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EXECUTIVE SUMMARY

The present document reports the results of the monitoring and evaluation activity carried out by the WP5 leader (MUNI) in collaboration with the project coordinator (ART-ER) and involving all project partners. It refers to the second and last period of implementation of the ERA_FABRIC project (July 2024 - June 2025).

The document consists of two main parts:

- MONITORING: which tracks the evolution of project activities, the achievements of the project's key expected results (KERs) and the attainment of the expected outcomes in the last 12 months of the project (July 2024 - June 2025).
- EVALUATION: which summarises the approach followed, its achievements, and particularly the learnings from an evaluation survey and interviews done with key regional stakeholders. The evaluation survey was carried out between 6 February and 23 March 2025 and the evaluation interviews took place in each region between 21 April and 30 May 2025. All project partners were involved in the implementation of both tasks.

Two distinct Annexes store the survey text and the interview script.

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1. INTRODUCTION

The present report is the second and last of two follow-up documents elaborated within the ERA_FABRIC project according to the Monitoring and Evaluation Methodology, defined in Deliverable D5.1 (July 2023), which foresaw two implementation steps, respectively in the interim and final part of the project.

This document consists of two main parts:

- MONITORING: which tracks the evolution of project activities, the achievements of the project's key expected results (KERs) and the attainment of the expected outcomes in the last 12 months of the project (July 2024 - June 2025).
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Two distinct Annexes store the survey text and the interview script.

2. MONITORING

2.1 Monitoring approach

The monitoring of ERA_FABRIC has been consistently carried out with a collection of indicators directly borrowed from the project objectives and sub-objectives, referring to all WPs constituting the bulk of project activities (except the Project Management one, which is separately monitored on the EU portal according to different rules).

In accordance with the D5.1 Monitoring Methodology, an Activity monitoring dashboard was used for internal documentation and continuous tracking of the status of implementation of the ERA_FABRIC project objectives and KERs (key expected results), with check points every sixth month. This is an internal table held by MUNI and supervised by the project coordinator, whose contents have been continuously updated through personal communication with individual partners. The latest edition of the dashboard is presented as Table 2, Table 3 and Table 5 below. These include the KPIs (Key Performance Indicators) associated to the project objectives and KERs introduced by the ERA_FABRIC consortium, as well as to the expected outcomes of the Horizon call as reflected in the project.

For a common understanding of the various terms used in the questionnaire across the consortium, at the beginning of the project a Glossary of used terms in ERA_FABRIC was created as an internal living document, as definitions could be updated during the project's lifetime and new terms added if needed.

For the purpose of monitoring, the following terms were used:

- **Inter-regional online workshops** where the workshop participants worked in 3 thematic groups, corresponding to the 3 thematic domains addressed by the project: clean renewable energy, sustainable manufacturing, biobased circular economy. These workshops helped to gather information on the ecosystem functioning in each region, its gaps and examples of good practice, focusing on relevant areas for ERA Hubs.
- **Online webinars** were focused on sharing the experience of subject matter experts to a broader audience with capacity building purposes. The webinars were predominantly intended for project partners, policy makers and related stakeholders.
- **Dissemination workshops** aimed to inform about the project, its findings and results not only versus the stakeholders from partner regions but also with the involvement of participants from other European regions.
- **Learning workshops** were onsite events with stakeholders often associated with a consortium meetings, which gave more space for stakeholders to share their experiences by presenting their work and achievements to an international audience.
- **Local events** were mostly onsite events or meetings arranged by the partners with regional stakeholders. The aim was to present the ERA_FABRIC project and its progress in small groups of people and give more space for stakeholders to share their experiences and obtain feedback on project work.

2.2 Activity indicators

The Table 2 summarises all project objectives and their status of implementation at 30.06.2025. In the second monitoring period of the project (1.7.2024 – 30.6.2025, M19-M30), the stakeholder consultation and various dissemination and work activities continued as well. The involvement of stakeholders in the project took place particularly in the form of inter-regional online workshops and webinars, online evaluation survey, dissemination workshops, small local group meetings, learning workshops and individual evaluation interviews. Workshops and webinars were followed by feedback from stakeholders, speakers and partners to improve the following events.

The following events were held:

Inter-regional online workshops:

- 25.10.2024, topic: “Enhancing the Local Impacts and Synergies of EU Framework Programme Project Results” (T4.3, EURECAT) - 28 participants from 7 partners and 2 participants from non-partner regions: Transylvania (Romania) and Flanders (Belgium)

- 28.11.2024, topic: “Policies and tools to valorise the human centricity within research and Innovation” (T4.4, EURECAT) - 15 participants from 6 partner and 3 participants from non-partner regions: Lisbon (Portugal), Moravian-Silesian Region (Czech Republic) and North Brabant (Netherlands).

Online webinars:

- 17.9.2024, topic: The Future of R&I Ecosystems within the Twin Transition (T3.4, TTP) - 26 participants from 6 partners and 18 participants from non-partner regions: Brussels and rest of Belgium, Prague (Czech Republic), France, Baden-Württemberg and rest of Germany, Central Macedonia (Greece), Groningen and rest of Netherlands, Podlaskie (Poland), Norway, Romania and 4 from non-specified regions. The recording of the webinar is available on the project website. By June 30, 2025, this recording had 52 views.

- 8.10.2024, topic: Smart Specialisation Strategies & Cross-Regional Collaboration (T3.4, TTP) - 28 participants from 7 partners and 16 participants from non-partner regions: Upper Austria, France, Rogaland (Norway), Lodzkie and Warmińsko-Mazurskie (Poland), Central Portugal, Transylvania (Romania), 5 from non-specified regions. The recording of the webinar is available on the project website. By June 30, 2025, this recording had 61 views.

- 16.1.2025, topic: Enhancing Local Impacts & Synergies of EU R&D Funded Programmes (T3.4, TTP) - 31 participants from 7 partner and 6 participants from non-partner regions: Brussels, Prague (Czech Republic), Warmińsko-Mazurskie (Poland), Transylvania (Romania). The recording of the webinar is available on the project website. By June 30, 2025, this recording had 20 views.

- 13.2.2025, topic: Human Centricity of R&D & Innovation Policies (T3.4, TTP) - 45 participants from 7 partners and 17 participants from non-partner regions: Agder (Norway), Brussels, Prague and Moravian-Silesian (Czech Republic), Piemonte and Lombardy (Italy), London (United Kingdom), Navarra (Spain), Vienna (Austria), Bucharest-Ilfov (Romania) and non-specified region from Germany and Turkey. The recording of the webinar is available on the project website. By June 30, 2025, this recording had 21 views.

- 3.4.2025, topic: ERA Hubs Theory of Change (T3.4, TTP) - 17 participants from 5 partners and 5 participants from non-partner regions: Brussels, Bucharest-Ilfov (Romania) and non-specified region Sweden. The recording of the webinar is available on the project website. By June 30, 2025, this recording had 36 views.

- 18.6.2025, topic: Policy Issues for ERA Hubs (T3.4, TTP) - 17 participants from 6 partner regions. The recording of the webinar is available on the project website. By June 30, 2025, this recording had 16 views.

Dissemination workshops:

- 19.9.2024, ERRIN + COOPERATE + ERA_FABRIC event: ERA Hubs: status and way forward, Brussels (INESCTEC + WUT + ART-ER) - 3 participants from 3 partners and 45 participants from non-partner regions: Brussels and Belgium, South Tyrol (Austria), Prague (Czech Republic), Brandenburg, Hesse, Saxony-Anhalt and one non-specified region from Germany, Liguria, Tuscan and Veneto (Italy), Pomerania (Poland), Basque Country, Galicia, Málaga and Murcia (Spain), Skåne (Sweden); non-specified regions from Bulgaria, France, Hungary, Lithuania and Netherlands.

- 3-4.10.2024, Shaping EU Innovation Ecosystems: The role of ERA Hubs, Rome (CNR + ART-ER + WUT) - 10 participants from non-partner regions.

- 9.10.2024, EU Regions Week 2024: Enhancing Sustainable Development through Knowledge Ecosystems, Brussels (ART-ER + CNR+ WUT) - 4 participants from 2 partners and 70 participants from non-partner regions: Brussels, Flanders and rest of Belgium, Prague (Czech Republic), North Savo, Western Finland, Ostrobothnia and the rest of Finland, Normandy (France), Achaea, Attica, South Aegean and rest of Greece, Calabria, Lombardy and Trentino-Alto (Italy), Central Lithuania, Drenthe, Genderland, North Brabant, Overijssel and rest of Netherlands, Nordland and Western Norway, Warmian–Masurian, Silesian and Greater Poland, Upper Carniola Statistical (Slovenia), Skåne (Sweden), Málaga (Spain) and non-specified regions from Croatia, Denmark, Germany, Ukraine.

- 5.6.2025, ERA Hubs: Enhancing Knowledge Valorization in Regional R&I Ecosystems - 13 participants from 5 partners and 39 participants from non-partner regions: Brussels and rest of Belgium, Prague (Czech Republic), Liguria (Italy), Lithuania, Eindhoven (Netherlands), Lodz (Poland), Basque Country and Galicia (Spain), Hovedstaden (Denmark), Reúnion and Centre-Val de Loire (France), Hesse (Germany) and non-specified regions from Bulgaria, Slovakia.

Learning workshops:

- 18.10.2024, Warsaw, WUT, Learning workshop with Mazovia stakeholders, WUT - 13 participants.

Local events:

- 9.7.2024, Lower Austria, ECOPLUS - 15 participants.

- 30.1.2025, Brno, Czech Republic, MUNI - 9 participants.
- 9.5.2025 Trondheim, Norway, TTP – 2 participants.
- 18.6 2025, Lower Austria, ECOPLUS - 7 participants.
- 18.6.2025, Brno, Czech Republic, MUNI - 10 participants.
- 26.6.2025, Bologna, Italy, ART-ER - 11 participants.

In total, 1079 non-unique stakeholders participated in the project events and activities. Thus, at the end of the second monitoring period (30.6.2024 – 30.6.2025, M19-M30) we achieved 214% of the targeted 500 attendance. From the 9 partner regions came 808 stakeholders, 261 stakeholders came from the other 81 regions - see table below. Around 13% of stakeholders participated repeatedly. An overview of all participating countries and regions is shown in Table 1 below.

Table 1 - Countries and regions involved in project activities

Country	**Regions**
Austria	Lower Austria, Upper Austria, Tyrol, Vienna
Belgium	Brussels, Flanders, unspecified
Bulgaria	unspecified
Croatia	Adriatic Croatia, unspecified
Czech Republic	Prague, South Moravian Region, Moravian-Silesian Region
Denmark	Hovedstaden, unspecified
Finland	North, Western, Ostrobothnia, unspecified
France	Normandy, Réunion, Centre-Val de Loire, unspecified
Germany	Baden-Württemberg, Brandenburg, Hesse, Saxony-Anhalt, unspecified
Greece	Achaea, Attica, Central Macedonia, South Aegean, unspecified
Hungary	Unspecified
Italy	Emilia-Romagna, Calabria, Liguria, Lombardia, Lazio, Sicilia, Trentino-Alto Adige, Tuscany, Veneto, Piemonte, unspecified
Latvia	unspecified
Lithuania	Central, Capital region, unspecified
Luxembourg	Unspecified
Malta	North, Unspecified
Netherlands	Eindhoven, Gelderland, Groningen, North Brabant, Overijssel, South Netherlands, unspecified
Norway	Trøndelag, Nordland, Western Norway, Rogaland, unspecified
Poland	Mazovia, Greater Poland, Lesser Poland, Lodz, Lublin, Pomerania, Silesia, Warmia-Masuria, Podlaskie, unspecified
Portugal	North Region, Central Region, Lisbon, Azores, unspecified
Romania	Nord-Vest, Transylvania, Bucharest-Ilfov, unspecified
Slovakia	unspecified

Slovenia	Upper Carniola Statistical, unspecified
Spain	Catalonia, Basque Country, Galicia, Murcia, Navarra, Andalusia, Extremadura, Málaga, unspecified
Sweden	Värmland, Skåne, Kalmar, unspecified
Turkey	Antalya, Konya, unspecified
Ukraine	Kijv, unspecified
United Kingdom	London
Unknown	Unspecified region of online participants

During the second monitoring period, 6 third party events were attended by project partners, reaching a total of 24 for the whole project (120% of the targeted at least 20 attendances). Participation in the events takes various forms - from presentations of the ERA_FABRIC project, its objectives and results, to personal dialogues at meetings of local regional ecosystems.

Successfully completed parts of the project include an EU-wide evaluation survey in which 127 stakeholders participated. The results are summarised in section 3 of this document.

Further cooperation took place in the form of involvement of individual organisations in interregional workshops, and representatives of some organisations also participated in our webinars where they presented their experiences and current projects. Additional regional organisations were involved via ERRIN and IGLO (Informal Group of R&D Liaison Offices) during policy gatherings that took place in Brussels (7 February and 17 February 2025) and further Brussels events organized by ERA_FABRIC consortium (17 September 2024, 9 October 2024, 5 June 2025). Formal alliances have not been concluded. However, on the basis of the involvement of the participants from each region (Table 1 and Figure 1) below, it can be considered that the ERA_FABRIC project, its objectives and results have been very well promoted. Moreover, a continuous exchange was maintained with the sister project COOPERATE for the whole project duration.

The new ERA_FABRIC Self-Assessment Tool for knowledge ecosystems was launched during the month of June 2025. The tool is currently being tested, and feedback is being collected at the regional stakeholder level. Testing will continue in the coming month as well. The tool is available on the project website and ready for open use. It has been offered to regional development institutions for use. At the time of publication of this document, 34 stakeholders from partner countries have tested the tool. Feedback is collected on an ongoing basis. The final number of tests will be published in the final project report.

