



Deliverable 5.1

Position paper on lessons learned to adjust D4.3

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Introduction

As the end of FIT4FOOD2030 draws near, the purpose of deliverable 5.1 is to examine how Responsible Research and Innovation principles can be effectively applied to achieve food systems transformation, taking into account the lessons learned in the project, particularly in the project's City, Food and Policy Labs. In doing so it builds on deliverable 4.3, a position paper on adapting R&I policies to achieve future-proof food systems by implementing RRI principles. D4.3 was submitted in M17, around the half-way mark of the project. Exploring and developing on the central concepts of FIT4FOOD2030, it was based on already existing research and sources, as well as work that was carried out during the first part of the project in Work Packages 2, 3 and 4. The activities to try and implement the main aims of FIT4FOOD2030 in practice, namely increasing the impact of R&I on the transformation of food systems through RRI, have taken place in the Labs. Therefore, it was foreseen that a second position paper would look at the application of RRI for food systems transformation again at the end of the project, taking into account the real world experiences of the Labs; the current deliverable.

Being submitted as D5.1, is the fourth policy brief of the FIT4FOOD2030 EU Think Tank. The EU Think Tank is made up of 15 experts from different backgrounds that are relevant to food systems. Its role has been to function as a link between what happened in the project and the EC policy level. They have met 6 times during the course of the project, and also participated in a number of sessions specifically related to Covid-19, together with the EC. The members of the Think Tank decided early on to produce a series of policy briefs in order to have a tangible output for increased impact. These briefs were not planned at the start of the project. The topic of the fourth policy brief is 'Governance of research to accelerate innovation, deliver transformation and demonstrate flexibility at the time of shocks', and it aims to highlight key principles for new ways of commissioning R&I, to make it more impactful in support of FOOD2030. It takes into account the lessons synthesized from the project, especially the Labs, the experiences of the Think Tank members from their work at national and international levels, and their observations of how the R&I system reacted to the Covid-19 pandemic, including associated restrictions. The main messages of the brief are summarized on its first page. This policy brief builds on the EU Think Tank's earlier policy briefs (Gill et al., 2018, 2019; Sonnino et al., 2020), which respectively focused on the systems approach in R&I for food systems transformation, the engagement of consumers in FOOD2030 and R&I in support of the EC's Farm to Fork strategy.

Because the topic of the fourth policy brief matched so closely with the aim of D5.1, and as the policy briefs are an extra publication of the project, it was decided to submit the brief as D5.1.





POLICY BRIEF 4

GOVERNANCE OF RESEARCH TO ACCELERATE INNOVATION, DELIVER TRANSFORMATION AND DEMONSTRATE FLEXIBILITY AT THE TIME OF SHOCKS

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KEY MESSAGES

- The shock of the pandemic confirms the urgency of, and provides an opportunity for, accelerating the research pathway from design through to impact.
- Responses to the pandemic have identified the need for research on the *interconnections* between different parts of the food system to enhance its resilience.
- Scientific outputs such as data, knowledge and models are tools for creating a dialogue with policymakers and society: their robustness and limitations should be understood by all dialogue partners.
- Infrastructure (funding and support) should be available to ensure that all those participating in research are supported through relevant capacity development.
- Both top-down and bottom-up approaches are required and need to be more closely integrated in guiding Research and Innovation policy.

FOOD 2030 EU policy framework

The European Commission's (EC) FOOD 2030 framework aims to find solutions to the challenges facing our food systems, such as obesity, malnutrition, hunger, climate change, scarce resources and high levels of waste through R&I. Prioritizing and integrating R&I on (1) nutrition (2) climate (3) circularity and (4) innovation is necessary for EU food systems to become future-proof - that is sustainable, resilient, responsible, competitive, diverse and inclusive.

This final policy brief of the European Union (EU) Think Tank – part of the FIT4FOOD2030 Coordination and Support Action (CSA) of the FOOD 2030 initiative – **aims to highlight key principles for commissioning impactful, inter- and transdisciplinary Research and Innovation (R&I) in support of the FOOD 2030 agenda.**

Why is there a need for change in the governance¹ of Research & Innovation?

