RÉPUBLIQUE FRANÇAISE
Liberté
Égalité
Fraternité

INRAE

INRAE Position Paper

10th European Framework programme for Research and Innovation

INRAE is the French National Research Institute for Agriculture, Food and the Environment. INRAE's mission is to carry out world-class science to provide innovative solutions addressing global challenges, notably climate change, biodiversity and food security while at the same time enabling the much needed agroecological, nutritional and energy transitions. This research also serves policy-making from regional to international levels, thereby contributing to the Sustainable Development Goals.

INRAE is a driving force in Europe. Its major scientific and political orientations are fully aligned with the European Commission's strategic agenda, in particular with the European Green Deal. By generating new evidence-based knowledge, sharing data, collaborating with stakeholders, and supporting public policy-making, INRAE contributes to the development of solutions to the EU's main challenges related to the sustainable transition of agricultural, forest and food systems, the development of the bioeconomy and the sustainable use of natural resources.

INRAE is also a key player in the European Research Area, being involved in over 300 projects under Horizon 2020 and already over 150 projects under Horizon Europe. It is the leading French organisation funded for the key European thematic area "Food, Bioeconomy, Natural Resources, Agriculture and Environment" (Cluster 6) and one of the most funded European organisations in this area. INRAE's research teams are involved in all the opportunities offered by Horizon Europe, whether in terms of pillars (Science of Excellence, Global Issues, Innovative Europe, Widening Participation and Strengthening the ERA), instruments (all categories of the ERC, MSCA and Research Infrastructures, Clusters, EIC, Twinning, etc.) or themes (the six Pillar 2 Clusters, including Missions and Partnerships).

As a major beneficiary and supporter of the successive European Framework Programmes for Research and Innovation, and as a research organisation committed to the strengthening of the European Research Area, INRAE wishes to make its contribution to the discussions on the future Framework Programme for Research and Innovation 2028-2034 (FP10).

Key messages

⇨ **Competitiveness and sustainability should not be opposed or considered separately**, but rather in synergy with high added value for European global leadership. The EU has to make sure that the system in which its industry and economy operate meets the challenges of resilience and sustainability to guarantee its long-term competitiveness.

- FP10 must support **collaborative research across the whole spectrum of research and innovation** to achieve impact.
- Including "**Research Actions" for collaborative research projects with low TRL** (TRL 2 to 4) would allow the completion of the TRL chain.
- Backing **the collaborative dimension of European research** brings clear European added value and fosters more impactful innovations**.**
- **A new "project cycle" approach is needed to create a portfolio of collaborative research projects organised in increasing TRLs that are part of a "challenge-driven programme"**. This approach would be based on long-term-planning for the financing from low-TRL projects through to high-TRL projects that meet the same challenge.
- **The creation of a European Technology and Industrial Competitiveness Council and a European Societal Challenges Council is welcomed** to engage practitioners in the governance of the programme. Strong synergies should be established between these two Councils, to ensure that improved competitiveness is also sustainable (and vice-versa), and also with the ERC Scientific Council and the EIC Board to ensure overall coherence.
- It is important for the effectiveness of research and innovation to **strengthen the synergies** between FP10 and other EU funds.
- **FP10 budget should reach €200 billion**, to maintain EU scientific and technological sovereignty in a highly competitive global environment, to tackle the urgent challenges related to agriculture, food and environment, and to provide the means to create a breeding ground for solutions.
- FP10 must pursue simplification efforts, especially to make participation and coordination easier.
- **European Partnerships are strategic instruments** to tackle the systemic approach of some research questions but significant improvements in the **simplification and clarification of participation rules are required**.
- **Research Infrastructures should retain their own identity as tools devoted to ERA excellence.**
- **European Missions** propose relevant solution-oriented approaches, but **should not be financed solely by FP10** as their purpose goes far beyond solving research questions**.**
- **FP10 should facilitate the establishment of international scientific partnerships** to ensure that the EU remains competitive in the international research arena and contributes to addressing global scientific challenges.

