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DELIVERABLE D5.2

Impact and outcome evaluation results 1

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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 first period of implementation of the ERA_FABRIC project (Jan 2023 - June 2024) and will be followed by a second and final report of the same kind to be produced and the end of the project considering impact and outcomes evaluation of the whole project.

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1. INTRODUCTION

The present report I is the first 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) that foresees two implementation steps, respectively in the interim and final part of the project. 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 first 18 months of the project (January 2023 - June 2024).

- EVALUATION: which summarises the learning from the first two rounds of data collections and the brainstorming sessions carried out with the contribution of all project partners in the first part of the project (January 2023 - June 2024).

2. MONITORING

2.1 Monitoring approach

All monitoring activities have been designed in accordance with the D5.1 Monitoring Methodology and making use of two main tools:

- a Monitoring activity dashboard used for internal documentation and continuous tracking of the status of implementation of the ERA_FABRIC project objectives, with checking points at six-monthly level. This is an internal table supervised by the project coordinator, whose content is regularly updated.

- a Monitoring Questionnaire structured according to the indicators of activity, output and outcome, defined in deliverable D5.1, part 2.2. – 2.4. The questionnaire was made available for project partners on the project website in non-anonymous form. Some of the questions were common to all partners and some were unique, related to specific individual tasks that individual partners guarantee. The main objective of the questionnaire was to check the status of the individual tasks and make visible the tasks that should not be neglected or focused on. The Monitoring questionnaire can be found in ANNEX 1. The questionnaire was filled by the project partners in July-August 2024, at the end of the first monitoring period. The data have been elaborated by MUNI.

The results obtained with the Monitoring questionnaires were compared with the Monitoring activity dashboard to assess the validity of its functionality, irregularities, progress of tasks, and achievements.

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

From the monitoring perspective, the following terms have been included in the Glossary:

- **Inter-regional online workshop** - within the workshop participants work in 3 thematic groups, corresponding to the thematic domains: clean renewable energy, sustainable manufacturing, biobased circular economy. The workshop helps to gather information on the ecosystem functioning in each region, its gaps and examples of good practice.
- **Online webinar** is about sharing the experience of subject matter experts. The webinars are predominantly intended for project partners, policy makers and related stakeholders.
- **Dissemination workshop** aims to inform about the project, its findings and results not only in the partner regions but also with the involvement of participants from other European regions.
- **Learning workshop** is onsite event with stakeholders often associated with a consortium meeting, that gives more space for stakeholders to share their experiences by presenting their work
- **Local event** is mostly onsite event or meeting with regional stakeholders. The aim is 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 at p. 9-21 summarises all project objectives and their status of implementation at 30.06.2024, outlining the individual gaps and parts of each task that need more focus in the coming period. Successful and completed tasks are highlighted in green, tasks that are approximately 50% complete are in black, and tasks that need more focus in the next period are in red.

Success

In the first year of the project (1. 1. 2023 – 31. 12. 2023, M0-M12), local regional communities were mapped and working groups established with active participation of stakeholders from the partner regions. A total of 714 stakeholders in 9 partner regions were mapped, 58% more than the target of 450 stakeholders.

In the second year of the project (1. 1. 2024 – 30. 6. 2024, M13-M18), the stakeholder consultation and various dissemination and work activities continued as well. The involvement of stakeholders in

the project took place both in the form of inter-regional online workshops and in the form of small local group meetings. Two inter-regional online workshops were held:

- 14. 5. 2024, topic: “Promoting a single market for the green and digital transition (T4.1, ART-ER) - 51 participants from 8 partner regions
- 11. 6. 2024, topic: Fostering inter-regional connections between innovation ecosystems across the EU (T4.2, ECOPLUS) - 33 participants from 9 partner and 5 participants from non-partner regions: Breda (Nederland), Liguria (Italy), Lubelskie, Malopolska (Poland).

In addition to focus groups in 9 partner regions the following learning workshops took place:

- 18. 10. 2023, Barcelona, EURECAT
- 12. 4. 2024, Split, UNIST
- 29. 5. 2024, Brno, MUNI

In total, 216 non-unique stakeholders have already participated in the events. Thus, in the first monitoring period (1. 1. 2023 – 30. 6. 2024, M0-M18) we achieved 43% of the targeted 500 attendance.

Workshops and webinars are followed by feedback from stakeholders, speakers and partners to improve the following events.

The following events are planned for further stakeholder involvement in the period from 1 July 2024 to 31 December 2024 (M19-M24):

- **Inter-regional online workshop**:
  - 25. 10. 2024, topic: Enhancing the Local Impacts and Synergies of EU Framework Programme Project Results (T4.3, EURECAT)
  - 28. 11. 2024, topic: Policies and tools to valorise the human centricity within research and Innovation (T4.4, EURECAT)
- **Online webinars**
  - 17. 9. 2024, topic: Twin Transition (T3.4, TTP)
  - 8. 10. 2024, topic. Smart Specialisation Strategies and Transformative Innovation Policies (T3.4, TTP)
  - 5. 12. 2024, topic: EU Framework Programme Valorisation (T3.4, TTP)
- **Dissemination workshop**:
  - 19. 9. 2024, ERRIN + COOPERATE + ERA_FABRIC event: ERA Hubs: status and way forward, Brussels (INESCTEC + WUT + ART-ER)
  - 3 – 4. 10. 2024, Shaping EU Innovation Ecosystems: The role of ERA Hubs, Rome (CNR + ART-ER + WUT)
  - 9. 10. 2024, EURegionsWeek 2024: Enhancing Sustainable Development through Knowledge Ecosystems, Brussel (ART-ER + CNR+WUT)
- **Learning workshop**

- 18. 7. 2024, Warsaw, Learning workshop with Mazovia stakeholders, WUT

- **Local event**
  - 9. 7. 2024, Lower Austria, ECOPLUS

During the first monitoring period, 18 third party events were attended by project partners (90 % 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 part of the project included an EU-wide stakeholder survey in which 169 stakeholders participated. The results are summarised in Deliverable D2.3 Stakeholder survey results.

The results of the monitoring questionnaire were compared with the internal Monitoring activity dashboard. The monitoring activity dashboard proved to be well set up and will be supplemented with data evaluating the status of the individual Tasks during M19-M30. An updated Monitoring Questionnaire will be used in the final part of the project to collect data and the information not included in the Monitoring Activity Dashboard.

Space for improvement

The involvement of non-partner regions started with the interaction with the COOPERATE project and ERRIN Network resulting in participants from 4 other regions involved in the project activities. However, so far, only 5 % of the targeted at least 100 participants has been reached. Increasing the coverage and involvement of stakeholders from additional regions is one of the objectives for the upcoming period.

In the last semester, the content and use of the potential of the project website has been gradually improved. It no longer only informs about past events, but also allows for registration to upcoming ones. Website traffic has achieved 28% of the target. The amount of interaction on social media is good (accumulative followers 58%, accumulative posts 57% and interactions 88% of the targets). On the other hand, the e-newsletter obtained only 58 subscriptions, which is 12% of the 500 targeted by the project. Thus, one of the challenges remains to increase this indicator.

Despite the amount of data collected, no open access publications were published to date. The preparation of articles is in progress and 2 press releases were published (March 2023, May 2024). The next task to focus on is to produce short videos on the experiences of partners and stakeholders and the benefits of the new ERA Hubs supporting regional and interregional development.

Some tasks are just in the beginning phase or have not started yet. In the next period the following deserve in particular attention::

- Complete data collection on the policy toolbox

- Development of the self-assessment tools
- Testing the self-assessment tool
- Preparing at least 1 innovative tool
- Formulating of the Theory of Change
- Defining of ERA Hub quality label
- Classification of ERA HUB programs
- Developing of business plan and roadmap for the post-grant phase needs

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2024	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	16 WG meetings 1 more planned by the end of 2024: ● 1 Local event in Lower Austria	**24**	**67 %**
	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	0 3 planned by the end of 2024	**6**	**0 %**
		At least 9 short videos of testimonials reporting about their experiences and perceived benefits (1 per region).	Quantitative	0 work has already started	**9**	**0 %**

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2024	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	2 events 4 more planned by the end of 2024: ● 2 dissemination events in Brussels ● 1 dissemination event in Rome ● 1 Learning workshop in Warsaw	**8**	**25 %**
		At least 9 ecosystem profiles.	Quantitative	0 Not started yet	**9**	**0 %**
		At least 20 individual partner attendances to third party events (e.g. policy workshops or academic conferences).	Quantitative + Qualitative description	18 Some partners are more active.	**20**	**90 %**

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2024	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	216 Focus groups Local events (Barcelona, Split, Brno) Interregional online workshops	**500**	**43 %**
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	Interaction has been established with the sister pilot project COOPERATE, that involves 3 additional countries not represented in the ERA_FABRIC consortium: Netherlands, Denmark, Belgium, and 2 additional regions (1. Liguria, Italy and 2. Prague, Czech Republic)	**10**	**0 %**
		At least 100 individuals	Quantitative	5	**100**	**5 %**

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2024	Target value	Percentage of fulfilment
awareness and increase the visibility of the ERA_FABRIC project, its aims and achievements	represented in the consortium.	attendances to project events from actors and stakeholders not belonging to the consortium.		Stakeholders from: Breda (Nederland), Liguria (Italy), Lubelskie, Malopolska (Poland)		
	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	58	**500**	**12 %**

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2024	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	1 established (COOPERATE) 30 identified	**10**	**300 %**
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 %**
	4.2 Run a EU-wide stakeholder survey	1 survey exercise with at least 100 respondents.	Quantitative	1 EU survey completed 169 respondents	**100**	**169 %**

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2024	Target value	Percentage of fulfilment
	on the most recurrent characteristics of knowledge ecosystems and assess the degree of conformance of partner regions to the ideal type.					
	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	0 T2.5 not started yet	**100**	**0 %**
Obj. 5 - Develop and	5.1 Liaise with regional and local actors,	9 need and gap analyses (1 per partner location).	Quantitative	9 Completed D3.1, D3.2	**9**	**100 %**

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2024	Target value	Percentage of fulfilment
structure real-life instantiation of the concept of ERA Hubs as Multi-Stakeholder Platform.	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.					
	5.2 Form thematic working groups at local level, connected with parallel activities in the other partner sites, on three main topics of	3 thematic working groups at project level (with instances at each partner site) on the topics of sustainable manufacturing,	Quantitative	3 Established involvement of additional stakeholders in workshops and webinars. Balanced distribution between the 3 project topics.	**3**	**100 %**

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2024	Target value	Percentage of fulfilment
	interest for the consortium.	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 Syllabus for the delivery of webinars elaborated and approved T3.4- D3.4 submitted 31 Jan24	1	100 %
		1 collection of governance rules and arrangements.	Quantitative	0 T3.5 not started yet	**0**	**0 %**
Obj. 6 - Select a combination of existing (proven) and innovative (yet to be tested)	6.1 Structure the activity of the thematic working groups on four main priority areas for policy innovation	4 sections of the Policy toolbox.	Quantitative	2 sections of the Policy Toolbox activated (Twin transition, Cross-regional Collaboration) 2 more are planned by the end of 2024.	4	50 %
		At least 10 meaningful case studies per section.	Quantitative	0 collection just started	**0**	**0 %**

