

POSITION STATEMENT
**TOWARDS STRENGTHENED
RESEARCH AND
INNOVATION SYSTEMS
ACROSS EUROPE**
2022

SCIENCE
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Shaping the future of research

Colophon

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TOWARDS STRENGTHENED RESEARCH AND INNOVATION SYSTEMS ACROSS EUROPE

**Science Europe Recommendations
to Reduce Research and Innovation
Disparities and Foster Brain Circulation**

Introduction

Substantial discrepancies exist between European research and innovation (R&I) capacities. The existing gaps between different areas of Europe are at risk of expanding due to new societal and economic challenges, a rapidly evolving global landscape with a fierce competition for R&I leadership, and the consequences of the war between Russia and Ukraine. In addition, the non-association of UK and Switzerland to Horizon Europe is a risk factor for the entire EU.

Leveraging the potential of Europe's existing talent, developing new capacities, and optimising and spreading the benefits of research and innovation throughout the EU, are therefore more important than ever. This is in accordance with the European Research Area Policy Agenda, and especially [Action 16 'Improve EU-Wide Access to Excellence'](#). Europe must reinforce its position as a top knowledge hub and enhance its competitiveness and ability to address societal challenges. Moreover, urgent action is necessary to reinforce and facilitate mobility of researchers between European countries.

A strict distinction is often made between the countries sometimes called '[widening](#)' and 'non-widening'. This must be nuanced: there are high-quality research and researchers in all European countries, and there can be large R&I performance discrepancies in both 'widening' and 'non-widening' countries.

As major European organisations that fund or perform ground-breaking research, Science Europe Member Organisations are committed to supporting capacity building across Europe. They have developed or supported initiatives to reinforce their national R&I systems, using both national and EU funding such as the '[Widening participation and spreading excellence](#)' instruments of Horizon Europe, and the [European Structural and Investment Funds](#). They have shared their activities and experience in a series of workshops and exchanges in 2022.

From this dialogue, Science Europe has extracted the following key messages and good examples.

1. Increasing National Investments in R&I

The use of EU tools such as the Structural Funds and the 'Widening participation and spreading excellence' instruments under the Horizon Programmes has proved successful in several countries, both in supporting brain circulation and in leading to the creation of additional research capacities and related jobs. However, European funding alone is not sufficient. Clear and ambitious national strategies and appropriate related investments are necessary to increase national R&I capacities. According to the [OECD](#), in 2020, the gross domestic spending on R&D within the EU varied from 0.47% to 3.49% of the national Gross Domestic Product (GDP).

Key recommendations

- All Member States should invest more in R&I to develop national capacities and provide

long-term opportunities and guarantees for researchers and research organisations. All countries should have a clear target to raise their R&I investment to at least 3% of GDP, in accordance with the objective set by the European Council in 2022.

- National funding could also be invested into making the positive effects of European-funded projects more sustainable and to amplify their results. Follow-up actions to successful projects and expenses not covered by EU funding could, for instance, be covered by national funding.
- Support from 'non-widening' countries is also important to improve collaboration and encourage capacity building.

2. Triggering Changes in Research Culture

Several EU countries suffer the effect of brain drain, and national research institutions sometimes struggle to keep or attract talents. Lower salaries can be perceived as a disincentive for researchers to stay in or return to a country. However, more important factors in the decision to leave or stay are often considered to be a static or conservative research culture, the lack of long-term perspectives, and the behaviours, values, attitudes, and norms of the research system.

Key recommendations

- All Member States and its research organisations should participate in the dialogues that have emerged at national and European level (such as the [ongoing dialogue to reform research assessment in Europe](#)) to rethink the research systems and cultures, and their benefit to the research community. An inclusive reflection process is needed to address urgent challenges and encourage the evolution towards more positive research cultures, processes, and policies to enhance the performance of research systems.
- Among the urgent challenges, the following key issues emerged:
 - The recruitment and rewards mechanisms must be transparent, effective, and fair. They must reward a diversity of academic and research contributions and activities, and promote good research practices, reproducibility, and integrity. Diversity and equal opportunities should be guaranteed to all.
 - Research systems must enable more access to professional trainings and mentorships, especially for early-career researchers, to provide them with the knowledge, awareness, network, skills and tools they need to develop excellent careers.
 - Researchers should be given opportunities and resources to explore new research ideas and create new research units. Highly-skilled support staff, such as research managers, data specialists, technology transfer officers, and so on are also needed (see message 4).