Research funding policy in the European Commission (EC) has shown a clear willingness to evolve since the first Framework Programme (1984-87). The impact of the current COVID-19 pandemic and the increasing recognition of the urgency of achieving a “net-zero” economy by 2050 (EU, 2020) have made it even more urgent for science to provide tools to help policy-makers navigate today's uncertainties. The EC has already taken action through its Green Deal (EC, 2019) and its commitment to spending 35% of the budget of Horizon Europe on climate-related issues.

This policy brief builds on the EU-Think Tank's earlier policy briefs (Gill et al., 2018, 2019; Sonnino et al., 2020) and is **based on a synthesis of lessons learnt during the FIT4FOOD2030 project, experiences of the members of the EU Think-Tank in their work at national and international levels and their observations of how the R&I system reacted to the COVID-19 pandemic, including associated restrictions.**

¹ In this policy brief: the range of regulations, principles and standards of good practice that ensure high quality research.



The context

In 2017 the EC commissioned a report (EC, 2017) to formulate a vision about R&I and make suggestions on how to maximize their impact. One of the key recommendations of this report was to adopt a **mission-oriented, impact-focused approach** to address global challenges through R&I missions that mobilise researchers, innovators and other stakeholders. That report, the interim evaluation of Horizon 2020 and other (scholarly) work have influenced the move towards challenge-based funding and, in particular, the role of Missions and Mission Boards within the new Framework Programme: Horizon Europe (2021-2027). Challenges and their solutions involve many stakeholders and beneficiaries across both public and private sectors and the diverse communities of producers and consumers. As articulating the nature of the challenges and addressing them requires using both “top-down” and “bottom-up” approaches, there is a need for clarity in identifying the specific responsibilities and accountability of organisations at different levels of governance. Governments at the European and national levels have a responsibility for driving food system transformation, translating global principles, agreements and rules into national and local agendas for implementation. Private sector (from multi-national companies to small and medium-sized enterprises, including producers) need to comply. To achieve the latter, however, they should be engaged in the process from developments of the vision through to implementation to facilitate closer alignment between public and private-sector funded research.

Consumer-citizens are the ultimate beneficiaries of research, but with approximately 7.8 billion of them globally, there is a very diverse range of needs and priorities that are not always aligned with the global, national or even local goals of governments. R&I tools (e.g. participatory approaches and Theories of Change) can help to increase awareness of the validity of different viewpoints and to find a resolution across them. A better understanding of the technological, political, economic and social dynamics that shape the existing network of food systems and the identification of the (deep) leverage points where intervention will be most effective is a prerequisite for transforming both food systems and their coupled R&I systems (EEA, 2017; EC FOOD 2030 Expert Group, 2018; Kok et al., 2019).

Bridging the barriers between R&I and policies governing food systems

There is a growing body of literature that explores the characteristics of effective evidence-based policy-making, going back over the last three decades or more (e.g. Gill and Johnston, 2010). Differences in language and culture, and in the training of people who follow career paths in science and policy, are two of the characteristics often identified as creating a barrier between the two communities.

Different time horizons are one aspect of cultural differences, with decision-makers looking for immediate and definitive answers, whereas scientists want to develop hypotheses through observation and analysis, and subsequently test them through experimentation and/or modelling, which takes time. (These differences between science and policy communities became particularly clear during the early days of the COVID-19 pandemic.) **Greater involvement of stakeholders** at all stages of the R&I process is increasingly advocated (Reed et al. 2009; Sartas et al. 2019; den Boer et al., 2020). EC-funded projects that explicitly engage with citizens and stakeholders more broadly, such as CIMULACT², CASI³ (support to research policy design) and FIT4FOOD2030 (support to the development and implementation of the FOOD 2030 policy framework), are growing in number. The first call for research in support of the Farm-to-Fork Strategy (‘Testing and demonstrating systemic innovations in support of the Farm-to-Fork Strategy’) specifically requires the adoption of **system approaches** to define the challenge(s) and of cross-sectoral approaches to engage practitioners, public and private institutions, including young professionals.