A. INRAE vision for the future of European Research and Innovation

The next Framework Programme for Research and Innovation (FP10) is being discussed in a context of economic, social and environmental crises, including the growing global challenges of climate change and biodiversity loss, geopolitical tensions, challenges for European competitiveness and restricted budgetary resources. While Europe needs to improve its competitiveness, this must go hand in hand with the EU leadership in dealing with climate, environmental and health emergencies to better protect its population. Increasing extreme weather events and the biodiversity crisis have come on top of the shocks faced by economic sectors and populations. The commitment of the re-elected President of the European Commission, Ursula von der Leyen, to "stay the course on the goals set out in the European Green Deal"[1] is therefore a strong signal to tie EU competitiveness to Green Deal goals. It is clear that the EU's long-term competitiveness, like that of any other economy, will be determined by its ability to ensure that the system in which its industry and other economic activities operate meets the challenges of resilience and sustainability. With this in perspective, **INRAE strongly supports the Commission's priority on the Green Deal at the heart of Europe's strategic priorities, and considers that competitiveness and sustainability should not be opposed or considered separately, but rather in synergy with high added value for European global leadership.**

Not only will this approach allow Europe to face its own challenges but it will contribute to achieving the Sustainable Development Goals.

The **agricultural crises that swept across Europe** over the last years are particularly revealing in this respect. Farmers are facing multiple and unprecedented crises, linked to the acceleration of climate change, biodiversity loss, animal diseases and geopolitical instabilities. All those uncertainties are cumulative and are weighing upon agricultural production while weakening the European socio-economic situation. In order to remain competitive, the agrifood sector is looking for solutions that will prevent or at least minimise the impact of these external shocks on their production – not to mention the obvious fact that stable agricultural production is also a key factor in Europe's food sovereignty and stability. The long-term competitiveness of the European agricultural and food sector is therefore inextricably linked to the transformation of the whole agrifood chain towards more resilience, fostered by the agroecology transition. The same applies to the bioeconomy: the development of this key sector will depend on the availability of biomass, which is already under pressure from competing uses, exacerbated by climate change and biodiversity loss, soil degradation and water resources' overexploitation. The pursuit of a strong Green Deal ambition therefore constitutes both a competitive advantage for the EU and the framework for long-term sustainable competitiveness, as stressed by the Commission's Expert Group on the Economic and Societal Impact of Research and Innovation in its Policy Brief "Why Europe needs a systemic R&I policy - Redefining competitiveness for long-term sustainability?"[2]

Combining competitiveness, resilience and sustainability calls for **far-reaching changes in industries and agrifood systems**. Only a **large spectrum from fundamental research to innovation,** embedded

[1] Europe's Choice – Political Guidelines for the next European Commission 2024-2029. Ursula von der Leyen, July 2024

[2] European Commission, Directorate-General for Research and Innovation, Richardson, K., Renda, A., Alkemade, F., Walz, R., et al., Why Europe needs a systemic R&I policy : redefining competitiveness for long-term sustainability, Publications Office of the European Union, 2024, https://data.europa.eu/doi/10.2777/778358

in the EU's industrial and sustainability strategy, will provide the next generation of solutions to complex challenges.

B. Further support for fundamental collaborative research to cover the full spectrum of research and innovation

By supporting collaborative research covering the diversity from fundamental research to innovation, FP10 can foster a more integrated and dynamic research environment that will contribute to solving transnational challenges.

Fundamental research enables a better understanding of the natural environment and the changes imposed by humans on this environment. The innovation process is not linear, but basic research, by advancing basic knowledge and understanding of scientific phenomena, is more likely to lead to new discoveries, thus multiplying the potential for new technological and scientific advantages that will feed the innovation cycle. Fundamental research is therefore key to meet the EU's challenges, as it will feed the pipeline of tomorrow's innovation. It represents one of the necessary first steps in the EU's transition to sustainable and resilient competitiveness. Under Horizon Europe, basic research is mainly funded by Pillar 1 "Excellent Sciences" and in particular by the European Research Council (ERC). The ERC has been a key asset of the previous EU Framework Programmes for R&I in supporting ground-breaking and curiosity-driven research, and has to be maintained in FP10. However, fundamental research is not limited to curiosity-driven research, and must also be driven by policy agendas in order to develop practical responses to sustainable competitiveness. FP10 should therefore expand the possibilities for funding fundamental research in targeted collaborative projects dedicated to both "Global challenges and European industrial competitiveness" – under what is known today as Pillar 2 of Horizon Europe. This is why INRAE proposes to include "**Research Actions" for collaborative research projects, which will fund low TRL projects (TRL 2 to 4)** and thus complete the TRL chain with the Research and Innovation Actions (RIAs, TRL 3 to 5) and Innovation Actions (IAs, TRL 5 to 7). Bridges will need to be built between these different levels to establish a genuine continuum from research to innovation to impact, via a **"project cycle" approach** (see below).

