Research Council of Finland

# Reaching ambitious targets requires investments in research

## Research Council of Finland's preliminary position paper on the tenth framework programme for research and innovation (FP10)

Research-based knowledge can help us tackle major societal challenges and reach the ambitious targets we have set ourselves, such as building a low- and zero-emission Europe. We need scientifically proven knowledge everywhere in today's society. The digital transition, the sustainable development of artificial intelligence and the fight against pandemics, among others, require new knowledge, technologies and innovations as well as ways to make better use of them.

The EU has the opportunity to bring together researchers and innovators to tackle grand challenges together and in partnership with the rest of the world. This is where framework programme funding, based on open and transparent competition and excellence, is an effective tool. The free movement of researchers and knowledge supports the EU as a whole, from the largest to the smallest member states, and boosts Europe's long-term competitiveness. Collaboration between RDI actors is a good example of the added value gained from European cooperation. By combining our best talents, by pooling our resources, we are greater than the sum of our parts.

Clean water, food security, sustainable agriculture and our defence capabilities rely heavily on the knowledge produced by scientific research. New data on sustainable resource use or disruptive technologies, for example, can increase our self-sufficiency and security and help us find solutions to future challenges. The safety of research in the EU must be guaranteed. The next framework programme regulation will also have to address these issues. FP10 must be viewed as an important element of a broader concept of resilience, security of supply and economic security.

## 1. Our main messages

- The criteria for FP funding should be based on excellence and competition.
- Excellent European research and research infrastructures must be ensured.
- Funding for excellent bottom-up research should be increased (ERC and Pathfinder Open).
- Funding for research at lower technology readiness levels must be expanded for all collaborative research projects.
- The cluster structure should be re-examined and the number of call topics reduced. It should also take less time to apply for funding.
- Partnerships should be more transparent, with less administrative burden.
- The freedom of science and research must be safeguarded across the EU.
- The security of research and knowledge must be seen as part of resilience and the security of supply.
- International cooperation should be strengthened considering RDI security.
- The social sciences and humanities must be comprehensively integrated into the framework programme.

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## 2. About the Research Council of Finland

The Research Council of Finland is an expert organisation in science and research that funds high-quality scientific research through open calls and competition by using international peer review. Our annual funding budget is more than 500 million euros. We also provide expert advice on science and science policy in Finnish and international networks and contribute to strengthening the status of science and research.

We participate in EU framework programme committees and have advisory National Contact Points for various parts of the programme. We pave the way for more effective networking and global cooperation of Finnish researchers, for example by participating in the funding of strategically important EU partnerships.

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# 3. Guiding principles and budget

## 3.1. The next EU Framework Programme for Research and Innovation (FP10) needs an ambitious level of investment

The Research Council of Finland believes that a significant increase in the FP10 RDI budget is necessary to strengthen both the EU's and Finland's knowledge base, competitiveness and self-sufficiency in knowledge and research. For decades now, framework programmes have provided funding for high-quality RDI projects. It is a working concept that has proven its usefulness and effectiveness. The framework programmes have created new knowledge and new skills and shored up Europe's competitiveness. We must continue to invest ambitiously in the framework programme to create new knowledge and smart solutions for the future.

## 3.2. The criteria for FP funding should be based on excellence and competition

The Research Council of Finland considers it important that future FP10 funding is earmarked and allocated based on open and transparent competition for excellent research and top-level innovation. Excellence as the cornerstone of the framework programme must be maintained. The funded research and the evaluation and implementation of funded projects must be accountable. This is how we can ensure new, sustainable and high-quality solutions and remain competitive in an ever-changing world.

## 3.3. FP10 funding must be dedicated to research, development and innovation

The programme's budget should not be overloaded with initiatives that do not represent RDI activities and are not included in the programme's strategic plan. For ad hoc actions, specific funds must be earmarked from elsewhere in the EU budget. The long-term nature of research funding must be ensured.