Innovations in commissioning

Traditional R&I commissioning involves funders developing competitive, relatively short (3-5 years) “Calls for proposals” (often informed by consultation with stakeholders), submissions of proposals by researchers, which usually exceed the budget available, and a peer review process, managed by funders but led by independent researchers and, more recently, including input from stakeholders.

FIT4FOOD2030 approached stakeholder engagement using two specific research tools: **1) City Labs and Food Labs** (Box 1, the latter title added during the project to account for the wider footprint of food systems), aimed to develop a common vision of a place-based food system and to identify the competences needed to contribute to its realization; and **2) Policy labs** (Box 2), aimed to propose innovative and coherent R&I policies to support food systems transformation. The FIT4FOOD2030 project drew out four key lessons for R&I funding systems from their experience in running these Labs, conducting trend analyses and studying “breakthrough” innovations (e.g. new proteins, personalised nutrition and health, biobased packaging, precision agriculture and urban agriculture) in food systems.

First, the **inclusion of systems thinking in the R&I agenda** is key: an assessment by the Member States of current R&I focusing on food shows that most budgets are still allocated to the traditional sectors of primary production and processing, rather than to more downstream issues like food consumption or food waste; nor do they explore ‘nexus’ issues (Gill et al., 2018). In particular, R&I linking the domains of food and health is limited. If R&I is to contribute to FOOD 2030 ambitions effectively, more projects are needed that aim to initiate or support promising food innovations that deliver co-benefits for nutrition and health, climate and sustainability, circularity and

² [CIMULACT](#)

³ [CASI](#)



resource efficiency and community empowerment. Also, R&I projects need more focus on initiating or supporting promising food innovations that can deliver co-benefits for nutrition and health, climate and sustainability, circularity and resource efficiency and community empowerment.

Second, the ***inclusion of a Responsible Research and Innovation (RRI) approach*** is necessary to make R&I more responsive to the needs and values of society. The concept of RRI, which emerged in the EU's Framework Programmes for Research and Technological Development, requires a focus on innovations that are appreciated by society, which then needs to be engaged in the innovation process. By aiming to move from 'science in society' to 'science for society and with society', RRI belongs to the school of multi-actor approaches that argue that multiple stakeholders need to be involved.

The third key lesson is about the importance of ***R&I funding institutions acting as 'innovation brokers'***: both public and private funding institutions (including philanthropic organisations) should assess their R&I funding system and analyse whether the incentives, selection criteria and procedures sufficiently contribute to achieving food system change, making FOOD 2030 ambitions more of a collective responsibility. Funders could also play a role in signalling to policy, business and other sub-systems such as health and environment/climate, which types of changes are needed to achieve food system transformation.

Box 1. The City and Food Labs and examples of outcomes

FIT4FOOD2030 supported twelve city-level and two regional-level City Labs in building competences on food systems (Responsible) R&I and raising awareness of initiatives and action plans among a wide-range of audiences. An underlying objective was laying the foundations of a transformative network of stakeholders, with more than 1,500 engaged. The Lab concept has great potential as a process catalyst; participants in this process note that labs serve as meeting points allowing different stakeholders to connect and network, become aware both of each other's ongoing initiatives and the broader national and EU-level context, and work together in a multi-stakeholder context, from setting up a common vision to exploring systematically and in-depth local issues to co-developing outputs such as trainings. Examples of concrete Lab outcomes so far include:

- A diverse set of 18 competence-building modules, delivered to 2,000+ recipients
- Several R&I Agendas and local Action Plans and priorities, to be pursued through new projects and funding or embedded into existing institutional structures of lab hosts and stakeholders' own strategies
- Catalysis, often in unexpected ways, of local developments; for example, a Food Club was established in a school where students are actively changing their environment

Examples include adjustments in (enabling) regulation (i.e., laws, subsidies, and tax instruments) and changes in public advice, communication and education – all factors that contribute to shaping the food environment (HLPE, 2017).

