



# 11 ways to make Horizon Europe work better

Response to the European Commission's open consultation  
on the future of the Framework Programmes  
22 February 2023

## About this report

This paper reflects comments by various members of the Science|Business Network at in-person workshops and town hall-style debates that were part of the Science|Business Annual Network Conference in Brussels on 6-7 February 2023.

It is a report of the news staff of Science|Business International SRL. While it incorporates many views from our members, it does not purport to speak for them collectively or individually.

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## Executive summary

Now and throughout 2023, the European Commission is making its big, periodic push to revise its long-term research and innovation agenda, as implemented in the €95.5 billion Horizon Europe programme. It does so against the backdrop of a series of shockwaves which have buffeted the continent – from COVID, heatwaves and drought to energy and food supply disruption caused by the Ukraine war – and which have underlined both the importance and fragility of Europe’s ambitions for sustainable development, climate neutrality, inclusive growth and more. The programme, as it aims to tackle these challenges, must work for Europe’s researchers and innovators as well as for society at large.

This white paper, following a series of workshops and conference sessions of the Science|Business Network on 6-7 February, is submitted to the Commission as part of its large-scale public consultation on past, present and future R&I framework programmes. In general, what we heard in these meetings was broad support for what Horizon Europe does and, by and large, how it does it. But many recommendations were also gathered about ways to improve the second half of Horizon Europe and shape the next framework programme. This report focuses on those recommendations which appeared to us as most constructive and noteworthy.

Science|Business, a Brussels-based media and communications company focused on R&D policy, offers this summary – to the Commission’s consultation process and as well as for open-access publication – in its continuing efforts to stir informed debate, and bring attention to good ideas.

### 11 recommendations for a better EU research framework

#### Improvements to project management

- 1) Pilot smaller scale R&I actions involving fewer partners and covering a wider range of technology readiness levels (TRLs) to enable more universities and smaller entities to participate in and lead projects in Horizon’s Pillar II, the programme’s central, collaborative research chapter.
- 2) Communicate openly and clearly about the politics of Horizon Europe association and third country participation. To help researchers understand the political landscape better, set up a European support office or help desk, designed after similar national Horizon ‘portals’
- 3) Slow down the roll-out of lump sum funding and produce a robust objective report on the pros and cons of the approach before going further

#### Pillar I: Excellent science

- 4) Basic research should not be limited to the European Research Council and its bottom-up approach. Introduce more funding opportunities for lower TRL projects, including collaborative basic research, to Pillar II of Horizon Europe
- 5) Research infrastructures rest on talent. Pilot a Marie Skłodowska-Curie Actions (MSCA) scheme for movement and knowledge-sharing between engineers and specialists working on research infrastructures and technology

#### Pillar II: Collaborative projects

- 6) To meet green innovation ambitions, fund more high-risk, high-reward technologies, including further exploration of genetic modification, and give a stronger mandate to social sciences and humanities researchers
- 7) Digital is confusing. Explain interlinkages and differences between Digital Europe, Horizon Europe, the Missions, and other instruments. And make sure different interpretations of EU data laws are not getting in the way of cross-border research and innovation



- 8) Disease prevention won't fix all health issues. Return focus on new therapies and disease pathways
- 9) The Missions, five goal-oriented R&I initiatives in Horizon, need a rethink to ensure maximum impact. Pilot a mechanism to keep national agencies and researchers in the loop. Make the difference between Mission and non-Mission calls more obvious

### Pillar III and Widening

- 10) Ease the path of involvement in Pillar III, focused on innovation and ecosystems, for universities, and get serious about social innovation
- 11) Instruments in the Widening programme, focused on integrating eastern and western EU members for R&I collaboration, must enable Widening countries to participate in the rest of the programme, not just give them extra space to play in. Assess what works and what doesn't before introducing new instruments

Panel discussion  
on health crisis  
management, at the  
Science|Business  
Network  
annual meeting  
6-7 February 2023



Panel discussion  
on technology  
infrastructures

## Introduction

In December 2022, the European Commission launched its largest ever mass public consultation on its research and innovation programmes, Horizon 2020 and Horizon Europe. It aims to assess what has gone right and wrong so far, while simultaneously looking ahead to the future. It's asking the R&I community what worked, what needs to change and what the most pressing research priorities are. The results of the consultation will feed into the next Horizon Europe strategic plan for 2025-2027 and the next EU framework programme.

