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SNSF position on the 9th European Union Framework Programme for Research and Innovation

Key Messages

The Swiss National Science Foundation highlights its key messages from its perspective as a research funder for the next European Union Framework Programme for Research and Innovation (FP9) as follows:

- Maintain excellence as the backbone of next Framework Programme
- Pursue continuity, reinforce the ERC and create stronger links between research and innovation
- Invest in Europe's future
- Ensure a 9th Framework Programme with clear European added value
- Widen participation by spreading seeds of excellence
- Overcome global challenges through international cooperation and openness
- Tackle contemporary challenges

Introduction

The Swiss National Science Foundation (SNSF) is the main Swiss funding agency for fundamental research, with an annual budget of nearly € 860 mio. It supports researchers and research projects in all disciplines, from philosophy and biology to nanoscience and medicine.

The SNSF aims at providing the best possible service for researchers working in Switzerland and thus, as a committed member of the European Research Area (ERA), takes the initiative to propose a vision for the next European Framework Programme for Research and Innovation (FP9). The SNSF would like to emphasize especially the need for complementarity and coherence between national and European funding instruments and programmes, and for schemes with a clear European added value.

For the SNSF the Horizon 2020 specific objective of “strengthening scientific excellence in Europe” is the most important, and we believe that FP9 should continue to focus on this aim. The Framework Programmes are an important part of the ERA, which is an open-ended process and we have to constantly work on improving it. The SNSF particularly and highly welcomes the association of Switzerland to Horizon 2020. The SNSF contributes to the development of the ERA through its engagement in Science Europe, its active participation in the EC's consultations and its numerous mechanisms and instruments for transnational cooperation and mobility. Moreover, the SNSF highly welcomes the European Commission's (EC) efforts to ensure gender equality in all kinds of research and innovation aspects and encourages these actions to continue.

Drawing from our observations of Horizon 2020 and other previous Framework Programmes, we would like to outline some key points that the SNSF considers crucial for the next Framework Programme. We would like to point out as well that the SNSF has contributed to and fully endorses the Science Europe position statement on the Horizon 2020 interim evaluation, *The Framework Programme that Europe Needs*¹. This paper goes further than the above mentioned statements.

¹ Science Europe, 2016. The Framework Programme that Europe needs. (Ref. Nr. D/2016/13.324/10). [pdf] Brussels: Author. Available at: http://www.scienceeurope.org/wp-content/uploads/2016/10/SE_Position_Statement_H2020.pdf [Accessed 26 June 2017].

Excellence as a backbone

Excellence must remain the backbone for funding in the next Framework Programme. Excellent research builds on worthwhile, delineated and informed research questions. It requires pioneering, rigorous, sustainable and often collaborative execution. Excellent research is also context sensitive, ethical and efficient in terms of opportunity cost. Essentially, excellence in research depends on open, appropriate and impact-oriented communication toward society. Both, the research and societal perspective, need to be taken into consideration when assessing excellence. However, excellence in scientific processes is easier to recognize a priori. This is not the case for impact, which often becomes apparent years later and cannot always be planned.

Without a strong commitment to excellence, Europe cannot achieve a strong and sustainable knowledge base. Therefore, it is key that a common understanding of excellence exists as it is the highest priority and driving principle in FP9.

Pursue continuity, reinforce the ERC and create stronger links between Research and Innovation

The next Framework Programme should not be a structural revolution from Horizon 2020 but rather an evolution. This evolution keeps transaction costs between the Framework Programmes within the first years of implementation low and allows the participants to focus on the content of the actions. From the lessons learned in Horizon 2020, FP9 should strive to maintain the right balance between fundamental research and innovation and create strong links between basic, investigator-driven research, applied research and innovation funding. Unfortunately, in Horizon 2020 we have seen a shift towards more innovation funding and the SNSF is worried that in the next Framework Programme this focus will be even more pronounced. Fundamental research with all its benefits must not be neglected and is a prerequisite of all innovation activities.