Finally, it is key **to create an environment to nurture innovations** that have the potential to trigger breakthroughs. These include: 1) incubators for alternatives/solutions; 2) initiatives that create practical ways of experimenting and learning about changing the status quo; and 3) innovations that inspire people by demonstrating that sustainable changes are indeed possible. This requires a systems change in research and funding practice. Bringing innovations to scale together with the 'users' need to be reflected in planning and funding. **Table 1** presents some innovative R&I funding examples.

The UN Sustainable Development Goals have an overarching principle of "leaving no-one behind" and this is important in a region as diverse as the EU. In some recently joined Member States, researchers have not had the same opportunities as those from Western Europe in terms of **capacity development**. Capacity development in food and nutrition involves more than formal training. It includes human resource development, organisational, institutional and legal framework development with the aim of enhancing knowledge and skills (Gurinovic et al., 2020). Capacity development is a long-term, continuing process, which gives primacy to national priorities, policies, plans and processes. The Capnatura network⁴ has delivered

Box 2. The Policy Labs and examples of outcomes

FIT4FOOD2030 supported nine national and two regional R&I Policy Labs in their mission to increase the impact of R&I on food system transformation by strengthening R&I policies. Involving a wide range of stakeholders Labs analysed their food and related R&I systems, identified barriers and opportunities and worked on policy innovation. The Policy Labs have shown to be an effective instrument for engagement of diverse actors from different parts of the food system, raising awareness and fostering conversations as well as concrete actions. A possible improvement in the future could be to better connect citizens and the local level to the Policy Lab. Ensuring commitment from decision makers is key to make change happen. It is also important to realize that this is a complex process, which requires time in order to achieve results. Examples of Lab outcomes so far include:

- Integrated food systems R&I Agendas
- The launch of transdisciplinary calls on food system transformation
- Formalised mirror groups for continued reflection
- Raised awareness about FOOD 2030 and the need for a systems approach
- Increased contact and collaboration between food system actors and capacity building

⁴ [Capnatura](#)



impressive food and nutrition capacity development results in the field of public health nutrition research, especially regionally harmonized methodology in food consumption and dietary intake assessment. Cooperation with other European networks and active participation in international research projects enhanced brought about development of substantial capacity in food, nutrition and public health research in Central and Eastern Europe.

Table 1. Examples of innovative R&I funding

Example	Details
Science Foundation Ireland's (SFI) Future Innovator Prize, Food Challenge⁵	<ul style="list-style-type: none"> ○ Focuses on the development of novel, potentially disruptive, sustainable solutions to reduce food losses and waste across the full breadth of the food supply chain ○ A Societal Impact Champion, coming from outside academia, plays a key advocacy role and assists in maximising societal impact
ZonMw⁶, the Netherlands Organisation for Health Research and Development	<ul style="list-style-type: none"> ○ Additional funding (50,000 euro) awarded to already funded projects to bring their results one step further towards implementation ○ Successful projects are asked to write a proposal ○ Evaluation of the outcomes or agreement on what 'success' looks like considered at the start
UK Global Challenges Research Fund (GCRF)⁷	<ul style="list-style-type: none"> ○ Supports cutting-edge research that addresses the challenges faced by developing countries ○ A call was issued for "Challenge Clusters" to bring together current and/or former GCRF projects, along with associated quadruple helix partners who agreed to collaborate ○ Clusters were encouraged to bring together other development projects to leverage knowledge and deliver new synthesis of research findings

