



**European Committee
of the Regions**

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OPINION

Research infrastructures: The future of the European Research Area (ERA) from a regional and cross-border perspective

THE EUROPEAN COMMITTEE OF THE REGIONS

- welcomes the European Commission's overall approach to identifying the key role that research infrastructure can and does play in the advancement of knowledge and technology. Research infrastructures (RIs) and their use are fundamental for the development of the European Research Area (ERA);
- notes that the implementation of the ERA shows also variations between the allocation of Horizon 2020 funding and R&I investment under ESI funds;
- warns that long term sustainability is another key challenge facing RIs, especially large-scale pan-European infrastructures which are extremely expensive to construct, maintain and operate;
- warns that especially in order to address the so-called grand challenges, such as climate change, RIs must be capable of integrating with neighbouring RIs, thus creating greater knowledge-sharing and contributing to interdisciplinary research;
- calls on the new European Commission to continue monitoring whether Member States and regions respect their obligation to devote 3% of GDP to R&D until the end of the current decade;
- urges to this effect the Commission to swiftly propose the successor to the Europe 2020 Strategy, which should include quantified targets also in the field of R&D;
- supports furthermore the "Spreading excellence and widening participation" approach, in combination with making the EU state aid rules more R&I friendly as a mechanism to equalise supports and realise the full research potential of all EU regions, including those outside the research-intense clusters;
- supports greater harmonisation and standardisation of access rules and procedures, especially the development of access charters to ensure fairness and consistency;
- calls for greater involvement of local and regional authorities in the design and implementation of R&I initiatives due to the importance that small and medium RI facilities have for local and regional development and as many of those initiatives are implemented at the local and regional level.

Rapporteur

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Reference document

Opinion of the European Committee of the Regions – Research infrastructures: The Future of the European Research Area (ERA) from a regional and cross-border perspective

I. POLICY RECOMMENDATIONS

THE EUROPEAN COMMITTEE OF THE REGIONS

Introduction

1. welcomes the European Commission's overall approach to identifying the key role that research infrastructure can and does play in the advancement of knowledge and technology. Research infrastructures (RIs) and their use are fundamental for the development of the European Research Area (ERA). In this regard, supports the work of the European Strategy Forum on Research Infrastructures (ESFRI) that has an important role in policy-making on research infrastructure at EU level and assists in creating a single European market for science;
2. highlights that research infrastructures have a deeply territorial character. They are critical for regional development, extending from scientific output to the impact on educational ecosystems to overall market and societal benefits;
3. notes that the ESFRI Strategic Roadmap identifies RIs of pan-European interest as contributing to meeting the long-term needs of Europe's research communities across many scientific areas and moreover welcomes the fact that it identifies investment into RIs as a method of increasing regional competitiveness and thus cohesion between the different Member States and regions;
4. highlights that RIs have a key role to play in combating global challenges in the areas of environmental and climate change which impact our society on all levels from the local to regional, national, European and on a global scale;
5. in addition, reaffirms the conclusion of previous CoR opinions that LRAs play a key role in the creation of effective innovation ecosystems especially through the strategic identification of regional research priorities by the development of Smart Specialisation Strategies (S3s)¹;
6. notes that Europe has developed a successful medium- to long-term vision for the development of a coherent RI ecosystem where cooperation between existing infrastructure is encouraged while, in parallel, plans are being put in place to construct and develop the next generation of RIs as defined by the ESFRI;
7. agrees with the conclusions of the European Council that a well-functioning ERA will contribute significantly to improving the efficiency and effectiveness of the overall European research and innovation ecosystem and recognises the importance of a close partnership between Member States and the European Commission in jointly working towards

¹ CoR: Smart Specialisation Strategies (RIS3): impact for regions and inter-regional cooperation (2017).

strengthening the ERA especially through Horizon Europe as the main funding instrument². Regrets though that the Council does not sufficiently recognise the role LRAs can play in this process;

