PATTERN.
Empowering Open and Responsible Research and Innovation

D4.1

State-of-the-art Analysis: mapping of the policy landscape for learning opportunities for researchers on open and responsible research and innovation

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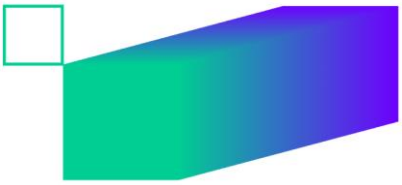

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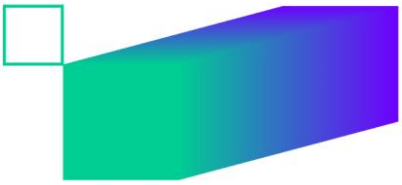
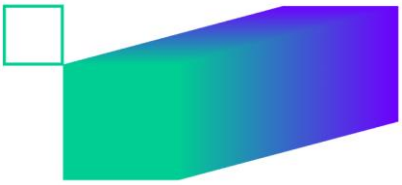


Contributors

NAME	ORGANISATION
Alessio Livio Spera	APRE
Claudia Iasillo	APRE
Cristina Lagido	AU
Gitte Kragh	AU
Kristian H. Nielsen	AU
Loek Brinkman	DANS
Teodora Konach	EARMA
Athanasia Salamoura	HEAL-Link
Maria Frantzi	HEAL-Link
Marios Balatzaras	HEAL-Link
Giannis Tsakonas	HEAL-Link
Gultekin Gurdal	IZTECH
Andrea Giraldo Sevilla	LPI
Shanmugasundaram Venkataraman	OpenAIRE
Elli Papadopoulou	OpenAIRE
Bojan Macan	RBI
Sanja Jurković	RBI
Stefan T. Mol	Sci-Link
Adam Keszler	Sci-Link
Emese Vita	Sci-Link
Szidónia Rusu	Sci-Link
Agnese Baini	SISSA
Chiara Saviane	SISSA
Niamh Brennen	TCD
Ádám Száldobágyi	UDebrecen
Pauli Assinen	UHelsinki
Antonia Correia	UMinho
Giacomo Consolini	UniSR
Ilse Marschalek	ZSI

Peer Reviews

NAME	ORGANISATION
Cristina Lagido	AU
Antonia Correia	UMinho
Alessio Livio Spera	APRE
Stefania Laneve	APRE



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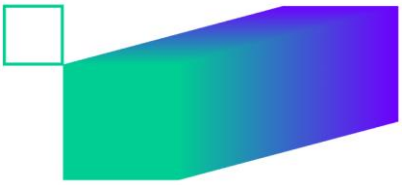

Table of Abbreviations and Acronyms

Abbreviation	Meaning
APRE	Agenzia per la Promozione della Ricerca Europea, Italy
AU	Aarhus University, Denmark
DANS	Data Archiving and Networked Services, Netherlands
EARMA	European Association of Research Managers and Administrators
ESF	Fondation Européenne De La Science, France
EC	European Commission
ERA	European Research Area
EU	European Union
FAIR	Findable Accessible Interoperable Reusable
HEAL-Link	Panepistimio Patron, Greece
HEI	Higher Education Institution
IZTECH	Izmir Institute of Technology, Türkiye
LPI	Learning Planet Institute, France
OA	Open Access
OS	Open Science
Open RRI	Open and Responsible Research and Innovation
RBI	Ruđer Bošković Institute, Croatia
RFO	Research Funding Organisation
R&I	Research & Innovation
RPO	Research Performing Organisation
SciLink	Stichting SciLink, Netherlands
SISSA	Scuola Internazionale Superiore di Studi Avanzati di Trieste, Italy
SWOT	Strengths, weaknesses, opportunities, threats
TCD	Trinity College Dublin, Ireland
UDebrecen	University of Debrecen, Hungary
UHelsinki	University of Helsinki, Finland
UMinho	Universidade do Minho, Portugal
UniSR	Università Vita-Salute San Raffaele, Italy
WP	Work Package
ZSI	Zentrum Für Soziale Innovation Gmbh, Austria

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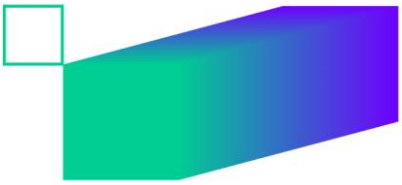

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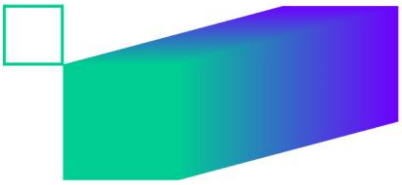

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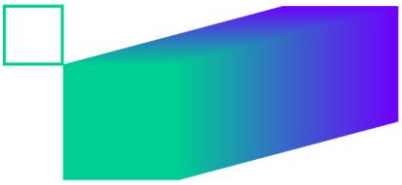


1 Executive Summary

The current document, titled "State-of-the-art Analysis: mapping of the policy landscape for learning opportunities for researchers on open and responsible research and innovation", was developed within the framework of the PATTERN project which is funded by the Horizon Europe Research and Innovation Programme under Grant Agreement No 101094416.

The purpose of this Deliverable is to describe and analyse the existing policies, policy frameworks, initiatives and guidelines, to assess gaps and possible needs in addressing training for Open Science (OS) and Responsible Research and Innovation (RRI) practices, for researchers at all career stages. The analysis covers three levels of granularity: European Union (EU), national and institutional policies.

To this end, the document comprises six main parts:

1. Theoretical background part presenting an overview of the approaches the policy mapping builds on;

2. Mapping process section describing the methods and process of generating data for the analysis as well as its limitations;

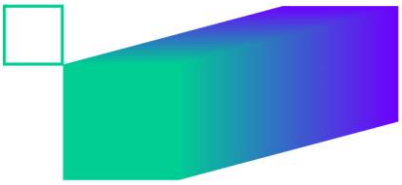
3. EU level analysis outlining the state-of-the-art of existing EU policies as regards the training on OS and RRI for researchers;

4. National level analysis showing the current state of relevant national policy and legal frameworks in the countries hosting PATTERN pilot institutions;

5. Institutional level analysis describing existing initiatives towards the promotion and application of OS and RRI principles and practices at PATTERN pilot institutions;

6. Results of the mapping section presenting the linkages between different policy levels on the training in OS and RRI practices for researchers as well as gaps and opportunities identified.

Establishing a baseline against which future policy options are compared as a point of departure is a crucial component of the policy making cycle. Moreover, this policy analysis helps to identify a potential for further practical support of training on OS and RRI principles and practices aimed at researchers, at different levels as well as to finetune the content for such training.



2 Introduction

The PATTERN (Open and Responsible Activities and Trainings Towards the Enhancement of Researchers Networks) project aims to promote the practice of OS and RRI by developing and piloting training activities for researchers at all stages of their careers.

These trainings will strengthen researchers' transferable (or more transversal, generic) skills to support their career development, improve research capacities and outcomes, and stimulate innovation[1]. These trainings will be co-designed with and implemented by pilot research performing organisations (RPOs) to improve the excellence of the science conducted, tackle pressing societal challenges and strengthen collaboration that benefits both science and society.

The trainings will be developed around eight main transferable skills in the context of OS and RRI:

- Open Access;
- FAIR data management;
- Citizen Science;
- Research Integrity;
- Gender, Non-discrimination and Inclusion in research;
- Dissemination and Exploitation of results;
- Science Communication (towards media and policy makers; policy makers);
- Management and Leadership.

PATTERN trainings will be openly available on a digital platform to bring together Research and Innovation (R&I) communities.

Moreover, PATTERN will build upon knowledge and analysis carried out during the project lifetime to develop and promote a set of policy recommendations addressed to authorities and institutions responsible for training aimed at researchers.

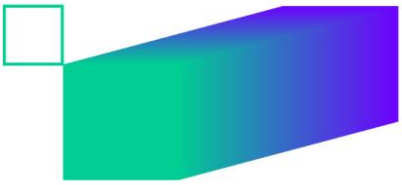
The project consortium is composed of 14 partners and 5 affiliated entities from 12 EU Member States and one associated country.

2.1 This document

The education and careers of researchers are important policy issues and training for transferable skills is a challenge that attracts increasing policy interest. These skills are receiving now more attention at the Higher Education Institutions (HEIs) level as well.

The training opportunities expand as careers in research diversify in response to today's rapidly changing scientific landscape, and consequently researchers' skills need to evolve. This document examines EU, national and institutional policies and initiatives relevant to training on transferable skills and provides a basis for further co-

[1] OECD (2012). Transferable Skills Training for Researchers: Supporting Career Development and Research. Organisation for Economic Co-operation and Development. https://www.oecd.org/science/transferableskills.htm



creation of policy recommendations to support the development and delivery of relevant training for researchers at all stages of their careers.

Throughout the project lifespan, a structured co-design process is applied, traditionally defined as a "transparent process of value creation in ongoing, productive collaboration with, and supported by all relevant parties, with end-users playing a central role and covers all stages of a development process[2]". A participatory approach, where both stakeholders and end-users (i.e., students, researchers at all career stages) are involved throughout the entire co-creation process of the training cycles and policy recommendations, comprises a variety of techniques.

For co-creating policy recommendations, an Open Studio technique will be applied. During an Open Studio, participants go through periods of divergence (exploring in an open way, brainstorming) and of convergence (bringing ideas together into concepts of potential solutions).

The Open Studios bring together participants with diverse backgrounds and roles to develop unique solutions and make effective recommendations. The Open Studio approach that will be used in PATTERN takes two days in the online format and one day face-to-face. These events will operate in three cycles:

i) first one, assessing needs and gaps in the current researchers' training and policy landscape and designing solutions;

ii) second one, translating the pilot institutions' results into operational insights feeding the next PATTERN pilot training cycle;

iii) third one, building on the project results to co-design solutions and policy recommendations.

The current document and its findings will be a starting point for the Open Studio first cycle to be held in 2024.

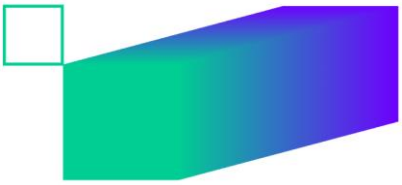
As noted above, the document is structured around three levels of policy mapping and analysis (EU, national, institutional). It also outlines linkages between these policy levels to see if, how and to what extent relevant EU practices are embedded at national and institutional levels. Finally, it provides an overview of the gaps and opportunities identified to feed further discussions on the development, piloting and evaluation of PATTERN training modules as well as on co-design of policy recommendations.

2.2 Relation to other PATTERN Work Packages

The overall PATTERN project incorporates six Work Packages (WPs), running from January 2023 to July 2027.

WP 4, for which this document is a deliverable, aims to elaborate policy recommendations for researchers' training on Open RRI practices. It draws on the work of WP1, during which knowledge on existing trainings on Open RRI for

[2] Pieters, Maarten; Jansen, Stefanie (2017). The 7 Principles of Complete Co-creation. Amsterdam: BIS Publishers. p. 15. ISBN 978- 90-6369-473-9



researchers at all stages of their careers was consolidated, through a complete and up-to-date picture built upon the identification, mapping, monitoring and analysis of established and emerging training offerings.

It is closely interlinked with WP2 which produces training materials together with a training and discovery platform enabling learners to easily access and make use of those materials in the long-term, and WP3, which supports development and delivery of tailored training plans and programs within each of the PATTERN pilot institutions.

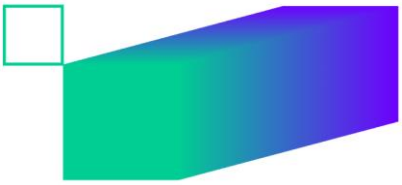
Throughout the project lifetime, work on WP4 builds on, but also in turn, feeds in different activities and results of these two WPs with a common goal to raise awareness amongst researchers, institutions and authorities on the importance of high-quality trainings on OS and RRI and to maximise the project's impacts towards researchers' trainings, through policy recommendations addressing authorities and governance of relevant institutions.

PATTERN project consists of four running phases and one holding phase. The running phases include:

- **Consolidation of knowledge (January – December 2023)**. PATTERN implementation started with systematic mapping and a comprehensive analysis of the state-of-the-art of learning opportunities for researchers on OS and RRI. The mapping was integrated by mutual learning activities and co-creation workshops identifying existing and emerging practices inside as well as outside the consortium. The analysis includes a quality assessment to identify current gaps and potential of existing training materials as a basis to develop PATTERN trainings. The policy mapping and analysis presented in this document are also part of this phase.

