

Supporting Europe's Societies: Research and Innovation for the Ninth Framework Programme

The European Union provides outstanding added value to research, innovation and education. No other continent, no other group of states has developed such a capacity to bring together the best minds across borders to solve major challenges, create knowledge, and acquire new skills. The budget for research and innovation in the next Framework Programme (FP9) needs to be increased to €130bn as the EU must concentrate on areas where it provides the most added value to Member States. Increased spending on research, innovation and education is essential if we are to strengthen Europe's knowledge economy, enhance citizenship through rational discourse, and engage with the social, cultural and environmental concerns of citizens in innovative ways. Spending on research, innovation and education should concentrate on areas where added value is greatest:

1. Support for frontier-led research must be strengthened to further enhance the excellence of European science.
2. FP9 should foster the scientific, societal and educational impact of research and innovation.
3. Mission-driven research and innovation will allow Europe to take a lead in addressing the UN's Sustainable Development Goals (SDGs).
4. To enable the long-term sustainability of excellence and collaboration across Europe, FP9 should reduce the participation gap between higher and lower performing countries.
5. FP9 should increase the effectiveness and European added value of innovation by supporting all actors in innovation ecosystems.
6. FP9 should support further progress on the European Research Area (ERA) and on Open Science.
7. FP9 should foster collaborations among researchers, innovators and students from around the world, based on principles of genuine two-way collaboration, capacity-building, and the shared pursuit of excellence.
8. FP9 should offer simplified, transparent and user-friendly funding programmes.

1. Support for frontier-led research must be strengthened to further enhance the excellence of European science.

Our most significant breakthroughs in knowledge, from the theory of relativity to the discovery of DNA, have come about through curiosity-driven research. The true impact of these discoveries has often been witnessed decades after their publications. Through the creation of competitive research funds at a European level the EU has established a unique standard of excellence, and this excellence must continue to drive decisions for research funding across different programmes of FP9. In particular, the Guild recommends that:

- The proportion of funding for the European Research Council (ERC), as a jewel in the crown of European research, must increase significantly. We fully support the demand of the ERC's Scientific Council to scale up its budget to €4bn annually within FP9.
- The overall budget of Marie Skłodowska Curie Actions (MSCA) should be increased by a proportion similar to that of the ERC, as it opens up opportunities for European collaboration to Europe's best young minds – and future leaders in research and innovation.
- As evidence has shown that the most highly cited researchers are those who have spent time abroad and then returned to their home country, The Guild suggests 'return grants' to be introduced within the MSCA. This way, national academic institutions could be supported in attracting researchers with international experience to continue their careers at their home institution after time spent abroad.

2. FP9 should foster the scientific, societal and educational impact of research and innovation.

The best research yields unexpected discoveries: by definition, its impact cannot be foreseen. Moreover, the full economic, social and cultural impact of research often takes decades to be fully realised. It is impossible to measure the precise relationship between science and its impact, which relies on a wide variety of inputs beyond that of researchers. Impact is maximised through the largest possible circulation of ideas, as this not only leads to new research questions, it also prompts new applications in often unexpected ways. It is critical that scholars maximise the circulation of ideas generated through their research (wherever possible), through a full engagement with Open Science, the dissemination of their work in every appropriate format, and a wider engagement with society.

The Guild calls for a more sophisticated approach to impact in the call texts of FP9. Instead of focusing mainly on the economic impact of the project, the European Commission (EC) should come up with more concrete ways in addressing the project's scientific, societal and educational impact that would also be reflected in the evaluation of the applications. Approaching impact from a wider perspective also contributes to making the Framework Programme and the projects that it is funding more relevant and accessible to citizens.

3. Mission-driven collaborative research and innovation will allow Europe to take a lead in addressing the Sustainable Development Goals.

Europe's states have recognised that they face common challenges framed by the UN's Sustainable Development Goals (SDGs). As individual nations have begun to formulate their own action plans there is a particular role for the EU in spearheading a European approach to tackle the fundamental challenges that affect all Europeans. By addressing the SDGs through its research and innovation policy the EU will

enhance its role as a global actor, and relate its mission to the core concerns of its citizens. Research, innovation and education help drive the EU's concern for our sustainable development. Enhanced spending on collaborative, mission-oriented research is needed to support not only sustainable growth and job creation, but also to strengthen the physical, social and cultural well-being of European citizens:

- The Guild supports mission-oriented call topics that have the development of knowledge and solutions to address Europe's challenges related to sustainable development challenges as their starting point.
- 30% of all mission-driven calls should be bottom-up calls to enable researchers to develop outstanding proposals within and across Work Programmes to address the SDGs.
- The SDGs encompass fundamental environmental, social, economic and political concerns, and require interdisciplinary solutions, calling on contributions from all fields of knowledge. Societal challenges cannot be addressed in a comprehensive way unless missions are also defined through approaches in the Social Sciences and Humanities.
- In addressing the challenges related to Europe's sustainable development we must frame our research, education and innovation in ways that engage wider society and relevant actors (including the public sector, NGOs, industry and SMEs). Our work must serve to reinforce social cohesion and the trust that citizens have in universities and public institutions, and the ethics of rational enquiry and truth-seeking as their core values.
- Increased budget for collaborative research should be introduced in FP9 with a dedicated action type that places research in the centre of the project, alongside support in the form of research and innovation actions (RIA), innovation actions (IA) and coordination and support actions (CSA).
- To address oversubscription (and the consequent waste of resources in valuable research time) we advocate the broadening out of a two-stage application process, with success rates in the second stage expected to be around 30%.
- To recognise the special relevance that some challenges might represent in different parts of Europe, The Guild suggests introducing calls for collaborative research that address problems prevalent in specific parts of Europe – be it migration, border security, or specific health concerns – without compromising on the principle that all participants eligible for funding under FP9 must be able to apply for these calls.
- International competition for the best ideas, and cross-border collaboration of the best researchers are the distinctive hallmarks of EU funding for research and innovation. For projects that are deemed to be of equal excellence (i.e. where they receive exactly equal evaluation scores), the Guild recommends using additional evaluation criteria of geographical diversity (to incentivise collaboration) and gender balance amongst applicants.

4. To enable the long-term sustainability of excellence and collaboration across Europe, FP9 should reduce the participation gap between higher and lower performing countries.

It is critical to the EU and to the strength of its scientific community that the gap between higher and lower performing regions in research and innovation is overcome. For this to happen, all Member States must fulfill their commitment to spend at least 3% of their GDP on research and innovation. The institutional autonomy of universities must be strengthened wherever possible, and the openness of national systems to international collaboration ensured. Further to these national priorities the EU must

ensure that the participation gap between advanced and lower performing regions in the next Framework Programme narrows.

The Guild suggests the following improvements to the Widening Participation and Spreading Excellence Actions:

- Teaming Actions should focus on developing projects within existing institutions. A proportion of Teaming funding (20% of the overall budget) should be spent by the host institution to implement a strategy for embedding the excellence developed through Teaming more widely into the institution (e.g. through doctoral programmes in related disciplines, supporting early career researchers, etc.), and this strategy should be evaluated in the application stage.
- All actions should focus on research excellence, and they should be open to all disciplines and forms of innovation (social, cultural and economic).
- Twinning Actions should focus more on the development of joint research projects, with a smaller proportion of funding to be spent on exchange and relationship-building.
- Funding for ERA Chairs should be increased, and they should be open to outstanding researchers even at mid-career stage.
- Structural Funds (ESIF) should be leveraged for Twinning and ERA Chair Actions, so that every euro invested in these projects from the Framework Programme would be matched by at least an equal amount of funding from ESIF.

To support the closing of the participation gap, synergies should be leveraged for other actions in FP9, for instance:

- Synergies with Structural Funds must be improved significantly, not least through the funding of proposals awarded the 'Seal of Excellence'. To enable this, funding for research and innovation through the structural funds should be increased and rules of participation for Structural Funds and FP9 should be harmonised.
- Further initiatives to leverage FP9 funding should be tested and mainstreamed, such as the innovative ways of funding ERC grants for participants from lower performing regions through the Norway/EEA grants.

The Guild also calls for the EC to address current structural barriers to collaboration and participation in lower-performing regions. Whilst the EU cannot (and should not) compensate fully for differences in national salary levels, greater flexibility in applying the remuneration rules that enables all countries to attract outstanding researchers must be found.

5. FP9 should increase the effectiveness and European added value of innovation by supporting all actors in innovation ecosystems.

Besides fostering basic research that produces knowledge for the creation of innovations, universities are curators for open innovation and educators of future entrepreneurs. It is critical that the European Innovation Council (EIC) engages with universities as a quintessential part of the innovation ecosystem and provides support for quadruple helix collaboration between academia, public sector, industry and civil participants. Support for the strengthening of innovation ecosystems would boost the capacity of universities in acting as motors for disruptive innovation.