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2024	Target value	Percentage of fulfilment
instruments for the implementation of the concept of ERA Hubs' Policy Co-Creation Toolbox.		At least 5 tested instruments per section / collection of case studies.	Quantitative	0 Not started yet	**0**	**0 %**
	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 Hubs "middle ground" model.	At least 1 innovative instrument proposed per section.	Quantitative	0 Not started yet	**0**	**0 %**
		1 theory of change of the ERA Hubs model.	Quantitative	0 Not started yet	**0**	**0 %**
Obj. 7 - Monitor and evaluate the project	7.1 Define a methodology for impact and outcome	1 methodology and plan of monitoring and evaluation activities.	Qualitative	1 Completed D5.1	**1**	**100 %**

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2024	Target value	Percentage of fulfilment
activities and their results, including gender balance and standardisation potential.	evaluation, based on the theory of change.					
	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	0 Just started	**0**	**0 %**
	7.3 Assess feasibility of a quality label and standardisation approach.	1 feasibility study for a quality label of ERA Hubs.	Quantitative	0 Just started	**0**	**0 %**
Obj. 8 - Define a	8.1 Promote a wide reflection on key widening and sustainability	1 business plan and road map for the post-grant phase.	Quantitative	0 Just started	**0**	**0 %**

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2024	Target value	Percentage of fulfilment
replicable model for ERA Hubs as Knowledge Ecosystems, Multi Stakeholder Platform, and Policy Toolbox.	related aspects of the ERA Hubs model.					
	8.2 Build a taxonomy of ERA Hub schemes with related profiles and implications for policy.	1 classification of ERA Hub schemes.	Quantitative	0 Just started	**0**	**0 %**
	8.3 Draw lessons and policy recommendations, particularly for the next generation of ERA Hubs.	2 ERA_FABRIC policy briefs.	Quantitative	1 Policy Brief released	**1**	**50 %**
Obj. 9 - Communicate and disseminate project	9.1 Define and maintain a professional graphic design and	Broad international visibility of the consortium and the ERA_FABRIC image.	Quantitative	Design of the ERA_FABRIC logo and brand image of the project including communication guidelines and templates of deliverables, PowerPoint presentations, letterhead, roll-ups.		

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2024	Target value	Percentage of fulfilment
activities and results to accompany the development of the ERA_FABRIC community towards its impact targets.	communication strategy.			1st e-Brochure and 1st e-Leaflet completed, 2nd e-Brochure and 2nd e-Leaflet Almost completed, language versions are being prepared. 2 Newsletters published. Website https://erafabric.eu/ LinkedIn: https://www.linkedin.com/company/era-fabric/posts/?feedView=all X: https://x.com/i/flow/login?redirect_after_login=%2FERA_FABRIC Youtube: https://www.youtube.com/@ERAFABRIC		
	9.2 Communicate effectively within the consortium and with the external actors and stakeholders.	1 single message for the vision and mission shared internally and in the participant communities.	Quantitative	1st Communication and Dissemination Plan elaborated and shared.	**0**	**0 %**

Operational objectives	Sub-objectives	Targets	Qualitative / Quantitative	Status: 30/06/2024	Target value	Percentage of fulfilment
	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 4154 unique visitors 11031 page views Related KPI Average visit duration 3,06 min Social media - 432 Accumulative Followers - 565 Accumulative Posts - 884 Interactions	1 15000 100000 **2 min** 750 1000 1000	100 % 28 % visitors 11% 58 % 57 % 88 %
	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	0 In preparation.	0	0 %

2.3 Output indicators

KERs	WP	Indicators	Qualitative/ Quantitative	Status: 30/06/2024
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	**0** 1 publication on the project website
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**

KERs	WP	Indicators	Qualitative/ Quantitative	Status: 30/06/2024
		Number of related open access publications	Quantitative	0 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	Not started yet
		Number of stakeholder sessions (How many times it was used)	Quantitative	Not started yet
KER #4: An EU-wide mapping of regional/local actors, communities,	WP3, T3.1+3.2 (UNIST+ADRN)	Typologies of actors	Qualitative	**D3.1 Mapping regional stakeholders**

KERs	WP	Indicators	Qualitative/ Quantitative	Status: 30/06/2024
policies and instruments.		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**
		Types of instruments	Qualitative	**0**
		Number of related open access publications	Quantitative	**0** 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	0 3 webinars planned by the end of 2024

KERs	WP	Indicators	Qualitative/ Quantitative	Status: 30/06/2024
		Number of trainees by profile (policy maker/public servant)	Quantitative	0
		Number of webinars	Quantitative	0
KER #6: Governance rules and arrangements for the ERA_Hub as a stakeholder platform.	WP3, T3.5 (ECOP LUS)	Number of rules and arrangements	Quantitative	0 Not started yet
		Number of involved stakeholders	Quantitative	0 Not started yet
		Number of related open access publications	Quantitative	0 Not started yet
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	0 Work in progress
KER #8: A standard and quality label for the upcoming EU funded ERA_Hubs	WP5, T5.5 (WUT)	Number of quality features	Quantitative	0 Preliminary proposal to be further developed

KERs	WP	Indicators	Qualitative/ Quantitative	Status: 30/06/2024
KER #9: A classification of alternative ERA_Hub schemes.	WP6, T6.3 (INESCTEC)	Number of schemes	Quantitative	0 Work in progress
		Classification criteria	Qualitative	0 Not started yet
		Number of related open access publications	Quantitative	0 Not started yet
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	0 Not started yet
		Involved actors (from the Quadruple Helix)	Qualitative	0 Not started yet
		Number of related open access publications	Quantitative	0 Not started yet

KERs	WP	Indicators	Qualitative/ Quantitative	Status: 30/06/2024
KER #11: **Recommendations on innovation management, scalability, sustainability.**	WP6, T6.4 (ART- ER)	Number of policy recommendations per each category	Quantitative	1 Policy Brief
		Number of related open access publications	Quantitative	0 Not started yet
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	All partners involved (11 partners / 9 countries), engagement of COOPERATE partners as well (6 partners / 4 countries)

2.4 Outcome indicators

Although outcomes will be better finalised in the next period, the data collected in summer 2024 via the monitoring questionnaire allowed us to get the first indications about the capabilities and experiences available within the project consortium, which could serve as a starting point for the further development.

Hereinafter are shown the results for each relevant question proposed to partners:

Do we have a tool to measure ecosystem interoperability?

Quantitative measures are difficult to establish, although some possible parameters could be fixed such as: number of regional national and international collaborations, level of interaction with the different stakeholders inside and outside the single ecosystem, etc.
Some examples:

In Lower Austria Ecoplus evaluates the number of cooperation projects between partners - or the letters of intent for cooperation.

In Catalonia there is ACCIÓ (Agency for Business Competitiveness) that publishes data yearly regarding innovation in Catalonia, but there are no specific parameters measuring this.

Do we have a tool to measure ecosystem intra-operability?

Quantitative measures are difficult to establish, although some possible parameters could be fixed such as: level of interaction among the internal stakeholders involved; level of the relationships between public and private actors.

Examples:

Ecoplus evaluates in Lower Austria the number of partners in cooperations projects (Balanced Score Card System).

Do we have a tool to measure talent circulation?

Quantitative measures are difficult to establish, although some possible parameters could be fixed such as: number of researchers involved and hired; progressions of their career within the ecosystems and outside; number of connections established with other research centres not directly involved in the ecosystems.

Examples:

In Lower Austria Ecoplus evaluates the number of Postdocs at their Technopols (Technology hubs) and they are creating awards for young researchers.

In Catalonia ACCIÓ publishes data on this matter but it should be better investigated at which extent they measure all people circulating in Catalonia.

In North West Romania, ADRNV is running a Talent Booster Mechanism initiative with the support of OECD; it is possible to have a tool for measuring talent circulation by the end of March 2025.

Do we have a tool to measure talent absorption?

Quantitative measures are difficult to establish, although some possible parameters could be fixed such as: number of researchers involved and hired; progressions of their career within the ecosystems and outside; their job security.

Examples:

In Lower Austria Ecoplus has organised marketing campaigns for young researchers for many years (9 years) and they are tracking their careers.

In Catalonia ACCIÓ publishes data for talent dynamics in the region but it is not sure if there is an exact parameter.

In North West Romania, ADRNV is running a Talent Booster Mechanism initiative with the support of OECD; it is possible to have a tool for measuring talent absorption by the end of March 2025.

Do we have a tool to measure knowledge circulation?

Quantitative measures are difficult to establish, although some possible parameters could be fixed such as: number of published papers by the researchers working within the ecosystems and having as a topic the ecosystems' research activity; number of seminars, workshops, internal round tables organised within the ecosystems.

Examples:

In Lower Austria: Ecoplus evaluates start up and spin off companies at their technology hubs (Technopols) and at their regional A+B centres ACCENT (support for technology company founders).

In Catalonia: ACCIÓ publishes data for knowledge dynamics in the region this but is not sure if there is an exact parameter

Do we have a tool to measure research results uptake?

Quantitative measures are particularly difficult to be established to this extent, although some possible parameters could be fixed studying how the research development could have affected the entrepreneurial and social results in terms of innovation, growth and progression on environmental protection and sustainability.

Examples:

In Lower Austria: ECOPLUS counts the publication from their partners at the Lower Austrian technology hubs (Technopol)

3. EVALUATION

3.1 Evaluation approach

Evaluation was carried out in accordance with the methodology presented in deliverable D5.1 "Monitoring and Evaluation Methodology", exploring and discussing alternative outcome and impact generation mechanisms, with the participation of all project partners.

Activities started with a preliminary on-line workshop that took place on 21 July 2023 involving project partners, during which the evaluative approach was presented, discussed and eventually approved. The following step was a first evaluation workshop organised during the consortium project meeting that took place in Barcelona on 16 October 2023. During this workshop partners were asked to provide their input for the evaluation questions according to the Evaluation Questionnaire defined in D5.1 (see ANNEX 2) and using Slido for the first input collection. The results of Slido are summarised in ANNEX 3.

The initial exercise made in Barcelona was completed in the following months, leaving all partners sufficient time to elaborate good answers to all the questions. For this purpose, an online version of the Evaluation questionnaire was implemented on the project website. In this second evaluation step, the answers were anonymous, and the survey was closed only to the consortium partners. Data collection took place between 11 January and 28 February 2024. All partners were included, and eventually 11 questionnaires were filled in. A summary of evaluation questionnaire results is presented in ANNEX 4.

These results were presented and discussed during the second evaluation workshop organised in the framework of the consortium meeting held in Split on 12 April 2024, providing further input for the contribution story that was elaborated during summer 2024 and is presented in the next chapter 3.2.