The COVID-19 pandemic

The need for radical changes in R&I funding mechanisms is highlighted by the recent COVID-19 pandemic, which caused global disruption to all aspects of life, including research implementation. Many funders allowed existing grantees to refocus their projects on COVID-19 related questions and also put out "agile" or "rapid-funding" calls for COVID-19 related research. Evaluations of these processes are underway and could provide useful lessons for the EC to help them accelerate the commissioning and review processes for R&I projects on food systems. Another key lesson to take on board is that although the likelihood of a pandemic had been long predicted, the majority of countries were ill-prepared and the impact on national economies has been far greater than anticipated. The similarities with the climate change crisis should not be ignored. Lessons need to be learnt by policy-makers about taking action now to decrease the impact of climate change and other shocks on the resilience of European food systems. Redundancy, tracking systems and policy harmonization should all be part of the research focus. Europe is seen as being one of the leaders in having in place its "Green Deal" (EC, 2019), implementation of which will require a shorter time from research initiation through to impact. This calls for some radical

changes to funding mechanisms e.g. Including collaboration with users on implementation and scaling outcomes, without compromising quality.

Lessons learnt through the EU Think Tank

One of the advantages of having the EU-Think Tank as part of the FIT4FOOD2030 project was the breadth of experience brought by members from their own Member State (or region) or international organisation. The analysis of the examples mentioned above and the experience of members of the EU Think Tank highlight the following aspects which need to be built into **the commissioning of R&I in a transdisciplinary context**. These are not exclusive, but are important in relation to maintaining research quality and value for money for research while planning for transformation of food systems.

Capacity development: broadening the "research community" beyond those trained in research methods requires investment to ensure that stakeholder participants understand the nature of the process and have the tools to enable their voices to be heard. Non-research funding sources should be explored for this purpose (e.g., the Interreg programmes of the European Region Development Fund (ERDF)⁸ to support capacity building in R&I). During the period 2014-2020, projects funded under the Interreg Danube programme⁹ have been instrumental in addressing shortage of skills in R&I management through developing and delivering capacity-building programmes for diverse stakeholders, including R&I policy makers, R&I funders, R&I project managers and funders, and managers of research infrastructures. For instance, the Excellence-in-ReSTI¹⁰ project developed the so-called 'ReSTI.Academy'¹¹, a sustainable learning system devoted to spreading excellence in R&I management, leadership and administration. Another example is the ResInfra@DR project¹², which aimed to improve the framework conditions for the R&I infrastructure in the Danube region. The project delivered a comprehensive training programme for funders and managers of research infrastructures as well as several practical guides. During the next programming period (2017-2027), a stronger coordination between the ERDF programmes and Horizon Europe could be highly beneficial in terms of: 1) research coherence/alignment while increasing the efficiency of EU funding for R&I; and 2) disseminating good practices in R&I policy design and policy implementation across EU regions and countries.

Continuity of funding: repeated funding of the same group is a problem for many public funders, but introducing innovative approaches may require funding for more than five years to establish networks, knowledge hubs and communities of interest/practice. Measurable indicators to monitor progress and alternative funding mechanisms to enable continuity need to be explored. This is especially relevant in the context of the much needed lessons, experiences and best practices in moving beyond experimentation towards scaling-up or mainstreaming of sustainable initiatives.

⁵ [SFI Future Innovator Prize, Food Challenge](#)

⁶ [ZonMw](#)

⁷ [Global Challenges Research Fund](#)

⁸ [European Regional Development Fund](#)

⁹ [Danube Transnational Programme \(DTP\)](#)

¹⁰ [Excellence-in-ReSTI](#)

¹¹ [ReSTI.Academy](#)

¹² [ResInfra@DR](#)



Bridging disconnects: traditionally, funding of R&I projects on agricultural production and support for production have occurred through the public purse, whereas R&I on processing has traditionally been of more interest to the private sector. Production data have been used in support of policy, while data on post farmgate processes are often used to help drive profit in the private sector, rather than open access. Systematic approaches need to make better connections between production and processing (which fits with the objective of “Deepening the ERA, EC, 2020), potentially by making co-funding with the private sector more attractive (through e.g. policy incentives). Such initiatives should also take account of health and nutrition goals.

