ERA Hubs as an engine for transformative place-based innovation investment priorities

1. Background

With the European Green Deal and the Recovery and Resilience Plans, economic policies in the EU are moving towards a **new economic growth and management model** to achieve climate neutrality by 2050. This is an era of **systemic change** that requires a fundamental rethink of the European multi-lateral governance model for transformative innovation. **That is why the new European Research Area (ERA)[1] is a window of opportunity** to shift the boundaries of present policy framework for aligning priorities towards the twin transition (green and digital) between European, national, and regional transformation policies. While national research and innovation policies control the bulk of policies and investments in European countries, it is at European (EU) and regional levels that the largest gaps still exist for establishing a consistent governance model for the European innovation system as a whole.

The ERA is the only institutional reference in the European Treaties to the multi-level policy framework for R&I (Art. 179 TFEU),[2] introduced in 2007 as policy counterpart for the Framework Programme as common investment mechanism. But European R&I policy developed also as a component of regional development policy,[3] with 'smart specialisation' as the expression of a regional industrial transformation policy. Both strategic frameworks are therefore necessary entry points for the deployment of the European R&I system, as a major layer of further European policy integration for 21st Century challenges. This evolution from a 'single market' policy framework for competitiveness to a whole of system framework for transformation is the backdrop for many policy discussions, such as the **JRC – CoR joint workshop on Smart Specialisation for the Recovery.[4]**

This workshop builds on the fact that,

> 'Smart Specialisation provides a unique entry point for understanding how place-based policies and especially innovation policies can contribute to the prosperity of places in times of such important changes in a way that leads to transformation of places that become more resilient in adapting to social, economic and environmental change. It seeks to foster a dialogue between practitioners, policy-makers and researchers and to contribute to the preparation of a new initiative of Commissioner Gabriel to identify remaining challenges of the EU innovation system and to provide adequate policy responses'.[5]

FoSS is an independent expert group that focuses on the unused potential of mainstreaming smart specialisation for transformation. In particular, the assumption that smart specialisation is limited to cohesion policy should be considered as one of the main impediments for promoting in general more targeted investments for strategic priorities because place-based innovation (the ecosystem perspective) is part of all innovation and transformation policies.

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[1] ERA Communication, A new ERA for Research and Innovation. Brussels, 30.9.2020 COM(2020) 628 final

[2] The Union shall have the objective of strengthening its scientific and technological bases by achieving a European research area in which researchers, scientific knowledge and technology circulate freely, and encouraging it to become more competitive, including in its industry, while promoting all the research activities deemed necessary by virtue of other Chapters of the Treaties…and…shall, throughout the Union, encourage undertakings, including small and medium-sized undertakings, research centres and universities in their research and technological development activities of high quality; it shall support their efforts to cooperate with one another, aiming, notably, at permitting researchers to cooperate freely across borders and at enabling undertakings to exploit the internal market potential to the full, in particular through the opening-up of national public contracts, the definition of common standards and the removal of legal and fiscal obstacles to that cooperation…

[3] European Regional Development Fund

[4] https://cor.europa.eu/it/events/Pages/JRC-CoR-Online-workshop-on-Smart-Specialisation.aspx

[5] Introduction to workshop

From this alternative perspective we propose some policy ideas on the challenges facing the EU innovation system. These are based on previous FoSS policy papers[6] and presented here as components of a wider systemic approach for the EU innovation system. We focus, in particular, on the window of opportunity to converge ERA priority-setting with smart specialisation strategies for targeted and aligned investment across the European innovation ecosystems[7] and the ERA-Hub initiative (see Annex 1).

2. FoSS theses on the role of smart specialisation for transformative innovation policy in ERA Governance

1. **All** new policy developments (and policy support) since 2020 should be **proofed for alignment** with the common European objectives to fight the backlash of the pandemic and prepare the transition to a climate neutral, resilient, and digitally enhanced economy. 'Effectiveness' of policy can no longer be limited to traditional competitiveness and horizontal policies when the challenge is to **implement industrial transitions and vertical transformation** along the main value chains.

2. Smart specialisation must be brought back **at the heart of European and national innovation policies**, where it originated in the first genuine ERA strategy as an intended approach to improve the efficiency of R&D investments in Member States by avoiding unnecessary fragmentation and duplication. At the same time, it should be upgraded **with a stronger European mission**. While Smart Specialisation Strategies (S3) promised a competitive position for all regions that focus on their dynamic comparative strengths, **S4** (Smart Specialisation Strategy for Sustainability)[8] engages all regions to find specific opportunities in common missions.