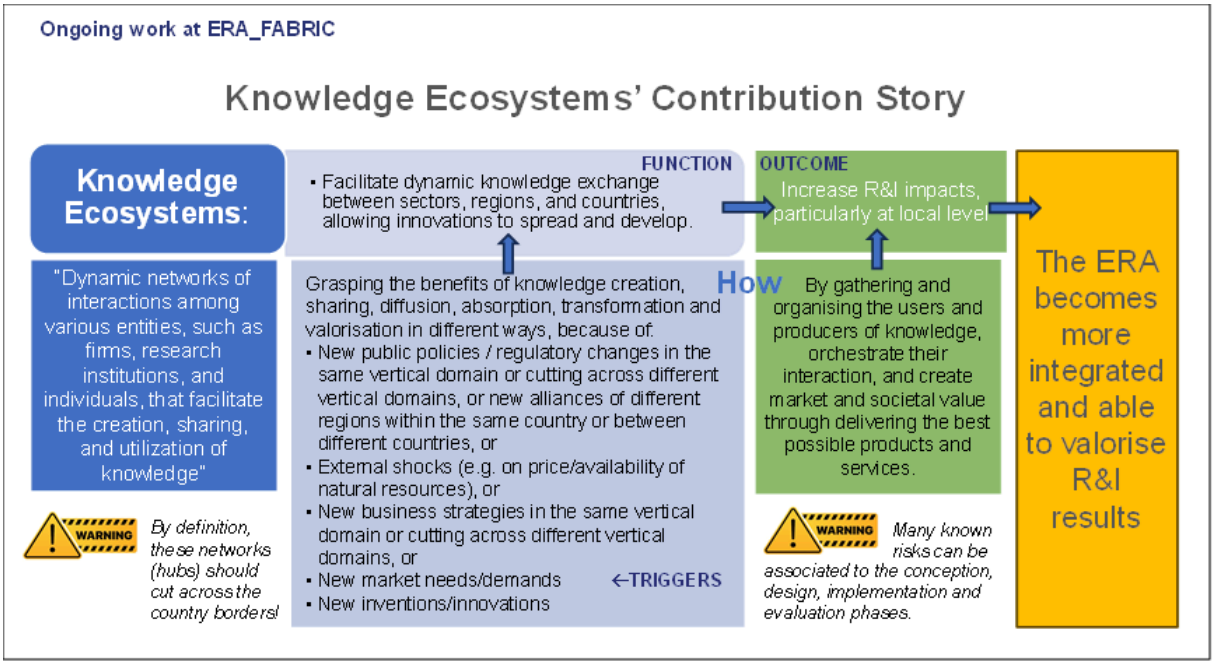
3.2 Evaluation results

The following three images (see Figures 1,2, 3) synthesise visually, for a matter of clarity (and also to stimulate further brainstorming among the partners – such as in the scheduled evaluation workshop at the Warsaw consortium meeting, 17-18 October 2024), what the prevalent opinion of ERA_FABRIC consortium members currently is about the ERA Hub's Contribution Story, which is the main goal of the WP5 evaluation methodology to build and refine. 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 observed outcomes or impacts. In ERA_FABRIC this narrative is used in a

forward-looking manner, as the intervention itself (the ERA Hub) does not exist yet, therefore we cannot deploy its effects.

Considering the three distinct dimensions of an ERA Hub according to our vision in this project, the Contribution Story is also split in three parts: 1) ERA Hubs as Knowledge Ecosystems, 2) ERA Hubs as Multi-Stakeholder Platforms, 3) ERA Hubs as Policy Co-Creation Toolbox. 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, 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.

Figure 1: Knowledge Ecosystems Contribution Story



This first image 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 utilisation of knowledge". A special

"Warning" sign emphasises 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:

    o 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.

    o 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.

    o External shocks (e.g., on price/availability of natural resources): This indicates that Knowledge Ecosystems can by a possible reaction to unexpected events and changes in the broader environment.

    o New business strategies in the same vertical domain or cutting across different vertical domains: This emphasises the ability of Knowledge Ecosystems to promote innovations and adapt business models, both within their existing areas and across different disciplines.

    o New market needs/demands: This signifies the responsiveness of Knowledge Ecosystems to changing market needs or preferences.

    o New inventions/innovations: This highlights the role of Knowledge Ecosystems in reacting to new inventions or innovations.

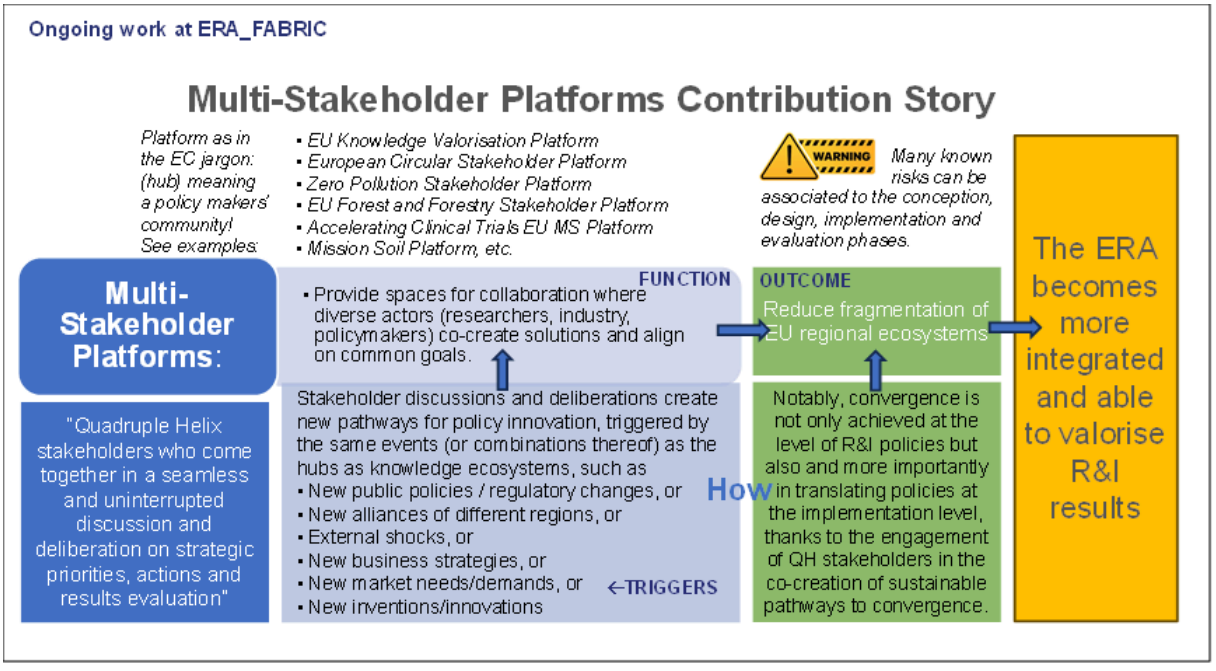
- **Outcome**: The top part describes the key intended result of the Knowledge Ecosystems dimension of an ERA Hub, which is to increase R&I impacts, particularly at the local level. This is achieved through the process explained in the "How" bottom part, which details how a Knowledge Ecosystem operates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

    o 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 emphasises 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 emphasised 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 utilise 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 2: Multi-stakeholder Platforms Contribution Story



The second image 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 emphasises 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:

    o 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.

    o 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.

    o External shocks (e.g., on price/availability of natural resources): This indicates that Multi-Stakeholder Platforms can by a possible reaction to unexpected events and changes in the broader environment.

    o New business strategies in the same vertical domain or cutting across different vertical domains: This emphasises the ability of Multi-Stakeholder Platforms to promote innovations and adapt business models, both within their existing areas and across different disciplines.

o New market needs/demands: This signifies the responsiveness of Multi-Stakeholder Platforms to changing market needs or preferences.

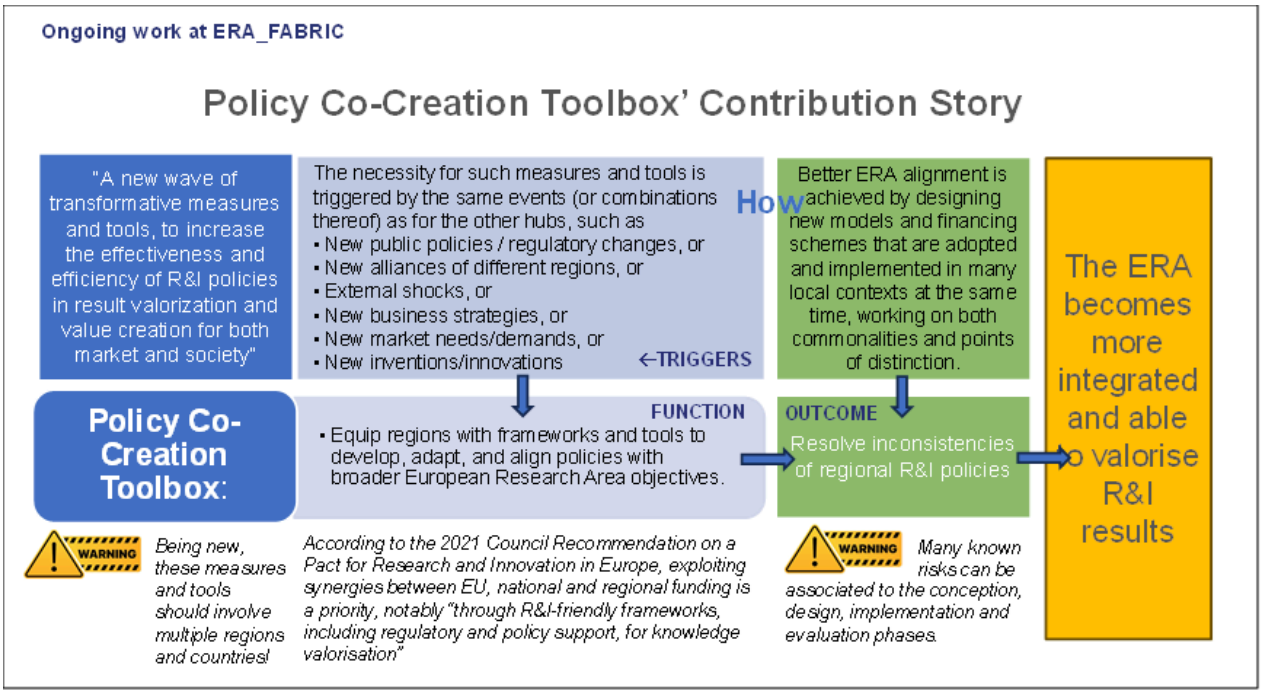
o New inventions/innovations: This highlights the role of Multi-Stakeholder Platforms in reacting to new inventions or innovations.

- **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:

  o 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 emphasised 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 utilise 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: Policy Co-creation Toolbox Contribution Story



The third image 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 Multi-Stakeholder Platforms as "A new wave of transformative measures and tools, to increase the effectiveness and efficiency of R&I policies in valorisation of results and value creation for both market and society". A special "Warning" sign emphasises 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:

o 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.

o 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.

o External shocks (e.g., on price/availability of natural resources): This indicates that new frameworks, measures and tools can by a possible reaction to unexpected events and changes in the broader environment.

o New business strategies in the same vertical domain or cutting across different vertical domains: This emphasises 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.

o New market needs/demands: This signifies the responsiveness of Policy Co-Creation Toolbox(es) to changing market needs or preferences.

o 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:

  o 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 emphasised 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 multicountry 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.

ANNEX 1 – MONITORING QUESTIONNAIRE

0. Stakeholder typology

    0.1 Name and Surname

    0.2 E-mail

    0.3 Partner

- ART-ER
- EURECAT
- ECOPLUS
- INESCTEC
- CNR
- TTP
- UNIST
- MUNI
- ADRNV
- WUT
- NTNU

1. Questions unique for ART-ER

    1.1 How many people participated in the WS Twin Transition (external stakeholders/consortium members)?

    1.2 What policy recommendations have you defined?

    1.3 How many partners and from which countries were involved in the creation of the community of interest (KER#12)?

    1.4 How many partners and from which countries were involved in the creation of the community of interest (KER#12)?

2. Questions unique for EURECAT - These questions concern particularly the testing of the new ERA_Hub concept.

    2.1 In which locations was the ERA_Hub concept tested?

    2.2 In which structures was the ERA_Hub concept tested?

    2.3 Which common compliance criteria were used for testing the ERA_Hub concept?

3. Questions unique for ECOPLUS

    3.1 How many people participated in the WS Policies to promote cross-regional collaboration (external stakeholders/ consortium members)?