The **collaborative dimension of European research** is also an essential asset for strengthening the EU's competitiveness in a holistic approach that integrates societal challenges. The ex-post evaluation of Horizon 2020 identified multidisciplinary collaboration and pan-European cooperation on research and innovation as a key strength of the Framework Programme[3]. Indeed, the report states that by allowing the combination of diverse and complementary expertise, skills and resources from multiple countries and players, collaborative research projects have created a critical mass that has raised the quality of research and innovation outputs and expanded the frontiers of science. Furthermore, pan-European collaborative research brings clear European added value, as it enables large-scale projects to be carried out with substantial resources – more than one country alone could do – thus accelerating the development of solutions to global challenges, which is much needed in these times of economic, social and environmental emergency. Collaborative research across Europe is also the basis for a more inclusive R&I ecosystem, contributing to the participation of Widening countries. Finally, the multi-actor and living lab approaches supported by collaborative projects are necessary to foster more

[3] REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL Ex post evaluation of Horizon 2020, the EU framework programme for research and innovation - COM/2024/49 final

impactful innovations to the real needs, problems and challenges that economic players and citizens are facing.

It is clear that FP10 must support collaborative research across the whole continuum of research and innovation to achieve impact. However, given that successive framework programmes have struggled to fully exploit and deploy research results, it seems necessary to propose in parallel **a new "project cycle" approach to increase the impact of research**.

C. Towards a project cycle approach to increase research impact

The question of the links between projects of different TRLs and the life cycle of projects is essential for building the path to impact. All too often, research planning seems limited to project duration, which is far too short term, and project results are not taken up to move up the TRL chain. **A new "project cycle" approach is therefore needed** to increase the impact of collaborative research projects. The project cycle approach would be based on **the creation of portfolios of collaborative research projects organised in increasing TRLs that are part of a "challenge-driven programme". It would require** the long-term planning of financing **from low-TRL projects through to high-TRL projects that meet the same challenge**, thus ensuring that projects are linked beyond their own lifecycle. **Project portfolio management should foster synergies between projects,** while at the same time facilitating modulation of TRL levels where necessary, since the innovation process is not linear. In concrete terms, this would mean financing several RAs, the results of which would lead to further research through a reduced number of RIAs, ultimately leading to the funding of one or two IA projects with strong market potential, ending in a demonstrator. Each step up the TRL chain would be subject to evaluation to ensure that projects progress in synergy, which requires proactive project monitoring and management in the frame of project portfolios. In this sense, the new approach proposed in the EIC with Programme Managers responsible for project portfolios is interesting and could serve as an inspiration for managing the project cycle approach, provided that an inclusive consultation of experts and stakeholders is guaranteed.

The project cycle should be led by a challenge to be solved (for instance "Climate resilient cropping systems" or "Precision fermentation for sustainable food systems"), promoting a systemic approach and synergies between projects. This implies calls for projects that are **more open and less prescriptive in order to break down thematic silos and foster the emergence of innovative solutions designed to achieve a common goal.** This project cycle approach would probably require thinking the research programming beyond the time-scale of Framework Programmes (7 years), **while keeping room for flexibility**.

In terms of governance, the challenges to be addressed through a project cycle could be defined with the help of an **independent expertise** provided by sectoral experts, academics and civil society representatives. This should contribute to making these challenges relevant to all stakeholders and aligned with EU priorities for sustainable and resilient competitiveness. This proposition is in line with the recommendations of the Commission Expert Group on the Interim Evaluation of Horizon Europe[4]

[4] European Commission: Directorate-General for Research and Innovation, Align, act, accelerate – Research, technology and innovation to boost European competitiveness, Publications Office of the European Union, 2024, https://data.europa.eu/doi/10.2777/9106236

to **create a European Technology and Industrial Competitiveness Council and a European Societal Challenges Council** in order to engage practitioners in the governance of the programme.

While two distinct Councils are necessary to deal adequately with the specificities of issues relating to competitiveness on the one hand, and societal challenges on the other, attention must be paid not to disconnect societal challenges from competitiveness, and to address these issues jointly from a long-term perspective. **INRAE therefore recommends that strong synergies be established between these two Councils**, to ensure that improved competitiveness is also sustainable, and vice-versa.

These Councils will also have to work closely with the ERC Scientific Council and the EIC Board to ensure overall coherence. Finally, it is important to underline that these four bodies have to be independent, inclusive and transparent in the formulation of their guidance and recommendations.