## 3.4. Stronger frontier research – funding for excellent bottom-up research should be increased

Pillar 1 of the framework programme strengthens European research excellence and supports research careers and research infrastructures. Only with strong Pillar 1 instruments can we ensure Europe's success in the increasingly fierce international competition for talented researchers and breakthrough research. Therefore, the role of the ERC, the MSCA, research infrastructures and the bottom-up scheme EIC Pathfinder Open should be strengthened and their budget in FP10 increased.

## 3.5. Funding for research at lower technology readiness levels must be expanded for all collaborative research projects

Pillar 2 takes up most of the budget of the Horizon Europe Framework Programme and plays an important role in finding solutions to societal problems in Europe and globally. However, the current emphasis on projects of a high technology readiness level limits the scope for finding far-reaching and sustainable solutions to the problems facing Europe

and the rest of the world. Such solutions require a stronger multidisciplinary approach, including the social sciences and humanities.

# 4. Structure and synergies of the framework programme

## 4.1. We need continuity and simplification

The three-pillar structure of Horizon Europe, as well as the cluster approach for collaborative research projects under Pillar 2, is clear and appropriate. We advocate that FP10 maintain the instruments that have worked well (e.g. the ERC) and examine whether all elements (e.g. the EIT, the EIE and the EU Missions) have reached their ambitious objectives. The framework programme needs a structure that is easy to manage, offers opportunities for synergies and is more accessible and understandable to funding applicants.

Simplification should also apply to governance. The more money is spent on administrative costs, the less will be available for research and innovation. We hope the European Commission will create simple and transparent participation rules and governance structures to save money for the core RDI mission of generating new knowledge and thereby facilitating innovation.

Project reporting is a cumbersome task and takes time away from actual RDI. The data gained from projects should be put to more effective use, to support both policymaking and other RDI projects. Overlapping of work must be avoided, and there must be greater efficiency in the management of the framework programme.

## 4.2. Synergies within the framework programme and with other related programmes need to be strengthened

The ambition of the current European Commission has been to increase synergies between funding programmes. This has been partly achieved, but the large number of existing instruments still creates a rather complex support framework for RDI. In the case of research infrastructures, there should be synergies between the future FP10 and other funding instruments, such as the possible successor to the Digital Europe Programme.

In addition, the next framework programme should seek to increase synergies between research infrastructures and all other FP funding schemes, for example, to make more effective use of research infrastructures across pillar boundaries. Another suggestion is that some research infrastructure calls could focus on supporting high-quality frontier research, currently represented by ERC, MSCA and EIC Pathfinder projects.

In addition to Horizon Europe, RDI activities are promoted with programmes that support the utilisation of research knowledge, such as Digital Europe, Health4Europe, the European Defence Fund and EU programmes on artificial intelligence and agriculture. To create synergies, these programmes should be brought closer to the good and transparent practices of the framework programme for research and innovation.

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## 5. Funding instruments, analysed by Horizon Europe pillars

We are in favour of maintaining the current pillar structure and effective programmes, but propose some changes to the instruments.

### 5.1. Pillar 1: Excellent European research and research infrastructures must be ensured now and in the future

**The European Research Council (ERC)** works very well with its clear investigator-driven practices, and the autonomy of its governing Scientific Council must be preserved. The ERC budget has slowly increased since FP7, but success rates are still very low, especially in the ERC Synergy Grants. Too many projects rated as excellent remain unfunded. ERC funding has become a great asset for both researchers and host institutions, beating nationally available research career funding in both quantity and quality.

In addition to significant scientific impact, ERC-funded projects have been shown to have extensive economic impact, as measured by the number of new patent applications and established companies, for instance. What's more, ideas that have emerged through ERC Proof of Concept projects have so far been the most successful in the Horizon Europe EIC Transition calls, which help take the next steps in the commercialisation process towards new business development (see Statement by the ERC Scientific Council on the next EU framework programme for research and innovation). The EU should therefore build the next framework programme on this proven success and further strengthen the ERC.