Table 2 - Activity indicators. Monitoring dashboard part I - KPI related to the project objectives

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2025	Target value	Percentage of fulfilment
Obj. 1 - Enlist and engage an EU-wide population of Quadruple Helix actors and stakeholders in the co-design of the ERA_FABRIC community of interest.	1.1 Engage actors and stakeholders in each of the participant territories to build and maintain local communities of interest.	9 regional/local communities of at least 50 participants each.	Quantitative	9 regional communities established Total 714 enlisted stakeholders	9 450	100% 159 %
		At least 8 meetings (1 per quarter) per each working group.	Quantitative	26 WG meetings	24	108 %
	1.2 Involve local communities in parallel working groups, capacity building initiatives, needs analyses, co-design, monitoring and evaluation activities	At least 6 capacity building webinars for the whole project	Quantitative	6	6	100 %
		At least 9 short videos of testimonials reporting about their experiences and perceived benefits (1 per region).	Quantitative	9	9	100 %

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2025	Target value	Percentage of fulfilment
Obj. 2 - Schedule a plan of P2P learning events (both online and offline) to ensure a true and consistent exchange of knowledge among the project partners and with their community members (notably	2.1 Define (already at kick-off) a tentative list of private (closed-door) and public gatherings (both directly organised and from relevant third parties) to be attended by the project partners.	At least 8 public events (1 per quarter) in combination with the periodic consortium meetings.	Quantitative	8 events ● 3 dissemination events in Brussels ● 1 dissemination event in Rome ● 1 Learning workshop in Warsaw ● 1 Learning workshop in Bologna	8	100 %
		At least 9 ecosystem profiles.	Quantitative	9 See D2.4	9	100 %
		At least 20 individual partner attendances to third party events (e.g. policy workshops or academic conferences).	Quantitative + Qualitative description	24 Some partners are more active.	20	120 %

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2025	Target value	Percentage of fulfilment
including civil society).	2.2 Ensure a broad participation of local actors and stakeholders (if needed, by appropriate translation of proceedings) to each partner's public event(s).	At least 500 non-unique individual attendances from local actors and stakeholders.	Quantitative	647 Focus groups Local events (Barcelona, Split, Brno, Lower Austria, Warsaw, Trondheim) Interregional online workshops Online webinars Dissemination workshops (Brussels, Rome, Bologna)	500	129 %
Obj. 3 - Exploit the existing, EU-wide and international networks of the consortium members to raise the	3.1 Attribute (already at kick-off) to each partner an average number of 2 additional regions or countries, prioritising those that are not	At least 10 additional territories covered with formal alliances.	Quantitative + Qualitative description	Cooperation with sister project COOPERATE (3 additional countries) ERRIN EVENTS (4 Oct 23, 17 Nov 2023; 7 Feb 25 2025, Brussels) IGLO event (17 February 2025, Brussels) Dissemination events (17 September 2024, 9 October 2024, 5 June 2025; Brussels)	10	-

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2025	Target value	Percentage of fulfilment
awareness and increase the visibility of the ERA_FABRIC project, its aims and achievements	represented in the consortium.			4 webinars		
		At least 100 individuals attendances to project events from actors and stakeholders not belonging to the consortium.	Quantitative	238 Stakeholders from 81 European regions – see table above	100	238 %
	3.2 Establish a continuous flow of communication with actors and stakeholders from these regions for the entire project duration.	At least 500 recipients of the ERA_FABRIC policy brief and e-newsletters.	Quantitative	580	500	116 %

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2025	Target value	Percentage of fulfilment
	3.3 Liaise with the sister project(s) of this call, existing and upcoming ERA Hubs, and other EU initiatives.	At least 10 other projects and initiatives clustered.	Quantitative	33 initiatives identified	10	330 %
Obj. 4 - Explore and substantiate with field evidence the concept of ERA Hubs as Knowledge Ecosystems.	4.1 Deliver a state-of-the-art analysis of knowledge ecology as a territorial production factor, including a census of related experiences and good practice examples.	1 online publication.	Quantitative	1 report (D.2.2) published	1	100 %

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2025	Target value	Percentage of fulfilment
	4.2 Run a EU-wide stakeholder survey on the most recurrent characteristics of knowledge ecosystems and assess the degree of conformance of partner regions to the ideal type.	1 survey exercise with at least 100 respondents.	Quantitative	1 EU survey completed 169 respondents See D2.3	100	169 %
	4.3 Develop a self-assessment and guidance tools for regions aiming to verify their strategic alignment to the model.	1 online self-assessment tool with at least 100 checked profiles.	Quantitative	1 tool 34 checked profile (ongoing activity) See D2.5	1 100	100 % 34 %

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2025	Target value	Percentage of fulfilment
Obj. 5 - Develop and structure real-life instantiation of the concept of ERA Hubs as Multi-Stakeholder Platform.	5.1 Liaise with regional and local actors, stakeholders and communities from both within and outside the consortium to deliver a needs analysis as well as a gap analysis of their existing policies and instruments.	9 need and gap analyses (1 per partner location).	Quantitative	9 Completed D3.1, D3.2	9	100 %
	5.2 Form thematic working groups at local level, connected with parallel activities in the other partner	3 thematic working groups at project level (with instances at each partner site) on the topics of	Quantitative	3 Established involvement of additional stakeholders in workshops and webinars. Balanced distribution between the 3 project topics. Stakeholders participate in the interregional workshops	3	100 %

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2025	Target value	Percentage of fulfilment
	sites, on three main topics of interest for the consortium.	sustainable manufacturing, biobased circular economy and clean renewable energy.				
	5.3 Set up the project's capacity building infrastructure for policy makers and other interested stakeholders.	1 syllabus and IT infrastructure for the delivery of webinars.	Quantitative	1 See D3.3	1	100 %
		1 collection of governance rules and arrangements.	Quantitative	1 See D3.4	1	100 %
Obj. 6 - Select a combination of existing	6.1 Structure the activity of the thematic working groups on four main priority areas	4 sections of the Policy toolbox.	Quantitative	4	4	100 %
		At least 10 meaningful case studies per section.	Quantitative	33 See D4.1: quality was prioritised over quantity; several use cases can be relevant for more than 1 section	40	83 %

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2025	Target value	Percentage of fulfilment
(proven) and innovative (yet to be tested) instruments for the implementation of the concept of ERA Hubs' Policy Co-Creation Toolbox.	for policy innovation	At least 5 tested instruments per section / collection of case studies.	Quantitative	20 See D4.2	20	100 %
	6.2 Organise the results of the three working groups according to the four areas with a summary of the transformative potential of the ERA	At least 1 innovative instrument proposed per section.	Quantitative	4 See D4.2	4	100 %
		1 theory of change of the ERA Hubs model.	Quantitative	1 See D4.2	1	100 %

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2025	Target value	Percentage of fulfilment
	Hubs “middle ground” model.					
Obj. 7 - Monitor and evaluate the project activities and their results, including gender balance and standardisation potential.	7.1 Define a methodology for impact and outcome evaluation, based on the theory of change.	1 methodology and plan of monitoring and evaluation activities.	Qualitative	1 See D5.1	1	100 %
	7.2 Deliver two rounds of data collection and interpretation, notably including gender balance.	At least 40 interviews and 2 evaluation surveys involving no fewer than 120 participants.	Qualitative	40 Interviewees 127 respondents to evaluation survey See D5.3 part 3	40 120	100 % 106 %
	7.3 Assess feasibility of a quality label and	1 feasibility study for a quality label of ERA Hubs.	Quantitative	1 See D5.4	1	100 %

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2025	Target value	Percentage of fulfilment
	standardisation approach.					
Obj. 8 - Define a replicable model for ERA Hubs as Knowledge Ecosystems, Multi Stakeholder Platform, and Policy Toolbox.	8.1 Promote a wide reflection on key widening and sustainability related aspects of the ERA Hubs model.	1 business plan and road map for the post-grant phase.	Quantitative	1 See D6.3	1	100 %
	8.2 Build a taxonomy of ERA Hub schemes with related profiles and implications for policy.	1 classification of ERA Hub schemes.	Quantitative	1 See D6.1	1	100 %
	8.3 Draw lessons and policy recommendations, particularly for the	2 ERA_FABRIC policy briefs.	Quantitative	2 Policy Brief See D7.2-D7.3	2	100 %

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2025	Target value	Percentage of fulfilment
	next generation of ERA Hubs.					
Obj. 9 - Communicate and disseminate project activities and results to accompany the development of the ERA_FABRIC community towards its impact targets.	9.1 Define and maintain a professional graphic design and communication strategy.	Broad international visibility of the consortium and the ERA_FABRIC image.	Qualitative	Design of the ERA_FABRIC logo and brand image of the project including communication guidelines and templates of deliverables, PowerPoint presentations, letterhead, roll-ups. Elaboration of templates for conferences, graphics to promote webinars, events, main project results. Infographics in social media, published deliverables for promoting and SEO, developing and updating website and LinkedIn channel ERA_FABRIC expansion Project leaflet and brochure available in 9 partner languages + English.		
	9.2 Communicate effectively within the consortium and with the external	1 single message for the vision and mission shared internally and	Quantitative	1 Communication and Dissemination Plan See D7.1-D7.4	1	100 %

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2025	Target value	Percentage of fulfilment
	actors and stakeholders.	in the participant communities.				
	9.3 Develop a project web platform and news feed representing the consortium and its achievements, as a first step towards the official ERA Hubs platform.	1 project web platform and news feed with 15,000 visitors by project end.	Quantitative	1 Project web platform 82581 unique visitors 219224 page views Related KPI Average visit duration 7:05 min Social media - 856 Accumulative Followers - 1033 Accumulative Posts - 1983 Interactions	1 15000 100000 2 min 750 1000 1000	100 % 551 % 219 % 114 % 103 % 198 %
	9.4 Disseminate project results to scientific and sectoral targets and channels.	Publication of at least 5 articles and papers on refereed journals and in conference proceedings.	Quantitative	1 paper and 3 conference proceedings	4	80 %

2.3 Output indicators

The monitoring of ERA_FABRIC continues with a second collection of indicators associated with the achievement of the 12 project KERs (Key Expected Results) introduced and defined in the DoA. The table below provides an overview of such indicators and their status of implementation at 30.06.2025. Both quantitative and qualitative indicators are used.

Table 3 – Output indicators. Monitoring dashboard part II - KPI related to the project's key expected results

KERs	WP	Indicators	Qualitative/ Quantitative	Status: 30/06/2025
KER #1: A census of ERA-Hub-like experiences and good practice examples within the EU.	WP2, T2.2 (CNR)	Number of experiences/examples	Quantitative	15
		Distribution by thematic domains (e.g. sustainable manufacturing)	Qualitative	5 case-studies for each domain
		Number of related open-access publications	Quantitative	1 publication on the project website

KERs	WP	Indicators	Qualitative/ Quantitative	Status: 30/06/2025
KER #2: A collection of recurrent characteristics of ERA_Hubs as Knowledge Ecosystems.	WP2, T2.3 (TTP)	Typologies of relevant characteristics	Qualitative	D 2.3 Stakeholder survey results
		Frequency of occurrence/recurrence	Quantitative + Qualitative description	D 2.3 Stakeholder survey results
		Number of related open access publications	Quantitative	1 publication on the project website
KER #3: A self- assessment and guidance tool for Regional and MS stakeholders.	WP2, T2.5 (UNIST)	Number of self- assessment and guidance tools developed	Quantitative	1
		Number of stakeholder sessions (How many times it was used)	Quantitative	34
KER #4: An EU-wide mapping of regional/local actors, communities, policies and instruments.	WP3, T3.1+3.2 (UNIST+NWRDA)	Typologies of actors	Qualitative	D3.1 Mapping regional stakeholders
		Types of communities	Qualitative	D3.1 Mapping regional stakeholders
		Types of policies	Qualitative	D3.2 Research and Innovation policies and strategies in the ERA_FABRIC regions

KERs	WP	Indicators	Qualitative/ Quantitative	Status: 30/06/2025
		Types of instruments	Qualitative	D3.2 Research and Innovation policies and strategies in the ERA_FABRIC regions
		Number of related open access publications	Quantitative	1 publication on the project website
KER #5: A capacity building programme for policy makers and civil servants.	WP3, T3.4 (TTP)	Number of training modules by profile (policy maker/public servant)	Quantitative	6
		Number of trainees by profile (policy maker/public servant)	Quantitative	226
		Number of webinars	Quantitative	6
KER #6: Governance rules and arrangements for the ERA_Hub as a stakeholder platform.	WP3, T3.5 (ECOPLUS)	Number of rules and arrangements	Quantitative	8
		Number of involved stakeholders	Quantitative	8
		Number of related open access publications	Quantitative	-

KERs	WP	Indicators	Qualitative/ Quantitative	Status: 30/06/2025
KER #7: An exemplary and reusable set of policy measures and tools.	WP 4, T4.5, D4.1 (EURECAT)	Number of measures and tools	Quantitative	21
KER #8: A standard and quality label for the upcoming EU funded ERA_Hubs	WP5, T5.5 (WUT)	Number of quality features	Quantitative	17
KER #9: A classification of alternative ERA_Hub schemes.	WP6, T6.3 (INESCTEC)	Number of schemes	Quantitative	4
		Classification criteria	Qualitative	• Knowledge ecosystem functionality • Stakeholder engagement • Governance • Cross-regional connectivity • Human-centricity See D6.1
		Number of related open access publications	Quantitative	-

KERs	WP	Indicators	Qualitative/ Quantitative	Status: 30/06/2025
KER #10: A business plan and roadmap for the "next generation" of EU funded ERA_Hubs.	WP6, T6.5 (INESCTEC)	Plan/roadmap aims and targets	Qualitative	The roadmap outlines phased deployment of ERA Hubs across Europe with specific targets for policy integration, funding alignment, and institutional recognition. The business plan identifies value propositions, governance models, financing scenarios, and performance metrics to guide adoption. See D6.3
		Involved actors (from the Quadruple Helix)	Qualitative	Regional governments, RTOs, universities, industry associations, and civil society actors through pilots, interviews, and consultation workshops. See D6.3
		Number of related open access publications	Quantitative	-

KERs	WP	Indicators	Qualitative/ Quantitative	Status: 30/06/2025
KER #11: Recommendations on innovation management, scalability, sustainability.	WP6, T6.4 (ART- ER)	Number of policy recommendations per each category	Quantitative	1 Policy Brief See D6.2 -D7.3
		Number of related open access publications	Quantitative	-
KER #12: A solid community of interest among Quadruple Helix Stakeholders	WP7, T7.4 + T7.5 (ECOPLUS + CNR)	Number and typology/location of involved (partner/non partner) stakeholders	Qualitative	808 partners stakeholders 261 non-partner stakeholders For typology see Table 4 For region see Table 1

Table 4 – Typology of Quadruple Helix stakeholders involved in the ERA_FABRIC project

Research (262)	University/ Research Centre/Higher Education Institution	262
Business (215)	Digital Innovation Hub	31
	Industry (having R&D departments or participating in R&D projects)	37
	Cluster / Professional association	78
	Business support infrastructure (Logistic Parks, Industrial Parks, Technology Parks, Industry Platforms, Technology transfer)	36
	Business Incubator / Hub / Co-working space	13
	Business Accelerator / Startup support organisation	18
	Business Angel / Venture Capital	2
Governance (155)	Municipality / County Council / Regional Government	40
	Regional Development Agency / Innovation Agency	99
	Regional Office of in-line ministries responsible for Innovation / Management Authorities or Intermediate Bodies for Innovation related programmes	16
Civil Society (11)	Civil Society Organisation (providing legal frameworks or incentives for innovation actors)	5
	Other	6

2.4 Outcome indicators

The monitoring of ERA_FABRIC finalises with a third collection of indicators associated with the 6 expected outcomes of the Horizon Europe call. The table below provides an overview of such indicators and their status of implementation at 30.06.2025. Both quantitative and qualitative indicators are used.