As research stakeholders around Europe scrambled to submit their feedback to the European Commission, the Science|Business Network met in Brussels on 6-7 February 2023 to discuss how, based on their experience with the programme so far, they think the final three years of Horizon Europe should be planned. This Network, with more than 70 public and private-sector members, is an extraordinary assembly of first-hand experts on Horizon – comprising many leading European universities, companies and research organisations that participate in the programme, supplemented by a growing number of like-minded organisations outside Europe. Collectively, the Network incorporates experience from thousands of Horizon projects, large and small. It is, in effect, a self-organised, massive focus group on Horizon, operating independently of the Commission.

At the conference, during six topic-specific workshops covering different parts of Horizon Europe and two town-hall style debates, many recommendations were aired. Several were discussed in the members' meeting on 6 February with Julien Guerrier, director of the Common Policy Centre in the Commission's Directorate-General for Research and Innovation, and further aired in a public conference the following day with speakers including Commission Executive Vice President Margrethe Vestager.

In this report, Science|Business highlights 11 recommendations aired during the conference that, in the opinion of our news team, were constructive and noteworthy. As this is a Science|Business report, it does not purport to represent the views of all or any individual members of the Science|Business Network; many of them are submitting their own, well-considered opinions in their own names. Rather, it is our open and transparent contribution to the important project of making EU research and innovation programmes as effective, inspiring and useful as possible.

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# Improvements to project management

## 1. Project and access

Horizon Europe is advertised as more impact-driven than its predecessors. It's meant to help Europe tackle pressing societal challenges, drive its industrial growth and help it transition towards a greener and digital society. All this requires innovations ready for the market, and Horizon Europe has been geared towards this. But that's not the entire picture. Without funding for more projects at lower technology readiness levels (TRLs), Horizon Europe risks failing to produce the science to be translated into innovation. And it risks leaving out some universities and smaller players from the programme, especially its Pillar II which funds large-scale collaborative projects; many smaller organisations struggle to hop on big, market-oriented initiatives.

To bring back balance in EU research programming, the Commission could pilot small scale R&I Actions with fewer partners to enable smaller entities to lead and universities to participate. These should also include funding for lower TRLs in Pillar II to allow space to test out new ideas and contain fewer non-scientific demands, such as high expectations for project dissemination and communication. "We're told to hire consultancy firms to do our communication, but that's very expensive. They're expecting big dissemination events, and then the results of the project are lost," one Science|Business network member says.



Pilot smaller scale R&I actions involving fewer partners and covering a wide range of TRLs to enable more universities and smaller entities to participate in and lead projects in Pillar II

## 2. International collaboration

Third country participation and association is a hot topic under Horizon Europe, and there are a lot of politics to digest around it all; many find themselves confused. Most recently, 21 Hungarian universities were kicked off Horizon Europe due to rule of law concerns. Switzerland and the UK are still left out of the programme as wider political stand-offs run on, despite the two EU neighbours knocking on the door. At the same time, negotiations are underway to recruit more countries, with varying geopolitical agendas, to Horizon. Researchers want the Commission to be more open about the reasons for these political battles engulfing Horizon Europe, as global R&I cooperation increasingly turns into a highly political and nuanced sport.

Overall, many Science|Business Network members want Horizon Europe to be as open as possible to the rest of the world. The funding involved in association agreements enables new avenues for cooperation beyond existing bilateral ties with 'like-minded' countries such as Canada and Japan. But the bigger it grows, the more complex it gets. Every associated country has its own rules of participation. Third countries, and even associated ones, are left out of certain parts of the programme, such as sensitive space and quantum projects. It's difficult to understand the new mapping, even if it lends itself to new opportunities, and the research community wants an open discussion on global and responsible R&I.

Many members voiced a desire that the Commission be more explicit: make a better effort simply to tell people, in real time, with whom they can play in Horizon, or under what terms. Particularly when contemplating partners in those countries not formally associated to Horizon, an EU researcher or entrepreneur currently has difficulty figuring it all out – and the Commission's existing Web resources are confusing and inadequate.



