



CNRS Position Paper

The future EU Framework
Programme for Research
and Innovation - FP10

CNRS vision for the next FP

Backed by 85 years of fundamental research, the CNRS (French National Center for Scientific Research) harnesses all scientific disciplines to understand the complexities of contemporary global challenges. It is a major player in research and innovation (R&I) in Europe and has been the leading beneficiary of European framework programmes (FP's) since their inception.

CNRS is committed to the strengthening of the European Research Area (ERA) in order to make the **European Union (EU) a world leader in scientific research**, ensuring its scientific and technological as well as economic **sovereignty** over the long term. As a lever of the ERA, the next FP for research and innovation (FP10) should be conceived as a strategic objective to guarantee the **political, economic and technological sovereignties**, as well as the **competitiveness** of both the EU and its Member States (MS's). Beyond political needs, the next FP should be conceived to fulfill the **EU needs in R&I that will provide the basis for innovation over the next decades, and also for the well-being of its citizens**.

To this aim, CNRS is convinced that the **continuum linking fundamental research and innovation** should **underlie the design of FP10**. **Curiosity driven research and targeted research** mutually fuel each other. They form a continuum in which the interactions should be encouraged.

The next FP should **support fundamental research and innovation** projects on the **major challenges** the world is facing: climate change; biodiversity preservation; health; food safety issues; technological and societal challenges of digital technologies (incl. AI); energy transition; new materials; migrations... For a complete coherence, CNRS strongly encourages the next FP to support projects developed within a **sustainable approach** minimizing their **environmental impact**.

Along its commitment to society, CNRS believes that the next FP should actively seek to preserve **public confidence in science**, in particular by promoting both **the methodology** and the **scientific production** of EU funded projects among citizens, and by giving a central place to issues of ethics and scientific integrity.

Finally, against the double backdrop of international competition and pressing global challenges, the EU should leverage its **European added value** to achieve the scale necessary to be global leaders in cutting-edge fields. CNRS suggests to pull out all the stops to build critical European masses around highly strategic topics (AI, quantum technologies, new materials...) by creating and supporting over the next decade **dedicated distributed or single sited centers**.

Main recommendations of CNRS for FP10

- ◇ FP10 should **keep excellence** as the main criterion for funding, both for individual and collaborative actions.
- ◇ At a time when global challenges call for more research in all fields of sciences, CNRS believes that FP10 should consider **fundamental research** as an **empowerment of ideas and creativity** as well as the vital breeding ground for innovations within a **continuum from fundamental research to innovation**.
- ◇ FP10 should set support to **European Research Infrastructures (RI's)** as a top priority, maintaining their highest technological level and promoting access to them — to attract more talents to the EU.
- ◇ FP10 should **concentrate its support** to projects for which **intra-European collaborations clearly provide added value**. This obviously relates to R&I on global challenges (climate change; biodiversity preservation; health; ...) but also on **emerging and highly competitive R&I areas** (AI, quantum techno, energy transition, materials...) for which the FP funding is critical in order **to assess the European leadership in these strategic areas**.
- ◇ **Collaborative projects**, harnessing the EU added value across the whole TRL scale, should transcend the whole FP.
- ◇ **Intra-European mobility** must keep being promoted. The **mobility of doctoral students** is crucial to build the ERA and its next generation of European researchers. Similarly, the international and interdisciplinary **exchange actions of research staff** are necessary to strengthen the R&I human capital base in Europe. Marie Skłodowska-Curie Actions (MSCA) must therefore be further developed.
- ◇ **International cooperation** must be pursued

to strengthen European research while **safeguarding the interests of the EU** and respecting the **principles and values** of EU R&I such as academic freedom, gender equality, research integrity or open access.

- ◇ FP10 should foster international scientific collaborations to make **Europe more attractive for scientific talents worldwide**.
- ◇ Efforts must be pursued to develop and increase EU scientific cooperation with the **African Union**.
- ◇ The EU must also continue its efforts to develop and promote **open access** in research.
- ◇ New indicators should make it possible to redefine the notions of **societal/economic impacts** which are often reduced to a short-medium term vision, very focused on economic dimensions. CNRS suggests taking into account the possibility of disruptive innovations in the longer term. Without excluding quantitative indicators (for example publications),

qualitative societal indicators (training of young researchers, increase in knowledge in a little-studied field, communication with the general public, etc.) should be considered as equally impactful as short-term economic indicators.

- ◇ To be fully compliant with the EU Green Deal objectives, CNRS urges considering the **environmental impact** in the evaluation of EU funded projects. An **eco-bonus** should reward projects promoting the reuse of already existing or shared equipment, deterring as much as possible systematic spending for new cutting-edge equipment.
- ◇ To achieve these goals, the CNRS supports the objective of **doubling the budget** of the next FP10 to 200 b€.

