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International Research and Innovation Programmes

Swiss Position Paper on the past, present and future of Horizon Europe

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Key messages

1. International cooperation with like-minded countries is key to accessing talent and promoting high-quality research and innovation.
2. Scientific excellence and impact should remain central to Horizon Europe.
3. Scientific breakthrough should be promoted further through Pillar 1 and the encouragement of sustainable small team structures through Pillar 2.
4. Efforts to better integrate Social Sciences, Arts and Humanities within Horizon Europe should be pursued.
5. European innovation policy should continue to foster breakthrough innovation in all fields.
6. Global networks and value chains to secure international leadership should be further embraced.
7. The promotion of Open Research Data is an important step that should be taken further to generate a shift towards Open Science.
8. It is crucial to monitor the compliance with Open Science policies.
9. Research Assessment has the potential to positively disrupt academic culture.
10. The submission and reporting processes could be further simplified and standardised.
11. Duplication of efforts and funding should be reduced.
12. The integration of gender and sex aspects into research and innovation content as well as of broader diversity aspects in research teams should be strengthened.

INTRODUCTION

The European Commission launched a public consultation in December 2022 to evaluate Horizon 2020, Horizon Europe and to define future priorities with the Strategic Plan 2025–2027.

The State Secretariat for Education, Research and Innovation, the Swiss National Science Foundation, Innosuisse, swissuniversities, the Swiss Academies of Arts and Sciences, the Euresearch Network, the ETH Board, the Swiss Science Council, SwissCore, Swissmem and Scienceindustries contributed to this position paper focusing on Horizon Europe.

STRATEGIC ORIENTATIONS

1. International cooperation with like-minded countries is key to accessing talent and promoting high-quality research and innovation.

- The rapid association of like-minded third countries that share the same values, standards and principles as the European Union (EU), is essential to meet the objectives of the programme. To ensure continuous access to talent, international cooperation with countries that contribute to the European talent pool by attracting excellent scientists and innovators from around the world (e.g. through participation in ERC and MSCA), is of key importance.
- Emerging and enabling technologies are crucial for Europe's competitiveness and fundamental to address societal challenges. For this purpose, it is strategically necessary that like-minded countries that share the same values and principles are provided with framework conditions that facilitate collaboration for the development of such technologies (e.g. Quantum technologies).

2. Scientific excellence and impact should remain central to Horizon Europe.

- The focus on scientific excellence throughout Horizon Europe should be maintained. However, the exclusion of like-minded countries from certain topics (building on Open Strategic Autonomy) contradicts this focus, promoting instead a shift from cooperation to competition. Country-specific restrictions prevent excellent scientists from networking or remaining networked. This is detrimental to scientific progress in Europe. Switzerland recommends including a broader definition of like-minded countries (e.g. OECD countries, as has been the case in previous topics). Open Strategic Autonomy should be neither a zero-sum game nor a sliding scale leading to a negative sum game.
- Scientific research has the potential to significantly and positively impact society, which is well reflected in the European Commission's efforts to redefine the impact models. However, the impact of scientific research is not always foreseeable nor can it be measured during an ongoing EU Framework Programme. An appropriate amount of risk taking and trust in the positive long-term impact of basic science needs to be preserved (rather than a stronger focus on short and mid-term impact).

- Scientific results and innovation produced in the context of Horizon Europe should aim at impacting society and policy-making. A good example is the critical role that scientific research played in shaping policy responses to the COVID-19 pandemic, providing evidence-based guidance to governments, health organisations and individuals. The programme should continue to foster the exchange between research and policy in times of crisis and beyond.

RESEARCH POLICY

3. Scientific breakthrough should be promoted further through Pillar 1 and the encouragement of sustainable small team structures through Pillar 2.

- Pillar I of Horizon Europe contributes to scientific breakthroughs mainly due to its bottom-up nature. This should be maintained and pursued further.
- Clusters in Pillar 2 are increasingly wide-ranging, leading to the growth in size of consortia. This is known to thwart disruptive research: Whilst large teams may have more impact than smaller ones, they tend to be less creative. Funding opportunities in Pillar 2 should therefore include measures aimed at preserving and encouraging the sustainable development of small team structures and offer more opportunities for bottom-up research. The goal here is to broaden the range of distribution across the TRL scale.

4. Efforts to better integrate Social Sciences, Arts and Humanities (SSAH) within Horizon Europe should be pursued.

- Switzerland welcomes the sustained efforts of integrating SSAH in all Horizon Europe clusters, missions and partnerships. However, this approach does not seem to be having the desired effect and raises the question of what could be done additionally: SSAH communities should be supported in a way that enables them to gain more visibility within the broader scientific community, affording them a stronger position to advocate for their fields of expertise (e.g. in the context of work programmes).

