

Bringing Europe forward in challenging times

1. Horizon 2020: A great initiative to make Europe stronger

The Helmholtz Association welcomes Horizon 2020 as a powerful and effective programme making Europe more competitive in the short as well as in the long run and making the benefits of European cooperation visible in times when such tangible proof is clearly needed. Horizon 2020 is vital for the Europe 2020 Strategy for sustainable European economic growth and competitiveness, and it shows that the EU has the vision to prepare for the future and to make sure to have the bright minds and excellent answers needed to tackle the problems society is facing. We appreciate the enormous efforts and improvements which have been made within Horizon 2020. And we are convinced that Horizon 2020 still has room to have even more impact:

2. Horizon 2020: Where it can get even better – Helmholtz key messages

- Focus on topics where Horizon 2020 can achieve its maximum European added value – jointly solving the grand societal challenges, and making necessary resources like research infrastructures accessible across the EU
- Invest more in game changers - strengthen funding for TRL 1-6 in pillar II+III in order to boost Europe's innovation capacity
- Improve success rates to ensure the best remain in the game
- Don't extend loans – they have limited scope and co-funding works better for research projects
- Simplify the funding landscape of Horizon 2020 – less instruments (e.g. PPP/ P2P/etc.) is more
- Keep up the good simplification work – there is still much potential
- Reestablish the full budget – this will maximize the impact of Horizon 2020 for growth and help to increase success rates

3. Horizon 2020: Making most of being European

Focus on European added value

Horizon 2020 is a unique programme, building on the strengths of the research landscapes in the EU Member States and giving them a European dimension. It is a tool for joining forces in order to boost the European Research Area as a whole in the worldwide competition for the best brains, the best solutions and the best research infrastructures. In order to reach its full potential, it needs to focus even more on areas where regional or national programmes are not sufficient and joining forces at European level would make the difference.

- **It is thus essential to focus on where the European Union is stronger than the sum of its members and where it offers possibilities the national funders do not have.**

a) Working together to address the grand challenges

European added value is greatest where synergies within the EU offer new possibilities. This is most tangible where big challenges require the joint forces of competences found in Europe: in pillar III (**societal challenges**),

where **collaborative research projects** provide the right framework for bringing together the best scientists and the most innovative enterprises in Europe, and for integrating skills and competencies across disciplines. Yet, these projects were one of the victims of the EFSI cuts and are marginalized in discussions on future framework programmes, so we strongly urge to **recognize them as the strength they are**.

Collaborative research in Horizon 2020 would, however, be even more efficient if it focused on the **whole innovation chain**. Instead, Horizon 2020 favours applied projects to the detriment of projects in Technology Readiness Levels (TRL) 1-6. This is a clear trend in the societal challenges and it's part of the overall concept of the pillar "industrial leadership". However, in all these areas Europe does not only need the further refinement of existing ideas, Europe also needs the game changers which arise from completely new approaches, mostly in TRLs 1-6.

In higher TRL, commercial interests often demand the most relevant new developments to be kept secret before market entry. Synergies by collaboration therefore become more difficult to grasp. This is why Horizon 2020 could strengthen its impact if it built more on collaboration in TRL 1-6 instead of focusing on higher TLR to the extent this is done now.

- **We urge to focus on where Horizon 2020 has maximum European added value: jointly solving the grand societal challenges.**
- **Invest more in game changers by strengthening funding for TRL 1-6 in pillar II+III in order to raise Europe's innovation capacity.**

The **European Innovation Council (EIC)** proposed by Commissioner Moedas has the potential to also strengthen European competitiveness by creating a pool of innovation expertise on how to improve framework conditions to ensure that the brilliant results science in Europe generates are translated into more innovative start-ups. In addition, we see considerable potential in making Horizon 2020 more accessible to innovative SME by further reducing time to grant, simplifying procedures and streamlining instruments.

- **However, for the EIC to strengthen Europe's competitiveness, care needs to be taken that the much-needed funding balance between game-changing research in TRLs 1-6 and applied research is not further disrupted.**

b) Sharing the best tools – cooperation on research infrastructures

Maximizing the European added value is especially relevant in the area of **research infrastructures (RI)** as e.g. research vessels, research airplanes, synchrotrons or high performance computers. Excellent research infrastructures are often the determining factor for a top scientist to come to Europe rather than staying elsewhere, since break-throughs in many disciplines depend on RI. They often require such a massive investment that they make joining forces at EU level a necessity. This investment also means that there are high efficiency gains to be gathered from ensuring that not all Member States have to build all types of infrastructure. Instead, the EU level is the perfect and the only place where a programme can be set up to provide access across borders between Member States.

- **Making research infrastructures accessible all across the EU is one of the success stories of the framework programmes. It urgently needs to be better funded.**
- **We need to increase the speed of setting up new RI in order for Europe to remain attractive for the best brains. This requires better support for the ESFRI process and for strengthening the integration of new national RIs into the European landscape e.g. via a stronger support for RI clusters.**
- **Close collaboration of research infrastructures on technological challenges is key to remaining at the cutting-edge concerning the global scale and needs to be fostered and funded.**

c) Making excellence a European strength

The **European Research Council** (ERC) has clearly established itself as a European brand and is a prime example for the EU added value of actions which can be done nationally but benefit from adding a “champions league” to challenge the best and to ensure a Europe-wide competition.