**The MSCA scheme** plays an important role in maintaining European excellence and should be continued. Securing the supply of skills is one of Europe's big challenges, and the MSCA have an important role to play here. The scheme lays the foundations for European excellence and for attracting talented researchers to Europe, supporting intersectoral mobility. The competition for funding from calls launched under the MSCA is fierce, much like the competition for ERC funding. To achieve reasonable success rates, the amount of funding should be increased. Our proposal is to have fewer programmes and more funding per programme.

**Research infrastructures** are the foundation of high-impact research, development and innovation. Coherent and well-designed research infrastructure activities can enhance the quality, renewal and competitiveness of European research, increase the international attractiveness of European research environments and facilitate joint public-private investments.

Investment in research infrastructures is not just one-off support for individual institutions, but an investment in the future. They attract talents and investments and increase the attractiveness of European research environments worldwide. This in turn stimulates investment in both the public and private sectors, which is vital to maintain a competitive edge.

Consequently, Europe must commit to significant investment in the maintenance and upgrading of research infrastructures. Funding for the upgrading of research infrastructures must be doubled to 5 billion euros in the next framework programme. In addition, care must be taken to ensure that the costs of using research infrastructures are also covered under the other FP pillars.

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The Research Council of Finland is in favour of large-scale, strategic investments that support the global competitiveness and attractiveness of European research infrastructures. This will contribute to efficient and excellent research and innovation by enabling researchers to make use of high-quality and versatile infrastructures for research in different fields.

We encourage that FP10 strengthen European cooperation and expertise in the construction and utilisation of research infrastructures, which would contribute to the efficiency and impact of research and innovation in Europe. A good example of this is the high-performance computing services of the EuroHPC and the evolution of quantum computing.

In addition, the Research Council of Finland is keen to emphasise the role of research infrastructures in the responsible and secure handling and managing of data, which supports the widespread production and use of new knowledge.

### 5.2. Pillar 2: The cluster structure should be re-examined and the number of call topics reduced. It should also take less time to apply for funding

Collaborative European research projects will continue to play a crucial role in tackling global challenges together. That is why we want to continue to support multidisciplinary joint projects. However, the current number of clusters and the whole cluster structure is not thematically logical. For example, cluster 4 and cluster 6 are very large, heterogeneous, and therefore difficult for applicants to manage. Contrary to what was initially planned, the larger clusters have not given rise to synergies. Therefore, the cluster structure should be completely re-examined, and a careful analysis should be made of which topics would fall under a single challenge or cluster. The number of clusters should also be reconsidered. This re-examination should be done in parallel with the evaluation of partnerships and the role of the EU Missions in the framework programme. There is unnecessary overlap.

The current application process is cumbersome and success rates are low, in relation to the amount of work that goes into writing applications. To allow novel and innovative solutions to emerge, the application topics should be more open, and more projects should be funded under each topic. Now, each call is too specific about what is required from each project, leaving little room for the new ideas and unconventional solutions that are needed to solve wicked problems.

The administrative burden in joint projects should be reduced. Joint projects are important, but their management is currently very taxing, and further simplification is needed.

### 5.3. Pillar 3: The EIC as a whole should be improved in the next programming period

The European Innovation Council (EIC) has been tasked with promoting the real relevance of innovation activities under Horizon Europe Pillar 3. The European Innovation Ecosystems (EIE) and the European Institute of Innovation and Technology (EIT) should be examined to see whether they have achieved their objectives. To reach the ambitious

targets of the EIC, it should be possible to feed the EIC with the best R&D ideas from across the framework programme and promote their utilisation more effectively (the current EIC Transition). In FP10, more investment is therefore needed in a funding instrument such as the EIC Transition scheme.