It is important that the EIC complements the work of the European Institute of Innovation and Technology (EIT). The EIC could have a particularly important role in supporting funding for close-to-

market innovation through the European Fund for Strategic Investment (EFSI). The EIC should also be attentive to the most successful innovation projects that emerge out of the ERC's Proof of Concept projects, to ensure that these receive further support where necessary.

The Guild makes the following suggestions for supporting innovation in FP9:

- More funding should be targeted to support open innovation through quadruple helix collaboration between academia, public sector, industry and citizens.
- The European Innovation Council has a critical role to play in strengthening the coordination between different instruments supporting innovation, and in complementing the work of the European Institute of Technology. Because of the important role of universities in the innovation ecosystem, it is critical that university expertise is fully represented in the governance mechanisms of the EIC.
- Access to Risk-Based Finance should be addressed through the European Fund for Strategic Investment (EFSI).
- Funding for innovation must become more effective in supporting innovation between knowledge creation and commercialisation (to overcome the so-called 'valley of death').
- The definition of innovation should be widened from concentrating on commercial products to social, cultural, service-based and institutional innovation.

6. FP9 should support further progress on the European Research Area and on Open Science

A renewed focus on the objectives of the European Research Area (ERA) is needed to further remove barriers to researcher mobility, improve equality of opportunity irrespective of gender, and enhance the links between national and European research. We welcome the positive effect which EU funding programmes have had on the competitiveness of national funding systems, although further alignment of nationally and EU-funded research could still be achieved. This would help in underlining the ways in which the Framework Programmes create European added value, through international collaboration and excellence achieved through European competition.

Just as it is important to keep a focus on ERA, so we must ensure that the EU's commitment to Open Science continues, so that we concentrate on making current investments in shared e-infrastructures (a concern of ERA as for Open Science) as well as the Open Science Cloud a success. It is important to emphasise that Open Science and the e-infrastructures require for their success a careful strategy of implementation that involves national and regional stakeholders and that creating the tools for Open Science to be effective at EU level is only the first step.

7. FP9 should foster significantly enhanced collaborations with researchers, innovators and students from around the world, based on principles of genuine two-way collaboration, capacity-building, and the mutual pursuit of excellence.

European research must involve collaboration with the best minds all around the world. The excellence of European research and innovation is significantly enhanced through international collaboration. FP9 should be ambitious in addressing common challenges through global partnerships, strengthening joint capacities to fight global crises (such as epidemics), and in building up intellectual and cultural connections beyond Europe. We need a new Framework Programme that is genuinely 'Open to the

World', based on principles of genuine collaboration, capacity-building, and the mutual pursuit of excellence.

The Guild makes the following suggestions for international collaboration in FP9:

- In addressing societal challenges and finding solutions that relate to the SDGs, The Guild advocates for closer synergies between the Development Cooperation instrument and the next Framework Programme.
- The Guild calls for an increased number of joint research partnerships worldwide, ideally based on a shared budget with the participating countries.
- It is critical for the Commission to lead in removing practical obstacles to collaboration. In particular, we recommend:
 - a. Flexibility on Intellectual Property rules, along with overseas partners.
 - b. Pragmatic rules on indemnity and penalties – the risk of litigation is extremely low, noting that institutions will do everything they can to avoid loss of reputation.
 - c. Audit requirements need to become more flexible, and this must be emphasised in bilateral discussions.
 - d. Attention to be shifted to the practical needs and concerns of researchers, away from risk-management and legal teams. The EU is in a unique position to develop a flexible and adaptable global standard for the conclusion of international research agreements.

8. FP9 should offer simplified, transparent and user-friendly funding programmes.

FP9 should build on the progress made under Horizon 2020 towards simplification, reducing fragmentation between programmes and increasing transparency in the formulation of the work programmes. The most urgent need for simplification in the future lies in the coordination of synergies between FP9 and other funding programmes of the EU. Harmonised rules of participation between the Framework Programme and Structural Funds would be a step forward in creating feasible and realistic opportunities for combining support from both funds.

The Guild welcomes further steps to make different action types more understandable from a participant's perspective. Finding information about different instruments could be further facilitated by having the Participant Portal cover all funding programmes for research and innovation regardless of their managing authority. Further simplification in managing the grants could be achieved by accepting more national accounting measures and standards.

A critical area for simplification consists of a better management of applications through the wider introduction of a two-stage applications process, with the success rate for projects in the second round being around 30%. This would significantly reduce the time and resources used for preparation of applications.