    3.2 How many common meetings have been held with the sister project?

4. Questions unique for INESCTEC

    4.1 These questions relate to alternative ERA_Hub schemes and the subsequent testing of the new ERA_Hub concept.

4.2 What alternative ERA_Hub schemes have you classified?

4.3 Which are the classification criteria?

4.4 Please list all related open access publications:

4.5 In which locations was the ERA_Hub concept tested?

4.6 In which structures was the ERA_Hub concept tested?

4.7 Which common compliance criteria were used for testing the ERA_Hub concept?

5. Questions unique for UNIST

5.1 Have all partners mapped a community of 50 stakeholders?

- ART-ER yes / no
- EURECAT yes / no
- ECOPLUS yes / no
- INESCTEC yes / no
- CNR yes / no
- TTP yes / no
- UNIST yes / no
- MUNI yes / no
- ADRNV yes / no
- WUT yes / no
- NTNU yes / no

5.2 How many self- assessment and guidance tools have already been created?

5.3 How many stakeholders use the self-assessment and guidance tools developed?

5.4 Please list all D3.1 and D3.2 related open access publications. Please include a link to where they were published.

- They are all contained in this folder: (link to the internal document)
- There are no new publications.

6. Questions unique for CNR

6.1 How many experiences and examples of good practice like ERA-Hub have you identified within the EU? Please write them per domain in the form: sustainable manufacturing/Bio-based circular economy/clean renewable energy

6.2 Please list all T2.2 / D 2.2 related open access publications. Please include a link to where they were published.

- They are all contained in this folder: (link to the internal document)
- There are no new publications.

6.3 How many synergies have been established with other European initiatives?

6.4 How many other projects and initiatives have been clustered?

7. Questions unique for TTP

7.1 How many webinars have been held so far?

7.2 How many people participated in the T3.2 survey?

7.3 Please list all T2.3 / D2.3 related open access publications. Please include a link to where they were published.

7.4 T3.4 How many training modules have taken place so far?

7.5 How many webinars have taken place so far?

7.6 T3.4 How many and what types of participants have attended?

8. Questions unique for WUT

8.1 How many newsletter recipients are registered?

8.2 How many newsletters have been published?

8.3 How many unique visitors have seen the ERA_FABRIC website so far?

8.4 How many times has the website been visited?

8.5 What is the average time to visit the website?

8.6 How many followers do our social networks have?

8.7 How many posts do our social networks have?

8.8 How many interactions were there on our social networks?

8.9 When do you plan to publish the 2nd policy brief?

8.10 How many publications about ERA_FABRIC have been published until now?

8.11 What quality features have you identified?

9. Common questions

9.1 How many community meetings have you held (including focus groups, meetups, etc.)?

9.2 How many people participated in your focus group?

9.3 How many stakeholders have you mapped in your region so far?

9.4 How may stakeholders have participated in your local events? Please specify the event (e.g. regional WS 9.7.2024/9; stakeholders breakfast 29.5.2024/6).

9.5 Do we have a tool to measure ecosystem interoperability?

9.6 Do we have a tool to measure ecosystem intra-operability?

9.7 Do we have a tool to measure talent circulation?

9.8 Do we have a tool to measure talent absorption?

9.9 Do we have a tool to measure knowledge circulation?

9.10 Do we have a tool to measure research results uptake?

ANNEX 2 - EVALUATION QUESTIONNAIRE

The core tenet of the ERA_FABRIC project is that in order to promote and increase the valorisation of ERA (European Research Area) activity results for both market and society, through broadening and fastening their uptake, as well as improving the effectiveness and efficiency of R&D and innovation policies at regional and multiregional levels, a new 'interconnected knowledge space' has to be built, which doesn't exist yet, the main characteristics of which it is our challenge to identify, also with your help, in this questionnaire.

Such 'interconnected knowledge space' – named ERA Hub – is provisionally defined as addressing 3 distinct and intertwined dimensions, being reciprocally interoperable and jointly significant: its nature of Knowledge Ecosystem, Multi Stakeholder Platform, and Policy Co-creation Toolbox.

As a Knowledge Ecosystem, the ERA Hub should gather and organise the users and producers of ERA activity related knowledge, orchestrate their interaction, and create market and societal value by delivering the best possible products and services.

A specific and peculiar aspect of such an interaction is that it can easily involve actors that are not territorially co-located, thanks to the opportunities offered by modern technologies; this enables to consider the heterogeneity of cultural contexts and the gap between research foci and industrial needs at a broader level than the regional one – ideally, at the EU level.

Compared with the current situation, what additional contribution could a Knowledge Ecosystem of such a kind give to promote and increase the valorisation of ERA results and improve the effectiveness and efficiency of R&D and innovation policies?

Please elaborate on (some of) the following impact generation pathways:

- Knowledge creation
- Knowledge sharing
- Knowledge diffusion
- Knowledge absorption
- Knowledge transformation
- Knowledge valorisation
- Other (please suggest)

Which actions / events / activities can be transformative of the status quo ante? Where and how can we gather reliable evidence around them?

Please elaborate on (some of) the following triggers:

- New public policies / regulatory changes in the same vertical domain
- New public policies / regulatory changes cutting across different vertical domains

- Alliances of different regions within the same country
- Alliances of diverse regions from different countries
- External shocks (e.g. on price/availability of natural resources)
- New business strategies in the same vertical domain
- New business strategies cutting across different vertical domains
- New market needs/demands
- New inventions/innovations
- Other (please suggest)

"What are the main risks associated with the realisation of such contribution?"

Please elaborate on (some of) the following risks:

- Risks related to the conception phase
- Risks related to the design phase
- Risks related to the implementation phase
- Risks related to the evaluation phase
- Other (please suggest)

As a Multi Stakeholder Platform, the ERA Hub should host, facilitate and be supported by a variety of R&D and innovation stakeholders – ideally, from the Quadruple Helix (i.e. involving actors from the Academia, Business, Civil Society and Government communities) – who come together with their own respective interests and aims, in a seamless and uninterrupted discussion and deliberation on strategic priorities, actions and results evaluation.

As above, we do not expect this convergence and integration of efforts to be limited to territorially co-located actors, but open to multiregional and multinational, if not pan-European, collaborations.

Compared with the current situation, what additional contribution could a Multi Stakeholder Platform of such a kind give to promote and increase the valorisation of ERA results and improve the effectiveness and efficiency of R&D and innovation policies?

Please elaborate on (some of) the following value creation pathways:

- More variety
- More interaction
- More sharing
- More complementarity

- Lower costs
- Lower risks
- Other (please suggest)

Which actions / events / activities can be transformative of the status quo ante? Where and how can we gather reliable evidence around them?

Please elaborate on (some of) the following triggers:

- New public policies / regulatory changes in the same vertical domain
- New public policies / regulatory changes cutting across different vertical domains
- Alliances of different regions within the same country
- Alliances of diverse regions from different countries
- External shocks (e.g. on price/availability of natural resources)
- New business strategies in the same vertical domain
- New business strategies cutting across different vertical domains
- New market needs/demands
- New inventions/innovations
- Other (please suggest)

“What are the main risks associated with the realisation of such contribution?”

Please elaborate on (some of) the following risks:

- Risks related to the conception phase
- Risks related to the design phase
- Risks related to the implementation phase
- Risks related to the evaluation phase
- Other (please suggest)

As a Policy Co-Creation Toolbox, the ERA Hub should design, test and implement a new wave (perhaps already existing, at least in part) of transformative measures and tools, to increase the effectiveness and efficiency of R&D and innovation policies in the direction of result valorisation and value creation for both market and society.

As above, these measures and tools should not necessarily operate in a small territorial area but help configure that “middle ground” or “intermediate space” being distinct from both the EU and the MS national/regional levels.

Compared with the current situation, what additional contribution could a Policy Co-Creation Toolbox of such a kind give to promote and increase the valorisation of ERA results and improve the effectiveness and efficiency of R&D and innovation policies?

Please elaborate on (some of) the following policy innovation pathways:

- New combinations of target domains/sectors
- New compositions of target territories
- New profiles of target beneficiaries
- New approaches to policy implementation
- New ways to measure policy performance
- Other (please suggest)

Which actions / events / activities can be transformative of the status quo ante? Where and how can we gather reliable evidence around them?

Please elaborate on (some of) the following triggers:

- New public policies / regulatory changes in the same vertical domain
- New public policies / regulatory changes cutting across different vertical domains
- Alliances of different regions within the same country
- Alliances of diverse regions from different countries
- External shocks (e.g. on price/availability of natural resources)
- New business strategies in the same vertical domain
- New business strategies cutting across different vertical domains
- New market needs/demands
- New inventions/innovations
- Other (please suggest)

“What are the main risks associated with the realisation of such contribution?”

Please elaborate on (some of) the following risks:

- Risks related to the conception phase
- Risks related to the design phase
- Risks related to the implementation phase
- Risks related to the evaluation phase
- Other (please suggest)

ANNEX 3 – RESULTS OF THE BARCELONA EVALUATION WORKSHOP

Slido Data Collection

Compared with the current situation, what additional contribution could a Knowledge Ecosystem of such a kind give to promote and increase the valorisation of ERA results and improve the effectiveness and efficiency of R&D and innovation policies?

- Encouraging the transition of the European policies from a competition-based approach to a more systemic approach oriented to face new economic challenges that require a governance of wide and complex processes.
- ERA Hubs are necessary to create better conditions for the Research in Europe to work together to find solutions for all of us, exploiting the force of many excellent researchers together.
- Knowledge is the best way to improve the Ecosystem, politics and leadership
- General development
- Use the existing knowledge to make greater impact (avoiding double financing, and repeating smaller-scale projects/activities that are making less impact)
- To answer this, I need specific needs of the ecosystem - what is needed in the area?
- Overcome UE place-based policy
- Knowledge sharing and Knowledge transformation could be the contribution opportunities with the most potential as the international knowledge sharing can build trust and then influence more knowledge creation, diffusion and absorption.
- Knowledge transformation as actors involved are joining the knowledge ecosystem because of the opportunity to create impact, create business or be recognized as important knowledge actor.

Which actions / events / activities can be transformative of the status quo ante? Where and how can we gather reliable evidence around them?

- Improve public policy based on demand side as well as citizens engagement
- Creating more formal and established arenas/networks at the inter-regional level to ensure communication, dissemination, and implementation. All these actions shouldn't be hard to measure when given a deadline.
- Researchers Night or other international Event showing the knowledge of Research in Europe will be necessary …
  New tools for researchers to get in contact with each other's to certain Technology topics.
- Facilitating the exchange of knowledge among stakeholders (private and public); educational programs; stimulating systemic transitions (within a private and a collective dimensions) ; stimulating new business strategies

- Alliances of any kind formed as a result of the ERA Hub initiative is easy to measure and document. New market needs/demands these alliances reveal is also easy to measure, especially if they result in new inventions, business strategies etc. By measuring these we can compare transformation from status quo.