- **Developing PATTERN trainings, activities and a platform (June 2023 – July 2027)**. Following consolidation of existing knowledge and identification of gaps in phase 1, including those identified within the policy analysis, PATTERN will develop innovative training curricula, placing emphasis on inclusivity and fairness of the modules. These training modules will be co-created around eight transferable skills identified in PATTERN and mentioned above, in a modular fashion to allow mixing and matching to develop specific learning paths which can be tailored further where necessary, to meet the requirements of researchers, whether this is discipline specific, different stages of careers, or other defined cohorts. PATTERN platform will provide a solution to host and disseminate training modules to be developed as part of PATTERN and which will be freely and publicly available to any learners. The policy mapping and analysis will be helpful to adapt the trainings to specific needs of the pilot institutions.

- **Testing PATTERN training modules at pilot institutions (December 2023 – July 2027).** During this phase, PATTERN trainings will be tested within 9 Consortium Members and 5 Affiliated Entities acting as pilot institutions (i.e. AU, SISSA, LPI, OpenAIRE, UniSR, DANS, RBI, SciLink, UMinho, UHelsinki, TCD, IZTECH, UDebrecen, HEAL-Link). The first action of each pilot institutions will be the co-design and fine-tuning of the training modules to address their



specific targets by the engagement of both end-users of the trainings (researchers) and the authorities responsible for researchers' trainings within the organisation. The testing phase will allow tests to be conducted in the field with a significant number of researchers and will consist of 2 cycles, each 12 months long. At the end of each learning cycle, training modules will be evaluated and refined. All feedback and results of training activities will be collected and considered in the development of the platform and in the creation of guidelines and recommendations.

- **Evidence for policy development (January 2023 – July 2027)**. PATTERN will build upon knowledge and analysis carried out during the project lifetime to develop a set of policy recommendations addressed to authorities and institutions responsible for training on transferable skills aimed at researchers. This activity will feed into trainings evaluation and fine-tuning. The recommendations will be disseminated through policy briefs, podcasts and a final policy report.

Co-creation is a Holding phase as a participatory approach is applied throughout the project as a whole, including policy analysis and production of policy recommendations.

3 Theoretical background

This chapter outlines the theoretical approaches adopted in policy landscape analysis and linked to PATTERN goal to identify a potential for further promotion of OS and RRI practices by developing and piloting training activities enhancing researchers' transferable skills as well as by producing comprehensive policy recommendations.

3.1 Conceptualising transferable skills in policy baseline

The European Research Area (ERA) priorities underline the importance of an open labor market for researchers, entailing the removal of barriers to researchers' mobility as well as enhancing their training and career opportunities[3].

Naturally, the research institutions and universities have always paid a lot of attention to training that build technical and scientific competences of their researchers' workforce. However, in the last couple of decades the institutions also started to invest resources in offering their researchers advanced trainings on transferable skills that can help to support their professional development in a broader sense and smoothen the transition to a variety of possible career paths, including those beyond academia.

Transferable skills by definition are those learned in one context that are useful for another. The term "transferable skills" implies that these are a new set of skills that researchers should acquire in addition to those traditionally developed. In most cases, this is a misconception as the transferable skills have always been required to some extent to do research effectively, even if previously they have been overshadowed by the knowledge and written outputs (thesis, scientific articles and papers). Both "hard" and transferable skills are interdependent and present simultaneously, but each can be seen clearly by shifting our focus.

In the past, the focus was on the production of scientific knowledge and written research outputs, with the development of a multi-competent researcher being an implicit part of the process. Now this development is more explicit.

The importance of offering trainings on transferable skills was highlighted in several documents, mainly regarding doctoral education, such as the "Principles of Innovative Doctoral Training[4]" (IDTP), the Salzburg Principles[5] and Salzburg II Recommendations[6].

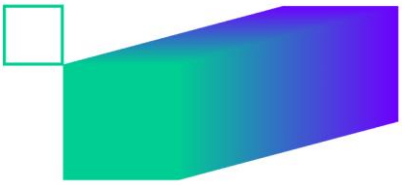
According to the Salzburg II Recommendations, the goal of doctoral education is to nurture and transfer "the research mindset" and capabilities for the benefit of the whole of society. In this context, training on transferable skills should help researchers find jobs in academia and other sectors, thus encouraging intersectoral mobility and

[3] European Commission, Directorate-General for Research and Innovation, Iagher, R., Monachello, R., Warin, C., Science with and for society in Horizon 2020 : achievements and recommendations for Horizon Europe, Delaney, N.(editor), Tornasi, Z.(editor), Publications Office, 2020, https://data.europa.eu/doi/10.2777/32018

[4] https://www.euraxess.be/belgium/jobs-funding/doctoral-training-principles

[5] Bologna Seminar on "Doctoral Programmes for the European Knowledge Society". https://eua.eu/downloads/publications/salzburg%20recommendations%202005.pdf

[6] Salzburg II Recommendations, European University Association ISBN: 9789078997221



knowledge transfer. Transferable skills enable researchers to be more effective, collaborative, and responsive in their own research too.

Training on transferable skills is also confirmed as one of the key reforms in doctoral education by European Universities Association (EUA) surveys, including the most recently published one titled "Doctoral education in Europe today: approaches and institutional structures[7]". The survey shows that although doctoral schools keep the focus on research competence trainings, a significant proportion of attention is also paid to transferable skills trainings.

To encourage the research institutions to pursue an evolving cultural change process, the policy makers reflected on core principles and issues pertaining to the social responsibility of researchers and a need for them to be familiar with best practices in research such as OS and RRI in a more global context, including through regulatory and funding frameworks.

The European Competence Framework for Researchers (ResearchComp[8]) developed by the European Commission (EC), specifically refers to the need for researchers to be equipped with transferable (transversal) skills and delivers on the new ERA[9] and the European Skills Agenda[10]. It contributes to the European Year of Skills[11] and is also the first competence framework aligned with the European Skills, Competences, and Occupations classification (ESCO[12]) as it has been developed based on the taxonomy of transferable skills for researchers that was included in the current, 2022 version of the classification.

The transferable skills include more general ones such as creativity, critical thinking, communication, leadership and management, but also more research-specific skills relating to research ethics, public engagement in research, and social responsibility, to support comparable and interoperable research careers, facilitating cross sectoral transfer of talents, and enhance societal value of science.

The transferable skills empower researchers as they also engage in knowledge exchange with external partners and stakeholders, including everything from policy advice and consultancy to new innovative collaborations, and thus, facilitating varied applications of the knowledge that has been generated in RPOs to help generate innovation and improve economic outcomes.

Building on SwafS results is the cornerstone of the PATTERN project. Horizon Europe, a 7-years EU key funding program for research and innovation started in 2021, facilitates collaboration and strengthens the impact of research and innovation in

[7] Doctoral education in Europe today: approaches and institutional structures, Alexander Hasgall, Bregt Saenen, Lidia Borrell-Damian. Co-authors: Freek Van Deynze, Marco Seeber, Jeroen Huisman, EUA-CDE. https://eua.eu/resources/publications/809:doctoral-education-in-europe-today-approaches-and-institutional-structures.html

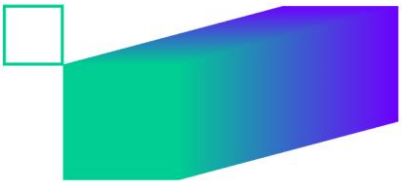
[8] https://research-and-innovation.ec.europa.eu/jobs-research/researchcomp-european-competence-framework-researchers_en

[9] https://research-and-innovation.ec.europa.eu/strategy/strategy-2020-2024/our-digital-future/european-research-area_en

[10] https://ec.europa.eu/social/main.jsp?catId=1223&langId=en

[11] https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/european-year-skills-2023_en

[12] https://esco.ec.europa.eu/en



developing, supporting and implementing EU policies while tackling global challenges[13]. As highlighted by SwafS Achievements and Recommendations for Horizon Europe[14], one of the most recently published EC reports, the aspects of OS and RRI are considered key characteristics of excellence of research in the ERA. The implementation of OS and RRI requires trained personnel.

However, there are still gaps in training on transferable skills aimed at researchers to fill at policy level. This leaves room for improvement and better alignment of research institutions to the Salzburg Principles and Recommendations, developed since 2005, to be adapted to diversified institutional contexts.

The analysis of policies relevant to provision of knowledge on transferable skills for researchers, draws on the constructivist approach developed by Carol Lee Bacchi[15] and expanded by other researchers, particularly in the domain of post-empiricist methods of policy analysis[16], such a conceptual analysis[17] and frame analysis[18]. This approach allows to consider how a policy issue (in this specific case, training on transferable skills for researchers) is defined and what is left out, or what the omissions are in the policy documents.

This theoretical approach views policies as one of the environments in which political concepts and challenges and their solutions are constructed. According to Bacchi, one of the ways in which to understand the policy baseline is to identify what is presented as a problem, and their starting points and implications. This kind of exploration makes it possible to expose the assumptions on which various policies are built, what effects they may have, what stakeholders mobilise in constructing issues, and how the policies' goals could be achieved. This approach also makes it possible to bring into focus what remains unaddressed, and what aspects of an issue are marginalised or completely omitted.

Specifically, the analysis of policies mapped focuses on how they define the need for researchers to get knowledge on transferable skills under consideration in PATTERN, whether and how the target audiences of the policies are defined, who and what is supposed to change, and whether and what procedures are in place to effectuate change. Therefore, the policy analysis is also based on a theory of change to see why

[13] https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en

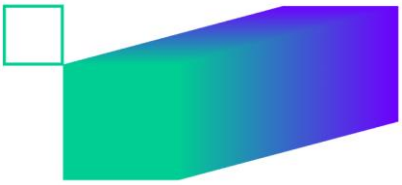
[14] European Commission, Directorate-General for Research and Innovation, Iagher, R., Monachello, R., Warin, C., Science with and for society in Horizon 2020 : achievements and recommendations for Horizon Europe, Delaney, N.(editor), Tornasi, Z.(editor), Publications Office, 2020, https://data.europa.eu/doi/10.2777/32018

[15] Bacchi, C. (2004). Policy and discourse: challenging the construction of affirmative action as preferential treatment. Journal of European Public Policy, 11 (1), 128–146. https://doi.org/10.1080/1350176042000164334

[16] Fischer, F. (2003). Reframing Public Policy: Discursive Politics and Deliberative Practices. Oxford University Press.

[17] Carstensen, M. B., & Pedersen, J. M. (2008). Ganging up on interets: a conceptual approach to policy analysis. Paper presented at International Conference on Welfare State Change. St. Restrup Herregaard, Aalborg, Denmark, https://vbn.aau.dk/en/publications/ganging-up-on-interests-aconcetual-approach-to-policy-analysis

[18] Cornford, I. (2010). Challenging current policies and and policymakers' thinking on generic skills, https://doi.org/10.1080/13636820500200273



and how the policies should reach their targets and target groups, including a reflection on research funding schemes.

The policy baseline analysis establishes the extent to which existing policies at different levels are comprehensive in terms of supporting provision of knowledge on transferable skills for researchers and what are the gaps. This policy analysis will be combined with data on existing and emerging relevant trainings identified in WP1 for co-creating policy recommendations at a later stage of the project.

3.2 The three levels of the PATTERN policy analysis

One of the most important features of policy mapping is that it may take place from different perspectives, depending on its objectives and parameters.

In PATTERN, the logic of the policy analysis has initially been built around two levels of the policies mapped: the EU and national ones, with a main focus on identifying and assessing gaps and possible needs in existing policies and initiatives related to trainings on OS and RRI practices.

EU level covers both regulatory and funding policies and frameworks to support a provision of knowledge on transferable skills aimed at researchers.

National level policy analysis focuses on countries hosting PATTERN pilot institutions: Croatia, Denmark, Finland, France, Greece, Hungary, Ireland, Italy, the Netherlands, Portugal and Türkiye.

When the policy mapping was in progress, a suggestion to expand it to additional (institutional) level emerged, was discussed within the consortium and accepted. The institutional level mapping covers PATTERN pilot institutions: AU, DANS, HEAL-Link, IZTECH, LPI, OpenAIRE, RBI, SISSA, Sci-Link, TCD, UDebrecen, UHelsinki, UMinho, and UniSR.