3. The European Research Area is more than a single market for knowledge circulation (c.f. Lisbon Strategy); it is a 'space' where knowledge investments are not space blind. Innovation ecosystems combine the institutional preconditions (quadruple helix) to **bridge the innovation gap**, thanks to public and private investment strategies that capitalise on unique clusters, with an appropriate governance and policy-mix, to **create new solutions for new markets**. This is exactly what smart specialisation tries to achieve.

4. The new ERA **multi-level governance** is pushing the boundaries of multilateral cooperation (already successful with ERA-Nets, Policy Learning Facility, etc) towards a stronger strategic commitment for European goals, in particular with the 'ERA Forum' and initiatives for common EU Roadmaps in key areas and the governance of research and technology infrastructures (see Annex 2). 'ERA-Hubs' proposed through interaction between the Commission and the Committee of Regions (CoR), is a new initiative that in particular **extends policy coordination to the regional level**. Their mission should be to promote internal policy reform at national and regional level and interregional cooperation to contribute stronger to European objectives. Interestingly enough, the new generation of S3 has the same mission.

[6] Available at https://friendsofsmartspecialisation.eu

[7] "The Commission will… Develop and test a networking framework in support of Europe's R&I ecosystems, building on existing capacities, in order to strengthen excellence and maximise the value of knowledge creation, circulation and use by 2022. " COMM(2020) 628

[8] Mikel Landabaso, From S3 to S4: Towards Sustainable Smart Specialisation Strategies, https://ec.europa.eu/newsroom/jrcseville/item-detail.cfm?item_id=670313&utm_source=jrcseville_newsroom&utm_medium=Website&utm_campaign=jrcseville&utm_content=From%20S%20to%20S%20Towards%20Sustainable%20Smart%20Specialisation%20Strategies&lang=en

5. The renewed S3 should be **at the heart of the ERA-Hubs**, because these represent the political level for European commitment and cooperation. Ideally ERA-Hubs should potentially reinforce the **mandate** of S3 beyond cohesion policy. S4 incorporates a top-down European **directionality**, while maintaining the bottom-up **discovery** process of seeking regionally-focused opportunities in the transformation pathways. The **networking** framework for ecosystems, which is envisaged by the new ERA action plan, can be topped-up with the network of ERA-Hubs, that combines all policy actors (and stakeholders) for transformative place-based innovation policy, with a **joint transformative ERA agenda** directed at strategic value chains and missions (including the ERA Pact).

6. New smart specialisation policies need to focus on their 'outward' dimension of **positioning local strengths in the transformation of European value-chains** (required by technological change and de-globalisation/strategic autonomy), as foundation of S3 partnerships in common mission areas and industrial ecosystems. Therefore, the methodology for implementing S4 has to focus on **creating enabling conditions to contribute to European transformation pathways**: for the circular industry, AI-driven data economy or resilient health systems. **Monitoring progress** in the design, implementation and adaptation of the strategies and partnerships in a continuous EDP,[9] at regional and European level can become a key agenda point for ERA Hubs.

7. The **Single Market** offers the scale that is needed for testing and demonstrating the value-proposition of transformative innovation and co-investing in new value chains. The Single Market, as the European regulated space for co-creating these new value chains, therefore becomes the reference for 'smart complementarities' in the shape of interregional smart specialisation partnerships for European priorities.

8. The **European Semester** incorporates the Recovery and Resilience Plans (RRP)[10] and also has to anchor smart specialisation in the assessment of the effectiveness of national and regional innovation systems. European programmes therefore will gain effectiveness if they are developed in synergy with fully integrated smart specialisation strategies, combining all policy tools. The fragmentation of European innovation and transformation policies can be overcome in the new ERA. **In particular synergies of new smart specialisation policy with the new industrial policy are paramount for effective co-investment in strategic value chains**.

   Despite the fact that 'Smart Specialisation provides a unique entry point for understanding how place-based policies and especially innovation policies can contribute to the prosperity of places in times of such important changes',[11] Smart Specialisation has not been recognised as a constituent policy for European transformation in the most important policy initiatives of the new programming period (the European Green Deal, the Industrial Policy Strategy, the new ERA, …), except in the case of Cohesion policy. Currently, it lacks political ownership, being reduced to an administrative condition for accessing (additional) European funds in Cohesion policy.