Next FP organization

CNRS supports the importance of **preserving continuity with previous FPs** avoiding reshaping the architecture of the FP, thus maintaining the 3 pillars.

CNRS however believes that a **better connection between these pillars is necessary to better conform to the continuum between research and innovation**. To ensure this continuity and allow for a smooth and efficient transfer between fundamental research to innovation projects, a better overlapping between their Technological and Societal Readiness Levels (TRL/SRL) must be achieved. Restricting collaborative activities to high TRL projects disrupts the innovation chain, therefore more collaborative projects at TRL/SRL 0-4 are required to sharpen Europe's ability to innovate and face the future (and unforeseen) challenges. To this end, CNRS proposes the following changes in the 3 pillars with overlapped TRL/SRL's.

1. Pillar 1

The scope of Pillar 1 should be broadened to innovative scientific research at large, while **keeping the focus on excellence** and supporting collaborative research of TRL/SRL of 0 to 4. Accordingly, it could be renamed "**Excellent and Innovative Scientific Research**".

Since its creation in 2007, the ERC has proved, internationally, as a unique enabler of groundbreaking and impactful research. To fully exploit the potential of the ERC, while preserving its independence, CNRS calls for its empowerment with a greater budget, in order to grant all A-rated projects.

The ERC Synergy grants are a great success of the ERC programme attracting many consortia. These consortia, however, are of limited size and primarily involve advanced participants. The CNRS proposes enhancing **support to collaborative projects between young researchers**, allowing a larger number of partners (up to 8) to be associated, and funded by a **substantial budget**. This could be done either within the framework of the current ERC SyG by modifying its rules or creating a new type of ERC Collaborative grant.

The MSCA programmes which support mobility of researchers at any career stage strongly contribute to forging a European scientific identity. CNRS will support any initiative that aims to strengthen, extend and promote these programmes.

The "Infrastructure" calls should remain in Pillar 1 but the new FP should establish a **transversality of ESFRI infrastructures** across the 3 pillars to make them more easily accessible by all EU funded projects.

2. Pillar 2

Pillar 2 should focus on “**Global challenges and European transformation**” supporting research at TRL/SRL of 1 to 6.

There should be more support in Pillar 2 for **funding “target-driven basic research” of low TRL/SRL.**

In order to support **long-term projects** aimed at bringing specific topics from low to high TRLs over the 7 years of the programme, the CNRS proposes that a few calls from the successive Work Programmes of each cluster of the Pillar 2 make it possible to fund long-term projects over the entire duration of the FP in which the consortia could evolve and with a go/no go assessment process.

To maximize the impact of EU support, CNRS recommends **to better prioritize the calls**, by reducing the number of **addressed topics**. All-encompassing calls result in superficial projects and too large consortia that are inefficient and difficult to manage.

3. Pillar 3

Pillar 3 should be entirely dedicated to “**Innovation and Industrial Competitiveness**” with calls starting on low TRL/SRL and on a larger range

between **0 to 8** in order to ensure the continuum between basic research and market-oriented projects.

Within its joint laboratories which associate SMEs or large companies with its research teams, CNRS develops **collaborative research on fundamental subjects co-defined with its industrial partners**, shaking up the idea according to which the needs of companies only relate to questions of high TRL innovation. Following a continuum approach, the EIC programmes should continue supporting the possibility to associate academic research with industrial partners around technological development interests.

CNRS therefore strongly supports **the continuation of the EIC programme**, both the **EIC Pathfinder** calls which fund research aimed at developing the scientific bases necessary to support disruptive technologies and the first stages of technological R&D as well as the **EIC Transition** calls which support collaborative R&I projects between Research Performing Organizations, SMEs and start-ups on higher TRL topics.

With such reorganization, the budget breakdown between the 3 pillars would then have to be rebalanced within a ratio of 40%, 40%, 20% for pillars 1, 2, 3 respectively.

Research Infrastructures

European RI's are innovative and unique research tools for the European scientific communities. They are not only pillars of **fundamental science**: they play a crucial role in **supporting collaborative research**, technological innovation and European scientific sovereignty. In addition, they are **powerful economic drivers** in European regions.

Cutting edge RI's are strong magnets for talents, **attracting many scientists** from around the world and contribute to Europe's scientific influence.

The next FP should ensure continuity of support to scientific communities for **promoting and maintaining access** to RI services, in particular through curiosity-driven projects. For this reason, RI's should be maintained in Pillar 1, ensuring the emergence of new RI's, supporting cooperation between RI's (including international cooperation), and **supporting the evolution of RI services to emerging needs**, with adequate levels of financial support.

FP10 should strengthen and foster the use of **RI services across all pillars**, with suited funding mechanisms. In particular, the use of RI's in Pillar 3 projects should be promoted as well as the use of the RI services by the private sector, **avoiding differentiating RI and Technology RI** as separate entities.

FP10 should broaden **the scope of the European Research Infrastructure Consortium (ERIC)** rather than creating new ones, for example through the integration of national infrastructures into existing ERIC.