3. Boosting the Key Factors to Attract and Retain Talent

Spreading excellence goes hand in hand with creating an attractive R&I environment. Excellent research, mobility plans, access to top-level research infrastructures, and academic freedom were considered as four crucial elements of an attractive research environment.

Key recommendations

- Academic freedom must be better protected. Restrictions on academic freedom by governments or research institutions can be observed in several European countries and are a grave danger – not only for the research community, but also for society as a whole. The content of the [Bonn Declaration on Freedom of Academic Research](#) adopted in 2020 must guide all European countries to safeguarding freedom of scientific research.
- Mobility schemes that foster ‘brain circulation’ all over Europe should be further developed and properly funded to enable researchers and research staff to go abroad, be exposed to other research systems and practices, and build connections and networks.
- Obstacles to scientific development in weak economies and increasingly high research and development costs can be partly overcome through networking, mobility, and the mutual sharing of information, facilities, and expertise between countries. Strengthening networks is therefore one of the key factors in promoting excellence and should be fostered.
- Research infrastructures are crucial to performing high-quality research. Top-notch facilities should be developed and maintained on European territory.

- To avoid unnecessary duplications, boost collaboration, and increase the attractiveness of local R&I systems, research infrastructures should be easily accessible to all researchers. Accordingly, more visibility should be given to infrastructures and facilities located in

Eastern and Central Europe and access should be open to all researchers. Reciprocally, researchers from all over Europe should have facilitated access to any European infrastructure enabling them to perform and improve their research.

4. Strengthening Support Expertise and Capacity for R&I

Researchers themselves are one element of the R&I system. Other functions, sometimes called 'support functions', are also crucial for a well-performing R&I system. The selection, training, and coaching of highly-skilled project co-ordinators, data specialists, research administrators, facilities managers, funding managers, and so on, are key to developing and implementing high-quality research, and to accessing available funding. Moreover, having appropriate support enables researchers to take on bigger roles in projects, such as becoming co-ordinators. Several instruments are currently available to support skills development; however, more has to be done.

Key recommendations

- More should be invested in the development of R&I 'support' positions to boost the performance of the national and local R&I systems as highlighted in [the European Research Area Action 17](#). Such capacity
- Career recognition systems should properly acknowledge the value of all functions that are necessary in well-functioning R&I systems. Opportunities should be provided for all career paths.

building should be undertaken not only in universities and research performing organisations, but also in all organisations that may participate in, or support, Horizon Europe projects (research funders, companies, non-profit sector, and so on). Support should be developed at several levels:

- Preparation, co-ordination and implementation of high-quality research and research projects
- Awareness raising about all funding opportunities, whether national or European, and how to combine them
- Support in the management and dissemination of research outcomes

5. Enhancing Mutual Learning and Networking Opportunities

Countries with a longer history of collaboration and participation in the Framework Programmes have more experience and better networks. They may have developed a deeper knowledge on how to participate (better applications, higher tendency to be co-ordinators) and with whom to do so.

Good integration in networks is a strong asset to learn, develop partnerships, and to launch or join collaborative projects. Available instruments should be used to the fullest and new tailor-made initiatives should be encouraged.

Key recommendations

- Increase the use of COST funds to build research and innovation networks. Their Actions help connect research initiatives across Europe and beyond, and enable researchers and innovators to grow their ideas in any science and technology field by facilitating peer-to-peer discussions. These actions are available to any researcher in Europe and have proven to be a very successful entry point to other funding schemes, such as Horizon 2020 and now Horizon Europe instruments.