  Public policies/regularity changes of any kind will also be influential for the status quo, but very hard to gather evidence about.

Please elaborate on (some of) the following triggers:

- Alliances of different regions within the same country
  - ERICs
  - Hydrogen valleys
- Alliances of diverse regions from different countries
  - DBEs - digital business ecosystems
  - Innovation valleys
  - Regions of Knowledge
  - DIHs 2x
  - European universities, ERICs
  - EDICs
  - Excellence Hubs
  - ERRIN
  - ERICs

Compared with the current situation, what additional contribution could a Multi Stakeholder Platform of such a kind give to promote and increase the valorisation of ERA results and improve the effectiveness and efficiency of R&D and innovation policies?

- More interaction: even though there are other platform initiatives for cross-border interaction, the platform from the ERA Hub initiative can be more tailored to ensure ecosystem leadership and at the same time tailored to ensure the stakeholder needs and demands are met. Both in terms of influencing EU level policy creation, but also the stakeholder needs in terms of interaction among themselves for more impact and better project/collaboration close to their core business/interest.
- Wider stakeholders' groups involvement.

Compared with the current situation, what additional contribution could a Policy Co-Creation Toolbox of such a kind give to promote and increase the valorisation of ERA results and improve the effectiveness and efficiency of R&D and innovation policies?

- By developing a Theory of Change for the policy makers we can ensure both new approaches to policy implementation and new ways to measure policy performance, especially if our theory of change can create an impact among the policy makers. Hopefully a positive and unified impact on both EU, government and local/regional level ensuring a more seamless (cross-level) policy development process and thus improving effectiveness and efficiency of R&D and innovation policies.
- 10% system and 90% people is the ratio when it comes to successfully implementing a system. how do you build a structure that helps to build the trust that is necessary to establish good relationships that contribute to cooperation across ecosystems and contribute to international growth?
- There are different needs of policy makers, the toolbox should enable them to select the most relevant ones.

ANNEX 4 - EVALUATION QUESTIONNAIRE – RESULTS

	1. ERA_Hubs as Knowledge Ecosystems
1.1	Compared with the current situation, what additional contribution could a Knowledge Ecosystem of such a kind give to promote and increase the valorisation of ERA results and improve the effectiveness and efficiency of R&D and innovation policies?

The ERA Hub can act as a collaborative platform that brings together researchers, innovators, and industry experts from different regions and disciplines. This diverse pool of talent and expertise can stimulate cross-disciplinary research, fostering the creation of new knowledge and innovative solutions. It can facilitate seamless knowledge sharing by providing a centralized platform for researchers, policymakers, and industry professionals to share their findings, best practices, and challenges. This could enable faster dissemination of valuable insights and promotes a culture of openness and collaboration. Furthermore, through the ERA Hub, knowledge can transcend geographical boundaries. Best practices and successful innovation models can be diffused across regions, ensuring that the benefits of successful projects are not confined to specific areas but are accessible and applicable on a broader European scale.

A Knowledge Ecosystem can provide additional contributions to promote and increase the valorization of ERA (European Research Area) results and improve the effectiveness and efficiency of R&D and innovation policies through various impact generation pathways.

A Knowledge ecosystem can improve the transmission of knowledge and technological innovation among all the private and public actors involved contributing in fostering in long-term perspective the economic development reducing the structural gap among companies and territories. It can also be an indirect instrument of the public industrial and innovation policies and a key element of the EU research and development policy.

The availability of information from the scientific community is increasingly growing and accessible in an open manner. The diffusion of open data on technical-scientific activities and projects is ever greater and the possibilities offered by Artificial Intelligence and machine learning techniques allow us to read this wealth of information more and more effectively. This wealth of data, appropriately shared and processed, can become a tool to orient R&D&I policies in an increasingly effective manner.

- Knowledge creation +2
    - The Knowledge Ecosystem can foster an environment conducive to continuous knowledge creation through collaborative research, experimentation, and innovation. By bringing together researchers, entrepreneurs, policymakers, and other stakeholders, the ecosystem can support interdisciplinary collaboration, encourage exploration of new ideas, and facilitate the generation of novel solutions

to complex challenges.
    - Multi-cultural collaboration may discover new knowledge as they have a broader background and understanding of the specific topic being, but in addition create knowledge about multi-cultural collaboration. It brings opportunities for joint project work.
    - greater involvement of widening countries and neighbouring ones in the knowledge creation processes.
    - = opportunities for joint project work
    - as it engages different regions and their better cooperation, identification of missing initiatives and incentives and defining the most suitable models of cooperation, along with using the results from the aforementioned interactions to create recommendations for policy makers.
- Knowledge sharing
    - = access to common repositories.
    - hopefully actors wanting to share their knowledge also contributes with dispersing other actors' knowledge, thus increasing the amount of knowledge sharing in total
    - The Knowledge Ecosystem can serve as a platform for sharing knowledge and best practices among stakeholders within the ERA. Through networks, forums, and online platforms, researchers and innovators can disseminate their findings, share insights, and exchange experiences with others in the ecosystem.
    - In my region, we still struggle with communicating and sharing all the amazing things that are being researched, discovered and marketed here (maybe because of competition between actors, or because a lot is going on).
    - push of leading scientists to work in widening countries.
    - as it engages different regions and their better cooperation, identification of missing initiatives and incentives and defining the most suitable models of cooperation, along with using the results from the aforementioned interactions to create recommendations for policy makers.
- Knowledge diffusion
    - = facilitation of acquisition by actors from within and/or outside the ecosystem.
    - as long as knowledge sharing is done actively and purposefully, random diffusion will also occur
    - Does this include exporting knowledge? Some companies in my region have an easier time than others exporting.
    - The Knowledge Ecosystem can facilitate the diffusion of knowledge from research institutions to industry, government, and society at large. By bridging the gap between academia and the market, the ecosystem can help translate research findings into practical applications, products, and services that address real-world needs.
    - joint investments in pilot lines
- Knowledge absorption
    - = facilitation of usage by actors from within and/or outside the ecosystem.
    - The Knowledge Ecosystem can support the absorption of external knowledge and expertise into the ERA by fostering international collaboration, mobility, and exchange. By engaging with partners and stakeholders from around the world,

researchers and innovators can access new ideas, perspectives, and technologies, enriching their own knowledge base and enhancing their capacity to innovate.
    - mechanism to support knowledge implementation in the widening countries
    - as it engages different regions and their better cooperation, identification of missing initiatives and incentives and defining the most suitable models of cooperation, along with using the results from the aforementioned interactions to create recommendations for policy makers.

- Knowledge transformation
    - = effective learning by doing.
    - The Knowledge Ecosystem can facilitate the transformation of knowledge into tangible outcomes and impacts through entrepreneurship, technology transfer, and commercialization activities. By providing support for startups, spin-offs, and SMEs, the ecosystem can help translate research discoveries into market-ready products and services, creating economic value and generating new jobs and opportunities.
    - ERA Hubs could develop as European high-tech centres of knowledge transfer and become the basis for a global technological lead

- Knowledge valorisation
    - = increased socio-economic and environmental impacts of jointly delivered products / services / projects. Example: to fight against climate change in cities - an EU mission for 2030 - the diffusion of knowledge about urban technology solutions that realise an effective reduction of CO_2 emissions should propagate at a comparable pace as the knowledge about Generative AI worldwide.
    - For me, this is connected to “knowledge sharing”; it is hard to valorise what we can’t properly communicate.
    - The Knowledge Ecosystem can contribute to the valorisation of ERA results by promoting the uptake and utilization of research outputs and innovations by industry, government, and society. Through targeted dissemination, outreach, and engagement efforts, the ecosystem can raise awareness about the potential benefits of research findings and encourage their adoption and implementation in practice.

1.2 Which actions / events / activities can be transformative of the status quo ante? Where and how can we gather reliable evidence around them?

Respondent 1.

The transformative potential of the ERA Hub lies in its ability to adapt and respond to various triggers that can reshape the European research and innovation landscape. These triggers, ranging from new public policies and regulatory changes within specific domains to unexpected external shocks, create opportunities for evidence gathering and strategic evolution. By actively engaging with policymakers, participating in cross-sectoral collaborations, and monitoring market trends, the ERA Hub can not only respond to changes effectively but also gather reliable evidence of its impact. Collaborating with diverse

regions within countries and forming alliances across borders provides avenues for evidence collection on the success of regional and international collaborations. Additionally, tracking new business strategies, market demands, and innovations enables the ERA Hub to stay ahead of the curve and align its activities with evolving needs. The integration of these triggers into the knowledge ecosystem ensures that the ERA Hub remains a dynamic and responsive platform, contributing to the advancement of European research and innovation goals.

Respondent 2

New public policies and/or voluntary alliances (institutional agreements) are certainly required to synergise and prioritise the individual initiatives of different country and/or regional governments, avoiding duplicates esp. when it comes to critical research and innovation agendas (such as in the hydrogen domain). Incentives should be provided (or new obligations formulated) to promote the convergence and/or collaborative work of diverse players from the supply side. An example can be the ongoing process towards the definition of Digital Product Passports (esp.) in case of multinational value chains, which may or may not be accompanied by appropriate financial support or regulatory constraints. Another example can be the promotion of federated / joint public procurement of innovation as an instrument for pooling "smart" market demand. It is very well known that knowledge circulation in this domain is quite limited among current and (esp.) prospective procurers, even when co-located in the same country, not to mention different ones. External shocks can be relevant, for example, in the case of global warming and the upsurge of generative AI - two game changers, none showing adequate matching between problem and solution definition.

Respondent 3.

If by "status quo ante" you mean "the state of affairs that existed previously", no new action / event / activity can "change the past", but if you mean "status quo" as the " the current situation";

Respondent 8

All above, but alliances of regions with complementary capacities seems to be the most relevant here. Then the strategic process should be launched resulting in new ventures.