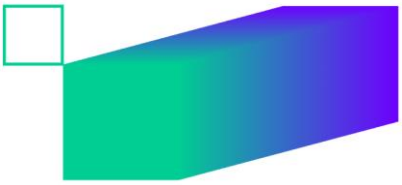
Following points explain an added value for extending the policy mapping and analysis to institutional level:

- Connecting institutional policies to national and EU policies to have a global state-of-the-art picture of provisions targeting trainings on transferable skills for researchers and see whether the EU/national policies have been translated into institutional policies;

- Linking already existing trainings on OS and RRI practices in the pilot institutions to policy requirements and recommendations to see if any of these policies manifest in concrete trainings;

- Possibility to better adjust the pilot trainings to concrete institutional needs, therefore feeding directly into WP3.

There is a need for harmonisation across Europe, and for the national authorities and funders to commit to European standards to help facilitate institutional capacity-building and knowledge exchange at the Universities and research centres,



contribute to the new priorities of digitalisation, inclusion and sustainability, and support researchers and students' mobility.

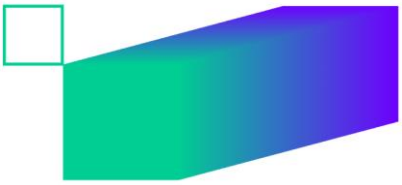
Upskilling and reskilling researchers with transferable skills is fundamental for creation of a truly European Higher Education Area[19].

According to the League of European Research Universities (LERU), "policy makers, governments and funding agencies should promote and support the principles for innovative training and seek ways to stimulate their uptake with the necessary flexibility, considering different aims and circumstances across countries, institutions and disciplines. They should furthermore ensure that funded programmes demonstrate their effectiveness in developing skills and independence in researchers, and they should support programmes that encourage intellectual risk-taking and creativity[20]". All policy levels are interconnected in shaping and delivering the training provision.

Harmonisation is a long and multi-dimensional process as it should be conducted considering the national and institutional specific contexts, with full respect for academic freedom. However, the policies have an important role in framing an overarching strategy for support of training on transferable skills, relevant principles and recommendations at all three levels.

[19] https://www.ehea.info/

[20] LERU Advice paper, January 2014 "Good practice elements in doctoral training", https://www.leru.org/files/Good-Practice-Elements-in-Doctoral-Training-Full-paper.pdf



4 Mapping process

This chapter explains the methodology of mapping, including an overview of the mapping tools, gathering and processing data, as well as limits of the process.

4.1 Mapping as a navigation tool

The mapping is a knowledge building process to collect relevant data by revealing the current situation in policies and potential to enhance Open RRI in the trainings for researchers, while specifically exploring opportunities for future policy recommendations. The methodology applied was designed to be:

- **Inclusive** – all consortium members were involved (to different extent) in three-levels policy mapping process. Moreover, a range of actors and stakeholders responsible for different aspects of the training for researchers were contacted at national and institutional levels by the consortium members to get more comprehensive and complete data.

- **Knowledge management based** – the mapping was centred around the information and knowledge already available in different sources, such as policy and legal texts themselves, statistics, reports, papers, information on organised public events/campaigns, but also tacit knowledge of the partners involved.

- **Self-reflection oriented** – "state-of-the-art" analysis enables the mapper's reflection based on evidence rather than pre-constituted opinions.

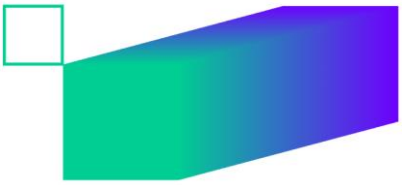
A map in this case is understood as structured information with added reflection to provide navigational instructions for the development of policy recommendations and policy briefs at a later stage of the project, rather than as an exhaustive list of existing policies and initiatives.

The "situational" maps – a reflection on the current state-of-the-art of the EU, national and institutional policies related to provision of knowledge on transferable skills aimed at researchers – deliver in-depth reviews as a starting point for these navigational instructions to foster reflection at Open Studios as well as to contribute to a better understanding of contexts and needs in framing the trainings for researchers.

4.2 Mapping tools

The mapping process focused on the collection and structuring of qualitative data. Quantitative examples, however, are included as supportive evidence in the description of features of the EU, as well as of different national and institutional contexts as part of the mapping process. The data collection process was facilitated by a set of templates (mapping tools).

First, a long list of **EU policies and initiatives** relevant to PATTERN needs was prepared by task partners in the form of an Excel file. Each line of the file represented one policy or initiative, while each column represented a variable (title, type, enforcement level, time frame of the policy, web-link, responsible institution,



relevance of the policy to the mapping, target groups). Then the policies and initiatives were distributed amongst the task partners for further analysis based on their interest in a specific policy and/or their field of expertise. The list of the policies consulted can be found in Annex 10.1.

A template was developed for detailed mapping and analysis of each of the EU policies and initiatives identified at a previous stage and can be found in Annex 10.2.

A series of criteria partially built on those used at the collection of EU policies stage, but also include additional ones, such as main objectives of the policy, other relevant organisations and stakeholders' consultation in policy-making process (in addition to a responsible institution), context of the initiation/approval of the policy, relevance to trainings on Open RRI for researchers at all career levels (including mentioning specific transferable skill(s) under consideration in PATTERN and/or overarching relevance, standards on the training setting (if any), target groups for the trainings), monitoring and evaluation, funding allocation mechanisms (if any), capitalisation and opportunities, gaps and limitations, sustainability, synergies with other policies, sources of information. Each criterion was complemented by guiding questions.

One of the most important analytical parts of the template was a "theory of change" to see if the policy makes it explicit what/who needs to change (e.g. organisational culture, mindset, quality of research management and research environment, better collaborations between academia and industry on researchers' training needs, etc.), if the mechanisms are described and who is responsible for this change.

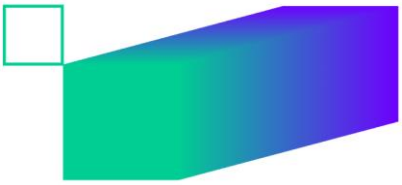
For **national policy level**, a grid as an Excel file to collect basic information on national policies and a template for national policy mapping report were produced. The template for the report can be found in Annex 10.3.

The template comprised six parts, including introduction, conclusions and references.

Substantive parts included mapping and analysis of national policies and legal frameworks at different levels in a specific country (national, regional if applicable, and RFOs), context and public opinion, changes expected, gaps and opportunities. All sections were also accompanied by detailed guiding questions to get a comprehensive overview of the attitudes towards the need to act on provision of knowledge on OS and RRI practices in each country and their evolution, including if the theme got (enough) attention at national level and if there were any major changes on how the theme has been addressed in recent years.

Particular attention was paid to assessing the extent to which the national/regional as well as RFO policies embed relevant EU practices (e.g. if the policies mention structural societal issues and addressing them by enhanced provision of knowledge on transferable skills, horizontal values and cross-cutting priorities – Gender Equality, Ethics, FAIR data, etc.).

The extent to which the national/regional as well as RFO policies provide a relevant framework for research institutions was also featured. The partners involved commented if and how national/regional policies encourage the development and delivery of training on transferable skills for researchers at organisational level (e.g. in relation to the role of RPOs in providing relevant knowledge, if and how relevant topics



should be included in the HEIs curricula, if knowledge on transferable skills for researchers is a precondition to get national funding, etc.).

For **institutional policy level**, a grid and a template for institutional policy mapping report similar to the national level mapping were produced. The template for the report with details on the sections and guiding questions can be found in Annex 10.4.

In short, institutional policy mapping reports feature policies, directives, statutes and/or other documents and strategies that exist at institutional level or any activities which are not related to the implementation of an internal policy but are relevant to the trainings on transferable skills for researchers, in case the institution does not have a policy or strategy in place.

Main stakeholders, context, changes expected, targets, any observable impact of the policies and if so, at what level (institution, faculty, department, etc.), gaps and opportunities were also addressed at this policy level mapping. An assessment of the extent to which the institutional policies follow relevant EU, national/regional policies as well as RFOs policies and practices for HEIs and research organisations, was an intrinsic part of the analysis.

The collected information, when taken together, provides the foundation for the analysis of linkages between different policy levels, identification of gaps and opportunities for further co-creation of PATTERN policy outputs. Moreover, it forms the framework for adjusting the forthcoming PATTERN trainings modules to institutional contexts and needs. It will also contribute to the creation of a database of actors to potentially engage in the co-creation Open Studio activity.

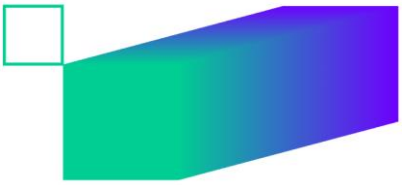
4.3 Process of gathering and processing data

The mapping approach and methodology were presented at the face-to-face PATTERN Kick-off-meeting on 16 and 17 January 2023 and then detailed and reviewed at an online meeting of WP partners on 27 February 2023.

The period of data collection for EU level policy mapping was between 6 March and 31 May 2023. The task partners were asked to contribute to creating a long list of relevant policies and initiatives for further in-depth policy-by-policy analysis and then to complete desk-based research on the policies assigned. As mentioned above, to facilitate their work, a template reflecting theoretical framework presented in the previous chapter, was developed. To ensure that the data collected was of good quality, regular online meetings were organised throughout the period indicated.

From 1 June to 31 August, the data were analysed by the WP leader (ESF) in order to elaborate findings and refine the mapping framework for two other levels of policy mapping. It is important to note, that at PATTERN online General Assembly on 19 June 2023, a suggestion to expand the policy mapping to institutional level was presented and agreed on.

An online briefing to present and discuss the framework for national and institutional policy mapping, mapping tools, partners' involvement and suggested timeline, was organised on 14 September 2023. The partners who could not attend were given a PowerPoint presentation and video recording of the meeting. In addition, to



summarise and clarify the information, bilateral calls and e-mail exchanges took place.

The period of data collection for national and institutional policy mapping was between 15 September and 1 November 2023. To ensure the consistency and quality of mapping outputs across the consortium, regular bilateral calls were held, as well as e-mail exchanges to discuss the work in progress, answer any questions and clarify issues connected with the mapping process. The main questions and answers were brought together and summarised in a document available for consultation at consortium level, so that the partners stayed aligned.

At this stage, the mappers were encouraged and decided to approach directly particular stakeholders and meet with a representative who could provide additional or more detailed and nuanced information on framing the trainings on transferable skills aimed at researchers.

In total, the following documents resulting from policy mapping, were submitted by the partners:

- 31 grids for relevant EU policies and initiatives.
- 11 national mapping reports (countries hosting PATTERN pilot institutions - Croatia, Denmark, Finland, France, Greece, Hungary, Ireland, Italy, the Netherlands, Portugal, and Türkiye).
- 14 institutional mapping reports (PATTERN pilot institutions – AU, DANS, HEAL-Link, IZTECH, LPI, OpenAIRE, RBI, SISSA, Sci-Link, TCD, UDebrecen, UHelsinki, UMinho, and UniSR).

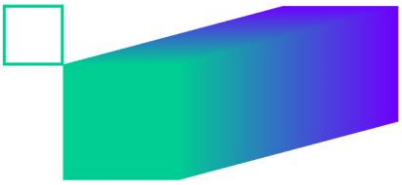
All grids and reports were then reviewed by the WP leader (ESF) from the point of view of comprehensiveness and the complementarity of the information provided throughout all mapping tools. The data collected and processed allowed a comparative investigation and a formulation of findings needed for the fostering of policy interest to provision of knowledge on transferable skills aimed at researchers.

4.4 Limits of mapping process

In the mapping process, several challenges and limitations were encountered by the project partners.

The policy mapping does not provide an exhaustive list of the available documents and initiatives which are continually being expanded and developed at all three levels. Nevertheless, the policies collected provide a good overview of the policy landscape giving a global picture of what is happening in relevant policy areas and contributing to identification of needs and potential for policy advancements.

It should be noted that making comparisons between laws and policies in different legal systems is difficult. Legal provisions are highly contextual and depend on the specific (legal, political, societal and cultural) characteristics of the country in which a given law was passed. Without in-depth knowledge of these factors and a good orientation in the legal context, it is challenging to conduct a comprehensive comparative analysis. Therefore, this document is not exhaustive, but rather outlines



some trends resulting from the analysis of the limited legal material collected for the study. This limitation is also valid for national and institutional policies.