D. Towards effective synergies between FP10 and other EU funds

While the project cycle approach calls for more synergies across the framework programme, it is also important for the effectiveness of research and innovation to **strengthen the synergies between FP10 and other EU funds**. For instance, complementarities with Structural Fund projects could be taken into account in project cycles to feed the pipeline to innovation, or to reinforce the deployment of solutions to local players. Synergies between FP10 and other EU programmes can also allow the funding of projects that go beyond the strict area of research and innovation. For instance, this would be relevant for the Missions, whose scope goes beyond simple research issues and aims to steer an ecosystem of players towards the resolution of a common challenge (see the Mission section below). Synergies beyond FP10 must not, however, lead to greater complexity in project management.

E. A budget that matches the challenges and ambition

INRAE is aligned with the recommendations of the reports by Mario Draghi[5] and by the Commission Expert Group on the Interim Evaluation of Horizon Europe[6] calling for at least a doubling of the FP10 budget compared to Horizon Europe, to reach €200 billion. Massive investments in research and innovation are needed if the EU wants to close the innovation gap with China and the US and **maintain its scientific and technological sovereignty in a highly competitive global environment**.

Moreover, the challenges related to agriculture, food and environment are so important and urgent that they cannot be tackled without a significant increase in funding for research and innovation in these fields. **Generational renewal** is one of the main challenges facing European agriculture and the EU needs to find solutions to ensure its food sovereignty. **Social innovations and methods of governance** should be defined to strengthen **farmers' position in the food value chain**. Increased pressure on soils and on water quantity and quality require social and technological innovations to move towards a **resilient use of the soil and water resources**. Practical solutions for the adaptation to climate change of the food and farming sectors compatible with **mitigation** targets are also urgently needed. The development of the bioeconomy requires even greater knowledge of biomass availability and the impact of its use, and scaling up of technological capabilities. All these issues - which are not exhaustive - correspond to the political priorities set by the European Commission in the mission letters

[5] Mario Draghi, The future of European competitiveness - A competitiveness strategy for Europe, 2024.
[6] European Commission: Directorate-General for Research and Innovation, Align, act, accelerate – Research, technology and innovation to boost European competitiveness, Publications Office of the European Union, 2024, https://data.europa.eu/doi/10.2777/9106236

of the new Commissioners. The scientific community is already moving forward to tackle these systemic challenges, but the solutions to be developed are complex, thus requiring a significant budget and changes in the way research activities are undertaken.

An increased budget will also enable the full potential of the research continuum to be exploited, making it possible to fund more high-quality proposals (as underlined in the Heitor report), thus enabling the realisation of excellent projects likely to offer alternative solutions, thereby accelerating innovations. By encouraging different approaches to the same issue, the EU provides the means to create a breeding ground for solutions, which could substantially accelerate the emergence of tomorrow's innovations.

F. Pursue simplification efforts to make coordination and participation easier

The European Framework Programmes for R&I have always represented an opportunity to conduct ambitious research projects with European counterparts. However, they have become highly bureaucratic and complex over the years. Increased transaction costs to apply to these programmes have considerably reduced their attractiveness for scientists, especially for beneficiaries who can benefit from other sources of funding. European calls for projects have become increasingly ambitious, with wide-ranging scope and thematic areas and challenging research objectives, calling for multi-disciplinarity, high-impact and inclusion of stakeholders, citizens and the whole value chain. This requires that the beneficiaries, and in particular the coordinator, master a very broad range of skills that go well beyond their competences as scientists. It is therefore a priority to **pursue simplification efforts** in FP10, especially to make the coordinator's role easier.

Ensuring the stability of procedures within and between Framework Programmes is also a decisive factor in their attractiveness. The Commission should consider that any new procedure (such as blind evaluation, lump sum), even if intended for simplification in the long-term, has an entry cost for researchers and for administrative and support staff. It is therefore important to be tolerant in the first years of the implementation by acknowledging the good faith of participants, who may make mistakes in applying the new rules.

Finally, FP10 should ensure that the size and budget of projects are defined according to the scientific challenge to be addressed. Larger projects mean increasingly complex consortia to manage, with less and less time for coordinators to do research. The size and expectations of the project have to remain manageable for coordinators.

G. Strengthening and improving specific instruments

European Partnerships

INRAE supports European Partnerships as strategic instruments for ensuring synergies between national and European research priorities. They also enable a broad range of public and private stakeholders (research organisations, academic institutions, industries, public authorities, etc.) to jointly define and revise research and innovation priorities, which is an asset to better align green and competitiveness goals. By design, the partnership approach is relevant to systemically tackle some research questions, which is not always possible with "isolated" projects in Clusters.