Table 5 – Outcome indicators. Monitoring dashboard part III - KPI related to the project's key expected outcomes

Outcomes	Indicators	Status: 30/06/2025
Test the new ERA Hubs concept across different geographies and structures in Europe, based on common compliance criteria.	Number of (partner / non partner) locations where the concept has been tested *See D2.4 Regional profiles*	**9**
	Number and typology of structures where the concept has been tested *See D2.5 Self assessment tool*	**34**
	Number and typology of common compliance criteria *See D2.5 Self assessment tool*	**7**
Better coordinate relationships between the European Research Area and relevant national or regional stakeholders in order to ensure the smart directionality introduced in the new ERA.	Number and typology of coordination models at multinational/transnational level *See D3.4 Multi-stakeholder platform Governance Manual*	**1**
	Number and typology of coordination models at multiregional/transregional level *See D3.4 Multi-stakeholder platform Governance Manual*	**4**
	Number and typology of involved (Quadruple Helix) stakeholders	**-**
Develop a common platform for collaboration and best practice sharing across borders, sectors and	Number of countries represented	**29**
	Number of sectors represented	**16**
	Number of disciplines represented	**16**

disciplines among ecosystem actors.	Number of actors represented	**1070**
	Number of ecosystems represented	**93**
Increase both the interoperability of the European ecosystems and the intra-operability within each territorial ecosystem.	Measure(s) of ecosystem interoperability	**6**
	Measure(s) of ecosystem intra-operability	**7**
Facilitate a better circulation and absorption of talents, improve knowledge circulation and uptake of research results.	Measure(s) of talent circulation	**5**
	Measure(s) of talent absorption	**5**
	Measure(s) of knowledge circulation	**6**
	Measure(s) of research results uptake	**6**
Provide a toolbox of best practices for researchers, innovators, industry and institutions across Europe to cooperate.	Number of best practice examples in the toolbox	**33**
	Number and typology of pan-European, multi-stakeholder cooperation models Civic-driven; cluster-driven, research-driven, policy-driven *SEE D6.1 Classification of ERA Hubs Schemes*	**4**

3. EVALUATION

3.1 Evaluation Approach

In accordance with the D5.1 Evaluation Methodology, the ERA_FABRIC Consortium has made a consistent use of Contribution Analysis, an alternative approach to impact evaluation that is aimed at constructing a plausible 'contribution story' to explain the contribution of a project, intervention or programme to its expected and/or identified outcomes and impacts. This approach also allows assessing causal questions and inferring causality in interventions putting all their steps along a causal chain – or 'contribution story' – that links actions and events to outcomes.

A standard Contribution Analysis involves six steps, which have been fully implemented across the project duration, as the following Table exhibits:

Table 6 – The six steps of Contribution Analysis in ERA_ FABRIC

Step #	**Description and examples** (from D5.1)	**Status and documentation**
1)	Set out the attribution problem to be addressed – this entails specifying the key evaluation questions, e.g. have the ERA Hub model dimensions influenced the observed results? Why have the results occurred?	An internal project workshop held in Barcelona, during the consortium meeting of 16 October 2023, followed by an internal partner survey (both reported about in D5.1 and in an Annex to it), laid the foundations for the Contribution Analysis by: 1) Specifying the initial hypotheses of how the three dimensions of the ERA Hub model proposed in the project (Knowledge Ecosystems, Policy Co-Creation Toolbox, and Multi-Stakeholder Platform) can be transformative of the status quo ante in R&D and innovation policy and deriving an indicative list of actions and events. 2) Naming the intended outcomes and impacts to be observed at the end of the intervention, which the Contribution Story is supposed to link to those actions and events.
2)	Update the initial Theory of Change of ERA_FABRIC about how the intervention is supposed to work, together with i) the assumptions underpinning the theory,	

	ii) the risks to realisation of the intended outcomes and impacts, iii) how strong or weak are the links in the underlying causal chain (and the strength or weakness of available evidence).	3) Identifying some relevant pieces of evidence to be gathered (borrowed from the descriptions of ERA_FABRIC tasks and other inputs from the partners and key EC documents) in order for the Contribution Analysis to be carried out successfully. 4) Considering the risks to realisation of the intended outcomes and impacts, how strong or weak are the links in the underlying causal chain, and the strength or weakness of available evidence. 5) Support the construction of the high-level evaluation questions to be answered by the Contribution Analysis going forward.
3)	Explore and discuss alternative outcome and impact generation mechanisms – identifying a number of "main" and "alternative" explanations and the evidence associated with them (e.g. different stakeholder positions on what are the causes of particular results).	All activities pertaining to these two steps were finalised between the consortium meetings of Split, 12 April 2024, and Warsaw, 18 October 2024. A preliminary version of the ERA_FABRIC Contribution Story, chosen out of a number of likely explanations of the way outcomes and impacts are generated, was included in D5.2 (issued on 31 October 2024). The description of the Contribution Story, which also included narratives and an elaboration of the points of weakness of those narratives, was accompanied by three visuals - one per each dimension of the ERA Hubs model (Knowledge Ecosystems, Policy Co-Creation Toolbox, and Multi-Stakeholder Platform). Some of its elements were presented in Brussels, at the annual ERA Forum conference, by INESC TEC on 19 September 2024. The description was refined by the partners during the Warsaw meeting and its final version is now presented in the next section of this document. Francesco Molinari presented and discussed its main aspects with Ricardo Migueis in a special podcast (within The Insider series) recorded on 10 January 2025 and available online here: https://open.spotify.com/episode/2JrGpP403ZafSOmYliUCfB
4)	Build the Contribution Story – this should specify the narrative proposed to explain how and why a result is caused by a particular sequence of events and actions – why it is reasonable to assume that the actions of the intervention contribute to the observed outcomes. It should also specify the weaknesses in the story.	

5)	Seek out additional evidence – this should focus in particular on resolving the weaknesses so far identified.	This third block of activities was finalised through two additional activities carried out in spring 2025 which are reported about in detail in sections 3.3 and 3.4 below: 1) another round of the initial survey, which was this time extended to external stakeholders to the partner organisations, and mostly used to validate and to some extent prioritise the three dimensions of the ERA Hub model proposed in the project's DoA (Knowledge Ecosystems, Policy Co-Creation Toolbox, and Multi-Stakeholder Platform). 2) a set of qualitative interviews to key local actors and stakeholders, especially focused on the potential value of an ERA Hub pilot action on cross-border collaboration in R&I activities in the evolving EU policy context (at that time epitomised by the European Commission's proposal of 28.02.2025 for a Council Recommendation on the European Research Area Policy Agenda 2025-2027).
6)	Revise and strengthen the Contribution Story – using the new evidence gathered and assessed.	

3.2 The ERA_FABRIC final Contribution Story for the ERA Hubs

3.2.1 Some background notes

ERA Hubs are a key initiative by the European Commission to enhance regional innovation within the European Research Area (ERA). They aim to create competitive research and innovation ecosystems across the EU by connecting various stakeholders, including public and private sectors, to foster collaboration and knowledge sharing[1].

Key objectives of ERA Hubs are threefold:

01. **Filling territorial gaps**: Ensuring all regions have access to research and innovation opportunities.
02. **Facilitating talent and investment flow**: Making it easier for talents and investments to move across regions.

[1] https://www.inspiring-era.eu/event/era-hubs-status-and-way-forward/https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-widera-2022-era-01-30

03. **Strengthening R&I ecosystems**: Building robust research and innovation ecosystems by leveraging regional strengths and addressing weaknesses.

ERA Hubs should operate through:

- **Coordination of R&D policies**: Helping Regions play a greater part in the coordination of research and development policies and investments.
- **Collaboration platforms**: Developing common platforms for collaboration and best practice sharing across borders, sectors, and disciplines.
- **Support for knowledge ecosystems**: Providing a toolbox of best practices for researchers, innovators, industry, and institutions to cooperate effectively.

Pilot action:

The ERA Hubs concept is currently being tested across different geographies and structures in Europe. This involves engaging a diverse range of stakeholders in multi-disciplinary and cross-sectoral collaborations.

'COOPERATE' and 'ERA_FABRIC' are the two Horizon Europe funded pilot projects now starting to deliver their results[2]. Their aim is to **help regions play a greater part** in the coordination of R&D policies and investments in member states. The ERA Hubs could support organizations – and people – in their bringing together different stakeholders, uniting public and private spheres and breaking existing silos to form new knowledge-driven innovation ecosystems, rooted in one region and connected with others, as key to future competitiveness of ERA in the global arena.

Expected outcomes:

The ERA Hubs initiative aims to achieve several key outcomes to enhance regional innovation and competitiveness across the European Union:

1. Establishing competitive research and innovation ecosystems across the EU by **filling territorial gaps and ensuring an easier flow of talents and investments**[3].
2. **Enhancing the transfer of knowledge and the development of entrepreneurial skills**, particularly benefiting small and medium-sized enterprises (SMEs) and creating new employment opportunities.
3. **Developing platforms for collaboration and sharing best practices** across borders, sectors, and disciplines.
4. Building robust research and innovation systems by **leveraging regional strengths and addressing systemic weaknesses**.

[2] https://www.inspiring-era.eu/event/era-hubs-status-and-way-forward/

[3] https://european-research-area.ec.europa.eu/policy-agenda-2022-2024/amplifying-access-research-and-innovation-excellence-across-union

5. **Developing holistic knowledge strategies** at the regional level through close collaboration with stakeholders from the public and private sectors.

These outcomes are expected to contribute to a more interconnected and competitive European Research Area, fostering innovation and economic growth across the regions.

3.2.2 The ERA Hubs Contribution Story

The ERA_FABRIC project funded by the Horizon Europe programme focuses on pilot testing the ERA Hubs concept to create a more interconnected and competitive European Research Area by leveraging regional strengths and addressing systemic weaknesses[4].

ERA_FABRIC is now building **a proof of concept for ERA Hubs** being seen as:

A. **Knowledge Ecosystems**: Fostering dynamic interactions between R&D and innovation actors at regional and multiregional levels, aligning research foci with industrial needs.
B. **Multi-Stakeholder Platforms**: Bringing together representatives from various interest groups to discuss and deliberate on strategic priorities, actions, and results evaluation.
C. **Policy Co-Creation Toolbox**: Developing a set of measures and tools to operate in a distinct space from both EU and regional levels, facilitating better policy-making and implementation.

The following three images synthesise visually the **ERA Hub's Contribution Story**, which is based on a forward-looking Theory of Change that has been developed in collaboration by all members of the ERA_FABRIC consortium. Just as a reminder, a Contribution Story in evaluation is a narrative that explains how an intervention (like a project, program, or policy) has contributed to some observed outcomes or impacts. In ERA_FABRIC, we are using this narrative in a forward-looking manner, as the intervention itself (the ERA Hub) does not exist yet, therefore cannot deploy its effects.

Considering the three distinct dimensions of an ERA Hub according to the vision of the project, the Contribution Story is also split in three parts. It should be borne in mind that while the ERA Hub concept in ERA_FABRIC lies at the intersection among these three dimensions, it can well be the case that some (existing or forthcoming) interventions bearing a different name, actually provide similar functions to one or more of those three. The entire exercise pertains to the realm of **simulation**, or proofing of concept, rather than post facto evaluation.