To help researchers understand the political landscape better, the Commission could set up a European support office or help desk, designed after similar national Horizon portals



### 3. Lump sums

Horizon participants are divided on lump sums, an alternative to the standard real-cost reporting, paid out without beneficiaries having to file timesheets and report on each item of spending. The Commission has been pushing for lump-sum adoption since 2018, with the goal of reducing bureaucratic overhead and cutting high error rates in EU spending on research and innovation. In an informal Science|Business survey just before the 6-7 February conference, about half the responding Network members said they didn't like the idea, while the other half favoured it. And some noted that the fundamental data the Commission is using – for instance, average personnel costs by country – needs better analysis and verification.

But there is consensus on the need to make sure decisions are made based on sound evidence; and many members feel there's not enough data at this time. The initial pilot lump sum projects are yet to wrap up and there's no evidence that the new mode of funding will simplify the lives of beneficiaries. Until there's proof it works, the roll-out should be slowed down. The Commission should not dive into this idea "out of starvation" for a solution to put an end to high administrative loads and error rates in the programme.

To aid this, once the evidence is in, the Commission should produce an objective report on lump sums. Here, it should honestly rate how well the new system covers personnel costs. There's anecdotal evidence that in some countries the costs are not covered sufficiently, and with record high inflation hitting the European economy, there are worries that lump sum estimates calculated on historical data may cause trouble down the line. When it comes to the specifics, members also want more information and security on how lump sum projects will be audited. "There are a lot of pros and cons with the lump sums, and [a] more open discussion around its development and lessons learnt from participants would be welcome," one Network member said in a survey.



Slow down the roll out of lump sum funding and produce a robust, objective report on the pros and cons of the approach before going further

Panel discussion  
on the science of  
sustainability



## Pillar I: Excellent science

### 4. Frontier research

Excellent science is the base of EU research programmes. Its crown jewel is the frontier research funder, the European Research Council; and most Science|Business Network members don't want to see any major changes made to the fund. There is great reluctance to say anything critical of the ERC per se, lest that complicate the politics around it. Still, some members suggested that the ERC could do more in funding collaborative, cross-disciplinary research at a fundamental level, at a time when understanding health and environment interactions in particular is becoming ever more critical to global health. True, it has its Synergy collaborative grants to address this issue; but some believe more is needed. On one issue, grant size, there was a range of opinions expressed: some complained that the ERC has yet to reckon with the impact of inflation on its standard grant sizes, while others said there should be more small-grant opportunities for young or specialised researchers.

More broadly, several members said the ERC shouldn't be the only safe haven for basic research in the programme. In other parts of Horizon Europe— especially Pillar II – and any future research programme, there should be more collaborative opportunities for basic research. Some of these calls should be fully open rather than targeted, to allow for more scientific exploration, balancing out Horizon Europe's impact-targeted big collaborative projects.



Basic research should not be limited to the ERC and its bottom-up approach. Introduce more funding opportunities for lower TRL projects, including collaborative basic research, to Pillar II of Horizon Europe

### 5. Research infrastructures

When it comes to research infrastructures, many members want to see more long-term thinking. It's difficult to maintain a research infrastructure with short-term projects and funding. This means investments in both talent and the operation of the infrastructures should be piloted: grants should allow for maintenance and operation, including salaries and training of the people who keep them running. Here, some members propose a new Marie Skłodowska-Curie Actions (MSCA) scheme be developed to allow for movement and knowledge-sharing between engineers and specialists working on research infrastructures

Maria Leptin,  
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and technology. Alternatively, others suggest expanding the scope of the existing MSCA Staff Exchange programme to specifically include those working on research infrastructures. Also, when planning EU funding for infrastructure, there should be more focus on European added-value, as opposed to duplicating what can be done at a national level. To make this happen, research infrastructures should be better integrated into the EU research framework, with a special focus on synergies with the Horizon Missions. Specifically, EU funding could help set up connections and the networking infrastructure between member states with similar specialised expertise, for example, synchrotrons and lasers.