INNOVATION POLICY

5. European innovation policy should continue to foster breakthrough innovation in all fields.

- Horizon Europe should continue the proven approach to mainly use bottom-up open calls across the EIC programme to foster innovation across new avenues for breakthrough future and emerging technologies.
- To support breakthrough innovation, the EIC should continue to focus on fast-growing deep-tech companies with high capital needs. To support the market entry of pre-revenue ventures should remain an important cornerstone of the EIC's strategy.
- Efforts to foster entrepreneurial talent should reach beyond the classical Science Technology Engineering Mathematics (STEM) target group and include the creative sector and humanities. Innovation in SSAH has a largely untapped potential to create societal and economic value.

6. Global networks and value chains to secure international leadership should be further embraced.

- The Global Innovation Index 2022 published the top 10 list of the most innovative economies, which contains five EU member states, the USA, Switzerland, the UK, the Republic of Korea and Singapore. Switzerland recommends including these countries in strategic alliances, extended partnerships and technology value chains in deep-tech fields to guarantee success and global leadership through Horizon Europe.
- The EU Framework Programmes are well-known for bridging the entire value chain from basic research to market-oriented innovation. Collaborative projects in Pillar 2 (including Missions) should continue to specifically target the so-called valley of death (TRL 4–6), e.g. regarding pre-competitive technologies. Based on their crucial role in collaborations between academia and industry, Universities of Applied Sciences should be better integrated into these programmes.
- Innovative companies, including SME and start-ups across the whole economy are essential for a successful twin transition. Consortia need to remain open to newcomers, most notably in partnerships with industry, to allow new ideas to emerge and to translate these into viable solutions.

OPEN SCIENCE POLICY AND RESEARCH ASSESSMENT

7. The promotion of Open Research Data is an important step that should be taken further to generate a shift towards Open Science.

- Horizon Europe policies mandate that scholarly publications and data are made publicly available. This has been instrumental in driving Open Science (adoption of preprints, open-access publishing, data repositories and Open Research Data). Switzerland very much welcomes the fact that Open Science is one of the priorities of the Swedish Presidency.
- While Open Research Data has the potential to improve research outcomes and accelerate scientific progress, there are a number of challenges that need to be addressed to realise its full potential (such as adherence to FAIR principles, data management, data quality, effective sharing, costs, privacy and confidentiality, etc.).

  These challenges require a coordinated effort by researchers, funders, institutions and policy makers to establish clear standards and protocols for Open Research Data and to provide the necessary resources and infrastructure to support its effective use.
- Horizon Europe should continue to invest in infrastructures to bring Open Data forward (e.g. through EOSC).

8. It is crucial to monitor the compliance with Open Science policies.

- Open Science enables researchers and innovators to demonstrate scientific validity and rigour by sharing methods, materials, workflows and data. It helps to replicate experiments and ensure that similar or identical findings are obtained.

Assessing how researchers and innovators comply with Open Science policies would help to better understand the driving factors, to decide on possible adjustments to advocacy and communication activities, or to decide on how to incentivize compliance and how to raise awareness of the benefits of Open Science at different levels. This could be done through the development of indicators that document how well funded researchers and innovators adhere to the policies.

- Switzerland recommends encouraging discussions at the national level to gain a better understanding of how institutions are adhering to Open Science national policies and how these are being implemented. It will be crucial to improve policy information among communities with low compliance.

9. Research Assessment has the potential to positively disrupt academic culture.

- Switzerland welcomes the formation of the Coalition on Advancing Research Assessment (CoARA). It is an important step towards a more impactful, efficient, inclusive and high-quality research system, which has the potential to positively disrupt academic culture.

IMPLEMENTATION ASPECTS

10. The submission and reporting processes could be further simplified and standardised.

- Switzerland appreciates the efforts to streamline the application and automate many elements of the reporting process and would welcome further simplifications, e.g. by reducing the large amount of administrative information that is requested in Part A of the application.
- The functionalities of the Funding and Tenders Portal have been significantly improved over the past years. A further increase in efficiency would be to give the Associated Partners editing or at least reading rights to the Portal. The fact that Associated Partners currently cannot insert the data of the projects they are involved in increases the burden on the consortium as a whole.
- Switzerland welcomes the effort made to integrate instruments like Partnerships, Missions and EIT KICs in the general Horizon Europe structure in a coherent way. However, further improvements are necessary to simplify the access to these funding opportunities, e.g. following recommendations by the European Partnership Stakeholder Forum. Against this background, Switzerland suggests maintaining the access open to third countries, both for participation in the calls and as members of the governing and funding bodies.

11. Duplication of efforts and funding should be reduced.

- As new instruments are being implemented in Horizon Europe (e.g. Missions), more focus should be set on avoiding duplication of efforts and funding. For this purpose, an analysis of duplication could be produced.

12. The integration of gender and sex aspects into research and innovation content as well as of broader diversity aspects in research teams should be strengthened.

- The Implementation of Gender Equality Plans as a requirement for participation in Horizon Europe is a positive development that should be further pursued. However, the integration of gender and sex aspects into research and innovation content could be stronger.
- Inclusiveness and diversity go beyond gender aspects, including for example ethnicity, class, and migration status. An intersectional approach could be beneficial to tackle inequality, increase diversity and produce high-quality research.

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