



## **Recommendations for the next Framework programme for R&I 2021-2027(FP9)**

H2020 has been instrumental in strengthening the scientific and technological community of Europe and enhancing its international competitiveness. Going forward, the adherence to excellence and true cooperation, the harmonization of the funding landscape and the increased focus on the human research potential should remain the cornerstones of the next Framework Program (FP9). To maximize the impact of European funding and better serve the European priorities of Research and Innovation, some strategic changes must be made. The FENS KAVLI Network is largely supportive of the recommendations put forward in the recent LAB-FAB-ALL report by the Independent High Level Group. Below we summarize what we think are the most important points for the success of FP9.

### **Operational principles**

Excellence must be maintained as the governing principle for the next Framework Programme. To better address the current divide between research and innovation, an appropriate balance should be achieved, since Research and Innovation (RIA) and Innovation (IA) Actions play distinguished, yet complementary roles in the development and deployment of new knowledge and technologies. This calls for a less-nearsighted approach for the concepts of “Technology Readiness Level (TRL)” and “Impact” and their interconnection, which also means that support for basic research at lower TRLs should be included in all three pillars of the programme. A broader definition of impact is also needed, whereby the importance of “scientific impact” as well as “social impact” is fully acknowledged. We strongly believe that research programs should not be reduced to their technological applicability.

### **Increasing the budget**

Towards this goal, we fully support the recommendation of the LAB-FAB-ALL report to double the budget of the current H2020 program. Doubling the budget of the European Research Council in particular will serve as a catalyst for advancing scientific excellence and innovation in Europe, given that only about 1/3 of excellent (grade A) proposals are currently funded due to budget limitations. In general, we welcome an increased focus on funding fundamental research, especially at early career stages, across all thematic areas.

### **Reducing the number of funding instruments**

We also strongly support the recommendation to reduce the number of different funding instruments currently available in H2020. Efforts should also be made to achieve further rationalization and streamlining of existing instruments. Highly attractive and successful ones, like for example the European Research Council and the Marie Curie Actions, should be strengthened while others should be absorbed in order to increase success rates and maximize impact.

### **Increasing success rates**

Low success rates of most EU funding schemes are considered a major problem. Not only they entail a waste of resources, but they also discourage participation and create entry barriers for newcomers and small groups. As a result, excellent potential can be lost, leaving out a vital part of the European research and business community. The following measures could be used to alleviate these problems:

- To ring-fence funds for early and mid-career scientists as these are the key drivers of innovation but also the ones at greater risk. They lack the extended networks and proven track records of experienced scientists and often the experience to draft competent proposals.
- To ring-fence funds for smaller groups, consisting of few (2-5) PIs. A more inclusive approach is needed to preserve a vivid, healthy and diverse ecosystem without lowering criteria and compromising quality.
- To introduce a two-stage (not a 2-step) evaluation procedure to reduce the long (>100) hours for preparing proposals that face strong competition.
- In certain areas it may be useful to have fewer topics, with increased budget for each topic but at the same time broader in scope. This would allow avoiding the phenomenon of decreased participation in certain topics of lower interest (which currently results in unused budget) and oversubscription in other topics of increased interest (which currently results in rejection of proposals with high scores).

### **Improving evaluation processes**

The use of a true two-stage submission and evaluation should be extended so that the majority of the proposals can be screened through the first stage. This would result in reducing both the administrative burden for the EU and the preparation effort of the beneficiaries. A reasonable period of time should be foreseen between announcing the results of the first stage and submitting second stage proposals to allow the actual work to be performed after the 1<sup>st</sup> stage results. With respect to the ERC in particular, we propose to eliminate the part B2 of the proposal and make decisions based solely on part B1 and the interview. To counteract the expected increase in subscription rates that could emerge from such measures, we propose to eliminate deadlines. This simple action was shown to reduce the number of applications by half in NSF calls: <http://www.sciencemag.org/news/2016/04/no-pressure-nsf-test-finds-eliminating-deadlines-halves-number-grant-proposals>.

### **Continue the progress towards open science**

In order to maximize the scientific outcomes and impacts from FP9 funding, it will be important to continue working towards a culture of truly open science. H2020 has been a leader in mandating open access publication and FP9 should continue to ensure that an increasing proportion of published work is immediately and freely available. As part of this, FP9 should consider supporting the preprint mechanism.

We feel that there has been less progress in sharing of research data and tools and this could be a major emphasis of FP9. FP9 should see a transition to mandatory sharing of raw data and software on the EU open data portal (in the same way that H2020 transitioned towards mandatory open access publishing). This would doubtless require infrastructure to allow the large amounts of scientific data to be uploaded and funding to the researchers to facilitate data sharing. Another possibility to foster a change in culture towards open science would be instituting a prize or reward for exemplars of excellence in data sharing amongst FP9 funded scientists.

We emphasize that it is particularly critical to enable reuse not just sharing, because it is reuse that increases scientific interaction and progress. We therefore propose that FP9 invests in resources dedicated to data integration. These are likely to be specific to particular domains of research since each there will be specialized data analysis, curation and organization that will be most valuable to a research community (e.g. >300+ researchers). Concrete examples from the experience of FKNE members are the virtual fly brain ([virtuallyflybrain.org](http://virtuallyflybrain.org)) and ion channel genealogy projects ([icg.neurotheory.ox.ac.uk](http://icg.neurotheory.ox.ac.uk)).

This could be realized through actions such as:

- Earmarking a percentage of funds to provide core support for resources related to data sharing and integration
- Funding charges for data deposition to appropriate domain specific resources, similar to paying open access charges
- Funding data analysis platforms that enable transparent data sharing when data are published and allow easier reuse of analysis tools
- Providing flexible rapid funding for e.g. junior scientists to visit data generation or analysis labs for training (perhaps leveraging existing schemes such as EMBO Short Term Fellowships or similar)
- Requiring data sharing plans and ensuring that grantees honour them

Overall, the FKNE strongly believes that when it comes to tailoring the funding instruments of FP9, an effort should be made to incorporate the opinion of the research community via targeted surveys and consultation actions.

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