The EIC Pathfinder is a very important instrument for exploring new European technology ideas in multidisciplinary joint projects. Pathfinder should therefore be further strengthened alongside the ERC in the Excellence pillar. In their current location, Pathfinder calls are difficult for the research community to find, and the instrument loses out to other EIC actions in terms of the amount of funding. The strong thematic focus also leaves too little funding for open-themed calls for proposals. A move back to Pillar 1 would be the best way to secure the scheme's status. In addition, in Pillar 1, each funding instrument should have its own mechanism, similar to the ERC Proof of Concept (PoC) funding scheme, to facilitate early utilisation of research results and prepare the idea for the next stages.

Currently, it is the ERC PoC projects that generate the majority of novel ideas that feed into EIC Transition, as they seem to be at a higher readiness level than other projects thanks to their PoC phase. All Pillar 1 projects should have equal opportunities to promote the best results in innovation. Projects under other pillars could also be a source of ideas for EIC Transition calls, if they could be offered initial, PoC-type support. The Transition funding should be at least ten times greater than the PoC funding. This would enable the EIC to better fulfil and further strengthen its role in promoting future European innovations.

### 5.4. Widening instruments should be re-examined and COST funding secured

The aim of the WIDERA programme of Horizon Europe is to increase the participation of the so-called Widening countries in the framework programme and to strengthen the European Research Area (ERA). The budget allocated to Widening countries was significantly reinforced with Horizon Europe.

As it stands, WIDERA has been a very unbalanced mix of Widening and ERA actions. While reducing the RDI divides is part of creating a stronger European Research Area, the WIDERA programme's considerable budget focus on supporting Widening countries makes it unbalanced – at present, Widening activities take up almost 90 per cent of the programme's budget. The low-budget ERA consists of small, often one-off calls, acquisitions, events, prizes, etc. The sheer number and variety of instruments and activities makes the programme hard to understand for researchers and also makes the work of committee members and NCPs challenging. Both parts of the programme are driven by strong political priorities and the European Commission, leaving little room for manoeuvre for the programme committee.

In FP10, we should consider a complete overhaul of WIDERA and possibly fund Widening instruments from a separate, fully transparent budget. This would not exclude finding synergies with other pillars, such as from the ERC or the MSCA Fellowships. The new Hop-On Facility may prove equally successful, and its efficiency and impact must be evaluated as soon as possible. The same applies to other new Widening instruments under Horizon Europe.

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Overall, the role of important ERA activities should be clearer and more transparent. COST, which supports European researcher mobility and networking between researchers from Widening countries and other EU countries, must be given a more prominent role, and its funding must be guaranteed. The current requirement of at least 50 per cent participation from Widening countries is somewhat excessive given the overall volume of RDI activities in Widening countries, and consideration should be given to lowering the requirement to 40 per cent.

### 5.5. Partnerships should be more transparent, with less administrative burden

For potential FP10 co-funded partnerships, what is needed above all is more transparency and the possibility to influence the partnership preparation stage. In particular, we need clear and coherent guidelines and principles for successful application and activities, so that all necessary actors can be engaged. This will include, among other things, clear and consistent guidelines for in-kind participation and for firewall requirements at the earliest stage. Transitions from one funding phase to another must be smooth for participants. Partnerships are also largely based on trust, and should therefore not be over-regulated by the Commission.

In Horizon Europe partnerships, the impact objective has been stepped up compared to the networks in previous framework programmes, and co-funded partnerships have also become large entities. Increased complexity has led to more administration and made it more difficult to get the necessary actors on board. Overlaps with the EU Missions and sometimes conflicting Commission guidance on implementation have slowed down the start-up of partnerships and weakened the involvement of non-funders in particular.

In FP10, it should also be possible to apply for operating grants through open (bottom-up) calls for networking in emerging sectors. Again, clear principles and active sharing of information are needed to ensure that this form of support is targeted at the right actors. To increase impact, there is also a need for more horizontal actions around the partnerships and stronger thematic synergies with different funding instruments. The ERA-LEARN project could be of greater assistance in this respect, and its role as a knowledge broker, a clarifier of implementation practices and a unique data repository should be supported to complement the Commission's own capacities.