- **The ERC budget needs to be maintained.**

d) Ensuring the mobility of researchers and Europe-wide cooperation for solution-oriented frontier research

Supporting the mobility of researchers via **Marie Skłodowska-Curie Actions** (MSCA) is another key to further strengthening the European Research Area and creating impact which cannot be achieved at national level. The **Future and Emerging Technologies** (FET) scheme again allows collaboration across borders in any topic and in small agile projects and so stimulates the bottom-up inventive capacity of Europe.

- **The bottom-up funding from the MSCA and FET needs to be maintained and the corresponding budget should be increased considerably.**

e) Widening participation

European added value of a different kind is demonstrated by the instruments destined to **widen participation**. We consider this to be a very useful initiative with a good potential to help bridge the worrying gap between different innovation capacities in Europe. Still, it is even more vital to tap the huge potential of the Structural Funds for this purpose and to allow synergies with Horizon 2020.

- **We therefore call for a stronger interlinkage with structural funds and better compatibility of Horizon 2020 and structural funds to facilitate its application.**

4. Horizon 2020: Efficiency and implementation

The implementation of Horizon 2020 in general is very efficient. The shorter time to grant is a competitive advantage and the participant portal facilitates grant management. Still, there remains room for even more efficiency in some aspects:

a) Success rates

The very low **success rates** of Horizon 2020 threaten to discourage good proposers from submitting. A change from 1:5 in FP7 to 1:8 in Horizon 2020 can be seen. In some cases the success rates were around 3% (SC1 and FET), which lead to an enormous waste of work and high frustration. Avoiding this effect should be a high priority for the European Commission. We believe the call-specific impact should be defined more precisely to clearly communicate the aim of the action to the applicants. Two-stage procedures would also streamline and ease the evaluation process under the condition that the success rate is about 1/3 in the second stage.

- **Success rates need to be improved to ensure the best remain in the game.**

b) Loans vs. grants

We are exceedingly concerned about the tendency to finance research via **loans**. Loans can be useful at the very last end of the innovation chain, but the EU competitiveness needs the whole innovation capacity. Break-through innovation is not predictable in the long term perspective and consequently not bankable – but it is still vital for Europe’s competitiveness.

- **Don’t extend loans – they have limited scope and co-funding works better for research and innovation projects.**

c) Proliferation and overlap of instruments

The ever-increasing number of organisations responsible for Horizon 2020 implementation (JTI, P2P etc.) is a problem growing over time. It makes the funding landscape highly complicated to all but the best informed, hindering access to Horizon 2020 for newcomers and SME. Overlaps of funding topics produce the danger of inefficiency, and subtly different funding rules and procedures add administrative complexity.

- **We encourage the European Commission to streamline or to actively reduce the number of instruments. We also urge to use the ongoing mid-term review of the JTI to aim for reducing their number, keeping only the most efficient ones.**

d) Simplification

Simplification has been achieved in some areas, and there is much good will on the part of the EC officers responsible for it, but there remain important issues to solve. The major challenge regards **internal invoicing**, which is used by the majority of industry and academic organisations to efficiently record the costs of inhouse facilities as e.g. genome sequencing facilities or animal houses. In Horizon 2020 the costs for the use of these facilities are practically impossible to account for. This problem has to be addressed urgently. We have proposed possible solutions in a joint declaration representing 410 universities and 210 organisations which Helmholtz has prepared together with many major European stakeholders ([link](#)).

5. Horizon 2020: Excellent with the potential to be brilliant

The Helmholtz Association appreciates Horizon 2020 as reliable instrument to foster the European Research Area and to ensure Europe's competitiveness for the years to come. For using its potential it is necessary to **fully compensate the budget decrease of €2.2 billion caused by the European Fund for Strategic Investments (EFSI)** as the majority of the EFSI projects does not address R&I aspects and thus cannot fill the gap created by the cuts. This gap has limited the number of projects jointly addressing the societal challenges, vital aspects of the European added value of Horizon 2020 – and since the JTI budgets were protected, the hit was felt especially hard regarding projects with lower TRLs.

- **This is why we recommend reimbursing the money in the work programmes 2018-2020 in the societal challenges especially for lower Technology Readiness Levels (TRLs 1-6) to assure the competitiveness of the EU.**

Brief portrait of the Helmholtz Association

The Helmholtz Association contributes to solving major challenges facing society, science and the economy with top scientific achievements in six research fields: Energy; Earth and Environment; Health; Key Technologies; Matter; and Aeronautics, Space and Transport. With some 38,000 employees in 18 research centres and an annual budget of more than €4 billion, the Helmholtz Association is Germany's largest scientific organisation. Its work follows in the tradition of the great natural scientist Hermann von Helmholtz (1821-1894).

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