   Political trends are turning from the (neo-liberal) provision of framework conditions to new 'directionalism', with more weight for top-down decision-making. This approach tends to ignore the unique power of the smart specialisation to produce a shared ownership of direction - avoiding picking winners - through governance of the joint entrepreneurial discovery process on promising futures for the regional ecosystems, based on unique strengths, in the wider European context.

[9] Entrepreneurial Discovery Process
[10] Recovery and Resilience Facility | European Commission (europa.eu)
[11] Introduction to workshop

9. While **ecosystem** approaches are a common thread in all transformative policy frameworks, their use is a necessary condition for developing a common empirical **understanding** of which ecosystems and value networks are addressed. This can best be achieved through multi-level governance and policy integration. Therefore, the joint **mapping** of these European value chains, the identification of the **challenges** for the green, digital, and resilient future of the European industrial ecosystems and of the **priorities** for the regional clusters and innovation infrastructures are the basis for increased policy coherence in the ERA. This governance capacity is scattered now.

10. Attributing **political credit** (visibility) to smart specialisation **priority setting** for local opportunities in the European decision making for RRP plans and the Green Deal, is the key lever for **inserting the place-based opportunity-seeking innovation systems** in the wider **European industrial ecosystems**. There is a role for the ERA Forum and ERA Hubs to gather the **political commitment** for the strategic priorities of European transformation, in relation with the European Semester, and the strategic frameworks for regional economic development (interregional S3 partnerships; I3[12]) and technology diffusion (European Digital Innovation Hubs).

3. Window of opportunity for multi-level ERA governance

There is a window of opportunity to **converge** the priority-setting and place-based transformation approach of smart specialisation strategies with the implementation of the ERA through 14 actions that are linked to each other.[13] In particular, the time is ripe to **prepare institutional reforms in the ERA governance framework**[14] to increase the political commitment for priority setting in the EU, aligned towards common European objectives. This governance can **build further** on instruments developed in the previous stage of ERA construction:

1. The **Policy Learning Facility**: to design mechanisms and capacities for aligning policy priorities of national and regional transformation strategies for European missions and common European roadmaps across new European value chains.

2. The Commission (RTD) / CoR **Knowledge Exchange Platform**: to design a common methodology for mapping the innovation ecosystems and the mapping of research and innovation infrastructure, to ensure more interoperability of networking and access to the best assets across the European Research and Innovation System.

3. The **legacy** of smart specialisation, since its conception in 2007 as an ERA instrument and its journey in European regional policy: with more than 120 regions developing smart specialisation strategies identifying priorities for research and innovation investments, and a budget of over €80 billion for the 2014-2020 period, smart specialisation is probably the 'largest innovation policy experiment in the world'.[15] Its mission now is to **accelerate** place-based transformation pathways across all policy domains and across all regions. This requires a **joint ownership**, through the European Semester (and the Recovery and Resilience Plans) and dedicated instruments to promote reforms, such as ERA Hubs.

[12] Interregional Innovation Investments, see 03bd2cbe-8901-4941-ba51-eb5af1f3cdeb (europa.eu)
[13] https://ec.europa.eu/commission/presscorner/detail/en/IP_20_1749. See Annex 1
[14] Article 182(5) TFEU opens up the possibility to adopt legislation to enforce the implementation of ERA:
'As a complement to the activities planned in the multiannual framework programme, the European Parliament and the Council, acting in accordance with the ordinary legislative procedure and after consulting the Economic and Social Committee, shall establish the measures necessary for the implementation of the European Research Area.'
[15] Radosevic, S., Ciampi Stancova, K. Internationalising Smart Specialisation: Assessment and Issues in the Case of EU New Member States. J Knowl Econ 9, 263–293 (2018). https://doi.org/10.1007/s13132-015-0339-3

With the ERA being the **only institutional reference** in the EU Treaty to the governance of the European Research and Innovation System, the next steps are crucial for reinforcing joint ownership with a decision mechanism such as the ERA Forum. FoSS is convinced that the smart specialisation approach, with a new generation of S4 and interregional S4 partnerships, is a key part of the multi- governance needed for a transformative ERA.

Annex 1

The new ERA Communication[16] notes that more attention needs to be paid to translating R&I into the economy.

