The European Commission's science and knowledge service

Joint Research Centre

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Pilot 5 - Efficient utilisation of research infrastructures within the context of RIS3

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Research infrastructures - S2E work

- Report entitled ''Addressing the innovation gap: lessons from the Stairway to Excellence (S2E) project'' highlighted:

  - RIs as an issue in some R&I systems due to their inadequacy (they are too old and not suitable for cutting-edge research)

  - May not be sufficient staff or they may lack the necessary skills and knowledge. This can be an issue with technical staff but also the RI may not attract a viable number of researchers to make it sustainable.

Issues from previous working group meetings

- Problems exist with the infrastructures that lack the necessary human capacity

- Are RIs in a region actually used for H2020 projects – what are the links to H2020? Also how do they link to the regional RIS3?

- There is a huge cost associated with RIs but analysis on whether or not they are efficient and strategic is needed

- Clarification with regard to State Aid

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Questions to address

1. To what degree are the RIs related to the strategic objectives of the region and state, and participating in H2020?

2. In a given region/country how efficient and sustainable are the RIs?

3. What are the bottlenecks that hinder the efficiency and sustainability?

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Previous work

- OECD - Global Science Forum
  - Research Infrastructures policies
    - Strengthening the Sustainability and Effectiveness of International Research Infrastructures (Toolkit)
    - Socio-Economic Impact of Research Infrastructures (Impact assessment & methodologies)
- European Strategy Forum on Research Infrastructures (ESFRI)
  - prioritisation process for pan European infrastructures
- OECD countries and EU MS
  - Individual Research Infrastructure roadmaps

Infrastructures – scope & definition

- Facilities, resources and services used by research and innovation communities to conduct research and foster innovation in their fields

- Include:
  - major scientific equipment (or sets of instruments)
  - knowledge-based resources (e.g. collections, archives & scientific data)
  - e-infrastructures (e.g. data and computing systems)
  - communication networks
  - any other tools that are essential to achieve excellence in research and innovation.

(ESFRI and EU FP)

Policy and cross-cutting issues 1

- Sustainability
  - **Long-term** investments: need to be sustainable (in terms of funding, organisationally, technically and in terms of their human resources)
  - Continued focus on **excellence** (of research and innovation activities)
  - Consideration of **whole lifecycle** (from planning to decommissioning or repurposing)
  - Operate in **complex funding** landscapes drawing on multiple funding streams of varying duration
  - Variety of **management models** and operational partnerships
- Monitoring and assessment
  - Performance, **goal attainment**, evaluation, indicators

Policy and cross-cutting issues 2

- Skills and training
  - **Demand exceeds supply**
  - Analytical, data and knowledge management **skills**
  - **Mobility** of technical professions and other essential specialists
  - Need to develop **career options, incentives and training** needs
- Data
  - **Open** access
  - **Management** of 'big data'
  - data security and **information governance**

Policy and cross-cutting issues 3

- International perspective
  - growing need to facilitate **transnational access** to 1ˢᵗ class research infrastructures
  - requires **strong partnerships** between governments as well as academia – **alignment** of strategies
- Collaboration and connectivity
  - fostering **collaborative culture**
  - need for **multi and interdisciplinary** working
  - interconnectivity & **complementary** roles of different types of infrastructure - equipment sharing
  - **distributed networks** of equipment and facilities
- (User) partnerships and participation
  - **multiple users**, public services and the public

Policy and cross-cutting issues 4

- **Scope**: clusters and local economies
  - local, regional and national aspects
- **Scale**: role of demonstrators, test beds and 'living labs'
- **Mission balance**: contribution to industrial sectors, policy challenges and statutory requirements

Framework for analysis

Identification, strategy and usage	Efficiency and sustainability
• Identify the main RIs and thematic areas in the regions that expressed an interest in the work; • Select RIs for further study in liaison with regional contacts; • Map the EU landscape for structural funds investments and H2020 usage; • Database to use to map RIs – Mapping of the European Research Infrastructure Landscape: http://portal.meril.eu • BETTER: https://www.inroad.eu/ • ALSO: ESFRI but……..	*Human capacity* • Utilisation of RI – level of usage and type of user (research institution, university, SMEs, other firms) • Level of human capacity in the RI (number of staff in RI and skills capacity); • Typology of skills needed to run a RI *Programme/initiative participation and funding* • Source of funding • Sustainability model – commercial funding • Participation in H2020, ERIC, ESFRI etc. *Internationalisation and regionalisation* • Degree of internationalisation – foreign researchers, co-authored publications • Models used • Participation in international projects including H2020 • Links to regions - clusters and local economies

Set of issues

Mission of RI and reason for investment

- Rationale for the investment
  - For new RIs, source of initial (seed) funding
  - For upgrades, source of funding
- Alignment with regional/national/European research and innovation strategies

Implementation

- Running costs
- Sustainability
  - Types and numbers of users
- Human resources
  - Links
- Internationalisation – involvement in international research projects, numbers of non-national researchers at the RI.

Impact on local innovation system

- Access to funding (e.g. H2020)
- Regional economic benefits

Selection of cases

Three per region:

a) the largest/most significant for the region;

b) good practice example (sustainable, well linked with EU priorities; and

c) indifferent performance or possibly one that requires a boost.

Utilisation in H2020

- Use H2020 database

- Have data on beneficiaries of RI investments by ESIF in current period – BUT……….

- Need data on RI investment from the previous period

Next steps

Tasks	Expected Date
Preliminary background reading	Dec 2019 – Jan 2020
Structural investments and H2020	Feb –May 2020
Identify RIs	Feb 2020
Initial interviews/contact with regional case study representatives	Jan – Feb 2020
Stakeholders' event report (Task 2)	April 2020
Follow-up interviews with regional case study representatives	April-May 2020
Interviews/contact with further identified stakeholders/case examples	April-May 2020
Liaison with JRC officials and analysis and synthesis	Dec 2019-May 2020
Final Report	31 May 2020

Discussion

- Selection criteria for the RIs to be studied

- Identification of RI investment from previous programming period