Another limitation comes from a need for the partners who are mostly researchers or research support staff members of their respective institutions, to do institutional and/or national policy mapping reports that require at least some basic legal background. Depending on the number, complexity and substance of the policies to map, the level of detail provided significantly varies. Therefore, this document focuses more on state-of-the-art of current policy landscape in general, identifying overarching gaps and opportunities relevant to the provision of knowledge on transferable skills, rather than pointing out each specific policy.

5 EU policy mapping and analysis

This section presents the analysis on data collected in the grids on identified relevant EU policies, policy frameworks, guidelines and initiatives.

5.1 Overview of the policies mapped

Overall, 31 policies and initiatives were mapped and analysed. The list of policies and initiatives consulted could be found in Annex 10.1.

The proportion of policies per type is presented in Figure 1 Types of documents mapped. The most common documents are various strategy documents (26%) followed by policy frameworks (19%).

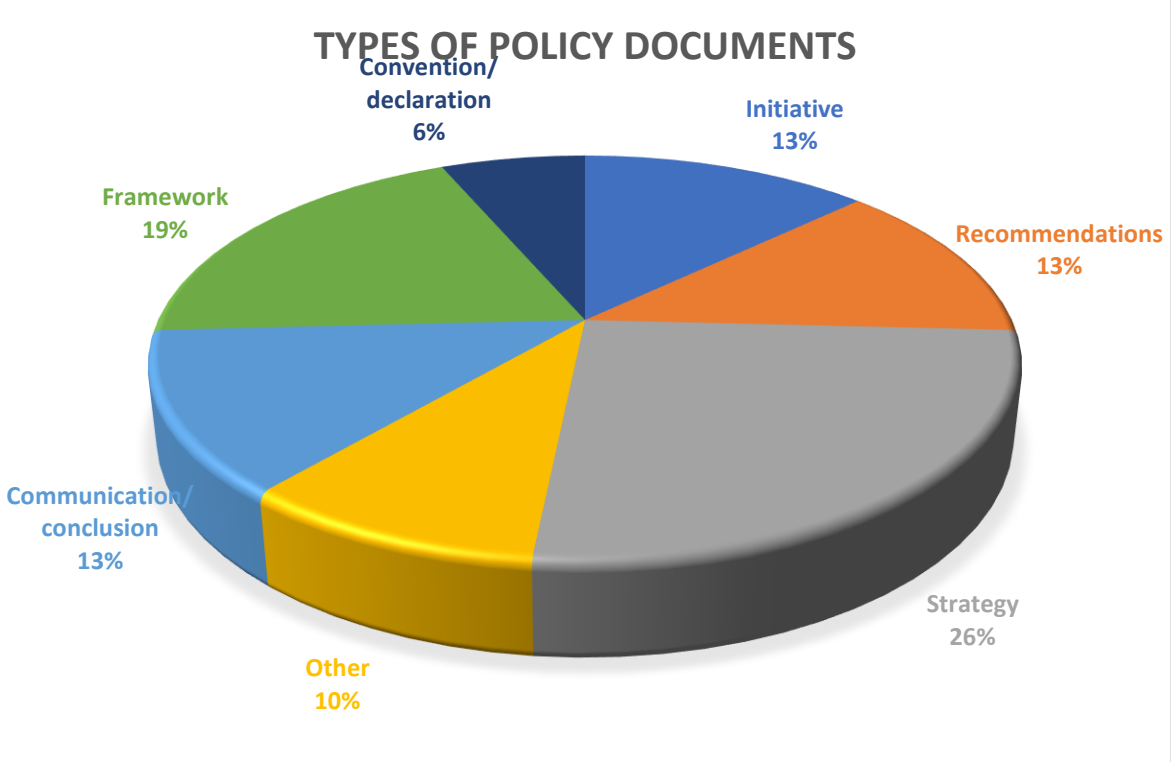


Figure 1 Types of documents mapped

The main initiator of the policies is the EC (responsible for 58% of the documents) as seen in Figure 2. Most of the documents were developed with a certain level of engagement of other stakeholders including individual Member States, RPOs, RFOs, European Parliament, research communities and the public through open consultations.

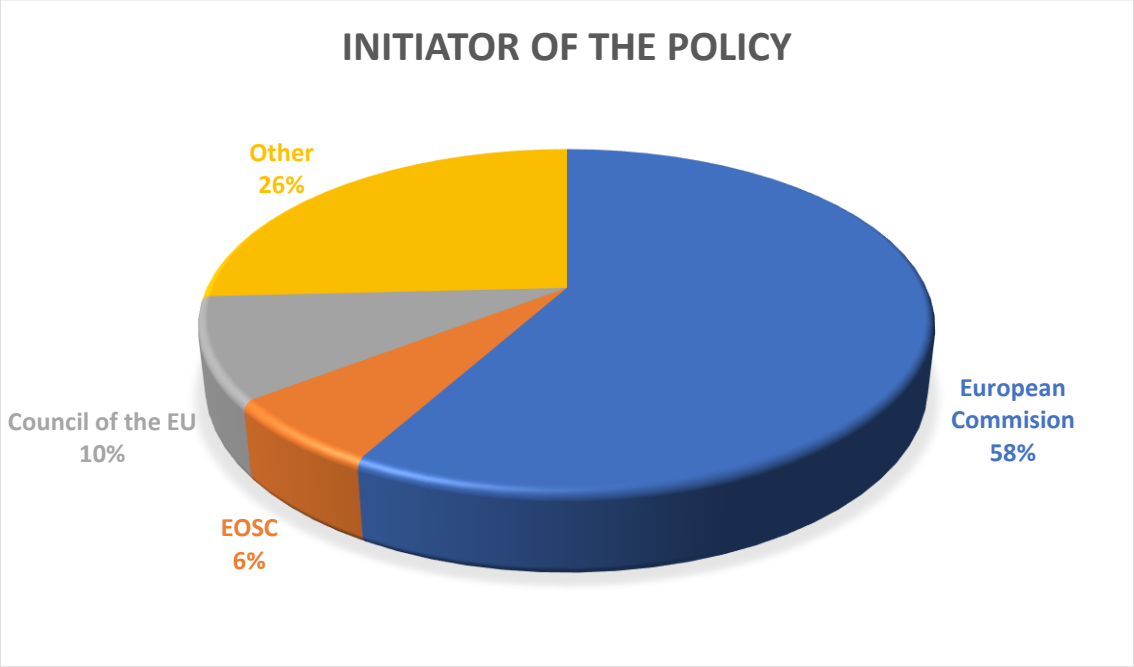
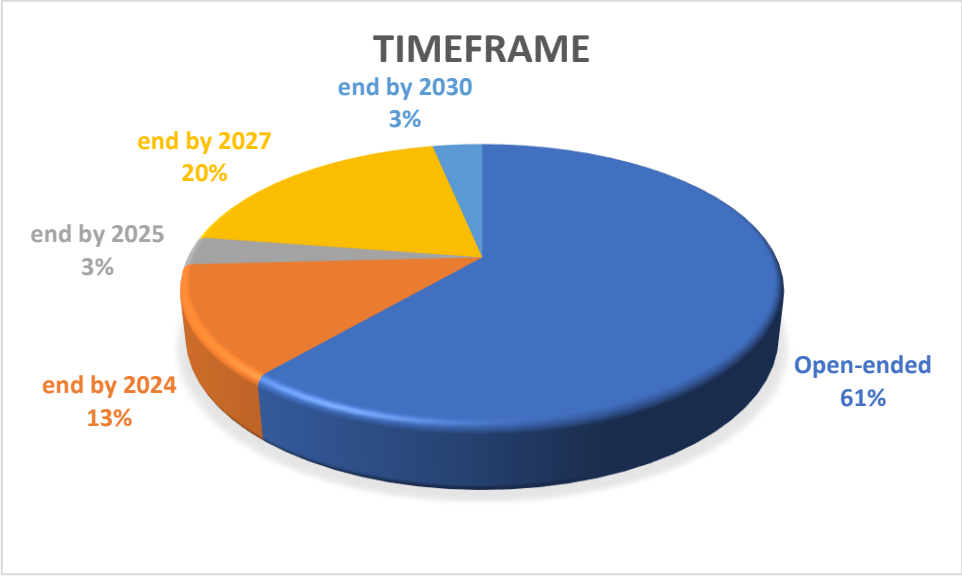


Figure 2 Policies' initiating organisations

The mapped documents under consideration also differ in terms of topics (e.g. European Code of Conduct for Research Integrity[21] or Gender Equality Strategy[22]) or sector (education, innovation, science-policy interface).

Most of the documents have a legally non-binding nature (e.g. strategic documents) but act either as soft-laws or have a binding character in the form of eligibility criteria for receiving funding (e.g. Gender Equality Plan).



[21] https://allea.org/portfolio-item/european-code-of-conduct-2023/
[22] https://ec.europa.eu/newsroom/just/items/682425/en

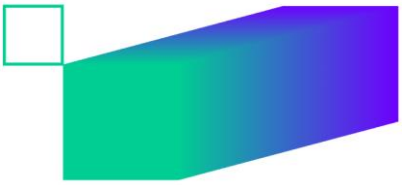


Figure 3 Timeframe of the mapped documents

All documents are currently being implemented. Some of them have open-ended nature while others have a specified timeframe (see Figure 3).

The open-ended documents are mostly policy frameworks, recommendations, communications or reports that tend to not have specific implementation timeline but will require at certain point revision and update. In contrast, the strategies or initiatives are defined in a time bound manner that aligns them with the priorities of the current programmes and to the budget planning of the initiating organisation (here mostly the EC).

5.2 Context and theory of change

Regarding the contexts in which the policies under consideration were initiated, the latter are presented in following categories:

- **Twin Transition** – digital and green transitions driven by various crisis and technological progress reflect the need for development of new skills among the wider population as well as in terms of new approaches to R&I. Both climate change and Covid pandemic are driving forces behind these transitions. Pandemic and related lockdowns sped-up significantly the digitalisation in education and research.

- **Gender Equality and Inclusion in a larger sense** – ensuring gender equality, inclusion and non-discrimination in all aspects of life is one of the long-lasting goals of today's society. To this end, the importance of integrating the topic in R&I ecosystem as well as reforms to ensure appropriate representation at all levels, lead to the need to develop related understanding, actions and skills among researchers and all actors of R&I ecosystem.

- **Trust in Science** – In today's rapidly changing scientific and policy landscape, the need to open up the scientific processes and re-establishing trust in science among the members of the public, require various approaches in Research Integrity and wider Open Science (including FAIR data, open innovation, open access, citizen science).

- **Labour market/ competitiveness** – the ever-evolving labour market needs coupled with societal challenges mentioned above, also determine the changes towards a more skilled workforce. The increase in competitiveness leads to the need to up- and re-skill the researchers, including through life-long learning programmes as well as reforms in the education and training ecosystems. More skilled workers would create more competitive environment that would lead to talent retention and better suited society to address pressing social needs and advance scientific knowledge.

The proportion of each of the above-mentioned categories is presented in Figure 4. Almost half of the policies address overall re-/up- skilling of researchers and increasing the competitiveness, while another half is distributed amongst the three other categories, making a good balance in approaches.