[4] https://erafabric.eu/https://erafabric.eu/the-horizon-europe-project-era_fabric-is-launched/

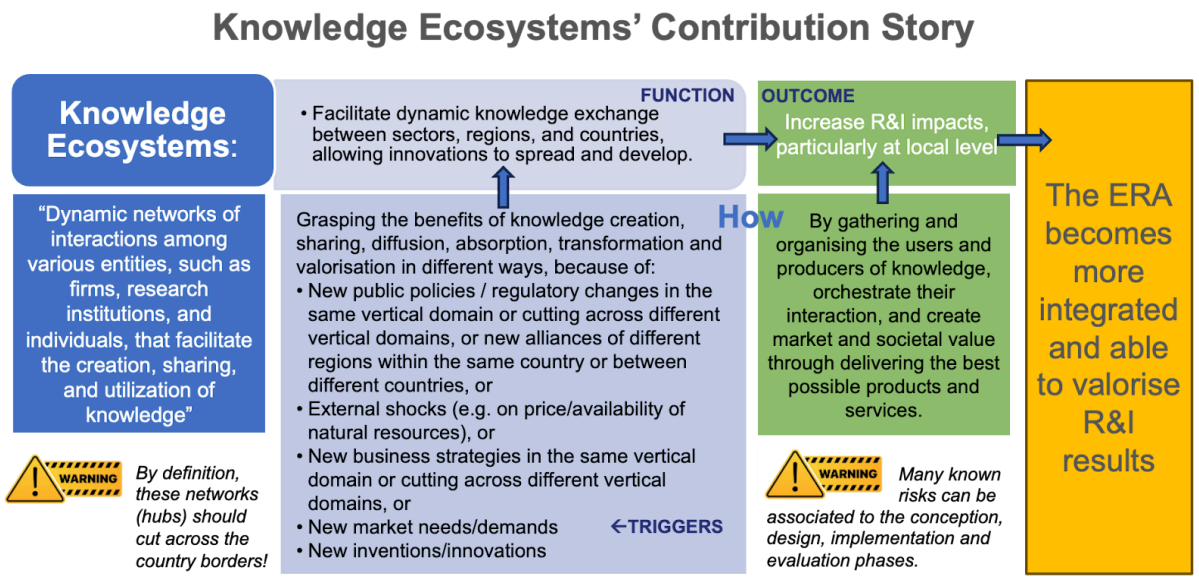


Figure 1 - ERA Hubs as Knowledge Ecosystems Contribution Story

Figure 1 describes how **ERA Hubs as Knowledge Ecosystems** contribute to achieving greater impacts in terms of a stronger integration of the ERA and of an increased valorisation of Research and Innovation (R&I) results.

The image can be broken down into three parts (columns) jointly representing the Knowledge Ecosystems Contribution Story:

- **Knowledge Ecosystems:** This part describes the first of the three key dimensions of an ERA Hub according to our project's theory. It defines Knowledge Ecosystems as "dynamic networks of interactions among various entities, such as firms, research institutions, and individuals, that facilitate the creation, sharing, and utilization of knowledge". A special "Warning" sign emphasizes that, by definition of an ERA Hub, these networks (hubs) should be localised across, rather than within, the EU country borders.
- **Function:** This part of the image first details the specific function of ERA Hubs as Knowledge Ecosystems, which revolves around the facilitation of dynamic knowledge between sectors, regions, and countries, allowing innovations to spread and develop. Then an overview is proposed of the specific Triggers that can possibly ignite the process of grasping the benefits of knowledge creation, sharing, diffusion, absorption, transformation and valorisation. Examples of **Triggers** include the following ones:
  - **New public policies/regulatory changes in the same vertical domain or cutting across different vertical domains:** This refers to when Knowledge Ecosystems are created by new regulations or policies within their specific industries or across different industries.

- **New alliances of different regions within the same country or between different countries:** This points to the collaboration and connection between different regions, either within a single country or globally.
- **External shocks (e.g., on price/availability of natural resources):** This indicates that Knowledge Ecosystems can be a possible reaction to unexpected events and changes in the broader environment.
- **New business strategies in the same vertical domain or cutting across different vertical domains:** This emphasizes the ability of Knowledge Ecosystems to promote innovations and adapt business models, both within their existing areas and across different disciplines.
- **New market needs/demands:** This signifies the responsiveness of Knowledge Ecosystems to changing market needs or preferences.
- **New inventions/innovations:** This highlights the role of Knowledge Ecosystems in reacting to new inventions or innovations.

· **Outcome:** The top part describes the key intended result of the Knowledge Ecosystems dimension of an ERA Hub, which is to increase R&I impacts, particularly at the local level. This is achieved through the process explained in the "How" bottom part, which details how a Knowledge Ecosystem operates to achieve the desired outcome. It highlights that this result is obtained:

- **By gathering and organising the users and producers of knowledge, orchestrate their interaction, and create market and societal value through delivering the best possible products and services.** This underscores the role of coordination and “smart directionality” within the Knowledge Ecosystem. It emphasizes the importance of bringing together different users and producers of knowledge to create value for both the market and society.

By the action of ERA Hubs as Knowledge Ecosystems, as predicted by our Contribution Story, **the ERA becomes more integrated and able to valorise R&I results.** This is a common impact to all the three dimensions of an ERA Hub, as will be shown below. Here we are focusing on ERA Hubs as Knowledge Ecosystems only. It is emphasized that by promoting collaboration between and leveraging different knowledge producers and users, the R&I landscape becomes more integrated. This leads to a greater ability to harness and utilize R&I resources effectively, ultimately resulting in more impactful R&I outputs. As another “Warning” message reminds us, many known risks can be associated to the conception, design, implementation and evaluation phases of this ERA Hub dimension. They have been analysed by the ERA_FABRIC partners and will be considered again in future versions of this Contribution Story.

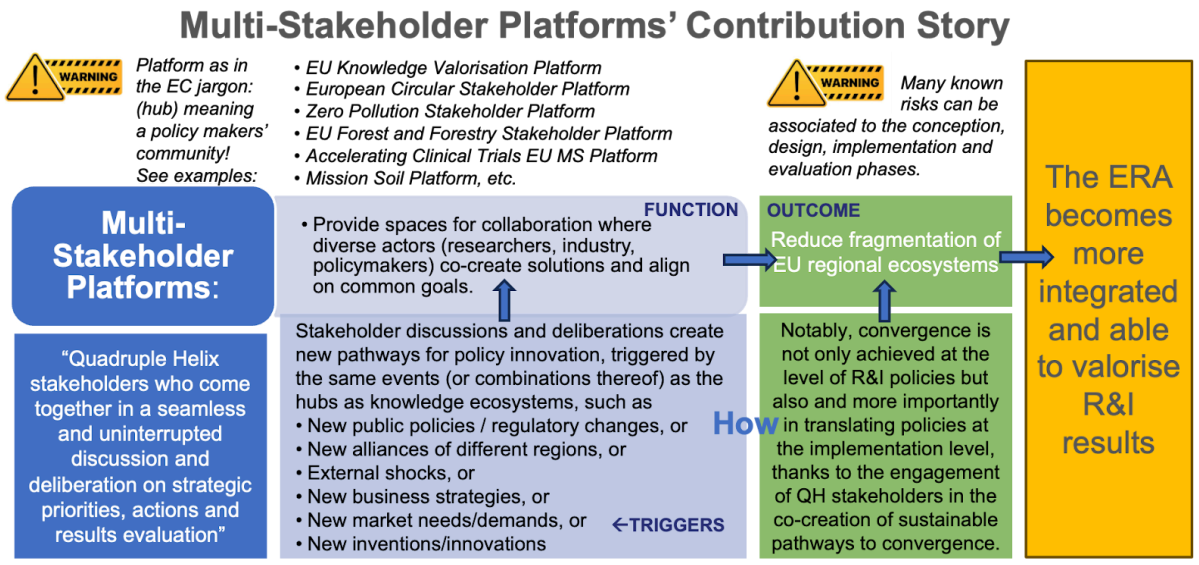


Figure 2 - ERA Hubs as Multi-Stakeholder Platforms Contribution Story

Figure 2 describes how **ERA Hubs as Multi-Stakeholder Platforms** contribute to achieving greater impacts in terms of a stronger integration of the ERA and of an increased valorisation of Research and Innovation (R&I) results.

The image as the previous one, can be broken down into three parts (columns) that are jointly representing the Multi-Stakeholder Platforms Contribution Story:

- **Multi-Stakeholder Platforms:** This part describes the second of the three key dimensions of an ERA Hub according to our project's theory. It defines Multi-Stakeholder Platforms as "Quadruple Helix stakeholders who come together in a seamless and uninterrupted discussion and deliberation on strategic priorities, actions and results evaluation". A special "Warning" sign emphasizes that the term "Platform", despite its various possible meanings, has a consolidated one in the literature and practice of EU policy making: an interactive community and a collaborative space designed to support the engagement of multiple stakeholders (normally from different countries) in support to a certain policy objective or set of objectives. Several examples are provided of this specific meaning of the term, a dimension that according to ERA_FABRIC, an ERA Hub should be in possession of.
- **Function:** This part first details the specific function of ERA Hubs as Multi-Stakeholder Platforms, which revolves around the provision of spaces for collaboration where diverse actors like researchers, industry, and policymakers can come together to build these solutions. This process is driven by stakeholder discussions and deliberations that lead to new policies, initiatives, and innovations. Then an overview is proposed of the specific

Triggers that can possibly ignite the search for collaboration and co-creation of solutions for common goals. Examples of **Triggers** include the following:

- **New public policies/regulatory changes in the same vertical domain or cutting across different vertical domains:** This refers to when Multi-Stakeholder Platforms are created by new regulations or policies within their specific industries or across different industries.
- **New alliances of different regions within the same country or between different countries:** This points to the collaboration and connection between different regions, either within a single country or globally.
- **External shocks (e.g., on price/availability of natural resources):** This indicates that Multi-Stakeholder Platforms can be a possible reaction to unexpected events and changes in the broader environment.
- **New business strategies in the same vertical domain or cutting across different vertical domains:** This emphasizes the ability of Multi-Stakeholder Platforms to promote innovations and adapt business models, both within their existing areas and across different disciplines.
- **New market needs/demands:** This signifies the responsiveness of Multi-Stakeholder Platforms to changing market needs or preferences.
- **New inventions/innovations:** This highlights the role of Multi-Stakeholder Platforms in reacting to new inventions or innovations.

· **Outcome:** This part first describes the key intended result of the Multi-Stakeholder Platforms dimension of an ERA Hub, which is to reduce the fragmentation of EU regional ecosystems. This is achieved through the process explained in the "How" section, which details how the Multi-Stakeholder Platform operates to achieve the desired outcome. It highlights that this result is obtained:

  - **By engaging Quadruple Helix stakeholders in the co-creation of sustainable pathways to convergence.** This is not only achieved at the level of R&I policies but also and more importantly in translating those policies at the implementation level. This signifies a shift towards a more sustainable and integrated network (hub) of regional ecosystems, where the joint efforts of diverse stakeholders contribute to achieving mutually acknowledged, collective goals. This is described as a shift towards a more integrated environment where R&I policies are not just designed or developed, but also effectively implemented across different EU regions, thanks to the active engagement of Quadruple Helix stakeholders.

By the action of ERA Hubs as Multi-Stakeholder Platforms, as predicted by our Contribution Story, **the ERA becomes more integrated and able to valorise R&I results.** This is a common impact to all the three dimensions of an ERA Hub, as is being shown in this document. Here we are focusing on ERA Hubs as Multi-Stakeholder Platforms. It is emphasized that by bringing together diverse stakeholders from academia, industry, government, and civil society in the framework of Multi-Stakeholder Platforms we can achieve a greater ability to harness and utilize R&I resources effectively, ultimately

resulting in more impactful R&I outputs. As another "Warning" message reminds us, many known risks can be associated with the conception, design, implementation and evaluation phases of this ERA Hub dimension. They have been analysed by the ERA_FABRIC partners and will be considered again in future versions of this Contribution Story.

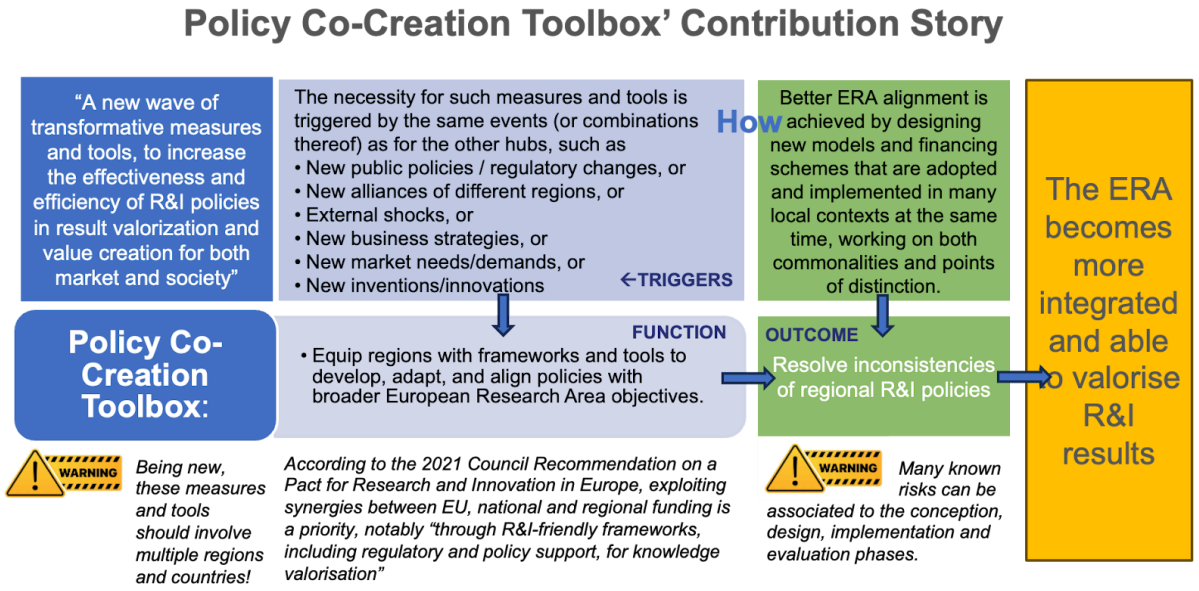


Figure 3 - ERA Hubs as Policy Co-Creation Toolbox Contribution Story

Figure 3 describes how **ERA Hubs as Policy Co-Creation Toolbox(es)** contribute to achieving greater impacts in terms of a stronger integration of the ERA and of an increased valorisation of Research and Innovation (R&I) results.

The image as the previous two, can be broken down into three parts (columns) that are jointly representing the Policy Co-creation Toolbox Contribution Story:

- **Policy Co-creation Toolbox:** This part describes the third of the three key dimensions of an ERA Hub according to our project's theory. It defines Policy Co-creation Toolbox as "A new wave of transformative measures and tools, to increase the effectiveness and efficiency of R&I policies in result valorisation and value creation for both market and society". A special "Warning" sign emphasizes that being new, these measures and tools should involve multiple regions and countries at the same time. This specific dimension of ERA Hubs echoes the definition of "R&I-friendly frameworks, including regulatory and policy support, for knowledge valorisation", which is part of the 2021 Council Recommendation on a "Pact for Research and Innovation in Europe".