- New public policies / regulatory changes in the same vertical domain +1
    - Changes in regulations or the introduction of new policies within a specific industry or sector can have a transformative effect. To gather evidence, researchers can conduct policy analysis, examine legislative documents, and track the implementation of regulations over time. Surveys, interviews, and case studies with stakeholders affected by the policy changes can provide qualitative insights into

their impact.
    - New public policies at a national and European level should foster the consistency of the different contributions given by the diverse ecosystems fostering the interconnections among them under a unified definition of the priorities
- New public policies / regulatory changes cutting across different vertical domains +1
    - New policies / regulations of any sort should create a transformative impact, and could be proven with comparison of the before and after situation (both long term and short term comparison is necessary to understand the complete impact)
    - Cross-sectoral policies or regulatory changes can lead to synergies or conflicts between different industries. Researchers can analyse policy documents, conduct stakeholder consultations, and assess the implications of regulatory changes on various sectors. Comparative studies across different regions or countries can provide insights into the effectiveness of cross-domain policies.
- Alliances of different regions within the same country
    - Collaborative alliances between regions within the same country can stimulate economic development and innovation. Evidence can be gathered through case studies of successful regional alliances, analysis of regional development strategies, and interviews with regional policymakers and stakeholders. Quantitative indicators such as economic growth, investment flows, and innovation outputs can also provide evidence of the impact of regional alliances.
    - as they produce new knowledge and development of the existing, new jobs and technological solutions based on the joint expertise.
- Alliances of diverse regions from different countries
    - There are many ongoing projects with other EU regions. This has been very important for my region, to secure collaboration, research, and business relations.
    - International partnerships and alliances between regions from different countries can facilitate knowledge exchange, technology transfer, and market access. Researchers can gather evidence through cross-border collaboration case studies, analysis of joint initiatives and projects, and surveys of participants in international partnerships. Indicators such as international collaboration networks, joint funding mechanisms, and joint publications can indicate the strength and impact of cross-country alliances.
    - as they produce new knowledge and development of the existing, new jobs and technological solutions based on the joint expertise.
- External shocks (e.g. on price/availability of natural resources)
    - We've already seen this with the current turmoil in Ukraine and Palestine
    - External shocks such as fluctuations in resource prices or availability can disrupt industries and spur innovation. Researchers can gather evidence through economic modelling, analysis of industry data, and case studies of firms' responses to external shocks. Longitudinal studies tracking changes in resource prices and their effects on innovation and industry dynamics can provide reliable evidence of the transformative impact of external shocks.
    - since they can obstruct the aforementioned processes.
    - like disasters caused by the climate change can be used to speed up a process of transformation towards more and more open access to research data and to

increased cooperation and use of advanced technologies to face common challenges

- New business strategies in the same vertical domain
  - or cutting across different vertical domains: Changes in business strategies, such as shifts towards sustainability or digitalization, can transform industries and markets. Evidence can be gathered through analysis of corporate strategies, interviews with industry leaders, and surveys of businesses adopting new approaches. Comparative studies across different sectors or regions can provide insights into the effectiveness of different business strategies.
- New business strategies cutting across different vertical domains
  - There are many opportunities between silos. I don't know about reliable evidence, but my region has interesting cases to share (i.e. health and micro-electronics).
- New market needs/demands +1
  - As one of the biggest buyers, public administrations should become better at public procurement of technology and innovation.
  - Emerging market needs or demands can create opportunities for innovation and entrepreneurship. Researchers can gather evidence through market research, consumer surveys, and analysis of trends in consumer behaviour. Case studies of successful startups or new product launches can provide insights into how businesses respond to changing market needs.
  - Technology development should be geared more towards the needs of the economy and the population, which is imperative as technology is developing at a rapid pace.
  - they have the potential to push towards the joint effort in the sphere of R&D
- New inventions/innovations
  - Especially if disruptive and fast scaling
  - Breakthrough inventions or innovations can disrupt existing industries and create new opportunities. Evidence can be gathered through patent analysis, technology scanning, and case studies of innovative firms or research projects. Indicators such as patent citations, technology adoption rates, and market share can provide evidence of the transformative impact of new inventions.
  - are the direct result of the enhanced cooperation between different regions and exchange of knowledge and expertise

1.3 What are the main risks associated with the realisation of such contribution?

Please elaborate on (some of) the following risks:

Respondent 1

Embarking on the realization of the ERA Hub, a knowledge ecosystem designed to enhance collaboration, knowledge transfer, and policy alignment in the European Research Area, involves navigating various risks at different phases of its development. In the conception phase, risks may stem from a lack of stakeholder alignment and an inadequate needs assessment, potentially

resulting in a concept that does not effectively address the diverse challenges faced by different regions and sectors. Moving into the design phase, technological challenges and insufficient consideration of interdisciplinary integration may hinder the effectiveness and security of the ERA Hub platform. During implementation, risks such as insufficient funding and resistance to change from existing regional ecosystems may impede the successful establishment of the knowledge ecosystem. In the evaluation phase, misaligned key performance indicators and a lack of continuous evaluation could lead to inaccurate assessments of the ERA Hub's impact. Moreover, additional risks, such as legal and ethical challenges related to data privacy and cultural and linguistic hurdles, must be considered. External factors like global events and uncertainties, including economic downturns or public health crises, can also impact the ERA Hub. Mitigating these risks requires thorough assessments, open communication with stakeholders, regular evaluations, and a commitment to adaptability and resilience in the face of changing circumstances. Establishing contingency plans and learning from both successes and failures will contribute to the overall success of the ERA Hub in its mission to contribute to the advancement of European research and innovation goals.

Respondent 2

The main risks are threefold:

a) the latent conflict between private interests and common knowledge (the free rider paradox, the tragedy of the commons, the Schumpeterian stimulus to innovation, etc.);

b) the knowledge and information overload for anyone belonging to the ecosystem and the impossibility of managing it (although the diffusion of AI may be helpful in that sense); and

c) the unavoidable tension between open access and closed exploitation of relevant knowledge (exemplified by the dilemma between opening of data and protecting the information contained therein).

Respondent 9

There are several risks in the policies applicable to the management of the knowledge ecosystems:

- the first is related to the delicate balance between free private interests and public collective objectives.
- the second concerns the lack of coordination among the different actors involved.
- the third concerns the possible conflictual tension between the territorial value of the ecosystems and their international dimension

Respondent 11

Assure adequate research data management

- Risks related to the conception phase +2
    - lack of clear objectives and vision; insufficient stakeholder engagement; inadequate needs assessment; unrealistic expectations

- Risks related to the design phase +1
    - not designed according to actual needs
    - Hard to design inter-country alliances; it needs to be one with a great level of understanding of both knowledge ecosystems.
    - poorly defined strategies and plans; lack of coordination and integration; insufficient consideration of implementation constraints; overemphasis on short-term goals.
    -
- Risks related to the implementation phase +1
    - may cause undesired impact if not designed properly or if assessment of potential impact (bad and good) is lacking
    - Especially with regards to public procurement, the implementation must run smoothly since nobody wants to be wasting taxpayers' money. Plus, the whole bidding system is a disgrace.
    - resource constraints; resistance to change; delays and setbacks; ineffective project management.
    - I think the implementation is a king but should be followed by a good planning process. So relevant time should be devoted to that.
    -
- Risks related to the evaluation phase
    - Evaluation may be based or done too early to include long-term impacts
    - inadequate evaluation design; bias or subjectivity; limited data availability; failure to learn from evaluation findings.

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2. ERA_Hubs as Multi Stakeholder Platform

2.1 Compared with the current situation, what additional contribution could a Multi Stakeholder Platform of such a kind give to promote and increase the valorisation of ERA results and improve the effectiveness and efficiency of R&D and innovation policies?

Respondent 1

The integration of a Multi Stakeholder Platform with the ERA Hub holds the promise of delivering a host of additional contributions compared to the current situation, enriching the vaporization of ERA results and enhancing the effectiveness and efficiency of R&D and innovation policies. This dynamic collaboration can inject more variety into the ecosystem, bringing together diverse perspectives, expertise, and regional characteristics. The platform's strength lies in fostering more interaction, providing a collaborative space for researchers, policymakers, and industry representatives to engage in meaningful discussions, share insights, and cultivate relationships. Furthermore, the platform encourages more sharing, creating an environment where stakeholders exchange resources, best practices, and knowledge assets, accelerating innovation processes and disseminating successful

practices across the European Research Area. By facilitating complementarity among stakeholders, the platform promotes the development of holistic solutions that leverage diverse strengths, contributing to more impactful outcomes. In terms of cost, collaborative efforts and resource sharing can lead to efficiency gains, potentially reducing the overall costs associated with research and innovation activities. Additionally, the platform can play a role in lowering risks by fostering collective risk assessment and management, informed decision-making, and shared experiences, ultimately contributing to more resilient and successful research and innovation endeavours. Beyond these pathways, the integrated Multi Stakeholder Platform has the potential to accelerate time-to-market, increase policy coherence, and enhance the global visibility of European research and innovation efforts, attracting international collaborations and investments. In essence, this integrated approach creates a dynamic and efficient ecosystem that amplifies collaboration, fosters innovation, and propels the European Research Area towards its strategic goals.

Respondent 2

There's plenty of evidence on the benefits to the outputs of innovation processes of e.g. multidisciplinarity of approaches, domain cross-fertilisation, variety and complementarity of participants in research and experimentation activities etc. It is however to be borne in mind that those benefits are mostly grasped at project level, not that much at organisational or institutional levels, which means that it would be a mistake to look for stakeholder alliances having a similar shape to EU supported consortia (too much overhead, too little flexibility etc.). It is also relevant to mention that the needed or most preferred configurations of such innovation teams may differ, even strongly, from case to case.

Respondent 11

The modern tools that allow you to share information can also make the transfer of knowledge and its valorisation more effective towards the business system, but not only. Normally each University/Research Institution has its own Technology Transfer Office, but sharing information on available technologies can make the transfer more effective, encouraging integrations and complementarities.

Respondent 5

- A Multi-Stakeholder Platform (MSP) dedicated to promoting the valorisation of ERA (European Research Area) results and enhancing the effectiveness and efficiency of R&D and innovation policies can offer several additional contributions compared to the current situation. Let's explore these contributions through value creation pathways: (RESPONSES ARE NOT ONLY OF THIS RESPONDENT)

    - More variety
        - An MSP can bring together diverse stakeholders from academia, industry,

government, and civil society, fostering a wide variety of perspectives, expertise, and resources.

- More interaction +2
    - By providing a platform for regular interaction and collaboration among stakeholders, an MSP facilitates knowledge exchange, networking, and partnership building.
      Increased interaction fosters cross-pollination of ideas, stimulates creativity, and enhances synergies between different actors, resulting in more dynamic and effective R&D and innovation initiatives.
    - more interaction between partners, less bureaucracy with a view to the big picture and a certain willingness to take risks when implementing new technologies in order to prevent us from acting too slowly globally.
    - More interaction and more complementarity is the most important here. Too big variety might lead to unmanageable ones.
    - among the actors involved would be surely a crucial point
    - or in other word, more input coming from industry towards academia and from industry to policy makers
- More sharing +1
    - If it is more available, user friendly than current stakeholder platforms
    - If we share best practices and results (whether good or bad), we can save another region/country money and time.
    - An MSP promotes the sharing of best practices, lessons learned, and success stories in valorising ERA results and implementing innovation policies.
- More complementarity
    - It could be easier to spot areas that are lacking innovation or resources = new market opportunities.
    - Increased complementarity enhances the effectiveness and efficiency of R&D and innovation policies by leveraging the comparative advantages of different actors and maximizing the impact of collective efforts.
    - More interaction and more complementarity is the most important here. Too big variety might lead to unmanageable ones.
- Lower costs
    - Collaboration through an MSP can lead to cost-sharing and resource pooling among stakeholders, reducing the financial burden on individual actors. By optimizing resource allocation and avoiding duplication of efforts, an MSP helps lower overall costs associated with valorising ERA results and implementing innovation policies, making initiatives more financially sustainable and scalable.
- Lower risks
    - If we share best practices and results (whether good or bad), we can save another region/country money and time.
    - Through collaboration and knowledge exchange, an MSP enables stakeholders to collectively identify and mitigate risks associated with valorising ERA results and implementing innovation policies.

2.2 Which actions / events / activities can be transformative of the status quo ante? Where and how can we gather reliable evidence around them?