Research infrastructures depend on talent. Pilot an MSCA scheme for movement and knowledge sharing between engineers and specialists working on research infrastructures and technology

## Pillar II – Collaborative projects

### 6. Green transition

Europe must move quickly with the Green Transition if it wants to achieve its 2050 climate neutrality goal. The clock is ticking, and it is time to take more risks. Researchers want to see more space for high-risk, high-reward technologies in the Framework Programme rather than homing in on solar and other “safe” technologies. For one, some members said, the next big thing in European climate research is genetic modification, as the EU prepares to loosen rules on deploying edited crops. To meet the change, genome editing applied to plants and animals should be one of the main focuses of the next Horizon Europe work programme. And while applied science is key, the programme should make more space for social sciences and humanities teams here: they should lead more green projects instead of just being a supporting partner. This is crucial, as behavioural change is necessary for the green transition.



To meet green innovation ambitions, fund more high-risk, high-reward technologies, including further exploration of genetic modification, and give a stronger mandate to social sciences and humanities researchers

## 7. Digital, industry and space

Another EU ambition is becoming a technology powerhouse, but digital isn't just about new technologies being developed. Technology is meant to serve people, and Horizon Europe should reflect this by giving social innovation a bigger role in the work programme.

Beyond the philosophical, many members find there is too much complexity between the Commission's different digital funding instruments: Digital Europe, Horizon Europe, the Missions, etc. This needs to be made clearer.

Further, data privacy laws such as the General Data Protection Regulation are a special complication for the R&I community; they are still not applied in a standardised way from top level down to individual institutions – and that can affect cross-border research. For example, countries implement them differently; and within countries, institutions implement them differently. So, better coordination and regulation of this law is needed to make it apply uniformly, accompanied by clear guidelines to help researchers navigate the EU's digital regulation landscape. This is especially an issue for health data, where informed consent is needed. Action on this issue would also help advance a related EU agenda item: promoting open science.



Digital is confusing. Explain interlinkages and differences between Digital Europe, Horizon Europe, the Missions, and other instruments. And make sure different interpretations of EU data laws are not getting in the way of cross-border research and innovation

## 8. Health

When it comes to creating a resilient and healthy EU, many Network members had a few concrete suggestions.

First, many members want to see better balance between research for disease prevention and research tackling disease after onset. They believe the balance is out of kilter between research in health prevention to pre-empt illness, and molecular biology research into disease pathways and target discovery with the aim of treating diseases. Health prevention will not cure inherited rare diseases and has only limited relevance to addressing antimicrobial resistance, for example. At the same time, health is tightly linked with the climate, and some members believe this connection should be reflected in the climate-related Horizon work programme.

Second, access to patient data remains a huge constraint on the potential of Horizon Europe funded health research. This is particularly the case when it comes to disease-agnostic data. The value of pooling data has been demonstrated in specific diseases in a number of Horizon 2020 projects, for example, the European Medical Information Framework Alzheimer's Disease (EMIF-AD) programme compiled a catalogue of relevant repositories of patient data and samples across Europe and agreed a governance structure for data access, leading to the discovery of new biomarkers of the neurodegenerative disease. That demonstrates that systems for health data sharing need not be centralised. In support of this, more work is needed on informed consent of patients taking part in clinical trials, to allow reuse of their data for other research. In parallel, the methodology of federated learning could be applied to overcome many of the ethical and privacy obstacles preventing patient data from being pooled for analysis. Rather than centralising patient data, it can be analysed with an algorithm downloaded to a data repository.

Third, get industry around the table when basic research related to health is being addressed. Industry should be involved in discussions about what kind of health-related basic research is funded. Having a seat at the table would increase awareness of what is coming through the pipeline, preparing the ground for translation of basic research into drug discovery and clinical studies.



Disease prevention won't fix all health issues. Return focus on new therapies and disease pathways – and make sure scientists can access the patient data needed for research

## 9. Missions

The Missions aren't a bad idea per se, but it might be time for a rethink. Right now, they are either too wide to be meaningful or so closed that it's hard to reorient them as needs change. To do so, there needs to be more political courage and willingness to adapt new governance models. This is happening – at least in some cases – but not to the extent needed to tackle cancer or save Europe's soils.