Moreover, for the SNSF, and at a larger scale for Switzerland, the support of fundamental bottom-up investigator-driven research and innovation is particularly important. In programmes such as the European Research Council (ERC), the Europe-wide competition provides real European added value. A European Innovation Council (EIC) based on the same principles as the ERC (bottom-up, excellence- and investigator-driven tack focuses on the elite) is also welcome. Also, for the SNSF it is very positive that the next Framework Programme provides more funding for young, talented and ambitious scientists by increasing support to Marie Skłodowska-Curie Actions (MSCA). However, it needs to be emphasized that the support of these young scientists is a key responsibility on the national level, whereas the MSCA and initiatives like COST can be used to reinforce this support and offer additional actions, e.g. first networking opportunities.

Since its creation in 2007, the ERC has also been a very successful programme for attracting talent to Europe. It is identified as a key building block in the ERA and must remain as such. The SNSF welcomes all initiatives aimed at strengthening the funding of the ERA and its international outreach. It also welcomes the re-introduction of ERC Synergy Grants as of 2018 and a continuation of this instrument in FP9, as it is an efficient way to fund bottom-up collaborative and interdisciplinary fundamental research.

Connected to this, fundamental research must continue to receive a high level of funding in the next Framework Programme. Therefore, the budget of the ERC, but also of the MSCA, must be increased. Particularly, for the ERC as the “flagship” instrument of Horizon 2020, additional funding is needed as indicated in the ERC Scientific Council position paper for FP9² in order to provide the financial means to support all proposals assessed as excellent by the prestigious peer review process. Additionally, to make it more attractive and increase competition, the ERC could be opened up to applications from participants in third countries (with special conditions, of course, e.g. separate funding). Last but not least, the Proof of Concept (PoC) scheme should be integrated – where possible and duly justified – in every scheme and programme of FP9 and not only in the ERC, in order to create strong connections between basic research and innovation, and more generally to support the translation of research results into application and to society at large. PoC types of instruments provide the much needed flexibility to experiment with early results in research and innovation and come with applications that were not originally foreseen.

Example: *An example how to create strong links between basic research and innovation within one programme is the BRIDGE programme. BRIDGE is a joint programme conducted by the Swiss National Science Foundation (SNSF) and the Commission for Technology and Innovation (CTI). It offers new funding opportunities at the intersection of basic research and science-based innovation, thereby supplementing the funding activities of the two organisations. BRIDGE consists of two funding opportunities:*

- *Proof of Concept is aimed at young researchers who wish to develop an application or service based on their research results. These projects may target innovations of all kinds from all research areas.*
- *Discovery is aimed at experienced researchers who aim to explore and implement the innovation potential of research results. Only technological innovations that have a societal and economic impact will be funded.*

More information: <http://www.bridge.ch>

Invest in Europe’s future

The migration and security crisis as well as the Brexit put pressure on the next European Multiannual Financial Framework (MFF). Nevertheless, the funding for the next Framework Programmes should be increased, as knowledge is Europe’s most important resource – and will be even more so in the future. Furthermore, besides the EU budget, member states and associated countries should also be encouraged to raise their research and innovation spending, especially those that lag behind: it is now time to see the Framework Programmes as investment programmes rather than funding programmes. It has been shown³ that funding research and innovation, rather than spending, is more aptly described as a long-term sustainable investment for economic growth and societal prosperity.

Besides increasing the budget, there are several mechanisms to decrease pressure on the future budget for FP9. First of all, the next Framework Programme could allow for a more flexible structure with more possibilities for co-funding in different parts of the programme. This would also align priorities at national and European levels and increase the European added value. Secondly, big

² European Research Council, (2017). Building on the European Success Story to Further Empower European Researchers. [online] Available at: <<https://erc.europa.eu/sites/default/files/content/pages/pdf/ERC-ScC-Statement-FP9.pdf>> [Accessed 26 June 2017]