Respondent 1

- To navigate the transformative landscape within the framework of the ERA Hub and its multi-stakeholder platform, a comprehensive approach is essential. Various triggers, such as new public policies, regulatory changes, regional alliances, external shocks, innovative business strategies, market shifts, and technological breakthroughs, can significantly reshape the status quo. The process of gathering reliable evidence around these triggers involves vigilance and strategic engagement.
- Monitoring official government announcements, collaborating with regulatory bodies, and participating in industry forums are crucial for capturing the nuances of new public policies and regulatory changes within specific domains. Cross-sectoral policies necessitate active involvement in policy discussions and an analysis of documents from diverse government bodies.
- Regional alliances, whether within a country or spanning international borders, demand attendance at development forums, analysis of collaboration agreements, and the assessment of economic and innovation indicators in participating regions. Resilience to external shocks, such as fluctuations in resource availability or pricing, requires continuous monitoring of market trends, collaboration with industry experts, and scenario analyses.
- In the realm of business strategies, staying informed through industry associations, conferences, and business reports is imperative. Tracking the success stories of companies implementing new strategies provides valuable insights into industry shifts and impacts on the ecosystem.
- Understanding emerging market needs and demands involves robust market research, engagement with consumer forums, and data analysis. Similarly, staying abreast of technological innovations requires collaboration with research institutions, participation in innovation showcases, and ongoing monitoring of patent filings.
- A holistic approach to evidence gathering involves engaging stakeholders through surveys, interviews, and case studies, complemented by quantitative methods such as key performance indicators. Creating a feedback loop with the ERA Hub community ensures ongoing insights into the ecosystem's adaptive capabilities and the impact of transformative triggers.
- In essence, this integrated approach positions the ERA Hub to not only respond effectively to transformative events but also to proactively shape and contribute to the evolving landscape of European research and innovation. It establishes a dynamic, resilient, and responsive platform, capable of harnessing the potential of diverse triggers for the benefit of the European Research Area.

Respondent 2

See my previous answer to the same question (1.2).

New public policies and/or voluntary alliances (institutional agreements) are certainly required to synergise and prioritise the individual initiatives of different country and/or regional governments, avoiding duplicates esp. when it comes to critical research and innovation agendas (such as in the

hydrogen domain). Incentives should be provided (or new obligations formulated) to promote the convergence and/or collaborative work of diverse players from the supply side. An example can be the ongoing process towards the definition of Digital Product Passports (esp.) in case of multinational value chains, which may or may not be accompanied by appropriate financial support or regulatory constraints. Another example can be the promotion of federated / joint public procurement of innovation as an instrument for pooling "smart" market demand. It is very well known that knowledge circulation in this domain is quite limited among current and (esp.) prospective procurers, even when co-located in the same country, not to mention different ones. External shocks can be relevant, for example, in the case of global warming and the upsurge of generative AI - two game changers, none showing adequate matching between problem and solution definition.

An additional example to make reference to (given the focus of the multi-stakeholder platform activities on facilitating knowledge valorisation) is the ongoing work at EU level on the identification of processes, good practice examples, domains of application, issued and benefits, as well as on the definition of guidelines and manuals for interested stakeholders.

Respondent 3

A new stakeholder platform may enable… and can be measured by comparing the before and after status for each of the stakeholders and regions that join the platform

Respondent 9

A further coordination among the different territorial levels (regions, nations, EU) is required to make ERA Hubs Platforms effective

Respondent 11

Network of Knowledge Institutions for the valorisation of research, via dedicated own platforms can be implemented initially at national level and then extended to other countries or harmonized via specific alliances starting a process of convergence towards a European system, whose impact would certainly be amplified

- New public policies / regulatory changes in the same vertical domain
    - Surveys, interviews, and case studies with stakeholders affected by the policy changes can provide qualitative insights into their impact.
- New public policies / regulatory changes cutting across different vertical domains
    - Comparative studies across different sectors or regions can provide insights into the effectiveness and implications of cross-domain policies.

  - as it is possible to examine the effectiveness of public policies against the number of new alliances created before and after.
- Alliances of different regions within the same country
  - National projects and their status.
  - Analysis of regional development strategies and initiatives can provide evidence of the effectiveness of regional alliances in achieving common goals.
  - as it is possible to examine the effectiveness of public policies against the number of new alliances created before and after.
- Alliances of diverse regions from different countries +2
  - Evaluation of international collaboration networks, joint funding mechanisms, and joint publications can provide quantitative evidence of the impact of cross-country alliances on innovation and economic development.
  - technology development using example CERN
  - Again alliances should play the most important role, internal and international. But should be open for new entrants.
  - as it is possible to examine the effectiveness of public policies against the number of new alliances created before and after.
- External shocks (e.g. on price/availability of natural resources)
  - Case studies of firms' responses to external shocks can offer insights into adaptation strategies, innovation dynamics, and resilience-building measures.
- New business strategies in the same vertical domain
- New business strategies cutting across different vertical domains +1
  - National and regional projects, and their status.
  - Surveys and interviews with industry leaders and entrepreneurs can help assess the drivers, motivations, and outcomes of new business strategies.
- New market needs/demands +1
  - Market research, consumer surveys, and analysis of trends in consumer behaviour can provide evidence of emerging market needs and demands.
- New inventions/innovations +1
  - case studies of innovative firms or research projects can offer insights into the drivers, processes, and outcomes of successful innovations.

2.3 What are the main risks associated with the realisation of such contribution?
Please elaborate on (some of) the following risks:

Respondent 1

Embarking on the realization of the ERA Hub and its multi-stakeholder platform brings with it a spectrum of risks across different phases that necessitate careful consideration. In the conception phase, risks include potential stakeholder misalignment and an inadequate needs assessment, which could lead to a platform that doesn't effectively address the varied needs of stakeholders. Moving into the design phase, technological challenges and a lack of interdisciplinary integration may compromise the functionality and transformative potential of the platform. In the implementation

phase, risks such as insufficient funding and resistance to change from existing regional ecosystems could hinder successful execution.

The evaluation phase introduces risks like misaligned key performance indicators (KPIs) and a lack of continuous evaluation, impacting the platform's overall effectiveness. Beyond these phases, additional risks encompass legal and ethical challenges related to data privacy, cultural and linguistic hurdles that may impede collaboration, and external global events introducing uncertainties. These could range from economic downturns to public health crises.

Mitigating these risks demands a proactive and adaptive approach. Strategies involve conducting comprehensive risk assessments at each phase, maintaining open communication channels with stakeholders, and implementing contingency plans. Continuous refinement based on real-time data and stakeholder feedback, coupled with an emphasis on learning from both successes and failures, contributes to the overall resilience and success of the ERA Hub and its multi-stakeholder platform. In essence, a vigilant and adaptable approach positions the platform to navigate risks and emerge as a dynamic force in advancing European research and innovation goals.

Respondent 2

See my previous answer to the same question (1.3). An additional risk is the "reification" of such a platform - its transformation into an entity with its own goals, resources, etc. - that must absolutely be avoided. Another risk can be the "multiplication" of such platforms with variable compositions and probably conflicting or not perfectly matching or complementary agendas.

Previous answer:

The main risks are threefold:
a) the latent conflict between private interests and common knowledge (the free rider paradox, the tragedy of the commons, the Schumpeterian stimulus to innovation, etc.);
b) the knowledge and information overload for anyone belonging to the ecosystem and the impossibility of managing it (although the diffusion of AI may be helpful in that sense); and
c) the unavoidable tension between open access and closed exploitation of relevant knowledge (exemplified by the dilemma between opening of data and protecting the information contained therein).

Respondent 9

The main risks are the lack of coordination’s among the different territorial levels deemed

Respondent 11

Different Regulatory frameworks in different countries can represent a barrier for actual implementation

- Risks related to the conception phase +3
  - lack of clear objectives and vision; inadequate stakeholder engagement; insufficient needs assessment; unrealistic expectations
- Risks related to the design phase +2
  - not designed according to actual needs
  - poorly defined strategies and plans; lack of coordination and integration; inadequate consideration of implementation constraints; focusing excessively on short-term outcomes during the design phase may lead to neglect of longer-term sustainability and impact.
- Risks related to the implementation phase +3
  - may cause undesired impact if not designed properly or if assessment of potential impact (bad and good) is lacking. if not developed with proper competitive advantages to other existing platforms, a new platform will not gain traction as desired.
  - inadequate funding, expertise, or capacity can hinder the successful implementation of initiatives and stakeholder resistance to new approaches, processes, or technologies can impede implementation efforts.
- Risks related to the evaluation phase +1
  - Evaluation may be biased or done too early to include long-term impacts
  - insufficient data or poor data quality can undermine the validity and reliability of evaluation findings.

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3. ERA_Hubs as Policy Co-creation Toolboxes

3.1. Compared with the current situation, what additional contribution could a Policy Co-Creation Toolbox of such a kind give to promote and increase the valorisation of ERA results and improve the effectiveness and efficiency of R&D and innovation policies?

Respondent 1

The introduction of a Policy Co-Creation Toolbox within the framework of the ERA Hub and its multi-stakeholder platform has the potential to significantly augment the valorisation of ERA results and enhance the efficiency and effectiveness of R&D and innovation policies. This comprehensive toolbox serves as a catalyst for policy innovation, encouraging dynamic collaboration and stakeholder engagement.

One pathway involves the exploration of new combinations of target domains and sectors, fostering interdisciplinary approaches that address complex challenges through collaborative efforts. Simultaneously, the toolbox promotes the reimagining of target territories, encouraging cross-regional collaborations that integrate diverse strengths and resources, contributing to more balanced development across the European Research Area.

The co-creation process facilitated by the toolbox extends to identifying new profiles of target beneficiaries, ensuring that policies are tailored to meet the specific needs of diverse stakeholders. This inclusivity promotes equitable distribution of benefits across sectors and regions.

Furthermore, the toolbox encourages experimentation with new approaches to policy implementation. By providing a collaborative space for stakeholders to share best practices and co-create implementation strategies, it supports the development of adaptive and agile policy frameworks that respond effectively to evolving challenges.

In terms of measurement, the toolbox advocates for new ways to assess policy performance. It urges the adoption of innovative metrics that capture broader societal and economic impacts, providing a nuanced understanding of policy effectiveness beyond traditional indicators.

Additionally, the toolbox opens avenues for policy pilots and testbeds, allowing for the exploration of innovative ideas on a smaller scale before broader implementation. Behavioural insights and nudging can be incorporated to influence decision-making processes and promote desirable behaviours among stakeholders, optimizing the impact of policies.

Moreover, open policy platforms within the toolbox foster transparency, inclusivity, and collective ownership of policy outcomes, while incorporating methodologies for policy impact forecasting enables better-informed decision-making and resource allocation.

Respondent 2

Instrumental to avoiding or mitigating some of the risks described in my previous answers could be the implementation of co-creative tools and methods such that the performance of some existing measures can be jointly assessed, and the direction of their modification (if not their actual contents) can be jointly identified together with e.g. the prospective users, beneficiaries or participants.

Respondent 9

A policy oriented to foster the social and economic impact of the ERA Hubs should involve new domains as well as new territories in order to reduce the gap of development among regions and, at the same time, to widen the spillover effects within diverse fields.