8. is concerned that there remain various shortcomings in the ERA framework with regards to RIs, resulting in an implementation gap that reduces potential benefits and efficiencies;
9. welcomes the Commission's proposed budget allocation of EUR 100 billion to finance science, research and innovation during the 2021-2027 period in order to address these shortcomings. At the same time, is concerned at the risk of inequalities growing between cities and regions that benefit from the framework programme for research and innovation, and whose budgets will increase, and the others, who will suffer the consequences of the fall in cohesion policy budgets³;
10. last but not least, recognises that demonstrating EU added value in any EU policy is crucial, in particular, bearing in mind that such policies are increasingly scrutinised. Notes that recent analysis shows that, while progress on ERA implementation continues, it is occurring at a slower pace than before and there remains large disparities between MS's in both performance levels and growth rates⁴. Therefore emphasises the need for better communication of European R&I impact through more robust and clear statistics;

Challenges to ERA, as identified from the regional and cross-border perspective

11. regrets that the share of research funding by the government sector in the EU stagnated at around 2.03% between 2014 and 2016⁵. This demonstrates that the share of national income spent on R&D is still well below the Barcelona target of 3% of gross domestic product set in 2002 and that less than 1% of national R&D funding is spent on transnational research⁶;
12. is concerned, furthermore, that the R&D gross domestic expenditure imbalance is also reflected at regional level, leading to the fact that there are just 31/281 NUTS 2 regions that reported R&D investments above the EU target of 3.0% in 2015, with clear research-intensive "clusters" throughout certain regions in the EU. These regions are located mostly in Germany, Austria, the United Kingdom, Sweden, Belgium, Denmark, France and Finland⁷;
13. notes that the implementation of the ERA shows also variations between the allocation of Horizon 2020 funding and R&I investment under ESI funds. EU-13 Member States are the main recipients of ESI funds whereas the application of the excellence criterion under Horizon 2020

² Council of the European Union: Draft Council conclusions on the Governance of the European Research Area. Brussels, November 2018.

³ CoR Opinion on Horizon Europe: The Framework Programme 9 for Research and Innovation (COR-2018-03891).

⁴ European Research Area Progress Report 2018; COM(2019)83.

⁵ Eurostat, Europe 2020 indicators - R&D and innovation.

⁶ EPRS: European Added Value Unit: PE 603.239 – December 2017.

⁷ Eurostat, Europe 2020 indicators - R&D and innovation.

has led to a concentration of funding as well as R&I capacities mainly in the EU-15, widening the innovation gap between the EU-15 and EU-13⁸;

14. warns that long term sustainability is another key challenge facing RIs, especially large-scale pan-European infrastructures which are extremely expensive to construct, maintain and operate, with construction costs frequently exceeding EUR 1 billion, with a related annual operational cost of approximately 10% of construction costs. With national science budgets often equalling or exceeding such costs the question of their long-term sustainability remains an ongoing issue⁹;
15. recognises that costs associated with access to RI facilities, especially in cross-border situations can be a barrier to researchers, and thus inhibit scientific advancement;
16. warns that especially, in order to address the so-called grand challenges, such as climate change, RIs must be capable of integrating with neighbouring RIs, thus creating greater knowledge-sharing and contributing to interdisciplinary research. In this regard, digital research infrastructure is of the utmost importance and therefore the CoR supports increased open data availability through the European Open Science Cloud;
17. notes that human resources are an important component of RIs. Human resource policy and management defines the quality and quantity of staff that can be recruited and is crucial to ensure the proper implementation, operation and impact of the RIs¹⁰. Therefore, the skills development and mobility of managers and the development of RI user skills are critical;
18. is concerned that the impact of R&I infrastructures on industry and society is still underdeveloped. Recognises however that the Commission is making efforts to convert Europe's scientific expertise into marketable products and services;
19. recognises that for RIs to impact wider society, they must also service industry needs. Hence, a robust, interconnected RI ecosystem should be capable of generating responses across disciplines to address complex problems;
20. has been warned that communication about existing and future RIs, in connection with research and development projects that are being performed at these infrastructures need to be more effectively communicated to the citizens, as part of the overall EU communication on benefits of the EU for its citizens;

⁸ European Parliament Briefing: European Research Area Regional and Cross-Border Perspective. PE 637.939 April 2019.

