8. Action 8: Strengthen sustainability, accessibility and resilience of research infrastructures

1.1. Purpose of the Action and expected outcomes

ERA Action 8 aims to reinforce Europe's research and innovation system through a set of European-level initiatives in the field of research infrastructures. The goal is to strengthen sustainability in terms of funding and investments, ensuring for researchers and innovators equal opportunities to access services provided by European infrastructures and increasing the impact of the investment made in research infrastructures on economy and society.[1]

European-level activities have contributed to the development of a mature research infrastructure landscape. Existing frameworks like the ESFRI Roadmap, the European Charter for Access to research infrastructures and the ERIC Legal Framework will be improved. Furthermore, through enhanced analysis and the implementation of new funding models and performance monitoring methodologies, persistent and emerging challenges will be effectively addressed.

This Action aims to achieve five outcomes, with a focus on sustaining long-term excellence and competitiveness within the ERA:

- Strategic analysis of the European Research Infrastructure landscape;

- Broader and more sustainable access for all countries to European research infrastructures and their services and revision of the European Charter of Access to Research Infrastructures;

- Update of the ESFRI Roadmap and implementation of the research infrastructures performance monitoring framework;

- Report on the ERIC Framework;

- Increased cooperation between research infrastructures, e-infrastructures and stakeholders, including through EOSC.

Action 8 addresses European research infrastructures and their interface with technology infrastructures, which is also relevant to Action 12, where technology infrastructures linked to Industrial policy will be addressed.

1.2. Implementation of the Action

As this Action by far pre-dates the first ERA Policy Agenda, a number of tools already exist to support its implementation. First, the **European Strategy Forum on Research Infrastructures (ESFRI)**[2], established in 2002, is a platform for coordinating and prioritising the development of European research infrastructures, involving national governments, the scientific community, and the Commission. It plays a vital role in identifying and promoting key research infrastructures that are crucial for addressing major scientific challenges and driving European research and innovation.

The **ESFRI Workplan for 2022-2023** is ambitious as it focuses on implementing a number of activities entrusted to ESFRI by the Competitiveness Council's Council Conclusions and Action 8 of the ERA Policy Agenda. To accomplish this, specialised ESFRI expert groups have been established to propose action plans and carry out mandates related to improving access to research infrastructures, ensuring sustainable funding, assessing impact, fostering industry collaboration, promoting international cooperation, conducting strategic analysis, enhancing transparency, and engaging stakeholders.[3]

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[1] European Commission (2021), European Research Area Policy Agenda – Overview of actions for the period 2022-2024, p.10-11.
[2] https://research-and-innovation.ec.europa.eu/strategy/strategy-2020-2024/our-digital-future/european-research-infrastructures/esfri_en
[3] https://www.esfri.eu/esfri-workplan

Second, the **European Research Infrastructure Consortium (ERIC)**, established in 2009, reflects the European commitment to facilitating collaborative research and efficient utilisation of research infrastructures among member countries. The increasing number of ERIC applications and the growing community of established ERICs serve as clear indicators of the success of this legal entity. Furthermore, this success has served as an inspiration for the emergence of another distinct legal entity, the **European Digital Infrastructure Consortium (EDIC)** which focuses on advancing digital infrastructure initiatives within the European context.

National policy examples

Czechia has an Innovation Strategy and Smart Specialisation Strategy to prioritize R&D&I. It supports large research infrastructures, aims to strengthen collaboration between research and industry, and increase participation in EU Framework Programmes.

Cyprus is developing its National R&I Strategy 2030, which will address the government's priorities in R&I and the needs of the national R&I ecosystem. The strategy will be based on the 'Innovate Cyprus 2019-2023' framework and the national long-term strategy 'Vision 2035'. The pillar 'competence and excellence' aims to support research capacity and excellence by focusing on human resources, research infrastructures, and open science.

Finland is also committed to improving research infrastructures and creating an environment that fosters innovation within its commitment to reach a 4% R&D investment level by 2030. Efforts are being made to strengthen research infrastructure, including increasing funding for universities, universities of applied sciences, and public research institutes.

Third, **research infrastructures** are also recognised as a fundamental pillar within **Horizon Europe** and, hence, the key funding program for fostering research infrastructures in the period 2021-2027. Within the program, significant funding has been allocated to research infrastructures, including universities, public research organizations, and private research centres, to support their efforts in advancing knowledge, driving innovation, and addressing societal challenges. Horizon Europe offers various funding opportunities, such as grants for research projects, fellowships, and collaborative initiatives, enabling research institutions to pursue cutting-edge research and develop innovative solutions.[4]

During the reporting period the following activities can be highlighted:

- Strategic analysis of the European Research Infrastructure landscape.

The Landscape analysis is decoupled from the ESFRI Roadmap: a new methodology developed by ESFRI was implemented, with surveys, more strategic gap analysis based on user needs and considering impact as well. Ongoing work is taking place in parallel per large domain and on cross-cutting aspects with contribution of several ESFRI Groups.

- Broader and more sustainable access for all countries to European research infrastructures and their services and revision of the European Charter of Access to Research Infrastructures.

Surveys to identify evolving needs and challenges to access were completed. Key findings and recommendations (on legal, institutional, financial and technical aspects) as well as main orientations for the revision of the Charter were discussed at within ESFRI and with ESFRI Stakeholders.

- Update of the ESFRI Roadmap and implementation of the research infrastructures performance monitoring framework.

The steps towards the next ESFRI Roadmap and general timeline are under discussion. With regards to monitoring: a first batch of 12 ESFRI Landmarks was completed, and a public report is available (highlighting overall good performance of the RIs but sustainable funding still a challenge). A second batch (11 Landmarks) has been launched and will be followed by third and last batch (8 Landmarks).

- Report on the ERIC Framework

The third Commission report on the application of the ERIC Regulation was adopted in August 2023. With 26 ERICs and several in the pipeline, the legal framework is instrumental in structuring and integrating resources within the ERA. However, the financial and operational sustainability of the ERICs remain a challenge. The report recommends that further effort is needed to strengthen the access of programmes of the ERICs and the availability of their services, to increase synergies among the different potential funding sources, to facilitate the engagement with international partners, and to address several operational challenges.

- Increased cooperation between research infrastructures, e-infrastructures and stakeholders, including through EOSC.

Several cooperation channels have been put in place or have been reinforced, which includes regular engagement of the ESFRI Stakeholder Forum and the ESFRI-EOSC task force, which is to ensure a structured interface between the ESFRI Forum and the EOSC Steering Board beyond the current ad-hoc cooperation. It should help reduce the fragmentation of the research data landscape in Europe and assist in increasing FAIR research data productivity in Europe. Moreover, the ERIC Forum received a new Horizon Europe grant for further cooperation among ERICs, integration in ERA and contribution to EU policies.