'… Although Europe is a world leader in some high-tech sectors such as green technology, with the growing importance and diffusion of ICT, efforts need to be channelled towards strengthening industrial innovation[9], technology transfer and fostering the uptake of R&I solutions and the diffusion of innovation through knowledge transfer and public-private cooperation.'

The Communication notes also that:

'The Commission will stimulate policy reform through regular dialogue and stronger interaction with Member States. Strategic and coordinated support will also be offered to regions and cities building on successful initiatives such as the Knowledge Exchange Platform (together with the Committee of the Regions) and the Science meets Regions initiative. These will be upgraded to a strategic level ensuring an effective dialogue for setting priorities and promoting synergies between R&I instruments and education and training with adequate mobilisation of cohesion policy funds.'

The Communication also notes that ERA Hubs could be a way of coordinating knowledge circulation, at the regional level.

'Knowledge circulation and creation of value from knowledge are important parts of the ERA. R&I Hubs and centres of excellence, spread across EU Member States and regions. They facilitate the involvement of a diversity of stakeholders in multi-disciplinary and cross-sectorial collaborations. They provide a valuable and still largely missing service to innovative start-ups and SMEs, which face particular market failures or obstacles.

Over the years, different types of supportive structures were created, ranging from Centres of Excellence to advisory services or specialised innovation hubs. There could be great benefit from fostering a stronger interconnection between them across the EU.

Based on a mapping of existing entities, and the analysis of potential gaps, an ERA Hubs initiative could be developed, building on existing capacities, such as the Digital Innovation Hubs and clusters, and linking to the Enterprise Europe Network and StartUpEurope, to provide an interconnected knowledge space. This will facilitate collaboration and exchange of best practices, with the incentive to maximise the value of knowledge production, circulation and use.'

This concept of a hub has been welcomed by the Committee of the Regions:

'.. the European Research Area needs to have the objective of ensuring, alongside excellence, the availability in all EU cities and regions of high-quality science that can be harnessed to boost innovation and help society and businesses meet the challenges of the Sustainable Development Goals and deal with today's crises. ERA hubs are an ideal instrument for fully recognising the merits of a place-based approach to science and

[16] ERA Communication, A new ERA for Research and Innovation. Brussels, 30.9.2020 COM(2020) 628 final

innovation. This approach is all the more necessary in the context of the current crises, their impact on the most fragile and hardest-hit regions, and the fragmentation of the ERA.'[17]

Annex 2

The EU and Member States will shape the new **European Research Area through 14 actions**: we note that actions (5), (6) and (11) are particularly suitable for implementation through the new concept of ERA Hubs:

1. Reaffirm the target of 3% GDP on EU research and development investment and propose a new EU 1.25% GDP public effort target to be achieved by Member States by 2030.
2. Support Member States in the coordination and prioritisation of national research and innovation funding and reforms through a European Research Area Forum for Transition. Voluntarily commit 5% of national public research and development investments to joint programmes and European partnerships by 2030.
3. Support Member States that are below the EU average level of research and innovation investments to increase their investment by 50% in the next 5 years.
4. Support Member States that have lower performance in training their researchers to access and develop excellence and increase their number of highly cited publications by one-third over 5 years.
5. *Develop common industrial technology roadmaps to maximise innovation in strategic areas like Artificial Intelligence, circular industries and resilient health industries.*
6. *Develop and test a networking framework in support of Europe's research and innovation ecosystems, building on existing capacities, to strengthen excellence and maximise the value of knowledge creation, circulation and use.*
7. Update and develop guiding principles for creating value from knowledge and a code of practice for the smart use of intellectual property.
8. Deliver a toolbox of measures to support researchers' careers, through a mobility scheme, trainings and more, in order to make Europe more attractive for talent.
9. Launch a platform of peer-reviewed open access publishing and incentivise open science practices by improving the research assessment system.
10. Support the creation of world-class research infrastructures and establish an updated governance structure for research and technological infrastructures.
11. *Develop a roadmap of actions for creating synergies between higher education and research, notably building on the dual role of universities.*
12. Develop concrete plans with Member States to promote gender equality, as well as diversity and inclusiveness, in science, research and innovation.
13. Organise citizen science campaigns and hackathons to engage citizens, especially young people, in science and innovation.
14. Develop with Member States a new approach to set and implement strategic priorities for the European Research Area, through a Pact for Research and Innovation in Europe.

[17] CoR Press Release 'The European Research Area: Towards full recognition of Regional Innovation Hubs', 4th Feb. 2021