- **Function:** This part first details the specific function of ERA Hubs as Policy Co-Creation Toolbox(es), which revolves around the delivery of frameworks and tools to develop, adapt, and align policies with broader European Research Area objectives. We can speculate this process to be driven by stakeholder discussions and deliberations done in the Multi-Stakeholder Platform(s) and be based on the facilitation of dynamic knowledge exchanges between sectors, regions, and countries, allowing innovations to spread and develop, which is connatural to ERA Hubs as Knowledge Ecosystems. Then an overview is proposed of the specific Triggers that can possibly ignite the co-creation process. Examples of **Triggers** include the following:
  - **New public policies/regulatory changes in the same vertical domain or cutting across different vertical domains:** This refers to when the need for stakeholder co-creation is established by new regulations or policies within their specific industries or across different industries.
  - **New alliances of different regions within the same country or between different countries:** This points to the collaboration and connection between different regions, either within a single country or globally.
  - **External shocks (e.g., on price/availability of natural resources):** This indicates that new frameworks, measures and tools can be a possible reaction to unexpected events and changes in the broader environment.
  - **New business strategies in the same vertical domain or cutting across different vertical domains:** This emphasizes the ability of these new frameworks, measures and tools to promote innovations and adapt business models, both within their existing areas and across different disciplines.
  - **New market needs/demands:** This signifies the responsiveness of Policy Co-Creation Toolbox(es) to changing market needs or preferences.
  - **New inventions/innovations:** This highlights the role of such new frameworks, measures and tools in reacting to new inventions or innovations.
- **Outcome:** This part first describes the key intended result of the Policy Co-Creation Toolbox dimension of an ERA Hub, which is to resolve (some of) the inconsistencies of EU regional R&I policies. This is achieved through the process explained in the "How" section, which details how the Policy Co-Creation Toolbox operates to achieve the desired outcome. It highlights that this result is obtained:
  - **By designing new models and financing schemes that are adopted and implemented in multiple local contexts at the same time, working on both commonalities and points of distinction.** This ensures that EU regions and Member States can better align their policies with the objective of knowledge valorisation that is embedded in the European Research Area.

By the action of ERA Hubs as Policy Co-Creation Toolbox, as predicted by our Contribution Story, **the ERA becomes more integrated and able to valorise R&I results.** This is a common impact to all the three dimensions of an ERA Hub, as is being shown in this document. Here we are focusing on ERA

Hubs as Policy Co-Creation Toolbox(es). It is emphasized that currently used frameworks, measures and tools have limitations in acting as the “R&I-friendly environments for knowledge valorisation” demanded as a priority by the already mentioned 2021 Council recommendation. As another “Warning” message reminds us, many known risks can be associated with the conception, design, implementation and evaluation phases of this ERA Hub dimension. They have been analysed by the ERA_FABRIC partners and will be considered again in future versions of this Contribution Story.

Overall Impact:
The three images together suggest that by co-creating new policy frameworks via the Policy Co-Creation Toolbox, which foster the transnational collaboration of Quadruple Helix stakeholders on dedicated Multi-Stakeholder Platforms, not only at the level of policy design but also implementation, particularly at the local level, including the promotion of knowledge exchange through multi-country Knowledge Ecosystems, the European Research Area can be supported to become "more integrated and able to valorise R&I results." This means a more connected and effective research and innovation landscape in Europe that generates tangible benefits from knowledge creation for all sectors of the economy and society.

3.3 Evaluation Survey

The evaluation survey was conducted in European regions between 31 January 2025 and 23 March 2025, with a total of 127 respondents from 13 European countries and a total of 20 regions, see Table 7 below. Partner regions were the most represented and the distribution between them was well balanced. Table 8 shows the representation of each stakeholder according to the typology common to the whole project – see Figure 6. To ensure balance in the following analysis, participants were divided into three main groups, i.e. Research institutions, Business, Development and Innovation institutions.

Table 7 – Countries and regions involved in the Evaluation Survey

Country	No.	Regions	Country	No.	Regions
Norway	13	Trøndelag, Rogaland, Agder	Italy	16	Emilia-Romagna, Lazio
Austria	14	Ostosterreich	Spain	14	Catalonia
Romania	20	Nord Vest, Bucharest-Ilfov	Belgium	1	Brussels
Portugal	2	Norte, Lisbon Metropolitan Area	Ukraine	4	Kyiv
Poland	16	Mazowieckie, Małopolska	Sweden	1	
Czech Republic	16	Jihomoravský kraj, Prague	Lithuania	1	Capital region
Croatia	9	Jadranska Hrvatska	**Total**	**127**	

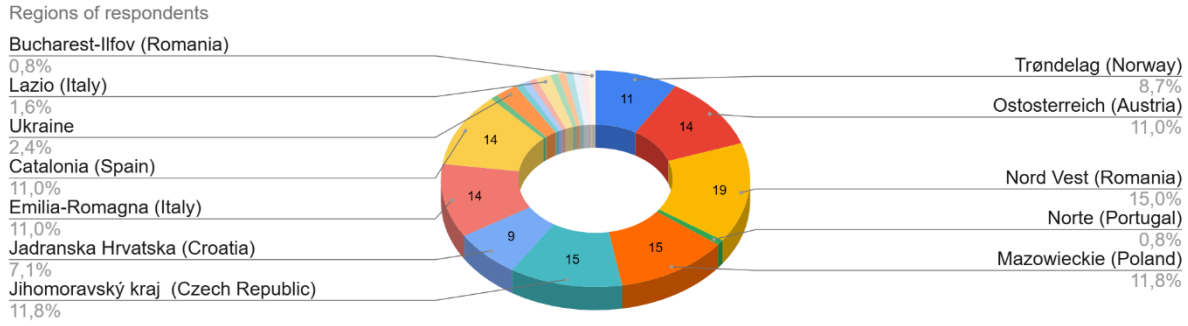


Figure 5 Regions involved in the Evaluation Survey

Respondents' data was analysed as follows. Means and standard deviations were calculated from the results of each question. The same was done with the data belonging to each region and stakeholder type. These values were compared to determine the variation across regions and ecosystem areas. The comparison showed that some values differ from the European average. However, the values always fall within the range set by the standard deviations of the values and can therefore be disregarded in further evaluation. This is true both in the comparison of regional values within regions and in the comparison of individual stakeholder types.

Table 8 – Typology of stakeholders involved in the Evaluation Survey

Research Institutions	University / Research Centre / Higher Education Institution	55
Business (37)	Business Accelerator / Startup support organization	2
	Cluster / Professional association	18
	Digital Innovation Hub, Business Accelerator / Startup support organisation	1
	Industry (having R&D departments or participating in R&D projects)	6
	Business Incubator / Hub / Co-working space	2
	Digital Innovation Hub	6
	Business support infrastructure (Logistic parks, Industrial Parks, Technology Parks, Industry Platforms)	2
Development and Innovation Institutions (33)	Regional Development Agency / Innovation Agency	23
	Municipality / County Council / Regional Government	7
	Regional Office of in-line ministries responsible for Innovation / Management Authorities or Intermediate Bodies for Innovation related programmes	3
	Civil Society Organization (providing legal frameworks or incentives for innovation actors)	1

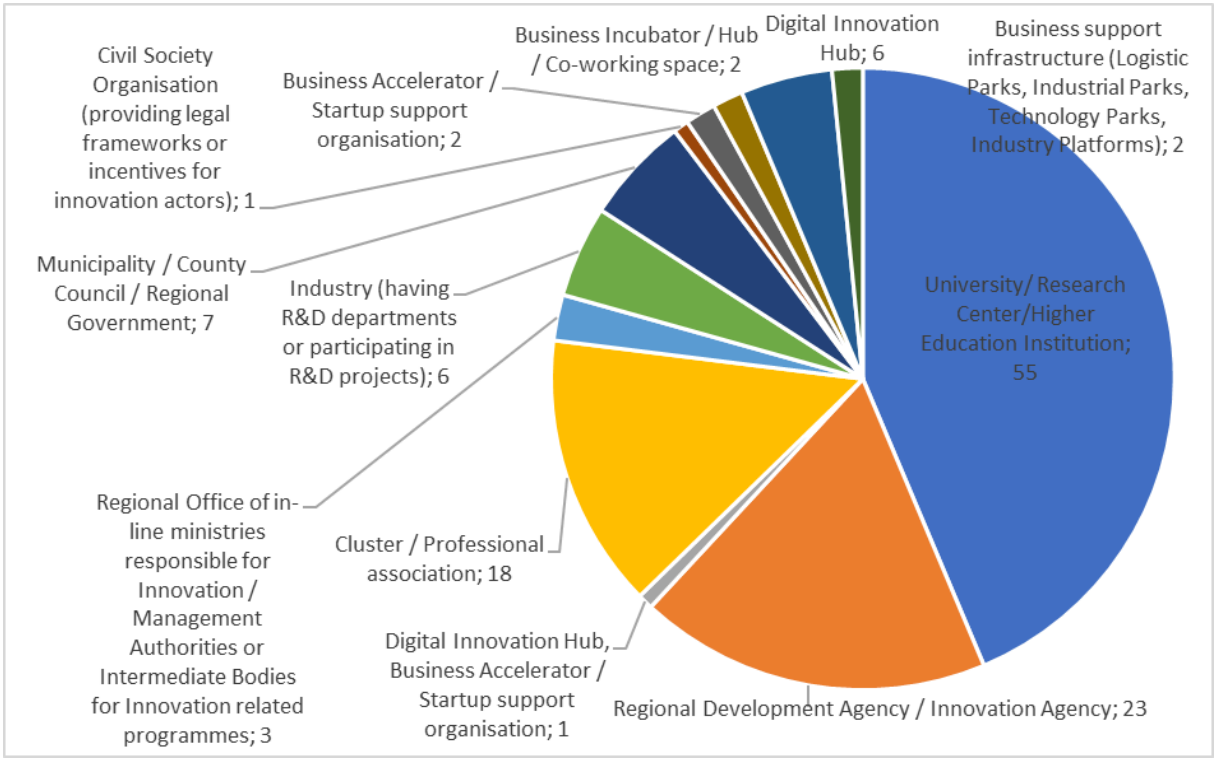


Figure 6 Typology of stakeholders involved in the Evaluation Survey

An overview of the results can be articulated as follows:

- To question 3.1 the respondents identified “Building more robust research and innovation ecosystems by leveraging regional strengths and addressing systemic weaknesses” as the main priority, followed by “Enhancing the transfer of knowledge and the development of entrepreneurial skills, particularly benefiting SMEs and creating new employment opportunities”.
- To question 4.1 the respondents (coherently with the previous answer) mostly prioritised “Strengthening R&I ecosystems” as a main gap to be filled in.
- To question 5.1 the respondents (coherently with the previous answer) identified as a strategic direction “Support for knowledge ecosystems: Providing a toolbox of best practices for researchers, innovators, industry, and institutions to cooperate effectively”.
- To question 6.1 the respondents, after reading the Contribution Story of each dimension of the ERA Hub, oriented their preferences towards the Knowledge Ecosystem.

A summary the means and standard deviations of all received responses can be obtained by the following table:

Table 9 – Overview of Evaluation Survey results

Question	Subquestion	Average	SD
3.1 The ERA Hubs initiative aims to achieve several key outcomes to enhance regional innovation and territorial competitiveness across the European Union. Based on your experience, please order these outcomes by growing importance (1=unimportant, 2=least, 3=average, 4=greatest).	- Build more robust research and innovation ecosystems by leveraging regional strengths and addressing systemic weaknesses	3.49	0.63
	- Fill in the territorial gaps and ensure an easier flow of talents and investments between regions (incl. internationally) and their research and innovation ecosystems	3.16	0.74
	- Develop platforms for stakeholder collaboration and sharing of best practices across EU country borders, sectors, and disciplines	3.10	0.84
	- Promote and exchange knowledge valorisation strategies at the regional level through close collaboration with stakeholders from the public and private sectors.	3.29	0.75
	- Enhance the transfer of knowledge and the development of entrepreneurial skills, particularly benefiting SMEs and creating new employment opportunities	3.33	0.72
4.1 ERA Hubs do not exist yet in the panorama of European research and innovation policies. However, their introduction is considered as crucial to	- Filling territorial gaps: Ensuring all regions have access to research and innovation opportunities.	3.25	0.69

fill in three acknowledged gaps of the existing EU policy mix. Based on your experience, please order these gaps by growing importance (1=unimportant, 2=least, 3=average, 4=greatest).	- Facilitating talent and investment flow: Making it easier for talents and investments to move across regions.	3.17	0.69
	- Strengthening R&I ecosystems: Building robust research and innovation ecosystems by leveraging regional strengths and addressing weaknesses.	3.56	0.64
5.1 According to the EU policy vision, ERA Hubs should act in three strategic directions, all having in common a multicountry/multiregional coverage and perspective. Based on your experience, please order these directions by growing importance (1=unimportant, 2=least, 3=average, 4=greatest).	- Coordination of R&D policies: Helping regions play a greater part in the coordination of research and development policies and investments.	3.24	0.72
	- Collaboration platforms: Developing common platforms for collaboration and best practice sharing across borders, sectors, and disciplines.	3.25	0.78
	- Support for knowledge ecosystems: Providing a toolbox of best practices for researchers, innovators, industry, and institutions to cooperate effectively.	3.35	0.73
6.1.1 Policy Co-Creation Toolbox: A new wave of transformative measures and tools, to increase the effectiveness and efficiency of research and innovation policies in research and innovation result valorisation and value creation for both market and society. Such increase is achieved by new models and financing schemes that are adopted and implemented in multiple local contexts at the same time, working on both commonalities and points of distinction. (1=you completely disagree on its introduction, 2=you disagree somehow, 3=you agree to some extent, 4=you completely agree on introducing the new policy functions.)		3.06	0.78

6.2.1 Multi-Stakeholder Platform: Quadruple Helix stakeholders coming together in a seamless and uninterrupted discussion and deliberation on strategic priorities, actions and results evaluation, reducing the fragmentation of the EU regional ecosystems. Such reduction is achieved by engaging Quadruple Helix stakeholders in the co-creation of sustainable pathways to convergence, not only at the level of research and innovation policies, but also and more importantly in translating those policies at the implementation level. (1=you completely disagree on its introduction, 2=you disagree somehow, 3=you agree to some extent, 4=you completely agree on introducing the new policy functions.)		3.15	0.73
6.3.1 Knowledge Ecosystem: A dynamic network of interactions among various entities, such as firms, research institutions, and individuals, that facilitate the creation, sharing, and utilization of knowledge. Such facilitation is obtained by gathering and organising the users and producers of knowledge, orchestrating their interaction, and creating market and societal value through delivering the best possible products and services. (1=you completely disagree on its introduction, 2=you disagree somehow, 3=you agree to some extent, 4=you completely agree on introducing the new policy functions.)		3.40	0.71
7.1 Based on your experience, please order these functions by their capacity to bring benefit to the current EU policy scenario in terms of integration and valorisation of research and innovation results (1=unimportant, 2=least, 3=average, 4=greatest).	ERA Hub as Policy Co-Creation Toolbox	3.03	0.73
	ERA Hub as Multi-Stakeholder Platform	3.28	0.74
	ERA Hub as Knowledge Ecosystem	3.44	0.70

Globally the survey showed that more than 55% of all respondents considered it most important to build more robust research and innovation ecosystems by leveraging regional strengths and addressing systemic weaknesses to improve innovation and territorial competitiveness. 84% of stakeholders consider all three ERA Hubs strategic directions to be of comparable importance.

