent this trend applies to the rest of the EU, but several sources point to a general underrepresentation: see e.g. the updated monitoring of all woman VC decision-makers in the EU from Sifted, a media platform backed by the Financial Times reporting on the EU's start-up ecosystem, available online at this link.

[8] EIT Food, 2021. *Female Agrifood Tech Entrepreneurs: Exploring barriers women face as founders and CEOs, and EIT Food's commitment to advance gender equity*. Available online at this link.

topics as their Smart Specialization Strategies, developing synergies with European Structural Investment Funds (ESIF). One of the aims is to leverage additional public funding from the ESIF to invest in innovation projects and capacity building, as mandated by the EIT Regulation and Strategic Innovation Agenda.

The Horizon Europe Regulation states that the "deployment of research results and innovative solutions developed in the Programme shall be facilitated with the support of other Union programmes, in particular through dissemination and exploitation strategies, transfer of knowledge, complementary and cumulative funding sources and accompanying policy measures. Funding for R&I activities shall profit from harmonised rules that are designed to ensure Union added value, to avoid overlaps with different Union programmes and to seek maximum efficiency and administrative simplification."

European Structural and Investment Funds are one of the Union programmes listed in the Regulation which shall facilitate the deployment of research results and innovation solutions. However, according to insights delivered by the EIT Food RIS Policy Council, the actual development and implementation of such synergies is hampered by several obstacles which are generating misalignment between different EU instruments, risks of inefficiencies and duplications, and hampering EIT Food's ability to connect its pan-European innovation ecosystem with local innovation initiatives and ecosystems.

These **obstacles** include:

- Misalignment between the call cycles of Horizon Europe and the EIT and those managed by national and regional authorities managing ESIF and smart specialization strategies;
- Lack of information on the benefits of synergies and misperception of synergies as attempts to withdraw resources from regional/local budgets;
- Horizon Europe's financial mechanisms not allowing external entities (non-partner, public funding bodies) to co-finance EIT funded projects (co-funding is possible only for EIT KIC partners);
- EIT funded projects are strongly focused on impactful, cross-regional initiatives - while projects funded locally by ESIF are more focused on regional/local impacts, involvement of local stakeholders;
- Lack of capacity among regional/local stakeholders to submit international cross-regional projects, if they are not already familiar with Horizon Europe's regulations and templates. In RIS countries, this knowledge is often found only within universities, research agencies and few highly innovative companies, whereas it is often missing among regional/local authorities, SMEs, farmers, agricooperatives, local agrifood trade associations, and the like;
- Regions and local stakeholders not interested in getting involved in international initiatives, or co-funding projects that would be selected using European-level peer review, rather than local decision making processes;
- Limited ability by individual beneficiaries in RIS countries to create synergies between innovation projects financed from different funding schemes at different development levels.

Solving these challenges will certainly require a combination of multiple interventions, at local, national and EU level. **EIT Food's recommendation** is to:

- Improve information flow between different EU initiatives, starting at the policy design level;
- Increase efforts to align reporting timelines and mechanisms to create joint pipelines of projects, and explore possibility to organise joint calls and co-financing schemes;

- Provide clear guidance and funding pathways that would enable KIC partners to combine EIT funding with ESIF by means of instruments similar to "Seal of Excellence" (i.e. beneficiaries of projects funded by EIT would have simplified access to ESIF funding on their regional/national level as complementary/co-funding in their projects).

5. Talent: developing and attracting entrepreneurial talent, encouraging diversity

In education and training, compared to other sectors, agrifood still follows more traditional approaches. There is a culture of learning on the job, but not to have this recognized and certified by a third party. In this respect, the agrifood sector is unlike other sectors, such as healthcare for instance, where there is a culture of Continuous Professional Education as a licence to practice the profession.

EIT Food is addressing these issues through its Competency Framework and associated Certification approach to be able to recognise key innovation and entrepreneurship skills across the sector in a way that benefits both employers and employees. To develop synergies and collaborate with other stakeholders in the agrifood sector, EIT Food has joined the Pact for Skills and the Partnership for Skills in Agrifood led by FoodDrinkEurope and Copa-Cogeca.

The EU Skills Agenda and the inclusion of skills in many relevant EU strategies dealing with the agrifood sector is helping to generate a market traction to promote upskilling and reskilling of workers. However, skills development does not happen in isolation. There is a need for broader capacity building (e.g. access to good digital infrastructure and latest technologies) for skill development to be meaningful.

At the moment, many job seekers are entering the agrifood sector with a deep but narrow technical profile. Eventually, they will grow to more interdisciplinary roles through their career. As such there is an opportunity to enhance curricula with more trans- and interdisciplinarity to ensure key underpinning capabilities are available throughout the food system.

In fact, education curricula are changing to better reflect the need of food system transformation, with more courses offering a systems approach and more interdisciplinarity. However, what is still missing in many curricula are the tools to actually drive the transformation, meaning the entrepreneurial and leadership skills, and the tools to make sense of impact in practical terms (i.e. how to articulate the sustainability benefits of a particular new product or process).

Moreover, there is a barrier for more innovative curricula in that most jobs that graduates would flow into are more traditional internships and/or graduate roles, so there is a more systemic issue in the labour market where industry is slow to adapt to the new skill sets that are coming available.

The EIT labelled Master's in Food Systems created by EIT Food is an entirely new way of imagining education, where no single university offers a full curriculum, but students acquire a full degree by taking courses at three different universities. The programme is based on EIT Food's Competency Framework and provides student a tailored approach, by allowing them to pick and choose the courses that best responds to market needs and individual career pathways.