⁹ SWD(2017) 323 final: Sustainable European Research Infrastructures - A Call for Action.

¹⁰ ENEA; Reflection Paper on Research Infrastructure - the Future of the ERA from a regional and cross-border perspective; May 2019.

Research infrastructure: policy recommendations

21. calls on the new European Commission to continue monitoring whether Member States and regions respect their obligation to devote 3% of GDP to R&D until the end of the current decade;
22. urges to this effect the Commission to swiftly propose the successor to the Europe 2020 Strategy, which should include quantified targets also in the field of R&D;
23. believes that further strengthening of shared efforts is needed at all levels together with further reforms to national and regional research and innovation systems to realise a well-functioning ERA and help spread excellence through synergies. Therefore, generally agrees with Commission proposals to include new initiatives to enhance the effectiveness of RIs in the 2021-27 programming period including the use of regional funds, a European reform delivery tool and Horizon Europe, which includes a dedicated pillar to help strengthen the ERA¹¹;
24. believes that RIs create regional opportunities to compete for EU funds in RI investments which can result in the development of innovation hubs within distributed RI. Considers that, to ensure long-term sustainability for RIs, additional, specific funding models are required across the whole RI lifecycle to address funding gaps where European, national or other funding sources are insufficient. Specifically, dedicated budget lines are needed for:
 - funding pre-construction or pre-operational phases;
 - funding ongoing RI operations; and
 - funding human resources, i.e. staff salaries, recruitment, retention and training.

This could include more creative use of funds from ESIF, Interreg, Framework and loans from the European Investment Bank, but also include Erasmus+, Digital Europe, COSME, Connecting Europe Facility, LIFE, etc., potentially along a co-funding model with national research funds. This is critical to the long-term sustainability of RIs;

25. supports furthermore the "Spreading excellence and widening participation¹²" approach, in combination with making the EU state aid rules more R&I friendly as a mechanism to equalise supports and realise the full research potential of all EU regions, including those outside the research-intensive clusters;
26. fully supports the initiative that combines Horizon 2020, the European Fund for Strategic Investments and the Programme for the competitiveness of enterprises and small and medium sized enterprises to launch Venture EU with a view to boost venture capital in Europe and provide more private investment for research activities¹³;

¹¹ European Commission: ERA progress report 2018: (2019)83 Page 4.

¹² <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/spreading-excellence-and-widening-participation>

¹³ European Commission: A Renewed European Agenda for Research and Innovation – Europe's Chance to shape its Future: EU May 2018. COM(2018) 306 final

27. suggests that Horizon Europe should include specific actions to enable RI access, including making costs related to access eligible for funding, as this can facilitate the development of RI services as well as ensuring long-term sustainability;
28. calls for more actions enabling increased open access to RI infrastructure and suggests that this can be achieved using a series of measures:
 - costs relating to access to RI facilities should be eligible under the next framework programme;
 - free access (excellence-based or open wide access) to services developed or tested in the context of approved projects;
 - funding dedicated to promotion and communication with the potential user community of RIs.
29. supports greater harmonisation and standardisation of access rules and procedures, especially the development of access charters to ensure fairness and consistency¹⁴;
30. is especially supportive of linking R&I policy with the development and implementation of S3 as these are innovative approaches to boosting economic growth, job creation based on identified regional needs, linking and involving regions in R&I activities. Furthermore, these offer the possibility of inter-regional and peer-to-peer collaborations in the implementation of RIS3 by LRAs to refine objectives, and develop synergies and better alignment;
31. calls for greater involvement of local and regional authorities in the design and implementation of R&I initiatives due to the importance that small and medium RI facilities have for local and regional development and as many of those initiatives are implemented at the local and regional level;
32. reiterates its support for the creation of a European network of regional ecosystems and innovation hubs by creating synergies between existing European, national and regional strategies and linking regional ecosystems and innovation hubs to key industrial value chains to promote a competitive RD&I ecosystem and thereby maximise the next Framework Programme's impact on society¹⁵;
33. calls for more integrated cross-regional and cross-border RI campuses to strengthen opportunities to establish close links to actors in regional ecosystems, i.e. local research infrastructure, incubators, technological parks, universities. Consequently, expresses its strong support for strategic initiatives like ASTRONET or APPEC;