As far as the three policy dimensions of ERA Hubs are concerned, 37% of respondents agreed, and 52% strongly agreed with the Knowledge Ecosystem function; 47% agreed, and 35% strongly agreed with the Multi-stakeholder Platform; 51% agreed, and30 % completely agreed with the Policy Co-creation Toolbox.

It can therefore be concluded that the ERA Hubs Contribution Story was largely validated with the participation of a significant number of R&I stakeholders in Europe.

3.4 Evaluation interviews

3.4.1 Introduction

The quantitative results of the evaluation process obtained through the evaluation survey had to be supplemented with qualitative indicators. For this purpose, evaluation interviews were carried out in WP5. Structured interviews with local R&I stakeholders, designed by MUNI with ART-ER support, were undertaken in the 10 partner regions (see Table 10) during April and May 2025. 39 interviews were held, one of which involved two respondents, thus a total of 40 stakeholders were approached. Respondents came from 10 different areas - see Table 11 and Figure 7.

Table 10 – Number of interviewees per region

Partner/Region	Interviewees number	Partner/Region	Interviewees number
ART-ER / Emilia-Romagna	4	MUNI / South Moravia	5
CNR / Lazio	2	NWRDA / Nord Vest	5
Ecoplus /Lower Austria	4	TTP / Trøndelag	3
EURECAT / Catalonia	5	UNIST / Adriatic Croatia	4
INESC TEC / Norte	3	WUT / Mazovia	5

The interview was structured into 6 open questions, the last being optional (AOB, recommendations, etc.) and the other 5 obligatory (for the full text of the questions, see Annex 2):

- Q1. Cross-Border Collaboration Examples
- Q2. Efficiency and effectiveness of R&I Investments

- Q3. Achieving critical mass in R&I projects
- Q4. Barriers and Constraints
- Q5. Policy and Governance Transformation
- Q6. (Optional) Additional Input

Respondents were distributed as displayed in the following Table. One can notice a significant prevalence of representatives from University Research Centres and Higher Education Institutions.

Table 11 – Stakeholder typology of interviewees

Research Institutions	University / Research Centre / Higher Education Institution	17
Business (13)	Technopole	1
	Cluster / Professional association	7
	Digital Innovation Hub, Business Accelerator / Startup support organisation	1
	Industry (having R&D departments or participating in R&D projects)	2
	Private R&D performing SME active in sustainable bio-based materials and smart agriculture	1
	Startup / Deep Tech SME / R&D Beneficiary	1
Development and Innovation Institutions (10)	Regional Development Agency / Innovation Agency	6
	Municipality / County Council / Regional Government	2
	Regional Office of in-line ministries responsible for Innovation / Management Authorities or Intermediate Bodies for Innovation related programmes	2

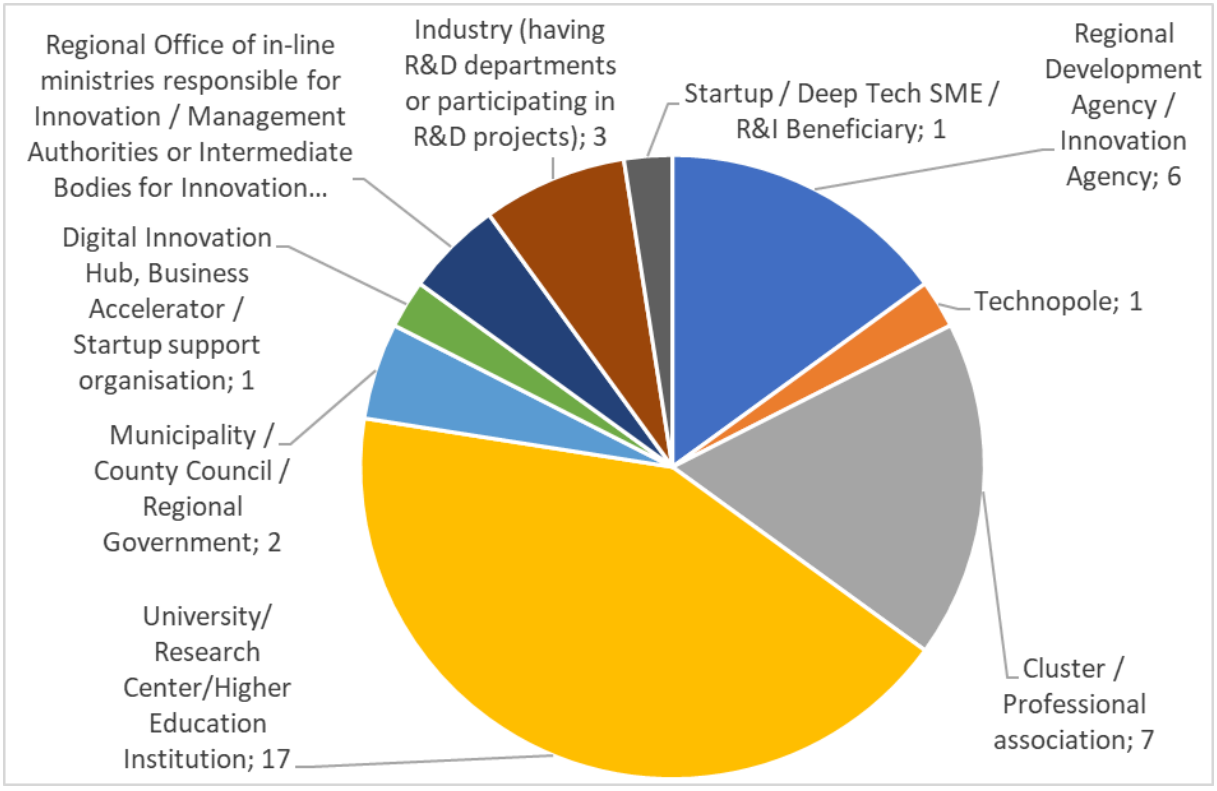


Figure 7 Stakeholder typology of interviewees

3.4.2 Methodology and Results

Contrary to the previously described survey, the focus of the qualitative interviews was not set again on the ERA Hubs model and its dimensions. Instead, respondents were invited to reflect in problematic terms on the scope and potential of cross-border cooperation between R&I actors, to pull resources together on key priorities of common interest and facilitate the joint achievement of more ambitious goals than those carried out independently by those actors in the respective countries/regions.

As mentioned in the (then draft) recommendation of the European Commission to the Council on the European Research Area Policy Agenda 2025-2027[5], the pooling of resources to achieve critical mass does not only increase the efficiency of R&I investments but also facilitates knowledge spillover effects throughout the participating actor communities.

5

https://european-research-area.ec.europa.eu/documents/proposal-council-recommendation-european-research-area-policy-agenda-2025-2027

The 22.10.2024 Communication of the European Commission summarising the current state of implementation of the European Research Area[6], while positively commenting the progress the EU Member States have made in the direction set out by the previous (2020) Communication entitled "A new ERA for Research and Innovation"[7], stressed the importance of continuing to reinforce European collective scientific and technological capacity through: (i) greater policy coordination on joint priorities between ERA countries; (ii) the sustained prioritisation of R&I investment at national level; (iii) supportive regulations and policies for R&I; and (iv) stronger monitoring of the effectiveness of the actions.

In 2022, R&D intensity in the EU stood at 2.3%, well below the 3% ambition, and that of our main international competitors such as the US at 3.6%, Japan at 3.4%, South Korea at 5.2% or China at 2.6%. R&I investments vary considerably across Member States ranging from 3.47% to 0.46% of GDP, with only five countries reaching the 3% target. The reason for this gap comes mostly from low private investments in R&D in Europe and insufficient specialisation in high-tech sectors ("the so-called European medium-technology trap").

Regulatory barriers impeding business innovation and the financing, scale-up and deployment of innovations remain to be tackled. Further actions are needed to improve the environment for innovative companies to grow in Europe and to increase the deployment and take-up of breakthrough digital and green technologies throughout the economy.

Actions to further promote knowledge and technology transfer from academia to the private sector, including through IPR policy, are also needed in many Member States.

In addition to private investment, public R&D investment remains low and insufficiently coordinated at EU level, as 90% of all public R&D is focused on national priorities and the European R&I Framework Programme (Horizon Europe) represents only about 10% of public R&D spending in the EU. In many Member states, Cohesion policy investments in R&I constitute a substantial part of their total R&I investment. In Lithuania, Poland and Latvia – above 30%; in Estonia, Slovakia, Hungary, Bulgaria, Croatia – above 20%, in Portugal, Cyprus, Czech Republic, Romania, Malta and Slovenia – above 10%.

No progress has been made towards achieving the ERA target of directing at least 5% of national public R&I funding towards joint cross-border research programmes or European partnerships.

More could also be done to reinforce public research systems by adopting stable and predictable funding schemes, tackling institutional fragmentation and improving the attractiveness of careers in research. As highlighted in the 2024 European Semester Spring Package, several Member States still need to implement structural reforms to improve conditions for science and innovation.

[6] https://research-and-innovation.ec.europa.eu/document/download/1bde0a38-7c86-4e6c-a4b8-7f9605d9e7e7_en?filename=com_2024_490_en.pdf

[7] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52020DC0628

Despite the efforts, the ERA still faces challenges in translating R&I results into societal impact and economic value and in retaining the latter within the EU.

As pointed out in the Draghi report on the Future of European Competitiveness (2024), the innovation capacity of the EU continues to lag behind that of the US, while other major economies are rapidly catching up. The EU shows weaknesses throughout the entire cycle of innovation, as well as in its patterns of sectoral specialisation, with activities concentrated in sectors with medium-to-low R&I intensity.

In the 28.02.2025 proposal for a Council Recommendation on the European Research Area Policy Agenda 2025-2027, the Commission does not make any specific proposal for a new ERA Action in correspondence of Priority Area 4 “Advancing Concerted Research and Innovation Investments and Reforms" but stresses the need to for cross-border cooperation to boost the efficiency of R&I investments through pooling resources in order to achieve critical mass and increase the knowledge spillover effects.

It adds that ensuring that these investments are efficient and impactful may also require in some instances designing, implementing and monitoring structural reforms in national R&I systems, just like it’s happening within the RRF (Recovery and Resilience Facility) that is reported to boost national innovation capacity, especially in countries that continue to lag behind. The aim of those further reforms would be to increase scientific excellence, extract the valorisation of research results, enhance science-business links and better target policies to support business innovation.

This is where our interviews started.

After due anonymisation, received responses were gathered in a table consisting of 39 rows (one per interviewee) and 6 columns (corresponding to the already mentioned Q1-Q6). The problem of interpretation was then tackled according to the following procedure:

1) As a first step, summarisation and coding/tagging of received responses (as per the table cells) were done manually.
2) Later the same attempt was repeated with the support of state of the art text summarisation software.
3) Then, noting that alternative versions of that software were anyway using Generative AI for the enhancement of their capacities, it was decided to turn directly to that for the creation of global summaries of received responses. Particularly and to minimise the risk of errors in the interpretation, the free versions of the following tools were used: ChatGPT, Claude, Copilot, Deepseek, Gemini, Grok, Manus.
4) The provisional results of the analysis were then presented to the partners during an internal project meeting held on 4 June 2025 and further discussed during a public event on 5 June 2025 (both were held in Brussels).

Following are summaries of received responses:

Q1. Cross-Border Collaboration Examples

A dominant form of cross-border R&I collaboration is participation in **EU-funded programs**. Horizon Europe (and its predecessors like Horizon 2020, FP7), Interreg, URBACT, COSME, EIT Food, and initiatives like the European Digital Innovation Hubs (EDIHs).

Other significant collaboration structures include:

- Bilateral and multilateral agreements between regions or institutions
- Interregional initiatives like Vanguard
- Cluster collaborations
- University alliances and joint doctoral programs
- National programs with cross-border implications or knowledge exchange components
- Networks of specific entities like EDIHs
- Startup programs and support initiatives with international partners
- Targeted collaborations with specific international institutions outside EU.

Q2. Efficiency and effectiveness of R&I Investments

These are perceived as mixed and varying considerably by region and program.

Common issues include fragmentation of funding, administrative burdens and bureaucracy, long approval times, and a lack of coordination between different funding instruments and governance levels.

The short-to-medium-term nature of many project cycles is often seen as insufficient for ensuring continuity, scalability, and real territorial impact, especially in sectors requiring long-term strategies like agri-food or hydrogen.