³ European Commission, (2014). Research and Innovation as sources of renewed growth. [online] Available at: <<https://ec.europa.eu/research/innovation-union/pdf/state-of-the-union/2013/research-and-innovation-as-sources-of-renewed-growth-com-2014-339-final.pdf>> [Accessed 16 June 2017]

industry and multinational cooperations should not receive any funding from the Framework Programmes but participate by bringing their own financial resources within a consortium. Agenda setting, access to knowledge, talents and networks are the main drivers of industry participation in European Framework Programmes. Thirdly, the structural funds should have a dedicated budget to fund FP9 projects that do not receive funding but are above the threshold. This is the only way the Seal of Excellence principle can work well and hence does not cause an extra burden on the national or regional level. Also, parts of the structural funds could be managed centrally by the European Commission for research and innovation projects, thereby providing more efficient synergies with FP9 and better coordination of regional ‘Smart Specialisation Strategies’. Last but not least, financial instruments such as loans are fine for research and innovation that is close to market or similar activities, but not for the majority of stakeholders within the Framework Programme. A different solution for a financial instrument would be the concept of cascading grants as this opens flexibility for both the EC and the stakeholders.

FP9 with clear European Added Value

Building on the work of the design of former Framework Programmes, the EU should keep focusing on instruments/activities with a clear European added value when designing the next Framework Programme. Only activities that cannot be done, or not as well, by national organisations/countries on their own should be taken on by the EU, such as fostering collaboration on grand challenges that cannot be solved on the national level, excellence programmes such as ERC and MSCA that involve very large grants and need international/European competition to make sense, networking initiatives like COST, or infrastructures with pan-European importance. In other words, European added value needs to be understood as complementary to national funding and not as a replacement.

Also, the support of cross-border collaborative projects and networks, which leads to cross-country learning and networking opportunities, provides such a European added value. It enables researchers from different regions (also from outside Europe) and backgrounds (public, private) to work together. Especially for topics that cannot be tackled by individual researchers or research teams, or that are e.g. interdisciplinary or need various kinds of knowledge, collaborative projects are very important.

Last but not least, the increasing complexity of the Research Infrastructure (RI) ecosystem offers FP9 the opportunity to ensure better access to RIs and e-RIs in Europe but also better coordination mechanisms for the design of future RIs and e-RIs in order to leverage the full European added value of the European RI ecosystem.

Widen participation by spreading seeds of excellence

Supporting lower-performing and underrepresented countries and widening participation is crucial, but this has to be done by structural funds and other infrastructural investments. The next Framework Programme should not be used to make up for underfunding in various countries. The ‘spreading excellence and widening participation’ specific objective (teaming, twinning and ERA-Chairs) can certainly play a small role in reducing the science divide. However, it is not possible to ‘spread excellence’. Seeds of excellence can be planted but they need the right ecosystem to flourish. Reforms at national level (e.g. properly rewarding top researchers) must be conducted in the ‘widening countries’ and be accompanied by an increase of spending in the field of research and innovation. Therefore, it is crucial that national or regional programmes aiming at

strengthening the research competitiveness and capacities of less-intensive research communities should be supported by the EC within a co-funding mechanism.

Furthermore, the widening participation schemes that have been started in Horizon 2020 should be evaluated quickly to see whether and how they have improved the situation and whether it makes sense to continue them under the next Framework Programme.

Example: An example of schemes supporting widening participation is the Promotion of Young Scientists in Eastern Europe (PROMYS) programme. The initiative PROMYS is aimed at young researchers in Eastern Europe who have studied or worked in Switzerland for at least two years and would like to continue their careers in a new Eastern European member state (NMS) of the EU. A grant includes the researcher's salary (assistant professor level), a research grant, employees' salaries. The duration of funding is limited to five years.
More information: <http://www.snf.ch/en/funding/careers/promys>

Overcome global challenges through international cooperation and openness

International cooperation in research and innovation is one way - if not the best - to address today's global challenges. Therefore, the next Framework Programme should clearly position itself globally and pursue being the leading research and innovation programme worldwide to overcome these challenges and present a global lighthouse. The implementation of the United Nation's Sustainable Development Goals (UN SDGs) in the next Framework Programme is key to highlight this global positioning.