In the end, it all boils down to the actors on the ground; and national agencies need to be involved from the beginning to help researchers turn the Missions into reality. Currently, some groups apply for funding without consulting national agencies, even though they need the national agencies once they win the grant. Many Network members want to see a mechanism created to keep national agencies in the loop from the beginning. This is especially true for the oceans and soils Missions which have harder-to-measure key performance indicators and thus need to be closer to the stakeholders that actually affect soil and ocean health. "Regulatory sandboxes" – special, limited derogations from normal rules so as to test new ideas – could be part of Missions and should be linked up across Europe. Living Labs, which are related to regulatory sandboxes, could also be integrated into missions.

The research community also needs some help in figuring out what the Missions are and how they work. First, researchers want to know where lies the boundary line between Mission calls and non-Mission calls. Right now, because the boundaries are unclear and there is a need to get funding from different sources, there are – as one member put it – "too many doors to knock on" to find the right funding source. The management structure and how it all works should be more obvious. Second, researchers want more time to prepare for the Mission-specific calls, which are often very broad and ambitious, especially considering the limited budgets allocated to them. To help them prepare, the work programmes should be published earlier ahead of the deadlines.



The Missions need a rethink to ensure maximum impact. Pilot a mechanism to keep national agencies and researchers in the loop. Make the difference between Mission and non-Mission calls more obvious

## Pillar III and widening

### 10. Innovative Europe

The message from many members was clear: end the Commission's "lip service" towards social innovation. Innovation has to be comprehensive, and that means including social innovation in the design of calls for more projects. A linked issue: people are struggling with the definition of "deep tech", which is seen – still, despite nods in the direction of the arts, humanities, legal technologies and so on – as being defined too rigidly, making social innovation researchers even more reluctant to be involved.



At the same time, many members say, Horizon Europe's innovation pillar is becoming too complex; some universities in particular are shying away from the heavy administrative work it requires. That said, many support the idea of the European Innovation Council and would like to see it expand, with universities in particular noting the value of its Pathfinder programme and its bottom-up calls. But they would like to see some changes in the bottom-up competition of the Transition scheme which allows researchers to test out the innovation potential of existing EU research: it should be open to more types of projects, beyond the EIC Pathfinder and ERC Proof of Concept grants.

The European Institute of Innovation and Technology, despite being perceived as a good tool, often fails to make its added value seen, considering the mountains of paperwork it entails. This has resulted in universities hopping in and out of its innovation communities – with some leaving the scheme altogether. With many also struggling to join in high-TRL projects in Pillar II, dropping out of the EIT has long-term costs: involvement in the collaborative aspects of the pillars is a vital part of capacity building. As things stand, with a risk of decreasing academic involvement in innovation-heavy projects, that aspect of capacity building is being hit.



Ease the path of involvement in Pillar III for universities and get serious about social innovation

## 11. ERA – Widening

There's little consensus on what works and what doesn't in the Horizon programme dedicated to bridging the gaps between the most and least innovative European regions. Some believe Widening instruments such as Teaming, Twinning and ERA Chairs work well and the bulk of the funding should be dedicated to them. Others say Teaming projects are so big and complicated that they do not see a future for this measure beyond the projects that have already been established. The truth likely lies somewhere in the middle. To bring these discussions together, many suggest a broad assessment of each of the instruments before new ones are created.

Beyond dedicated schemes, synergies with other EU and national programmes are important in helping Widening countries catch up; but there are shortcomings when it comes to implementing them. To fill in the gaps, members suggest that the Commission's research and regional directorates-general should work more closely with each other to coordinate their funding mechanisms. Plus, in the design phase of the programme and calls, it should be considered how they can go hand in hand with national schemes.

Networking opportunities are welcome. Just make sure Widening partners are not seen as token add-ons but as valued and useful partners in any collaboration and consortium. Measures and instruments that give researchers, institutes or private companies in Widening countries the chance to network and collaborate with quality partners from around Europe and the globe were very beneficial. Some said they would like to see more professional help from the EU and Horizon National Contact Points network for those that lack on-the-ground support and experience in applying for EU grants.

"To stress, we don't want to only be successful in Widening. We want to be included in the rest of the programme. This is the ultimate goal, and the instruments should work towards this," one Science|Business Network member from a Widening country said.



Widening instruments must enable Widening countries to participate in the rest of the programme, not just give them extra space to play in. Assess what works and what doesn't before introducing new instruments



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