The impact of R&I investments on local economies and societies is generally seen as positive but often falls short of its potential. Positive impacts include modernized research infrastructure, improved university capabilities, enhanced collaboration, and in some cases, a correlation with increased exports and regional competitiveness.

However, many feel the translation into broader economic benefits (e.g., new products, market uptake, job creation) and societal well-being is limited or difficult to quantify.

This may be because R&I results often remain confined within beneficiary consortia or institutions and that limited knowledge spillovers occur in practice.

Q3. Achieving critical mass in R&I projects

Key thematic areas highlighted as prime candidates for intensified cross-border R&I collaboration include:

- Digital Technologies (AI and Cybersecurity)
- Health, Life Sciences, and Bioeconomy
- Green Transition and Sustainability
- Advanced Manufacturing and Production Technologies
- Energy Systems
- Strategic Raw Materials and Electronics.

However, the **diversity of national agendas, administrative cultures, and competitive interests** within Europe impede seamless collaboration. **Funding availability** remains a critical issue, as well as the **difficulty for SMEs** to secure and manage complex EU grants and face the heavy administrative burdens associated with EU projects.

To address these challenges, a **multi-level approach** is advocated.

Q4. Barriers and Constraints

The most frequently cited obstacles are the **overwhelming administrative, legal, and regulatory complexities** inherent in multi-country collaborations. Stakeholders describe a "regulatory maze" characterized by heterogeneous national frameworks, bureaucratic burden, inconsistent funding rules and timelines, IP and data sharing concerns.

Financial barriers are a close second in hindering collaboration, including: lack of dedicated and accessible funding, high cost of proposal preparation and country/regional socio-economic disparities.

Cultural, organizational, and trust-related hurdles are also highlighted, as well as **capacity, infrastructure, and talent related issues**.

Underlying the above issues are often **systemic and policy-level deficiencies**, addressing which requires more than just funding programs: it calls for systemic simplification, greater harmonization of rules and procedures, enhanced support for capacity building and networking, and fostering a genuine culture of trust and open collaboration across Europe.

Q5. Policy and Governance Transformation

To significantly enhance cross-border cooperation and resource pooling in R&I across Europe, a **multifaceted transformation of existing policies and governance structures** is imperative.

Respondents emphasized a shift away from fragmented, administratively burdensome systems, towards more harmonized, flexible, and results-oriented approaches, supported by long-term vision and stable funding.

Fostering **a more vibrant landscape for cross-border R&I collaboration** in Europe requires a concerted and systemic overhaul of current policies and governance.

This involves **not only simplifying rules and enhancing funding but also building trust, empowering dedicated facilitators, ensuring strategic alignment across all governance levels, and focusing on tangible results and long-term impact**.

Q6. (Optional) Additional Input

In conclusion, gaining more efficiency and effectiveness of R&I investments, as well as achieving critical mass in R&I projects through cross-Member State collaboration is seen as not merely beneficial, but a fundamental necessity for the continent's technological advancement and global competitiveness.

Despite successful initiatives like the ERA and the Framework Programmes, stakeholders report that deep, sustained cross-border collaboration among R&I actors remains surprisingly infrequent.

Interview results highlighted a complex web of interconnected barriers—spanning administrative, financial, cultural, and systemic domains—that collectively stifle the development of common work agendas.

3.5 Conclusions

ERA Hubs were conceived of as a transformative platform to bridge research, innovation, and policy across Europe. Envisioned as dynamic, interconnected knowledge ecosystems, ERA Hubs would have brought together universities, businesses, policymakers, and civil society. Their mission would have been to pool resources, align strategies, and create a seamless European Research Area (ERA) where knowledge, talent, and innovation could flow freely.

If implemented, ERA Hubs would have operated across borders and countries through three core, interwoven dimensions:

1. Knowledge Ecosystems
2. Multi-Stakeholder Platforms
3. Policy Toolboxes

The ERA_FABRIC project provided and tested/validated convincing explanations (aka Contribution Stories) for how the above three dimensions would have contributed to the policy goal of further integrating the ERA and making it more effective in valorising R&I results.

Their relevance and potential effectiveness have been validated by 127 European stakeholders.

Additionally, based on 39 responses to direct, face to face interviews, to R&I stakeholders across Europe, **cross-border collaboration** is recognised as a vital driver for scientific progress, economic growth, and societal advancement. The interviews conducted reveal a landscape where cooperation is both stimulating and complex, shaped by a mix of well-established programs, emerging initiatives, and persistent challenges that must be addressed to unlock the full potential of European R&I.

At the heart of cross-border collaboration lie **EU-funded programs** such as Horizon Europe and its predecessors (Horizon 2020, FP7), Interreg, URBACT, COSME, and thematic initiatives like EIT Food and the European Digital Innovation Hubs (EDIHs). These frameworks have created **extensive networks** that bring together universities, research institutions, clusters, and startups across national borders. Beyond these, **bilateral and multilateral agreements** between regions and institutions, **interregional initiatives** like Vanguard, and **joint doctoral programs** further enrich the collaborative nature of the ERA ecosystem. **National programs** with cross-border knowledge exchange components and targeting partnerships with international institutions also contribute to this dynamic, underscoring a multi-layered approach to cooperation.

Despite this rich tapestry of collaboration, stakeholders express **mixed views on the efficiency and effectiveness of R&I investments**. On one hand, these investments have led to tangible improvements: research infrastructures have been modernized, university capabilities enhanced, and new collaborative ties forged. In some regions, these efforts correlate with increased exports and improved competitiveness. Yet, many interviewees caution that **the broader economic and societal impacts often fall short of expectations**. The translation of research outputs into new products, market uptake, job creation, and societal well-being is frequently limited or difficult to quantify. A significant reason is that **R&I results tend to remain confined within the beneficiary consortia or institutions, with limited knowledge spillover to the wider economy or society**.

Two fundamental challenges identified by many stakeholders are the **fragmentation of funding** and the **administrative burdens** associated with cross-border projects. The “regulatory maze” of heterogeneous national legal frameworks, inconsistent funding rules, and divergent timelines creates a complex environment that is difficult to navigate. The administrative workload, lengthy approval processes, and overlapping governance structures often discourage participation, especially among smaller organizations and SMEs, which face difficulties in accessing and managing complex EU grants. Financial barriers also loom large, including the high costs of proposal preparation and disparities in socio-economic conditions across countries and regions.

These structural and procedural obstacles are compounded by **cultural and organizational differences**. Trust issues, varying administrative cultures, and competitive interests between regions and countries hinder the formation of cohesive, large-scale collaborative projects. The **diversity of national agendas** means that aligning priorities to achieve critical mass in R&I efforts is challenging.

Nevertheless, stakeholders identify **several thematic areas as particularly promising for intensified cross-border collaboration**. These include digital technologies—especially artificial intelligence and cybersecurity—health and life sciences, bioeconomy, green transition and sustainability, advanced manufacturing, energy systems, and strategic raw materials and electronics. These fields are seen as strategic priorities where pooling resources and expertise across borders can generate significant added value.

Another matter of concern is the **short-to-medium-term nature of many project cycles**. Many R&I initiatives operate on funding timelines that are too brief to ensure continuity, scalability, and lasting territorial impact, particularly in sectors requiring long-term strategies such as agri-food systems or hydrogen technologies. This temporal limitation restricts the ability to build sustained innovation ecosystems and to translate research breakthroughs into market-ready solutions and societal benefits.

In light of these challenges, **interviewed stakeholders call for a comprehensive transformation of policy and governance frameworks governing cross-border R&I collaboration**. There is a strong consensus that the current fragmented and administratively burdensome systems must give way to more harmonized, flexible, and results-oriented approaches. Stable, long-term funding commitments are essential to provide the continuity needed for impactful projects. **Simplification of rules and procedures, greater alignment of governance across EU, national, and regional levels, and enhanced support for capacity building and networking** are critical enablers.

Equally important is the need to **foster a culture of trust and open collaboration**. Stakeholders emphasize the role of dedicated facilitators and intermediaries who can help navigate complexities, build relationships, and align interests. **Strategic alignment across governance levels** and a clear **focus on tangible results and long-term impact** are seen as prerequisites for successful cooperation. The interviews highlight that policy reforms must go beyond funding mechanisms to address the systemic issues—legal, cultural, organizational, and infrastructural—that currently fragment the European R&I landscape.

In conclusion, the interviews paint a picture of a European R&I ecosystem rich in collaborative potential but constrained by a complex web of administrative, financial, cultural, and systemic barriers. While initiatives like the European Research Area and the Framework Programmes have laid important foundations, deep and sustained cross-border collaboration remains surprisingly infrequent. Stakeholders agree that enhancing the efficiency and effectiveness of R&I investments and achieving critical mass in cross-border projects are not merely advantageous but essential for

Europe's technological leadership and global competitiveness. Realizing this vision requires a systemic overhaul that embraces simplification, harmonization, trust-building, and long-term strategic commitment. Only through such a multifaceted transformation can Europe fully harness the collective strength of its diverse innovation actors and secure its position at the forefront of global research and innovation.

Meanwhile, the new ERA Policy Agenda 2025-2027 has been approved and has come into force. The EC's proposal was reviewed by the Research Working Party in several meetings (March–May 2025), resulting in 3 revised Presidency texts based on Member State feedback. The final draft was agreed upon by the Research Working Party after an informal silence procedure concluded on 6 May 2025. The Committee of Permanent Representatives (COREPER) was invited to:

- Confirm agreement on the draft Council Recommendation.
- Recommend the Council (Competitiveness Council, COMPET) to reach a political agreement at its session on 23 May 2025 – which effectively happened.

Indeed, Priority Area 4 "Advancing Concerted R&I Investments and Reforms" of the Agenda calls for coordinated investments, policy alignment, and impactful reforms across the EU. Curiously, but not too much, it is the only objective where "there is no specific ERA structural policy or action proposed (…). The European Commission and the Member States remain, however, committed to work closely together using a set of existing instruments".

In this policy context, ERA Hubs could have been the engine for:

- Pooling regional, national, and EU resources.
- Facilitating joint programming and shared infrastructures.
- Bridging gaps between strong and emerging innovation ecosystems.
- Turning policy ambitions into collaborative, on-the-ground action.

Yet, without real implementation, these ambitions remain largely aspirational—wished for, but not realised.

ANNEX 1 – STAKEHOLDER EVALUATION SURVEY

With this anonymous survey - being distributed in several countries and regions of Europe at the same time - we ask for your help to validate the potential benefits of a new concept - the so-called **ERA Hub** - which we see as a **game changer** in the way research and innovation results are **integrated** (ie. positioned in a certain product value chain, which is cutting across the national borders) and **valorised** (ie. brought to the market, or turned into social benefits or even new public policies in the EU Member States).

No personal data will be collected or stored in the process.

1. Which European region do you live/operate in? If you select “other”, please add information about **Region (Country)**
    - Trøndelag (Norway)
    - Ostosterreich (Austria)
    - Emilia-Romagna (Italy)
    - Catalonia (Spain)
    - Jihomoravský kraj (Czech Republic)
    - Mazowieckie (Poland)
    - Norte (Portugal)
    - Jadranska Hrvatska (Croatia)
    - Nord Vest (Romania)
    - Other

2. Please choose the option that best describes your current role within your regional ecosystem
    - University/ Research Centre/Higher Education Institution
    - Digital Innovation Hub
    - Municipality / County Council / Regional Government
    - Industry (having R&D departments or participating in R&D projects)
    - Regional Development Agency / Innovation Agency
    - Cluster / Professional association
    - Regional Office of in-line ministries responsible for Innovation / Management Authorities or Intermediate Bodies for Innovation related programmes
    - Business support infrastructure (Logistic Parks, Industrial Parks, Technology Parks, Industry Platforms)
    - Business Incubator / Hub / Co-working space
    - Civil Society Organisation (providing legal frameworks or incentives for innovation actors)
    - Business Accelerator / Startup support organisation
    - Business Angel / Venture Capital

3.1. The ERA Hubs initiative aims to achieve **several key outcomes to enhance regional innovation and territorial competitiveness across the European Union**. Based on your experience, please order these outcomes by growing importance **(1 = unimportant, 2 = least, 3 = average, 4 = greatest)**.

	0	1	2	3
Build more robust research and innovation ecosystems by leveraging regional strengths and addressing systemic weaknesses	●	●	●	●
Fill in the territorial gaps and ensure an easier flow of talents and investments between regions (incl. internationally) and their research and innovation ecosystems	●	●	●	●
Develop platforms for stakeholder collaboration and sharing of best practices across EU country borders, sectors, and disciplines	●	●	●	●
Promote and exchange knowledge valorisation strategies at the regional level through close collaboration with stakeholders from the public and private sectors.	●	●	●	●
Enhance the transfer of knowledge and the development of entrepreneurial skills, particularly benefiting SMEs and creating new employment opportunities	●	●	●	●

3.2 Feel free to elaborate on the response given:

4.1 ERA Hubs do not exist yet in the panorama of European research and innovation policies. However, their introduction is considered as crucial to fill in **three acknowledged gaps of the existing EU policy mix.** Based on your experience, please order these outcomes by growing importance **(1 = unimportant, 2 = least, 3 = average, 4 = greatest)**.

	0	1	2	3
Filling territorial gaps: Ensuring all regions have access to research and innovation opportunities.	●	●	●	●
Facilitating talent and investment flow: Making it easier for talents and investments to move across regions.	●	●	●	●
Strengthening R&I ecosystems: Building robust research and innovation ecosystems by leveraging regional strengths and addressing weaknesses.	●	●	●	●

4.2 Feel free to elaborate on the response given:

5.1 According to the EU policy vision, ERA Hubs should act in three strategic directions, all having in common a **multicountry/multiregional coverage and perspective**. Based on your experience, please order these outcomes by growing importance **(1 = unimportant, 2 = least, 3 = average, 4 = greatest)**.