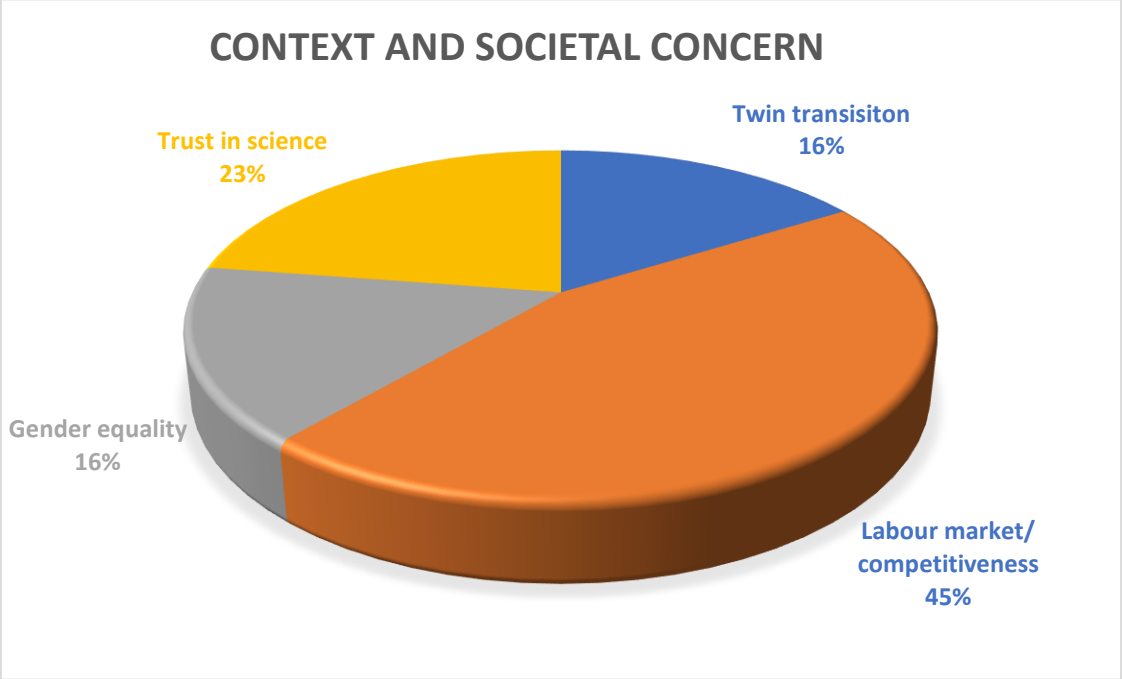


Figure 4 Context and societal concerns leading to initiating relevant policies

Most of the EU policies are generally formulated and establish the frame and guiding principles. They delegate the responsibility for implementation and making change either to Member States and other policymakers, or to the research institutions. The change the relevant policies look for, could be systematised this way:

- **Change in research culture** – today's trends in reforms of research assessment (e.g. Coalition for Advancing Research Assessment - CoARA[23]) are clearly present in the policy documents. The current ways science is done and assessed, need to change. Provision of knowledge on transferable skills facilitates researchers' social responsibility, science communication and leadership, and thus, should be at the forefront of new approaches to research assessment and research methodologies.

- **Reform of Higher Education** – another desirable change concerns the design of curricula and training towards more student- and researcher-oriented curricula to increase mobility, life-long learning, social responsibility and employability of the researchers. Provision of knowledge on transferable skills is a part of this process.

- **Researchers' mindset** – changing researchers' mindset, including through training offerings on transferable skills, is one of the most important needs the relevant policies address.

- **Political reforms** - all the changes mentioned above, need to be supported by appropriate laws and policies at national, regional and institutional levels.

[23] https://coara.eu/

All these desirable changes are interlinked, and no particular change could be achieved without the support of the remaining others and bringing them all together in a strategic framework.

5.3 Content analysis

As for the content of the policies under consideration, the references to the trainings for researchers vary (see Figure 5).

In most cases (53%), the policies mention the need to upskill the researchers in general, OS and RRI practices being part of the training offerings to develop and conduct.

Some documents directly feature the need to enhance management, leadership, communication, dissemination, and exploitation skills. The more specifically focused policies referred to Open Science (23%) – including FAIR data, OA, Citizen Science, Gender Equality & inclusion (15%), and Research Integrity (6%).

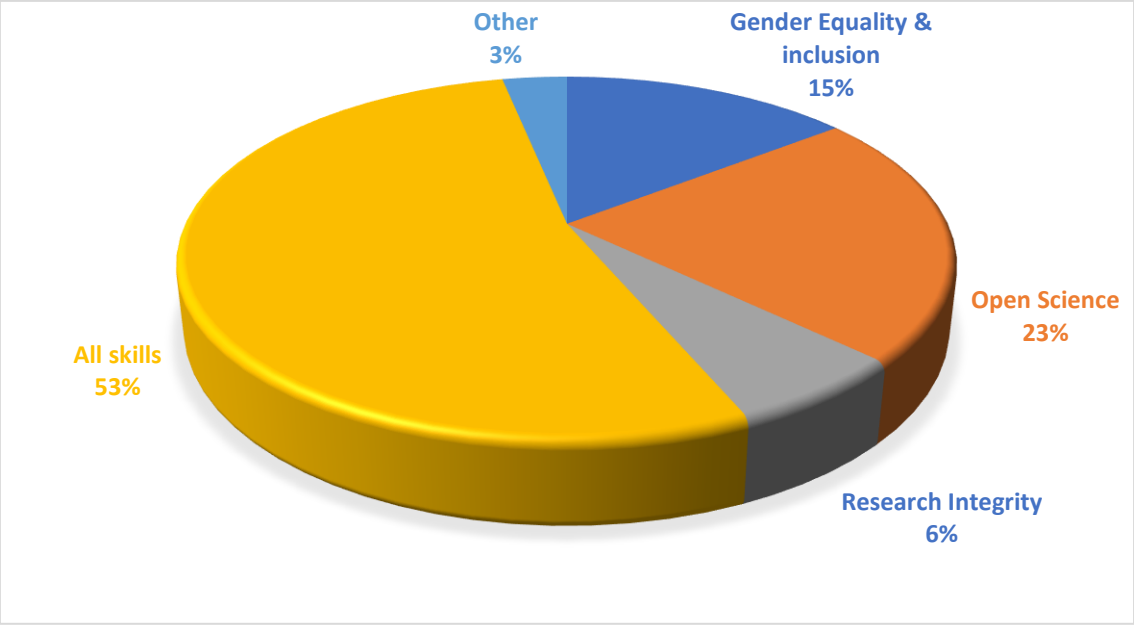
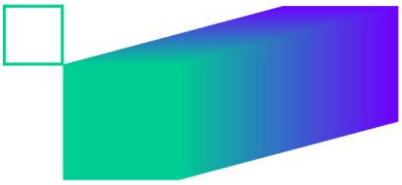


Figure 5 OS and RRI areas in the EU policies

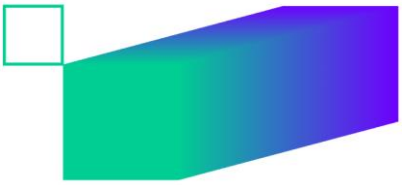
SWOT analysis

The SWOT analysis was done to assess the EU policies mapped and the results are presented in the Table 1. below.

Strengths	Opportunities
• **Highlighting the importance of the societal responsibility of**	• **Collaborations, engagement and trust of society in science** – the



science – OS and RRI practices are recognised as a tool to address societal concerns and are mentioned in all documents. • **Synergistic nature of the documents** – a lot of documents work in parallel building on each other and therefore, strengthening the potential for change. • **Dedicated documents and/or their priorities for specific areas of the Open RRI** – specific strategies and policies focusing on the wider OS and RRI concepts (Open Science, Research Integrity, Gender Equality, etc) identify needs for change in research culture, including through dedicated training for researchers. • **Importance of transferable skills and life-long learning** – in many cases the need for up- and re-skilling of the whole labour market is highlighted, and the transferable skills and life-long learning are the main driving forces to achieve this goal. • **Alignment with ERA Policy Agenda and European Education Area**	importance of societal responsibility and addressing societal needs comes hand in hand with higher level of interaction between Quintuple Helix actors (government, academia, industry, citizens, environment). • **Increasing European Excellence** – creating more skilled and competitive labour market and retaining skilled workforce is a condition for achieving excellence and reducing disparity between countries. • **Transdisciplinarity** – Higher level of interdisciplinarity and collaborations are required to drive innovation. High quality training offerings on communication, leadership, management and other transferable skills should reinforce researchers' input to facing the global challenges. • **Twin transition fostering the need for change** – the ongoing twin transition is also one of the key factors enabling change in research methodologies and research environment. • **Reforms of research assessment and harmonisation of the education/careers across EU** – the driving force behind the reforms in research assessment can create incentive for researchers to expand their portfolio in terms of skills
Weaknesses	**Threats**
• **Too general approach** – due to their EU scope, many documents establish general guiding principles without concrete mechanisms and examples of how the policies should be implemented.	• **Budgetary constraints** – in certain cases the financial support to implement the trainings, is not mentioned. • **Rapidly changing political landscape** – post-pandemic crisis,



• **Lack of examples of training implementation** – in most cases it is not specified how and by whom the trainings for researchers would be delivered, what are the standards or how it should be embedded in the existing ecosystems. • **Non-binding character** – most of the documents do not reach their full potential because of being optional and allowing for semi-opt out. • **Lack of monitoring** – the documents do not usually outline clear monitoring and evaluation mechanism to assess their effectiveness. • **Slow implementation** – the general overarching character of the policies and delegating responsibility to other organisations, slow down the implementation process.	Ukraine-Russia and Israel-Hamas wars, other geopolitical, economic, political considerations, might divert officials' attention from the implementation of R&I agendas. • **Responsibility outside of the policy initiator** – the implementation of the policies is usually delegated to the EU Member States. **Resistance to change** – any important, sustainable change is usually confronted by resistance that slows down the process.

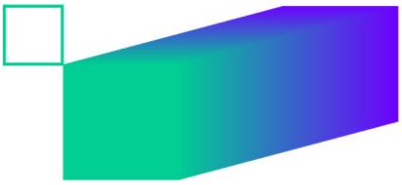
Table 1 SWOT analysis of the EU policies

The SWOT analysis shows that the EU policy approach creates a strong trend for change in relevant area. The implementation should be picked up by the Member States, individual research institutions and other stakeholders. As the EU represents a variety of countries and cultures, it aims at establishing frameworks and general principles rather than describing concrete implementation measures.

5.4 Practical implications

As most of the EU policies are high-level general documents addressing international science issues, they are often mentioned in each other and synergise well. Their most important practical implications are the following:

- Their overarching character serves as a reference for the national and institutional policies.
- Raising awareness on OS and RRI practices for researchers.
- Funding opportunities, particularly through Horizon Europe Framework Programme.



The first point will be detailed in Chapters 6 and 7 (National policy mapping and Institutional policy mapping respectively). The second and third ones are presented below.

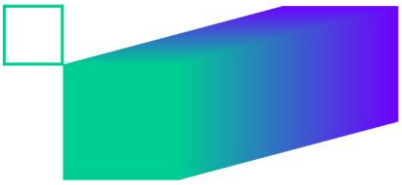
Raising awareness on OS and RRI practices amongst researchers

Multiple awareness-raising campaigns in relevant area are being organised to attract attention and interest to OS and RRI concepts and practices within research community, enhance training offerings and contribute to putting the EU objectives into practice[24]:

- conferences, forum discussions and further events to promote debate on the role and contribution of skills policies to achieve competitive, sustainable and fair economic growth and to mobilise relevant stakeholders to ensure access to training, including training on transferable skills;
- working groups and events to foster discussion and mutual learning on the actions and approaches that the stakeholders can take, including development and dissemination of good practices examples and guidelines for high quality trainings for researchers;
- initiatives targeting research institutions and individual researchers, companies, social partners, public authorities, education and training providers, to support the provision, funding and uptake of upskilling and re-skilling opportunities;
- information and communication campaigns on EU policies and initiatives for upskilling and re-skilling;
- increasing dialogue in existing stakeholder groups and networks, also via established online platforms;
- developing and applying further skills intelligence tools, while promoting and disseminating their application in identifying current and future skills needs;
- promoting tools and instruments for increased transparency of qualifications, including qualifications awarded outside the EU;
- promoting programmes, funding schemes, projects, actions and networks of relevance to public, private and social stakeholders, involved in the design, delivery and dissemination of training opportunities.

Large-scale awareness-raising activities are very much needed to attract additional attention to addressing societal challenges, including through training for researchers on transferable skills and mutual learning. It requires cooperation

[24] Many of them are brought together in the European Year of Skills initiative. For further details: https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/european-year-skills-2023_en



between RPOs and the external environment, across the spectrum from policymakers through industry to citizens.

The existing infrastructures like European Open Science Cloud (EOSC[25]) and others, have an important role to play, alongside the inclusion of FAIR and open data, in creating openness in the research community towards tackling societal challenges, and developing and following relevant training.

Horizon Europe Framework Programme

This sub-section presents an overview of how the need for researchers to be familiar with OS and RRI practices, is reflected in the Horizon Europe Framework Programme.

Certain EU policies, such as Gender Equality Strategy[26], ERA Policy Agenda[27], Open Science Policy[28], are a reference point for Horizon Europe Framework Programme. The latter encompasses the values of OS and RRI as a basis for funding the projects, initiatives and providing direct support to researchers.