Finally, CNRS strongly supports open access in research and consequently reaffirms its support to EOSC. However, a thorough **evaluation of EOSC** appears necessary to avoid any disconnection with user expectations prior to its continuation.

Partnerships

Partnerships allow stakeholders (industry, research organizations, academia and operators) to jointly define research priorities around given topics and to structure communities. They have demonstrated their efficiency and **should be reinforced and be made more flexible** to facilitate an easier integration of new participants, in particular those from the academic world — including Research Performing Organizations (RPO's).

For topics with a potential economic impact (i.e., materials, energy, transport, etc.) the next FP should promote cooperation between all stakeholders in order to boost the transfer of research results to innovations and the market-applications. To achieve that goal, access to the current **European co-programmed as well as**

institutionalized partnerships should be made easier with affordable membership costs.

Partnerships close to markets and manufacturers are very high TRL oriented and tend to mainly support Innovative Actions (IA), searching for short-term impacts, at the expense of Research and Innovation Actions (RIA). CNRS suggests to keep a **high RIA/IA ratio** in all partnerships in order to **maintain substantial research activities in all of them.**

Co-funded partnerships which make it possible to synergize the EU funding with that of MS's on specific challenges **deserve to be further developed** and promoted by adapting the relative contributions of each MS according to their financial capacities.

Synergy with MS national programmes

Given that most EU R&I priorities intersect those of MS's strategies, the next framework programme should more efficiently seek **synergy between national programmes and European actions** and allow easy opening of calls on emerging topics suggested by MSs during the course of FP10.

This **flexibility will allow more co-funded and co-programmed calls** to be opened on societal issues

in Pillar 2. Such co-funded calls could be proposed either by individual MSs or by a joint proposal from several MSs and would concern low TRL/SRL collaborative projects (1-4). The co-funding rules should be clearly stated and supported by the MSs to enable smooth participation in particular of academic entities.

Widening / Outermost regions

Widening countries

The European divide is only slowly healing and constitutes a major threat to European cohesion. CNRS strongly support **strengthening collaborative actions with widening countries, without compromising on the non-negotiable criterion of scientific excellence.** These actions must not be focused only on strategic themes but should encompass all scientific fields. New actions **promoting the transfer of knowledge** between MSs should be considered (similar to the Transfer of Knowledge (ToK) actions of previous FPs). These fundings should be linked more closely to EU structural funds to gain synergy and efficiency.

Outermost regions

EU **outermost regions are “marker” sentinels of the impacts of global change** on questions of preservation and adaptation of biodiversity, preservation of natural resources and natural risks - seismic, volcanic or climatic, rise of the sea — but also emerging diseases. They are a unique opportunity for EU scientists to study grand challenges including with non-EU partners. In the next FP, CNRS supports the implementation of **specific R&I strategies for the outermost regions** with respect to these challenges, further developing the synergies between European fundings and third parties.

Operational implementation

Lump Sum

CNRS welcomes the implementation of “**Lump sum**” funding and its extension across the programme. This funding scheme greatly facilitates the administrative management of EU projects, alleviating financial justification towards the funding authority. To further reduce the time spent to prepare the administrative and financial components of projects, CNRS proposes that the submitted **proposals only feature a simplified budget**, and that the final “lump sum” be detailed and refined only for selected projects, during the Grant Agreement Preparation phase.

Environment

As mentioned above CNRS supports measures to mitigate the carbon footprint of EU R&I. Accordingly, FPIO rules for eligibility of expenses should consider a “buy less and buy better” approach by establishing an **eco-bonus** which

would promote maintenance and repair of purchased equipment and the use of second-hand equipment. Additionally, the use of low carbon footprint transportation for intra-European travels should be promoted.

Mass purchases

For specific projects, these expenses represent a real financial challenge. CNRS supports in the next FP the possibility for projects to apply distribution keys based on consumable use in the cost justification processes.

Harmonization

CNRS strongly supports a **complete harmonization of financial rules for all European projects** and for all DG's, with more consistency between the rules of participation and eligibility within the FP.

As a summary

CNRS is a major player in the ERA and **will continue to promote the necessary strengthening of its Research and Innovation FP** to make Europe a world leader in scientific research guaranteeing its long-term sovereignty.

Overall, CNRS considers that the FPIO should:

- ◇ **Support individual and collaborative fundamental research** to ensure the continuum from basic research to innovation, within a long-term vision.
- ◇ **Primarily promote the added value of EU collaborations.** The more and the closer research collaborations between Member States, the stronger the ERA.
- ◇ Keep **excellence as the priority criterion** for selecting EU funded projects.
- ◇ Maintain European **research infrastructures** at the highest technological level to be able to meet new scientific and technological challenges beyond the next two decades.
- ◇ Empower **international scientific collaborations** and make the EU an **attractive place** for talents worldwide.