- Encourage researchers to participate in EU Partnerships projects, as this is often seen as a first stepping stone towards other Horizon Europe projects.
- Encourage researchers to gain experience by evaluating proposals, including by joining the [Horizon Europe's pool of evaluators](#) from

which the European Commission selects project proposal evaluators. Evaluating proposals provides deep insight in future developments in one's field of expertise, but also a good overview of best practices for proposal writing and presentation. Moreover, evaluators joining the evaluation panels also expand their scientific network.

6. Promoting Diversity as a Key to Success

To promote high-level research and technological development and to stimulate innovation across European countries, it is necessary to encourage diversity and to emphasise the added value of diversity at all levels of the research process.

Key recommendations

- Increase the diversity of researchers' profiles: Europe should be a research system where all scholars can realise their potential regardless of their ethnic origin, geographical and social background, gender, sexual orientation, religion, or disabilities. A diversity of researchers' profiles can be beneficial to the quality of the research process, content, and outcomes. Diversity contributes to making research more socially relevant and more inclusive.
- Use the diversity of research funds: Combination and complementarity of different funds are essential to ensuring the sustainability of long-term research projects. National and European funding must cover the entire R&I chain and encourage a diversity of initiatives.
- Embrace the diversity of research contexts: Research systems should welcome a diversity of geographical, cultural, and disciplinary contexts. Europe offers a large cultural and historical diversity. European collaboration therefore offers a perfect environment to approach a challenge or a research question in different and complementary ways. Collaborations that embrace this diversity by including researchers from very different countries should therefore be encouraged.

Conclusions

Despite years of efforts, disparities in R&I are still a characteristic of the European landscape. Understanding their causes is key to identifying effective solutions. Science Europe and its members have identified several key reasons that explain the lower performances of some countries in European programmes. These include insufficient national investments in R&I, as well as weak institutional frameworks, brain drain, and a 'system learning' effect.

Addressing these issues is crucial and renewed efforts are urgently needed. However, during discussions with members, it was stressed that ambitious national and institutional strategies are necessary. They can be strengthened, but never replaced by EU funding and strategies.

It is therefore crucial to support more knowledge exchanges and networks to inspire countries and institutions in their reforms and investments. Contributions from 'non-widening' countries are as necessary as those from 'widening' countries to build a more effective European Research Area. Moreover, Switzerland and the UK should be fully involved in this endeavour.

Europe needs to raise the bar on the quality and impact of its R&I system. Everyone must play their part in this important challenge, which cannot be met without reducing the existing disparities and increasing the R&I potential of all European regions.

Science Europe prompts EU Member States, the European institutions, and the entire R&I community to continue the dialogue to foster brain circulation across Europe and strengthen R&I systems. Science Europe remains committed to facilitating the dialogue and exchanges between its members, raise their collective voice, and support them in their efforts to boost excellence across Europe.

Examples of Initiatives

Mobilitas Plus Programme

In Estonia the Structural Funds are largely used to develop R&I capacities, but also to fund the national participation in European Partnerships under Horizon Europe. Mobilitas Plus programme, covered by the European Regional Development Fund, aims to: 1) improve the international visibility of Estonian research, business and higher education; 2) strengthen the international competitiveness of Estonian researchers and research organisations, including companies; 3) support opportunities for Estonian R&D institutions and companies to collaborate with transnational research organisations and networks, including through synergy with Horizon 2020 actions; 4) expand opportunities for international collaboration and improve mobility and cross-sectoral co-operation.

More information

<https://etag.ee/en/funding/programmes/mobilitas-plus/>

Alliance4Life

Alliance4Life is a coalition that brings together 12 life science institutions from 11 EU-13 countries. The alliance aims to become the role model of progressive health research institutions in Central and Eastern Europe and increase the visibility of these Life Science institutions. It aims to strengthen low-performing Member States in their scientific excellence and innovation through strategic structural reforms, mutual learning and better participation in EU-funded research and innovation actions. In addition, the alliance aims to ensure, encourage and motivate the creation of a culture that rewards high scientific performance while closing the innovation gap in Europe.