- New combinations of target domains/sectors
    - Innovation (incl. R&D) is likely to originate at the intersection of domains and sectors that have not been explored before (i.e. using technology that was developed for the chemical industry in the health sector).
    - the Toolbox can facilitate the identification and exploration of new combinations of target domains or sectors for policy intervention.
    - related and unrelated varieties
- New compositions of target territories
    - the Toolbox can support the design and implementation of policies that take into account the unique characteristics and needs of different regions, territories, and communities. By enabling stakeholders to co-create policies tailored to specific geographical contexts, the Toolbox can promote regional development, enhance local innovation ecosystems, and foster inclusive growth across diverse territories.
    - By bringing together stakeholders from different sectors, disciplines, and industries, the Toolbox can foster interdisciplinary collaboration and innovation, leading to the development of novel policy approaches that address complex challenges and capitalize on emerging opportunities.
    - involvement of associated countries, peripheral territories
- New profiles of target beneficiaries +1
    - The Toolbox can help policymakers identify and engage new profiles of target beneficiaries, including underrepresented groups, marginalized communities, and non-traditional stakeholders. By ensuring the inclusion and participation of a diverse range of stakeholders in policy co-creation processes, the Toolbox can promote social equity, address systemic inequalities, and enhance the relevance and effectiveness of policies for all members of society.
- New approaches to policy implementation +2
    - If best practice is proven and knowledge of this shared in a proper way, it may result in improving policy implementation in municipalities / regions etc. that have a desire to improve by implementing others' ways instead of clinging to their own current practice
    - Policies before being implemented should be run by the actual stakeholders (policymakers don't always know exactly what the challenges are in the R&D environment).
    - the Toolbox can facilitate the adoption of innovative approaches to policy implementation, such as co-design, co-production, and open innovation. By empowering stakeholders to actively participate in the design, implementation, and evaluation of policies, the Toolbox can increase ownership, legitimacy, and accountability, leading to more responsive and adaptive policy interventions.
    - policy instruments that are more goal-oriented with less bureaucracy, streamlining the funding jungle

- focus on outcome and impact than bureaucratic procedures
- the objective is to identify models and financing schemes for research and innovation projects with an interregional dimension. In practice, while each maintaining the peculiarities of its own instruments (typically ERDF regional operational programmes), we would like to create models of joint tenders, which instead of financing individual projects with a regional dimension, can support interregional partnerships on issues of common interest to the Regions involved.

- New ways to measure policy performance +1
  - If policy implementation happens in the same way (with the same/similar policy) in multiple regions, the before and after comparison can prove valorisation and increased effectiveness as a result of the new policy
  - the Toolbox can support the development and implementation of new methods and metrics to assess the performance and impact of policies. By incorporating indicators of innovation, knowledge creation, and societal well-being into policy evaluation frameworks, the Toolbox can provide more comprehensive and nuanced assessments of policy effectiveness, enabling policymakers to make informed decisions and adjustments over time.
  - less legal aspects but focus on performance results including efford made even if there is an implementation failure.

3.2. Which actions / events / activities can be transformative of the status quo ante? Where and how can we gather reliable evidence around them?

Respondent 1

Navigating transformative changes within the ERA Hub and its multi-stakeholder platform demands a multifaceted and proactive approach. Various triggers, such as new public policies, cross-sectoral regulatory changes, regional alliances, external shocks, innovative business strategies, market shifts, and technological breakthroughs, hold the potential to reshape the status quo ante. Reliable evidence gathering around these triggers involves continuous monitoring, engagement with stakeholders, and a combination of quantitative and qualitative methods.

For instance, staying abreast of changes in regulations and policies requires vigilance in monitoring government announcements, policy documents, and industry forums. Engaging with regulatory bodies and conducting surveys and interviews provides insights into stakeholder perceptions and impacts.

Collaborating in cross-sectoral forums and policy discussions is crucial for understanding the implications of policies cutting across different vertical domains. Analysing official documents and reports, as well as collaborating with experts from diverse sectors, enhances comprehension of the opportunities and challenges presented.

Monitoring regional collaborations within a country involves attending development forums, analysing collaboration agreements, and assessing economic and innovation indicators in participating regions. Similarly, participating in EU-level projects and engaging with international networks facilitates the understanding of transnational collaborations and their impact on knowledge exchange and innovation.

Adapting to external shocks, such as shifts in resource availability, requires continuous monitoring of market trends, collaboration with industry experts, and scenario analyses. This helps in evaluating the resilience of the ERA Hub ecosystem and gathering stakeholder feedback on adaptation strategies.

Understanding the impact of new business strategies within specific industries necessitates engagement with industry associations, attendance at sector-specific conferences, and analysis of business reports. Tracking success stories and gathering stakeholder insights provides a comprehensive understanding of the implications of these changes.

Moreover, monitoring shifts in consumer preferences and emerging market demands requires rigorous market research, engagement with consumer forums, and analysis of sales and demand data. Assessing how the ERA Hub aligns with these evolving needs ensures adaptability and relevance.

Acknowledging breakthroughs in technology involves collaborating with research institutions, participating in innovation showcases, and tracking patent filings. Understanding how the ERA Hub integrates and supports these innovations, along with gathering stakeholder feedback, facilitates informed decision-making.

Respondent 2

Again, see my previous answers to the same question (1.2 and 2.2). Another example of external shock aligned with the topic at hand could be the idea of Missions, brought forward at the level of implementation, thanks to the aforementioned methods and tools for user co-creation. Presumably, we shouldn't limit ourselves in the process of identification of specific missions - named without using the capital letter - and should accept that many missions can arise, perhaps of smaller ambition, but working in parallel and presumably contributing to the creation of a more complex yet ordered picture. Going even further, the identification of the missions themselves might be the output of a co-creation process involving relevant stakeholders from many domains AND countries, as our own ERA_FABRIC project is humbly trying to showcase.

Respondent 11

New partnerships among regions of different countries, for example via Regional Innovation Valleys should favour this process

- New public policies / regulatory changes in the same vertical domain +1
    - Hopefully the toolbox will create new policies implemented in multiple regions, which can be measured / proven by feedback from the users choosing to implement policies shared in the toolbox.
    - analysis of policy documents, legislative proceedings, and government announcements.
    - should strengthen the innovation process channelling the transmission of knowledge into collective objectives
- New public policies / regulatory changes cutting across different vertical domains +1
    - Hopefully the toolbox will create new policies implemented in multiple regions, which can be measured / proven by feedback from the users choosing to implement policies shared in the toolbox.
    - Policies that have within their scope to be cross-sectoral have a higher chance of inducing/promoting innovation.
    - comparative analysis of policy documents and regulatory frameworks across different sectors.
    - should strengthen the innovation process channelling the transmission of knowledge into collective objectives
- Alliances of different regions within the same country +2
    - analysis of regional development strategies, partnership agreements, and collaborative initiatives. Surveys and interviews with regional stakeholders to assess the perceived benefits and challenges of regional alliances.
- Alliances of diverse regions from different countries +2
    - surveys, interviews, and workshops with stakeholders involved in international partnerships to evaluate their experiences and outcomes.
- External shocks (e.g. on price/availability of natural resources)
    - case studies of businesses or regions affected by external shocks to understand adaptation strategies and resilience-building measures.
- New business strategies in the same vertical domain
    - comparative studies of firms implementing different business strategies to assess their performance and impact on innovation and competitiveness.
- New business strategies cutting across different vertical domains +2
    - case studies of businesses or regions affected by external shocks to understand adaptation strategies and resilience-building measures.
- New market needs/demands
    - market research, consumer surveys, and trend analysis to identify evolving market needs and demands.

- New inventions/innovations
    - analysis of indicators such as technology adoption rates, market penetration, and economic impact to assess the transformative effects of new inventions and innovations.

3.3. What are the main risks associated with the realisation of such contribution?

Respondent 1

Embarking on the realization of the ERA Hub and its multi-stakeholder platform presents a complex landscape fraught with inherent risks across various developmental phases. In the conception phase, the peril of stakeholder misalignment poses a threat to the platform's effectiveness, alongside the risk of an inadequate needs assessment leading to an incomplete understanding of the diverse challenges within the European Research Area.

Transitioning to the design phase introduces the potential for technological challenges, emphasizing the importance of robust cybersecurity measures. Insufficient interdisciplinary integration may limit the transformative potential of the platform, necessitating a careful and inclusive design approach.

Moving forward to the implementation phase, challenges such as insufficient funding and resistance to change from existing regional ecosystems could impede the successful execution of the platform's objectives. Addressing these challenges requires strategic financial planning and effective change management strategies.

In the evaluation phase, the misalignment of key performance indicators (KPIs) could skew assessments, highlighting the need for accurate and contextually relevant metrics. The absence of continuous evaluation mechanisms may compromise the platform's adaptability and responsiveness to emerging risks.

Beyond these phases, additional risks encompass legal and ethical challenges related to data privacy and intellectual property. Cultural and linguistic hurdles may hinder effective communication and collaboration within the multi-stakeholder community, necessitating a nuanced and inclusive approach. External factors, including global events and uncertainties, underscore the importance of building resilience and flexibility into the platform's structure.

Furthermore, the risk of limited adoption and engagement poses a threat to the platform's impact and sustainability. This emphasizes the need for ongoing communication, user involvement, and a continuous feedback loop to enhance stakeholder engagement.

Mitigating these risks requires a holistic and adaptive strategy, incorporating thorough risk assessments, open communication channels with stakeholders, and the implementation of contingency plans. Learning from both successes and failures, coupled with continuous refinement based on real-time data and stakeholder feedback, contributes to the overall resilience and success of the ERA Hub and its multi-stakeholder platform.

Respondent 2

Again, see my previous answers to the same question (1.3 and 2.3). An obvious set of risks that weren't mentioned previously pertains to:

a) the limited availability of resources, contrasted with the extended and probably deep scope of the competing interests at stake,

b) the need to prioritise interventions assuming a different perspective (and therefore system of values/aims) than that of each individual policy or instrument co-designer (the dimension of the "middle ground" instead of the individual countries/regions/districts); and

c) the necessity to proceed incrementally, therefore on a limited initial scale for the planned interventions, while the required dimension of actions is probably systemic.

Previous answer:

The main risks are threefold:
a) the latent conflict between private interests and common knowledge (the free rider paradox, the tragedy of the commons, the Schumpeterian stimulus to innovation, etc.);
b) the knowledge and information overload for anyone belonging to the ecosystem and the impossibility of managing it (although the diffusion of AI may be helpful in that sense); and
c) the unavoidable tension between open access and closed exploitation of relevant knowledge (exemplified by the dilemma between opening of data and protecting the information contained therein).

Respondent 9

The main risk here again is the lack of consistency between the private-led activities of innovation and the public priorities

Respondent 11

It is important to identify common very specific operational objectives to assure actual effective synergies among different initiatives/ projects

- Risks related to the conception phase +2
  - Not only the policymakers should be involved in this phase.
  - lack of clarity in objectives and inadequate stakeholder involvement
- Risks related to the design phase +1
  - Not only the policymakers should be involved in this phase.
  - inadequate planning and strategy formulation may result in inefficient resource allocation and failure to achieve objectives and lack of coordination and integration
- Risks related to the implementation phase +2
  - may cause undesired impact if (new) policy is not designed properly or if assessment of potential impact (bad and good) is lacking. if not, policy shared in the toolbox is not best practice or adapted the need of the region/market it is implemented in, it may not create the impact as desired.
  - If only the policymakers have been involved in the conception and design phase, then implementation will be hard as the affected actors might not understand the benefits or goal of the new policy.
  - resource constraints and resistance to change.
- Risks related to the evaluation phase +1
  - Evaluation may be based or done too early to include long-term impacts of policies implemented via use of the toolbox
  - inadequate evaluation design and limited data availability