The three key policy principles of the EC, 'Open Science', 'Open Innovation' and 'Open to the World', build a strong foundation to pursue this ambition of being the leading research and innovation programme worldwide. Furthermore, FP9 should also contribute to these three key principles. This implies that FP9 has to define more flexible mechanisms for the participation of researchers from third countries. Association should not be driven by political rationales but should be designed to attract the best researchers from around the world and facilitate the free circulation of knowledge. All researchers should have the opportunity to contribute equally to the European integration project through ground-breaking science and disruptive innovations.

Example: The third thematically open call of the Swiss Programme for Research on Global Issues for Development (r4d) is an example how bottom-up, interdisciplinary and multi-stakeholder research on global issues can be embedded in the context of the 2030 Agenda for Sustainable Development. For this third thematically open call, inter- and transdisciplinary research partnership projects with problem- and solution-orientated approaches will be funded. The involvement of non-academic stakeholders in the research process is of high significance and the co-creation of knowledge is considered an integral part of the research projects. Proposed research must aim at producing findings that are relevant to several or many developing countries and world regions (upscaling). The requirement for setting up international research partnership projects in the context of the r4d programme involves a collaboration with researchers in a minimum of one least developed or low and middle income country. The inclusion of emerging countries in the research consortia is possible and with reference to the 2030 Agenda for Sustainable Development a particular asset. The projects have to be relevant to international cooperation and policy dialogue.
More information: www.r4d.ch

Tackling contemporary challenges

The global financial and economic crisis has affected Europe but also the design of Horizon 2020 massively. While Europe is still recovering from this crisis, it already faces complex additional crises such as the migration crisis, climate change, soaring income inequality, populism and terrorism. This multitude of complex crises can only be tackled with a holistic and interdisciplinary approach that brings together a wide range of actors from different research disciplines. It is also known that Social Science and Humanities (SSH) offers this approach. Therefore, the next Framework Programme for research and innovation should better embed and integrate SSH and interdisciplinary research to tackle our contemporary challenges. This implies that SSH and interdisciplinary research is not only an add-on in the next Framework Programme but strongly embedded. Concretely, the next Framework Programme should not only add SSH or interdisciplinarity in form of market and impact analysis in market-oriented calls. SSH provides methods and theories for the analysis of societal transformations (e.g. in the field of digitalisation), tensions and opportunities and their transcultural settings. In a framework of legal, political, humanitarian, cultural, historical and linguistic considerations, SSH address societal challenges that shape today's society for the future. SSH contribute to innovative collaborative research strategies across disciplinary borders and shape the future educational environment of Europe. This implies that FP9 has to offer more opportunities for bottom-up fundamental interdisciplinary and SSH research, also outside the ERC. Additionally, synergies within and outside the framework programme (e.g. with the ERA-Nets) are key and need to be ensured for the next Framework Programme. In general, FP9 needs to provide sufficient bottom-up fundamental research opportunities in order to tackle today's contemporary challenges but also prepare for future unforeseen challenges.

Example: *An example of SSH and interdisciplinary research supporting transformational processes is the ERA-NET "New Opportunities for Research Funding Agency Co-operation in Europe (NORFACE)" is a pan-European initiative in the field of social sciences, comprising funding organisations from 18 European countries. It supports cross-border research co-operation in the social sciences with the aim of strengthening their profile in these countries and at European level. The SNSF has been a full member of NORFACE since spring 2015. The Belmont Forum is a group of the world's major and emerging funders of global environmental change research. It aims to accelerate delivery of the environmental research needed to remove critical barriers to sustainability by aligning and mobilising international resource.*

The Swiss National Science Foundation (SNSF) is the principal Swiss agency promoting scientific research. On behalf of the Swiss Federal government, it supports researchers and research projects in all disciplines, from philosophy and biology, to the nanoscience and medicine.

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