More information

<https://alliance4life.ceitec.cz/>

ERC support at Charles University

At the Charles University in Prague, a support scheme was put in place to increase the number of ERC applicants and ultimately grantees. The programme is aimed at encouraging researchers to take an interest in the opportunities provided by the ERC. It also provides support and training on ERC rules, expectations, and project writing, and prepares applicants for the oral presentation in front of the jury.

Czexpats

The Czexpats in Science initiative has been created in Czech Republic. It aims to connect Czech scientists abroad with scientists and institutions in Czech Republic to promote long-term partnerships and the exchange of information, with the goal of supporting world-class science in Czech Republic.

More information

<https://czexpats.org/en/>

Polonez Bis



In Poland, the Polonez Bis instrument, co-funded by the National Science Centre Poland and the Marie Skłodowska-Curie Actions (MSCA), funds fellowship positions in Polish Universities. This action, which supports brain circulation, also led to the creation of additional jobs (for instance additional research positions for co-investigators to the fellows) and about 60% of past grantees have already secured national funding for stable positions in Poland. In various countries, national funding or Structural Funds are also used to fund projects that received a Seal of Excellence either from MSCA or the European Innovation Council (previously SME instrument).

More information

<https://polonezbis.eu/en/>

Weave



Weave brings together 12 national and regional research funders. The initiative aims to make it easier for researchers to collaborate following simplified submission processes and a single evaluation procedure. Weave is based on the Lead Agency Procedure and on trust between the involved funders. The team of researchers determine a co-ordinating applicant, who submits the joint proposal to the respective Weave funding organisation in their own country or region. This funder evaluates it according to its internal rules set out for its respective national or regional programme. The funding recommendation is then communicated to the other funders, for approval and budgetary purposes.

More information

<https://weave-research.net>

EEA and Norway Grants' bilateral research programmes



The EEA and Norway Grants are financed by Iceland, Liechtenstein and Norway. The grants have two objectives: to contribute to a more equal Europe, both socially and economically, and to strengthen relations between Iceland, Liechtenstein and Norway and the 15 beneficiary states in Europe. The aim of this initiative is to reduce inequalities and increase bilateral cooperation. Widening country entities lead the projects, while Norwegian and Icelandic entities act as programme advisors and project partners. Approximately 200 bilateral research projects are currently underway. These funds strive for synergy with both the Horizon Europe programme and the Structural Funds (ESIF).

More information

<https://eeagrants.org/about-us>

PROMYS



The Swiss PROMYS programme (Promotion of Young Scientists in Eastern Europe) enabled early-career researchers from Central and Eastern Europe who previously worked or studied in Switzerland, to establish their own research team in their respective countries. The initiative was open to all disciplines, and the duration of the funding was of five years. PROMYS promoted brain circulation and contributed to increasing the research capacity and competitiveness of selected countries and fostered their integration in the European Research Area. In the first pilot project (2015), seven projects from Croatia, the Czech Republic, Hungary, and Romania were funded by the Swiss National Science Foundation (SNSF). Five of the grantees later obtained a permanent position at their host institution, and two of the grantees an ERC grant. In the context of the second Swiss contribution to selected EU member states (EU-13), the Swiss government plans to offer, among a series of initiatives, a programme inspired by PROMYS (the name still needs to be decided).

More information

<https://www.snf.ch/en/X1yI8UD3NuX3mANe/funding/funding/discontinued-funding-schemes/promys>



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Science Europe is the association of major research funding and research performing organisations in Europe.

Our vision is for the European Research Area to have the optimal conditions to support robust education and research & innovation systems.

We define long-term perspectives for European research and champion best-practice approaches that enable high-quality research for knowledge advancement and the needs of society.

We are uniquely placed to lead advancements to the European Research Area and inform global developments through participation in research initiatives where science is a strong and trusted component of sustainable economic, environmental, and societal development.

More information is available at www.scienceeurope.org

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