To apply and receive funding within this Framework Programme, researchers and institutions need to adhere to certain eligibility conditions:

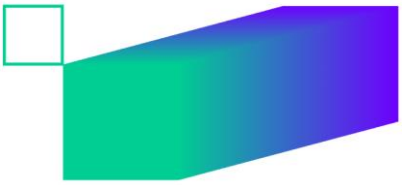
1. RPOs need to have a Gender Equality Plan.
2. The proposals need to include:
    a. Ethics self-assessment.
    b. Gender dimension of the research (unless explicitly stated otherwise).
    c. Open Science approaches (including mandatory Open Access and Data Management Plan).
    d. Interdisciplinary dimension.
    e. Role of Social Sciences and Humanities.

These conditions being mandatory, enable more responsible research and thus, require the researchers to get knowledge on and apply OS and RRI principles.

Within the Horizon Europe, there are specific calls in the Widening participation and strengthening the European Research Area excellence (WIDERA) calls dedicated to:

- Promoting transferable skills.
- Promoting Open Science and Responsible Research concepts.

[25] https://eosc-portal.eu/
[26] https://commission.europa.eu/strategy-and-policy/policies/justice-and-fundamental-rights/gender-equality/gender-equality-strategy_en
[27] https://commission.europa.eu/system/files/2021-11/ec_rtd_era-policy-agenda-2021.pdf
[28] https://research-and-innovation.ec.europa.eu/strategy/strategy-2020-2024/our-digital-future/open-science_en#the-eus-open-science-policy



- Strengthening Gender Equality.

The calls in WIDERA such as "ERA chairs[29]" and "ERA fellowships[30]" and numerous Marie Sklodowska-Curie Actions[31] (e.g. doctoral, postdoctoral) directly request increase in training of transferable skills for awardees.

5.5 Concluding remarks

The EU policy mapping and analysis shows that an adequate skill offer is a precondition for well-functioning and inclusive European societies and economies. Demographic, geopolitical and technological changes, post-pandemic crisis, and the green transition are rapidly altering the needs of the EU labour market, including the R&I field. Therefore, a need for improved strategies and measures to respond to the new reality is highlighted.

All these challenges bring skills development to the fore, and the EU clearly supports skills-related actions and initiatives across Europe. The EU level policies set a frame for changes that need to happen at national, regional and/or institutional levels as well. The whole research community needs to change, including research methodologies, culture, content and environment.

The policies display a good distribution of the *foci* in terms of OS and RRI concepts. However, in many of them monitoring mechanisms and concrete implementation directives are missing, which might result in a slower implementation. On the other hand, a synergistic nature of the policies coupled with financial support funded by their directives sets a good scene for researchers to develop important competences related to OS and RRI practices.

[29] https://rea.ec.europa.eu/funding-and-grants/horizon-europe-widening-participation-and-spreading-excellence/era-chairs_en
[30] https://rea.ec.europa.eu/funding-and-grants/horizon-europe-widening-participation-and-spreading-excellence/era-fellowships_en
[31] https://marie-sklodowska-curie-actions.ec.europa.eu/

6 National policy mapping and analysis

6.1 Overview of the policies mapped

Total of 127 policy documents has been mapped in 11 countries hosting PATTERN pilot institutions (Croatia, Denmark, Finland, France, Greece, Hungary, Ireland, Italy, the Netherlands, Portugal, and Türkiye).

The distribution of policies mapped per country is presented on Figure 6. The biggest number of identified documents is in Ireland.

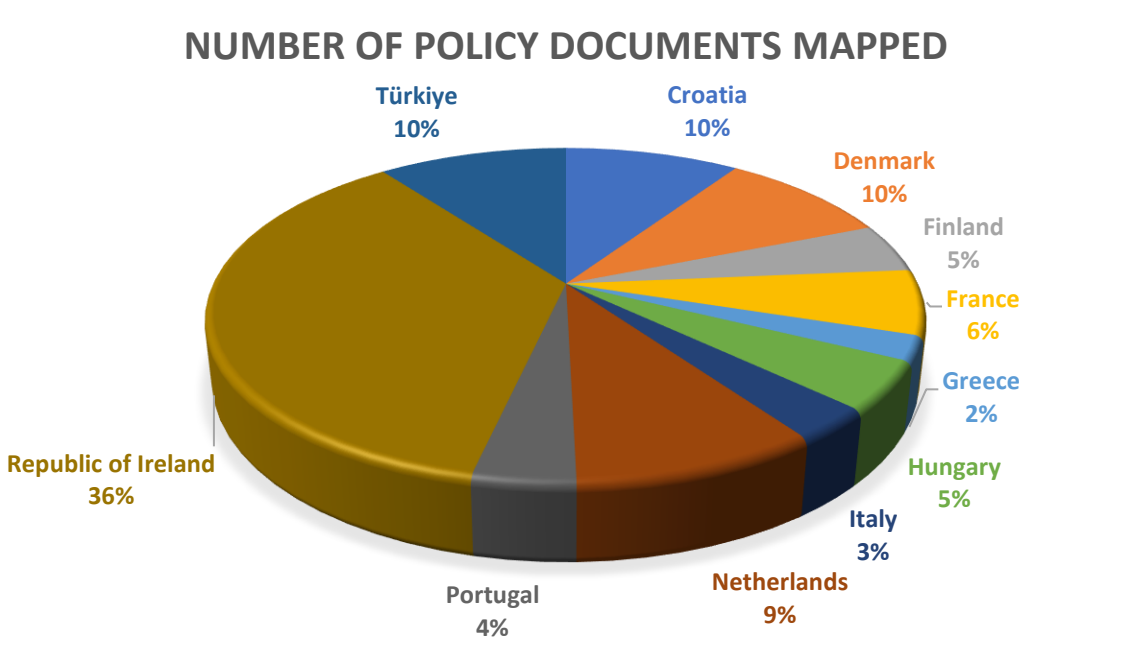


Figure 6 Distribution of the number of the policy documents mapped per country

OS and RRI are usually mentioned in both general and thematic national policies, but number of mentions differs depending on the area and on the country as seen in the Table 2 below

Country/ Total number of relevant policies	Number of general and/or thematic national policies mentioning OS and RRI							
	OA	FAIR data	Citizen Science	Research Integrity	Gender, Inclusion	Science Comm	Dissemination & Exploitation	Management
Croatia/9	7	7	1	5	4	4	7	2
Denmark/12	7	5	5	5	8	5	7	5
Finland/6	6	6	5	5	5	5	5	4
France/8	1	1	2	3	5	2	4	1
Greece/3	1	1	1	1	0	1	1	0

Hungary/6	3	1	1	3	3	1	1	0
Ireland/47	8	9	10	13	12	10	8	9
Italy/4	4	4	2	1	1	0	0	1
The Netherlands/11	9	8	9	10	10	10	11	9
Portugal/5	2	3	0	1	1	1	1	0
Türkiye/13	5	1	0	2	2	1	4	3

Table 2 Overview of the number of policies mapped per country

In terms of timeframe, most of the policy documents mapped are open-ended (73%) as seen on Figure 7 . The ones with defined end dates are mostly strategies that are being implemented over specific time periods.

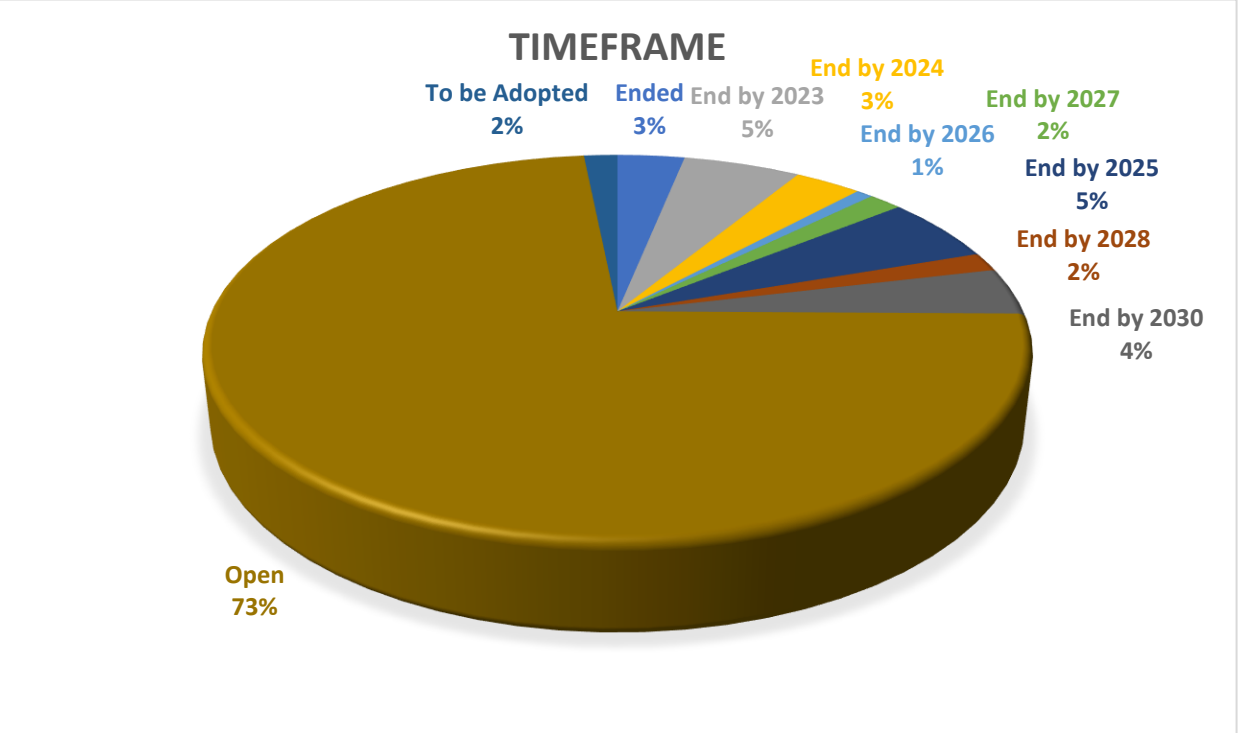


Figure 7 Timeframe of all the national policies mapped

The main initiators of the national policies are, to no surprise, governmental institutions and ministries at 46% (see Figure 8). Nonetheless, in some cases the policy has been initiated by other actors like Expert Bodies, RFOs and Universities' collectives.

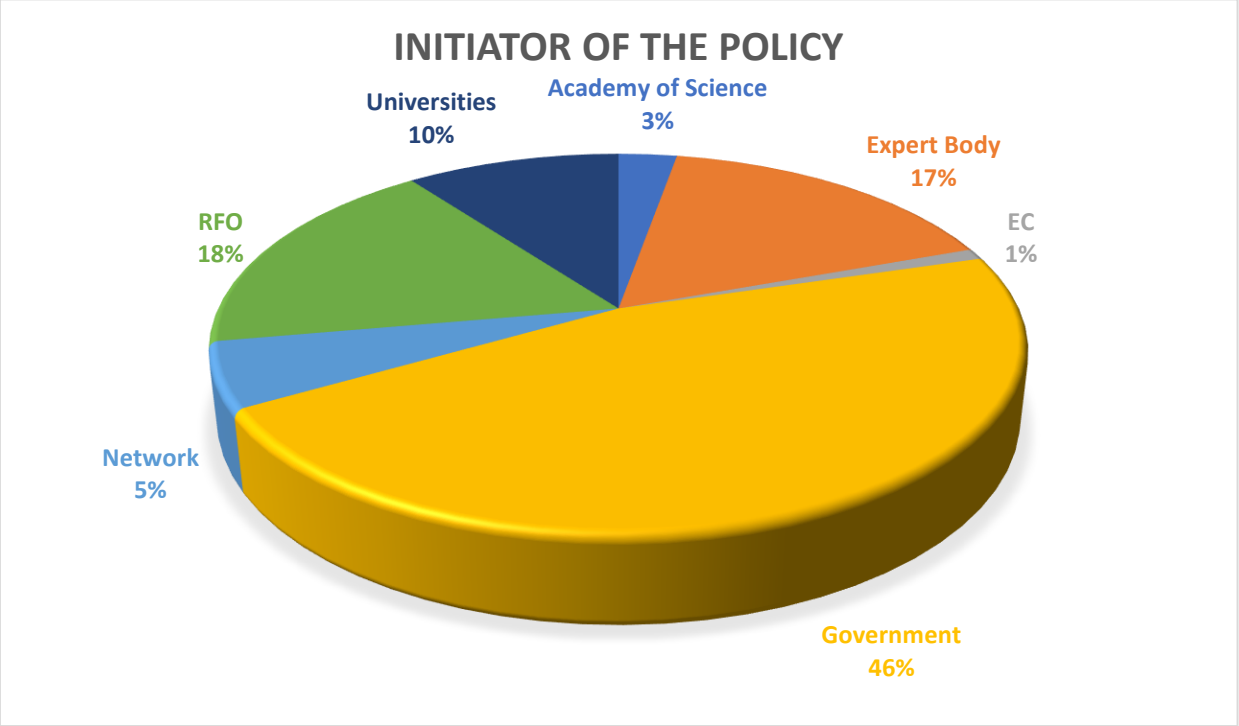


Figure 8 Initiator of the national policies

Various types of national policies have been identified (see **Errore. L'origine riferimento non è stata trovata.**). The legal frameworks (45%) prevail and are followed by strategies (27%), recommendations and charters (9%). However, it should be noted that not all countries created pure legal framework to apply OS and RRI related principles but only use different type of documents, particularly recommendations.