Flexibility alongside quality and accountability: the timeline on the delivery of the SDGs and in relation to climate change emphasises that the current process of commissioning R&I will not support food system transformation. A lesson of COVID-19 is that funders can be flexible when the need is high, and evaluation of rapidly funded COVID-19 projects and implementation of their outputs will provide an excellent opportunity to learn lessons on how to accelerate processes and adapt research towards urgent needs. Accelerating the research to impact timeline is critical, but changes need to be informed by evidence that research quality will not be compromised.

Difficulties in accelerating uptake: the rapid adoption of R&I results will be essential to deliver on GHG emission reductions and the SDGs. Considering the diversity of local contexts and the potential for unintended consequences, mistakes will be made. These mistakes should be viewed as part of the research process and a robust system of monitoring and course correction should be put in place alongside adoption. Implementation science¹³ may help with this.

The role of international organisations: international meetings (e.g. the 2021 Food Systems Summit and COP 26) have a key role to play in fostering the adoption of global goals by governments since they can provide platforms to connect the intersectoral dots and get the narrative (on research, political economy and national and international food systems) right. Internationally agreed goals set the context for national policies that should work together as a cohesive whole – vital for climate change, since we all share the same atmosphere, and for food system networks connected by trade in agricultural inputs and food commodities. They also set the high level drivers of the desired outcomes of transforming food systems within the context of the SDGs. This in turn helps to identify the drivers of R&I strategies at European and national levels. Knowledge exchange (bi-directional) between decision makers articulating the drivers at those levels needs to be timely and systematic. Close alignment of EC R&I with that commissioned by international organisations is key.

Concluding remarks

Food production has been the main driver of many economies (and still is in several low- and middle-income countries), but its expansion has contributed to many global challenges (e.g., nutrition, health and environmental). Sustainable economic theories, such as Doughnut Economics (Raworth, 2017), have been proposed to transform food

systems but, to date, they have not yet been integrated into high-level policy. There is a need for a **new R&I paradigm**, which should include:

- The goal of building **collective intelligence** through knowledge production, sharing and mobilization in support of the design of context-specific solutions, to be developed with strong beneficiary input. This has implications for the way we learn lessons and for “scaling out” and “scaling up” processes.
- **Embracing complexity, trade-offs and risks and acceptance that dealing with these require more flexibility** in the R&I process than is currently available, considering the requirements for rigid targets and milestones in proposals.

Recommendations for R&I funders

Horizon Europe has already incorporated some of the best practice points listed below. They should, however, also be translated into funding policies at the national level.

Principles

- **Mission-driven research** (i.e., research focused on societal impact) should be at the forefront of R&I strategies but not to the exclusion of basic or upstream R&I, which often generates breakthrough knowledge or technologies. The scale of global challenges of the 21st century also requires “blue sky” solutions.
- Delivery on Missions requires **transdisciplinary research approaches** – i.e., an interdisciplinary research team working closely with stakeholders.
- Barriers to closer collaborations between public and private sectors should be addressed: active **independent brokerage** could be a way forward.
- **Strong coordination** between Horizon 2020 and Horizon Europe and the ERDF programmes should be prioritized.

Regulations

- **Maintaining high quality R&I is paramount**, and a peer review process undertaken by disciplinary experts who can assess the robustness of research design and methodology is essential.
- **Peer review** by relevant stakeholders should be the norm for transdisciplinary research proposals, together with commitment to Open Science and the San Francisco Declaration on Research Assessment¹⁴.
- **Accountability** for the value of public funding is essential, but the uncertain nature of the R&I process needs to be recognised to allow for less rigidity in the achievement of pre-set targets.

Standards of good practice

- More investment needs to be made in ensuring that all stakeholders participating in R&I are **well briefed** on the nature of the R&I process and **compensated** for their contribution.
- Where R&I is intended to deliver on a “Mission”, realistic pathways describing how the research outputs will contribute to the “Mission” should be described and **the potential for any unintended consequences on other “Missions” identified**. Measurable indicators of progress in the later stages of those pathways could be requested.

¹³ [Implementation science](#)

¹⁴ [San Francisco Declaration on Research Assessment](#)



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