European Partnerships provide a relevant and interesting approach for the preparation of Strategic Research and Innovation Agendas, but are **tools which are complex to implement, thereby reducing their attractiveness** for research communities. INRAE expects FP10 to bring **significant improvements**

in the simplification and clarification of participation rules, in order to facilitate the involvement of Research Performing Organisations (RPOs) in Partnership consortia, as they provide scientific expertise and mobilise national resources. Ensuring at least a 50% contribution of the European Commission for co-funded partnerships is also vital to maintain the engagement of RPOs and achieve the objectives of developing common instruments that benefit the whole EU.

INRAE stresses also that activities developed under European partnerships **should be complementary** to R&I projects funded by the Framework Programmes. Partnerships alone do not cover all the research needs around a thematic field, as they only launch annual calls and fund smaller-scale projects. However, these smaller-scale projects can have a significant leverage effect, by making it easier to initiate research projects on a given topic, which, if taken up in "classic" collaborative calls for projects (currently in the second pillar clusters), can lead to the development of larger-scale projects, with already a strong basis. It is **therefore essential that the themes covered by these partnerships do not stop being addressed within the scope of FP10 collaborative calls**. FP10 calls are essential for ensuring that funding remains accessible to a broader range of researchers, independently from national financial commitments, thus supporting a more inclusive European research landscape and offering more open opportunities for global collaboration.

Research Infrastructures

INRAE recognises the contribution that the ESFRI framework combined with EC funding makes to the overall coordination and successful operation of mature Research Infrastructures. Research Infrastructures deserve to be supported through a dedicated programme which pushes for a better-integrated and better-funded landscape aligned with the EU's most fundamental challenges. **Research Infrastructures should therefore retain their own identity as tools devoted to ERA excellence**, while considering that closer links with thematic collaborative projects are also important. Research Infrastructures are also key assets for innovation and training. These activities should be recognised and supported as such. Synergies between European and national infrastructure funding are also necessary to avoid fragmentation of the ERA.

FP10 should open more opportunities for Research Infrastructures that are not yet ESFRI/ERIC labelled, and should not make consortia too conditional on the participation of extremely mature infrastructures. This will make better use of the strengths of the entire European Research Infrastructure landscape and avoid excessive complexity. Therefore, the next Framework Programme should first aim to better provide researchers with new access to the best facilities to improve the cohesion of research in Europe. In addition, bottom-up aspects are still lacking and more open topics should be proposed.

Regarding e-infrastructures, the EU should promote the AI ecosystem in Research Infrastructure under FP10, encouraging them to provide AI-ready data and facilitating data and knowledge integration by research communities.

Missions

INRAE recognises the importance of European Missions, which are solution-oriented approaches that are very relevant for responding to social and public policy issues. However, Missions can be a **complex tool for the research community**, because of the limited place for research in some calls, and the strong requirement for stakeholders' involvement, especially from local authorities. From INRAE's

point of view, **European Missions, which go far beyond solving research questions** and which operate according to a specific timetable and governance, **should not be financed solely by FP10.** In complement to FP10, missions could also be funded under e.g. the LIFE programme, because of the strong emphasis on demonstration in some projects, or by European structural funds, as Mission calls are often linked to the European regions' roadmaps or strategies. This would also improve synergies between the various European funds.

H. Strengthening international cooperation to meet global challenges

International cooperation is essential for driving the transformative changes necessary to secure a sustainable future for all – notably within the framework of the UN Agenda 2030. It allows pooling of resources across world regions to tackle together the most urgent challenges. The most highly cited papers often come from international cooperation that brings the best experts together.

To remain competitive in the international research arena and meet the scientific needs required to address global issues, **FP10 should facilitate the establishment of international scientific partnerships tailored to these needs**, i.e. with scientific partners of excellence and/or key partners outside Europe. Many global issues could be covered: for example, anticipating the risks of emerging zoonoses to avoid pandemics, preventing plant pests from threatening European food safety, global "One Health", carbon farming, or food systems in the face of water stress. At the same time, facing increasing foreign interference in research, FP10 will need to strike a balance between international cooperation and research security: maintain the targeted international cooperation approach for certain topics and "open" international cooperation for others, after a thorough risk analysis by the European Commission, as this allows flexibility. The Commission should also monitor the implementation of international collaborations during projects, to adapt its approach if necessary over the course of the programme.

The European Union has a vital role to play in the **protection of researchers and the safeguarding of academic freedom**, particularly in times of global instability. FP10 should pursue the initiatives to support the integration of researchers with high scientific potential facing significant risks in their home countries, such as political persecution or severe restrictions on academic freedom.