	0	1	2	3
Coordination of R&D policies: Helping regions play a greater part in the coordination of research and development policies and investments.	●	●	●	●
Collaboration platforms: Developing common platforms for collaboration and best practice sharing across borders, sectors, and disciplines.	●	●	●	●

Support for knowledge ecosystems: Providing a toolbox of best practices for researchers, innovators, industry, and institutions to cooperate effectively.	●	●	●	●

5.2 Feel free to elaborate on the response given:

6. In two years of work, the Horizon Europe funded ERA_Fabric project has elaborated on those strategic directions, proposing **three new policy functions the ERA Hub should set up to perform**. Please rate the usefulness of these new functions using the following convention:

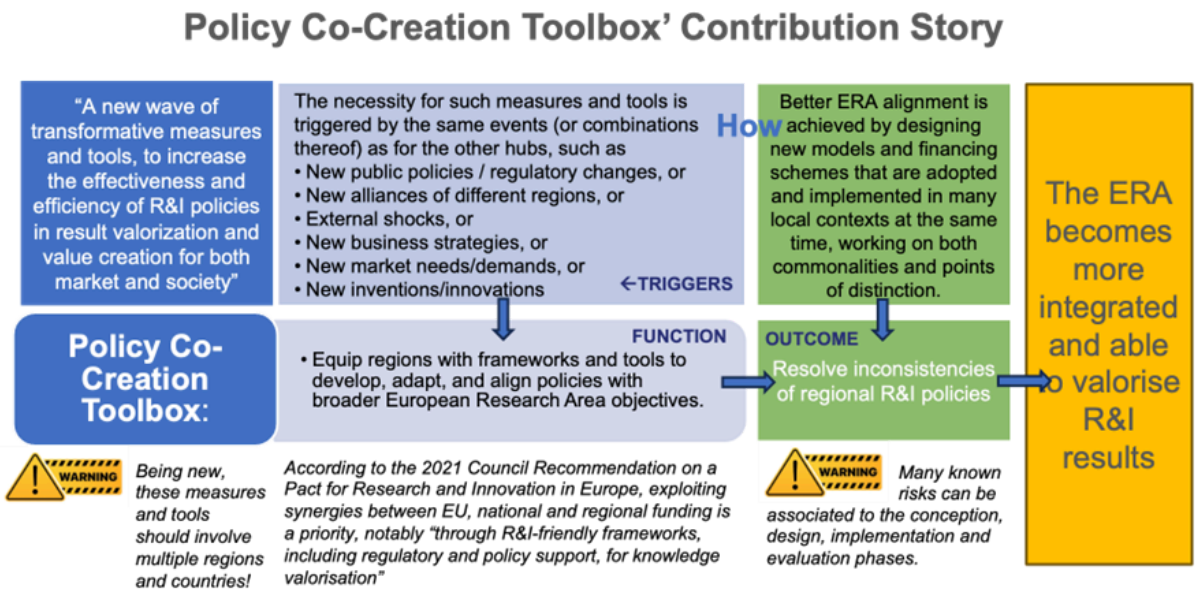
☆ you **completely disagree** on its introduction,

☆☆ you **disagree somehow,**

☆☆☆ you **agree to some extent,**

☆☆☆☆ you **completely agree** on introduction the new policy functions

6.1.1 Policy Co-Creation Toolbox: A new wave of transformation measures and tools, to increase the effectiveness and efficiency of research and innovation policies society. Such increase is achieved by new models and financing schemes that are adopted and implemented in multiple local contexts at the same time, working on both commonalities and points of distinction.

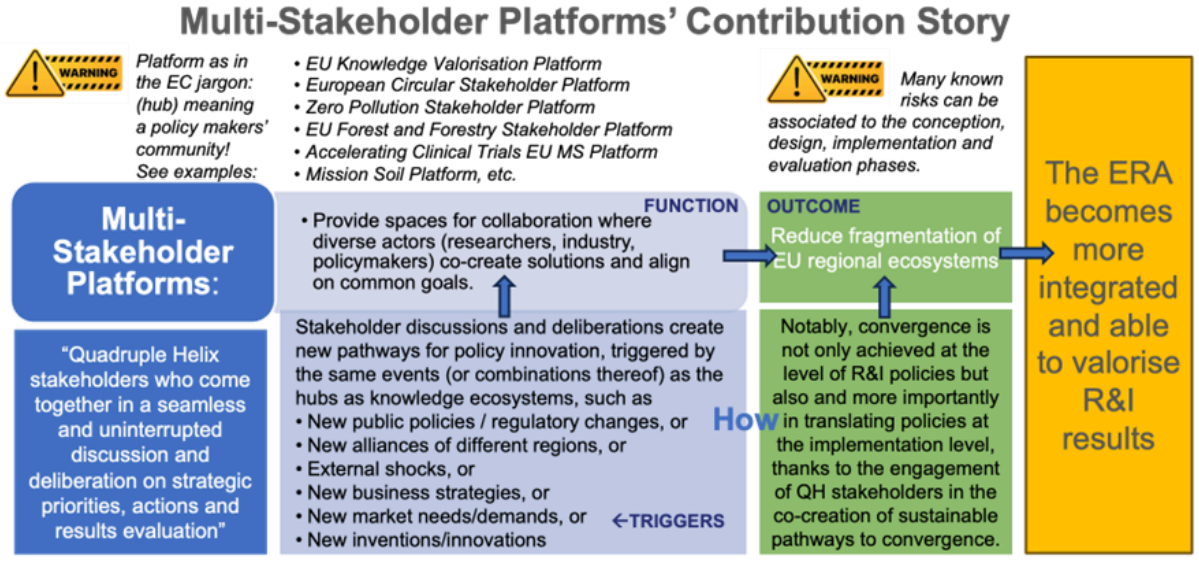


1 2 3 4

☆ ☆ ☆ ☆

6.1.2 Feel free to elaborate on the response given:

6.2.1 **Multi-Stakeholder Platform:** Quadruple Helix stakeholders coming together in a seamless and uninterrupted discussion and deliberation on strategic priorities. actions and results evaluation, reducing the fragmentation of the EU regional ecosystems. Such reduction in archived by engaging Quadruple Helix stakeholders in the co-creation of sustainable pathways to convergence, not only at the level of research and innovation policies, but also and more importantly in translating those policies at the implementation level.

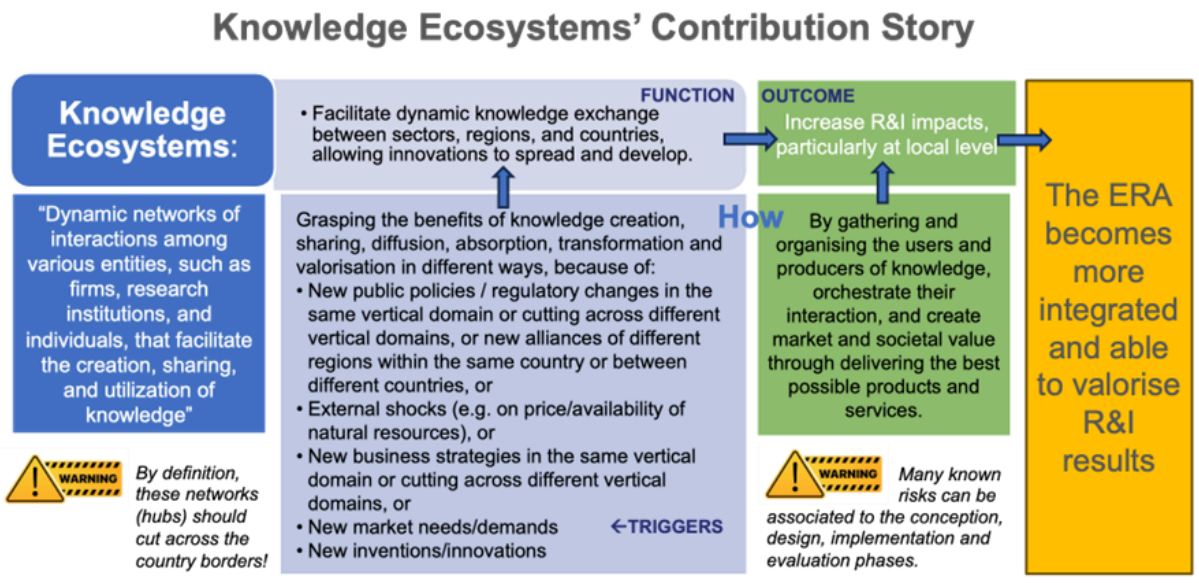


1 2 3 4

☆ ☆ ☆ ☆

6.2.2 Feel free to elaborate on the response given:

6.3.1 **Knowledge Ecosystem:** A dynamic network of interactions among various entities, such as firms, research institutions, and individuals, that facilitate the creation, sharing, and utilization of knowledge. Such facilitation is obtained by gathering and organising the users and producers of knowledge, orchestrating their interaction, and creating market and societal value through delivering the best possible products and services.



1	2	3	4
☆	☆	☆	☆

6.3.2 Feel free to elaborate on the response given:

7.1 Based on your experience, please order these functions by their capacity to bring benefit to the current EU policy scenario in terms of **Integration and valorisation of research and innovation results (1 = incapable, 2 = least, 3 = average, 4 = greatest)**.

	0	1	2	3
ERA Hub as Policy Co-Creation Toolbox	●	●	●	●
ERA Hub as Multi- stakeholder Platform	●	●	●	●
ERA Hub as Knowledge ecosystem	●	●	●	●

7.2 Feel free to elaborate on the response given:

The survey is over, thanks for your collaboration. You are welcome to give us any feedback.

ANNEX 2 – EVALUATION INTERVIEW SCRIPT

Name/personal code and role of interviewee (*)	
Name of organisation of affiliation	
Name of interviewer and date	
Stakeholder typology (**)	

(*) personal code: for data processing purposes, please identify the respondent in the following way: organisation abbreviation - respondent number - gender M/F; example: MUNI-1-F

(**) Please choose from the following options:

- University/ Research Centre/Higher Education Institution
- Digital Innovation Hub
- Municipality / County Council / Regional Government
- Industry (having R&D departments or participating in R&D projects)
- Regional Development Agency / Innovation Agency
- Cluster / Professional association
- Regional Office of in-line ministries responsible for Innovation / Management Authorities or Intermediate Bodies for Innovation related programmes
- Business support infrastructure (Logistic Parks, Industrial Parks, Technology Parks, Industry Platforms)
- Business Incubator / Hub / Co-working space
- Civil Society Organisation (providing legal frameworks or incentives for innovation actors)
- Business Accelerator / Startup support organisation
- Business Angel / Venture Capital
- Innovation and Tech transfer organisation / Science and Technology Parks

Q1. Cross-Border Collaboration Example

Let's start with your own experience of cross-border collaboration in R&I activities. Can you make any example you are familiar with (1-2-3, national/regional, European/outside of Europe)? How was it structured? What was your role? What were the outputs/outcomes on the economies and societies of the regions/countries involved, including – if any – in terms of knowledge spillovers?

The general purpose of these questions is to gather insights into the interviewee's personal experiences (if any) with cross-border research and innovation (R&I) collaborations, to establish a common level of understanding with the interviewer. Experiences with basic research collaboration (e.g. Horizon Europe) is

not really relevant here. Applied research or innovations and placing them on the market shall be the main focus.

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Q2. Efficiency and effectiveness of R&I Investments

How efficient do you think current R&I investments are in your country/region? What are the most important financial sources leveraged (e.g. Structural Funds, Horizon Europe, Interreg programmes, etc.)? Are they impacting on e.g. the local economy and society satisfactorily in your opinion? If not, what is missing to ensure better outcomes and higher impacts from these investments? Do they generate knowledge spillovers, or do their results stay confined within the participant organisations? How could these spillovers be incentivised to boost innovation and economic impact?

These questions aim to collect the respondent's opinion on the efficiency and effectiveness of R&I investments done within the country borders. We can intuitively associate the concept of efficiency to the cost of obtaining a certain result, while effectiveness pertains to the capacity of that result to generate positive outcomes and impacts.

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Q3. Achieving critical mass in R&I projects

Above and beyond the geopolitical aspects of the current situation, Europe is facing significant challenges to its fragmented approach to R&I, which the ERA mission is to reduce and make less negatively impactful. Topics like artificial intelligence and cybersecurity – just to make two examples from the digital world – need Member States to join forces, avoid duplications and work faster and more effectively to deliver results that push the technology frontier forward. In your experience, how important do you think it is to achieve critical mass in R&I projects through collaboration with other players situated in a different Member State? What specific areas or themes in your country/region would benefit most from this approach?

Fragmentation of R&I investments is often identified as a major source of inefficiency and ineffectiveness. This question asks whether there are any topics where collaboration across the country borders might be beneficial to counteract fragmentation.

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Q4. Barriers and Constraints

Apart from few known examples (notably promoted by EU funded programmes, like Horizon and Interreg) it is not very frequent to see cases of R&I actors from different countries of Europe engaged in common work agendas. Why is it so? Which barriers and constraints (of cultural, language, socio-economic, legal-administrative, technological, etc. – nature) do you see as impeding the development of cross-border collaboration in R&I? What about the current areas of sectoral specialisation of your country/region? The state and accessibility of your own research infrastructures? Other factors, such as (un)available finance or talent/expertise?

These questions aim to identify the key barriers and constraints that (respectively) impede or make it difficult to join forces in R&I projects by actors residing in different countries of Europe.

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Q5. Policy and Governance Transformation

What changes or new approaches would be needed in existing policies or governance structures to support cross-border cooperation and resource pooling in R&I? What is currently missing to enhance knowledge spillover effects between your country/region and other EU member states? What role should the EU, your national and/or regional governments play in facilitating these changes? What do you think are the critical success factors in promoting effective cross-border R&I collaboration? What potential risks or challenges should be anticipated, and how can they be mitigated?

The purpose of these questions is to name/identify some policy or governance innovations at the regional, Member State and/or EU levels, that could promote and facilitate cross-border R&I collaboration.

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Q6. (Optional) Additional Input

Is there anything else you would like to add about how cross-border cooperation and pooling resources could be improved to boost the efficiency and impact of R&I investments in your country/region as well as in the EU?

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