### 5.6. Funding for EU Missions under the framework programme should focus on RDI funding, with other elements to be funded from outside the programme

It is in Europe's interest that science and research have a strong presence in the implementation of the EU Missions. However, to achieve the objectives set for the EU Missions, a wide range of actors other than researchers and funding programmes other than Horizon Europe are also needed.

The five EU Missions are all different in their objectives and activities. The RDI calls of the EU Missions are partly similar to the cluster-specific calls under Pillar 2, leaving the added value of the missions unclear. There are also differences between member states in the way EU Missions are managed and implemented. The RDI activities are limited, and many other activities are involved.

The question is whether the current concept has provided the best tools to reach the ambitious goals set for the EU Missions. If EU Missions are to continue to be seen as appropriate and effective instruments within broader policy frameworks, the FP funding should focus on RDI activities, and other activities should be funded from other budget categories. We anticipate that this would strengthen the synergies between the framework programme and other European programmes. Increasingly, the EU Missions should also be funded from funding programmes other than the framework programme, which should only be used to fund RDI. As with all EU programmes, the management of EU Missions should be harmonised and the rules simplified to allow the widest possible participation.

The assessment of EU Missions clearly shows the need for better integration of the social sciences and humanities into the clusters and projects. Promoting multidisciplinarity can provide effective solutions to global challenges.

# 6. Cross-cutting themes

## 6.1. The freedom of science and research must be safeguarded across the EU

The freedom of science and the freedom to choose research topics boldly are the cornerstones of a civilisation. It is important to maintain the freedom of research and to avoid over-regulation. The framework programme should not provide funding for projects in member states that restrict the freedom of research. At European level, research funding should be allocated based on quality and competition, in an open and transparent manner. The free movement of researchers and knowledge must be ensured.

The next framework programme must support the conditions for independent research and the free use of research knowledge. This is the best way to promote scientific research, knowledge creation, new technologies and innovation for the benefit of Europe as a whole.

## 6.2. International cooperation should be further strengthened, taking into account the security of RDI

Research and innovation are international activities, and excellence can be found also beyond Europe's borders. Taking into account the security risks of research and innovation cooperation, future international cooperation under the framework programme should be strengthened, both to ensure the quality of European science and innovation and to respond to global challenges. One essential way to do this is to attract new countries with similar values to apply for association status to the framework programme, as has happened with New Zealand, for example. The aim should be to increase the number of associated countries and to implement them from the start of the programming period. At the same time, the international mobility and collaborations made possible by the ERC and the MSCA must be maintained and further improved, and ways to strengthen the EU partnership participation of third countries must be considered.

International cooperation of European research infrastructures supported by the framework programme also plays an important role. Flagship calls that support international

cooperation between clusters should also be kept in the range of instruments available. As a basis for further development, the European Commission should be able to provide a better overview of the mechanisms, objectives, results and security aspects of international cooperation.

In addition, the changing geopolitical situation in the world calls for a rethink of the role of defence and dual-use research in the framework programme. These issues are here to stay. We hope that the Commission will discuss this and related plans openly with member states and that together we will create workable rules for the whole of Europe.

### 6.3. The social sciences and humanities must be comprehensively integrated into the framework programme

Technological, medical and other innovations move humanity forward but will not be effective or support resilience if the actions taken fail to focus on the people. It is therefore important that the entire range of the social sciences and humanities be fully taken into account in the framework programme, both in the design phase of call themes and in the implementation of evaluation and decision-making processes.

It would therefore be very important for the societal utility and scalability of solutions that the Commission in future pay more attention to the role of the social sciences and humanities in planning themes and programme calls. Only through such multidisciplinary co-creation will it be possible to design research programmes calls whose relevance can be understood and whose funding can therefore be sought by researchers across all scientific disciplines. The social sciences and humanities must be involved in multidisciplinary projects as research packages and providers of added value. The development of cooperation between research projects and stakeholders must be seen as a separate task requiring specific expertise.