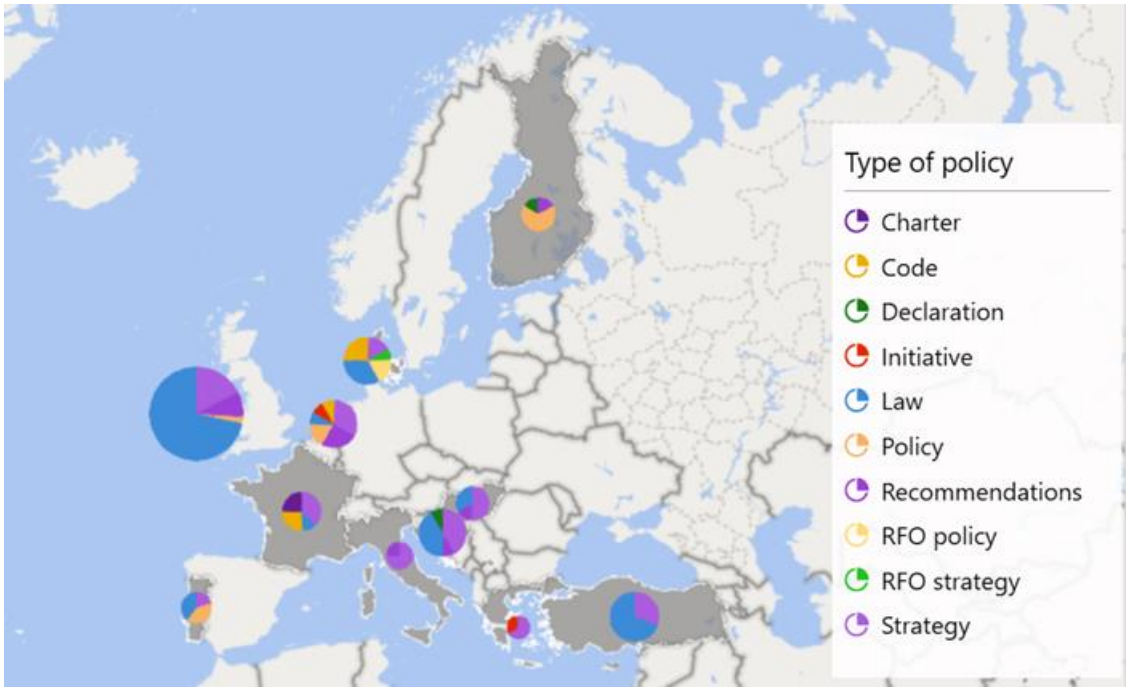


Figure 9 Types of policies mapped

In terms of enforcement level, the **Errore. L'origine riferimento non è stata trovata.** shows that majority of the policies are mandatory with exception of Finland, where the identified relevant policies remain optional with exception of committed institutions.

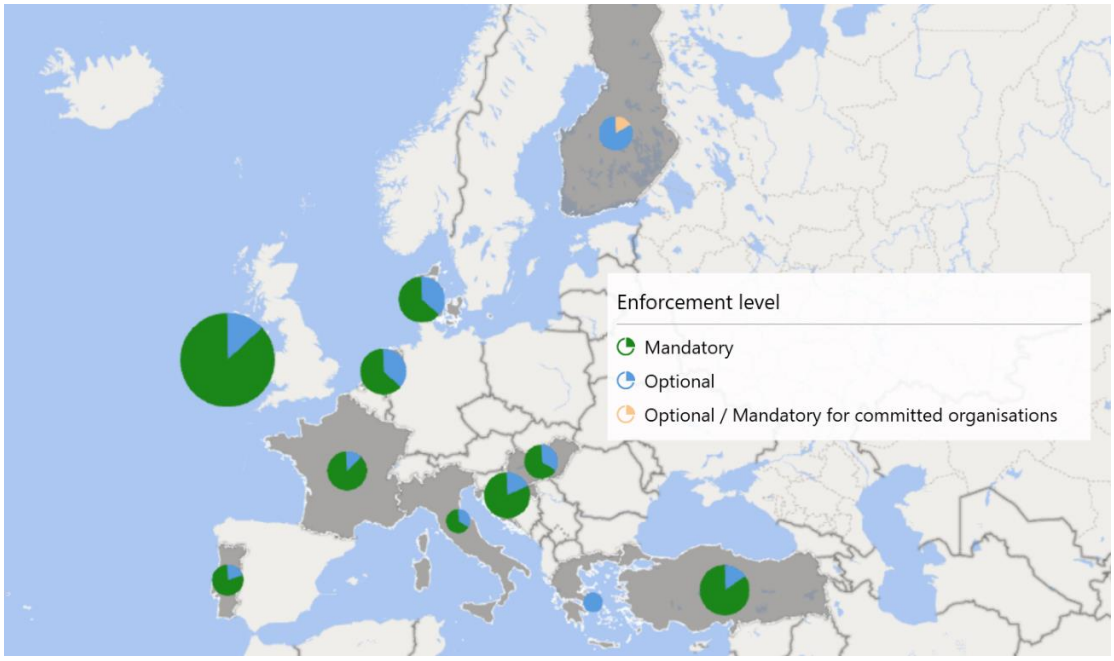
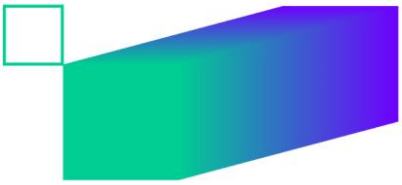


Figure 10 Enforcement level of national policies



6.2 Context and theory of change

Research excellence, openness, inclusion, smooth digital transition, social responsibility of science, promoted by EU policies, require further reflection and investing in skills and opportunities for the researchers at national level. In many countries, the concepts of OS and RRI were essentially used in the context of projects funded by the EC, but due to progressively increasing participation of national institutions in such projects, these concepts are starting to spread in the larger scientific community.

In addition to general trend to follow the guiding principles established at EU level, sometimes the adoption or discussion on relevant national policies were also linked to a specific context.

For example, in Croatia, under the "Next Generation EU" instrument, the Recovery and Resilience Facility (RRF[32]) will provide Croatia a substantial funding over the next ten years, with a focus on reforms and investments aimed at accelerating economic recovery and enhancing societal resilience. The precondition for accessing the RRF funds is the creation of a National Recovery and Resilience Plan, aligning with RRF goals, emphasising the government's priority to maximise the use of these available funds for a swift economic recovery and strategic investments in key areas, including upskilling research community.

Another example comes from #*MeToo* movement. In France, even if this movement was not at the origin of national Gender Equality policy, it was widely discussed in the French public space, particularly in relation to the aggression that took place in SciencePo, one of the most famous HEIs in Paris. In Denmark, the #*MeToo* movement has also shed light on issues of gender-based violence and harassment, including in academic and research environments, which resulted in an increased focus on addressing gender-based violence and promoting gender equality within HEIs and research institutions. Debates and discussions have revolved around creating safe and inclusive environments within HEIs, addressing power imbalances, and taking concrete steps to combat gender-based violence and harassment.

As for the change expected, the national policies mostly note the shift in researchers' mindset and accessibility of scientific research, advancing the quality, transparency and accountability of science. Better collaboration between Academia and industry is also mentioned, including a better consideration of researchers' upskilling needs. The main responsible actors for effectuating change, are national authorities and funders as well as individuals HEIs, RPOs and individual researchers.

6.3 Content analysis

Most of the countries hosting pilot institutions consider all eight OS and RRI concepts identified by PATTERN as a focus for the training modules to be developed at a later stage of the project (see The policies mapped are either general documents, such as institutional strategic plans, or thematic ones relevant to a specific RRI area.). What is worth mentioning, is a slight discrepancy between "northern" and "southern"

[32] https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility_en

European countries. In the case of the former, the distribution of the focus is equal among all eight OS and RRI concepts, while for the latter the imbalances were noted.

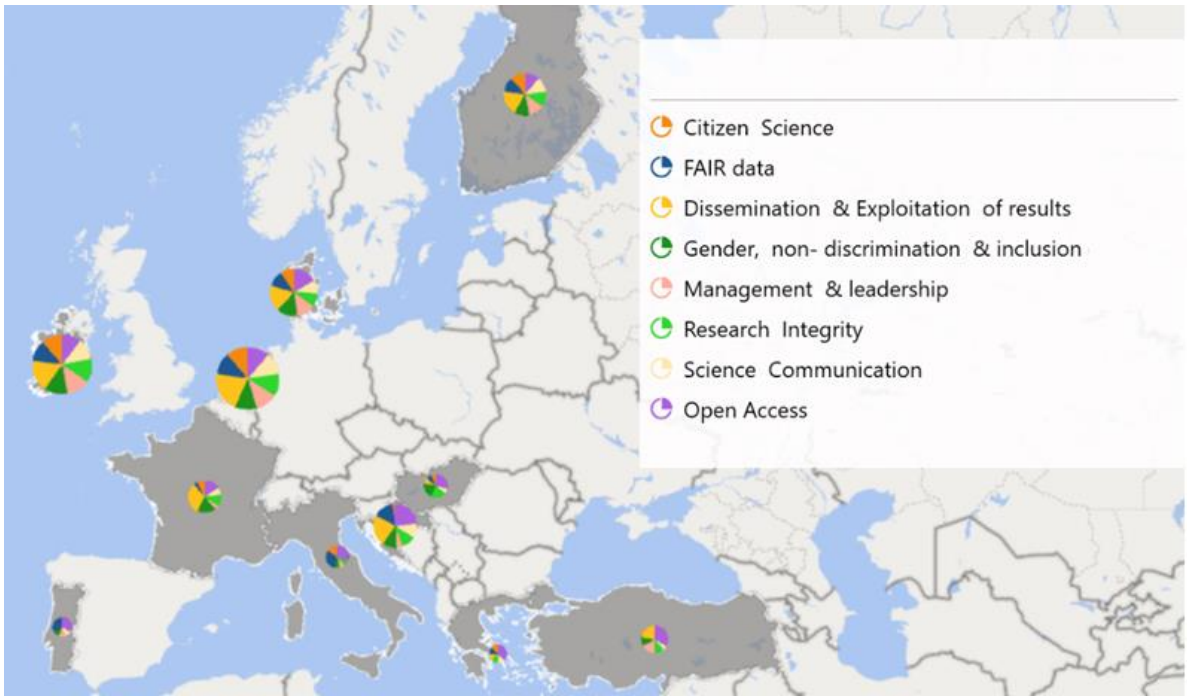


Figure 11 OS and RRI areas in the national policies

In the following sub-sections, the focus on training in each of the eight OS and RRI concepts will be discussed separately.