¹⁴ ENEA: Reflection Paper on Research Infrastructures – the Future of the ERA from a Regional and Cross-Border Perspective. May 2019.

¹⁵ CoR: Draft opinion. A renewed European Agenda for R&I. Europe's chance to shape its future. 2019.

34. notes that higher education has a key role in providing the future-orientated skills and competencies to successfully innovate. Calls for the creation of stronger structured collaborations between RIs and universities leading to greater mobility and exchange programmes between these sectors;
35. supports the new direction of ESFRI for greater interdisciplinary interfaces and greater coordination between ESFRI and national strategies and roadmaps to ensure better coordination and more efficiency in the RI ecosystem, as a robust, interconnected RI ecosystem should be capable of generating responses across disciplines to address complex problems;
36. supports concretely spreading the delivery of intelligence about publicly funded innovations and innovators and their market readiness through the use of the innovation radar¹⁶;
37. supports the use of common evaluation criteria, building on existing quality assurance mechanisms as a means of achieving cross-border comparability, and supports the EU Council decision of May 2018 encouraging Member States to develop a common approach to monitoring RI performance¹⁷;
38. calls on the European Commission and the Member States to work closely together with local and regional administrations to collect information on RIs and activities connected to them including mapping of activities and outputs, in order to increase awareness by citizens of its contribution for them as individuals, as well as for the regional, national and European economy.

Brussels, 9 October 2019

The President
of the European Committee of the Regions

Karl-Heinz Lambertz

The Secretary-General ad interim
of the European Committee of the Regions

Pedro Cervilla

¹⁶ Innovation Radar: Identifying Innovations and Innovators with High Potential in ICT FP7, CIP, & H2020 projects.

¹⁷ EU; Conclusions of the Council of the European Union-Accelerating knowledge circulation in the EU. May 2018. Doc 9507/1.

II. PROCEDURE

Title	Research infrastructures – The future of the European Research Area (ERA) from a regional and cross-border perspective
Reference(s)	N/A
Legal basis	Article 163 of the Treaty on the EU
Procedural basis	Own-initiative opinion (under Rule 41b) ii) RP)
Date of Commission letter	N/A
Date of Bureau/President's decision	
Commission responsible	Commission for Social Policy, Education, Employment, Research and Culture (SEDEC)
Rapporteur	Eamon DOOLEY (IE/Renew Europe)
Analysis	January 2019
Discussed in commission	2 April 2019
Date adopted by commission	11 July 2019
Result of the vote in commission (majority, unanimity)	unanimity
Date adopted in plenary	9 October 2019
Previous Committee opinions	"A renewed European agenda for research and innovation – Europe's chance to shape its future" ¹⁸ "Horizon Europe: The Framework Programme 9 for Research and Innovation" ¹⁹ "Local and Regional Dimension of the Horizon 2020 Programme and the New Framework Programme for Research and Innovation" ²⁰
Date of subsidiarity monitoring consultation	N/A

¹⁸ [CoR 3955/2018](#)

¹⁹ [CoR 3891/2018](#)

²⁰ [CoR 854/2017](#)