Open Access

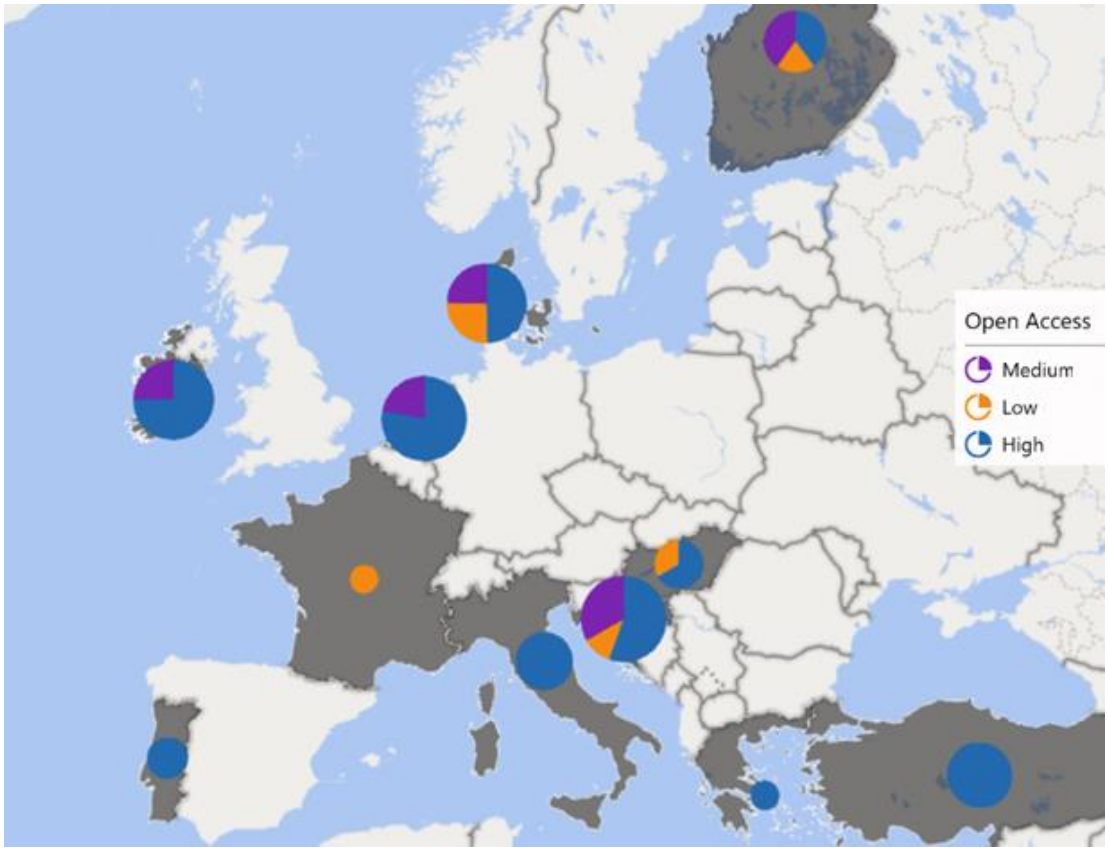


Figure 12 Open Access in the national policies

All countries have at least one policy with a high focus on OA as it is usually part of the overarching OS policy/initiative. In most cases, it follows the OA principle applied to peer-reviewed articles.

While most of the countries under consideration have some of the policies mentioning the need for training in OA, France remains an exception with only a low focus on this.

FAIR data

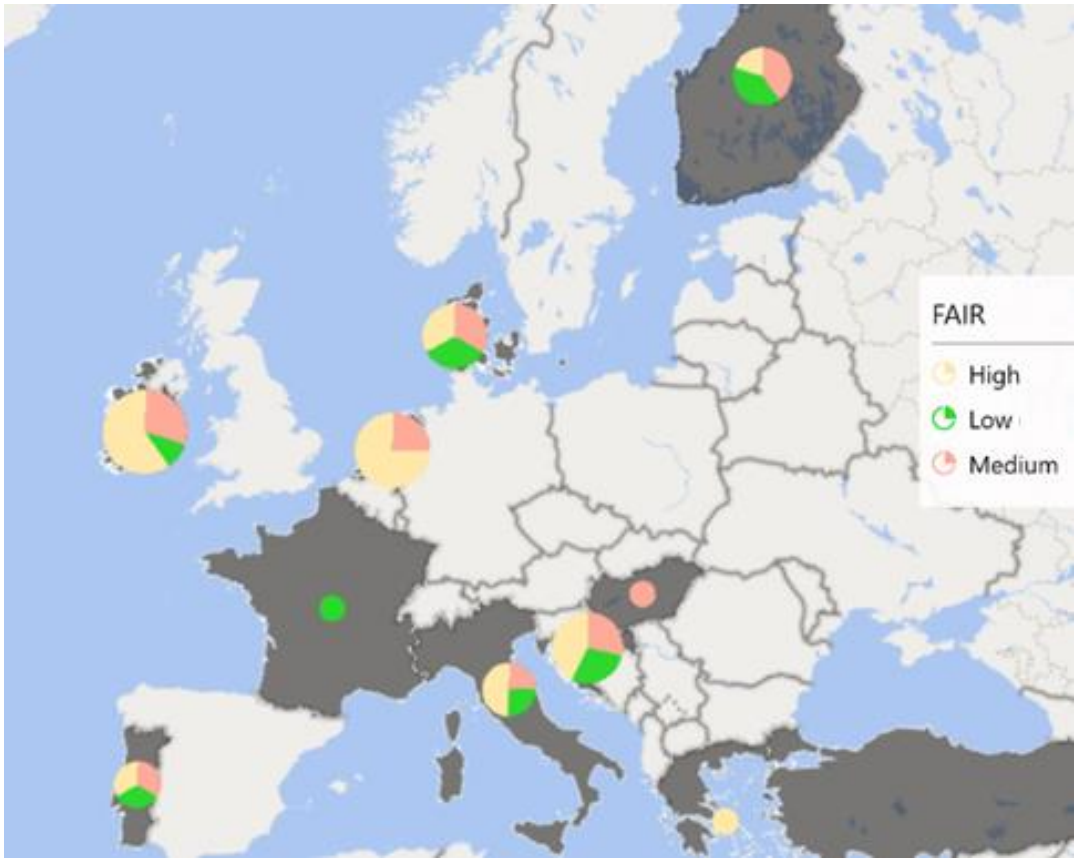


Figure 13 FAIR data in the national policies

Alongside OA FAIR data is one of the main components of OS. National policymakers confirm that ensuring FAIR principles is necessary for building a more transparent and accessible research ecosystem. In this context ensuring proper training for researchers is essential. While most countries have a high focus on FAIR data skills, sometimes a strong commitment is still missing, e.g. in Türkiye.

Gender, Inclusion & Non-discrimination

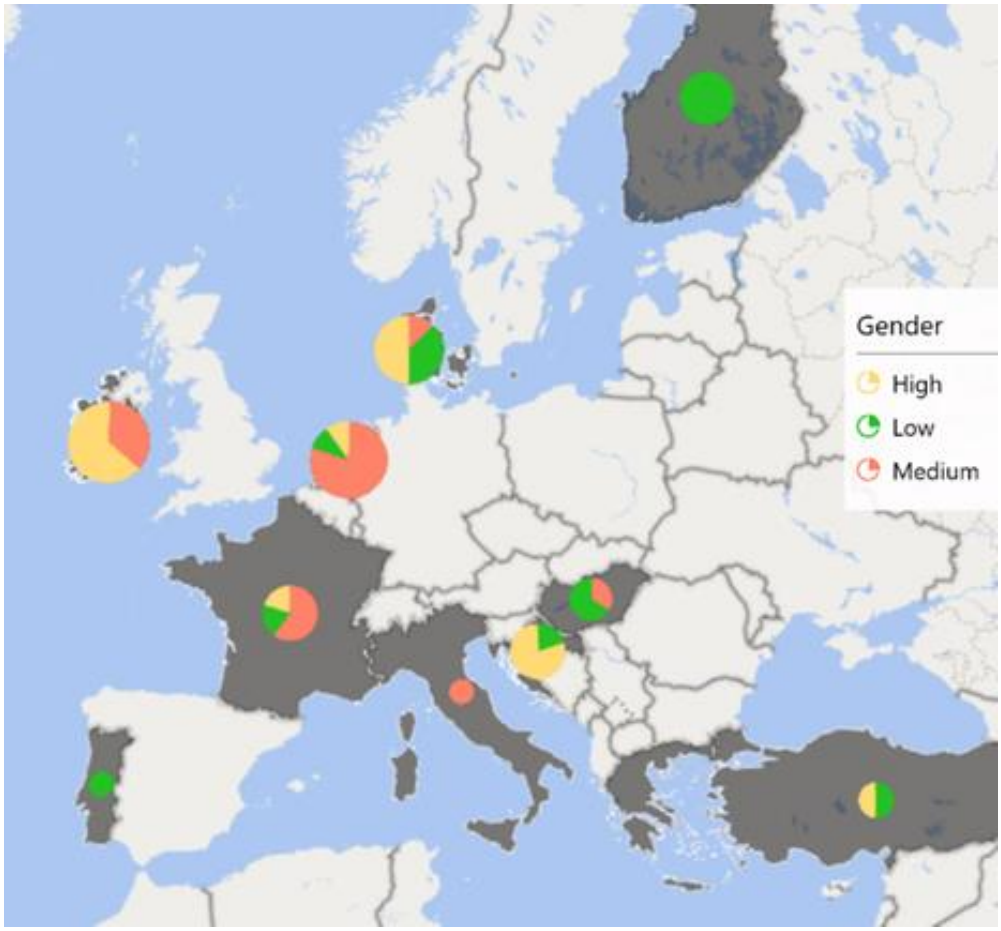


Figure 14 Gender, Inclusion and Non-discrimination in the national policies

As one of the United Nations' Sustainable Development Goals and global EU priority, gender equality is an important aspect that should be supported at national policy level. While gender equality and, in a larger sense, inclusion are usually declared as priorities, the importance of providing relevant training is not always underlined. Therefore, most policies show medium or low focus on these matters.

Research Integrity

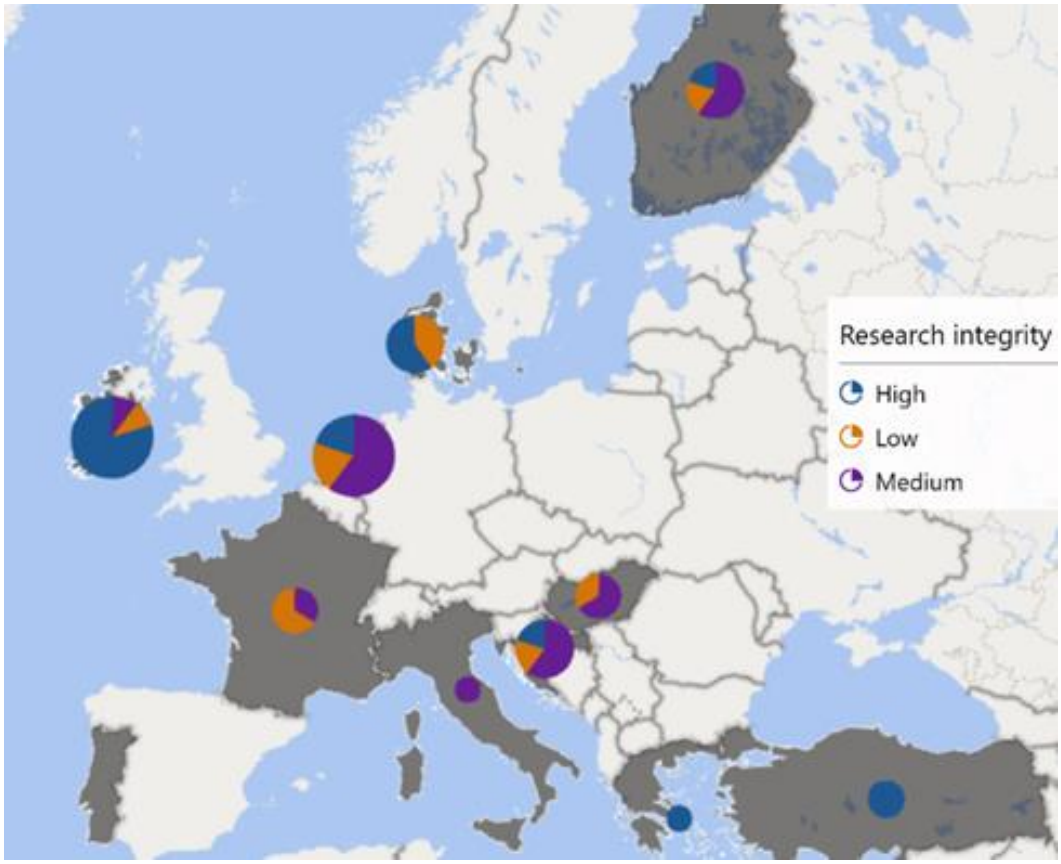


Figure 15 Research Integrity in the national policies

OS and RRI have their grounds in societal challenges and engage society directly in the scientific processes. In a world with wavering levels of trust in science and public engagement, transparency and integrity are crucial. At national policy level, various codes of conduct as well as ethics committees and boards, support the training on research integrity aimed at researchers, thus laying a solid foundation for continued awareness-raising on the relevant concepts, policies, use of new technologies such as AI, and applicability of research integrity principles at national level.

Management

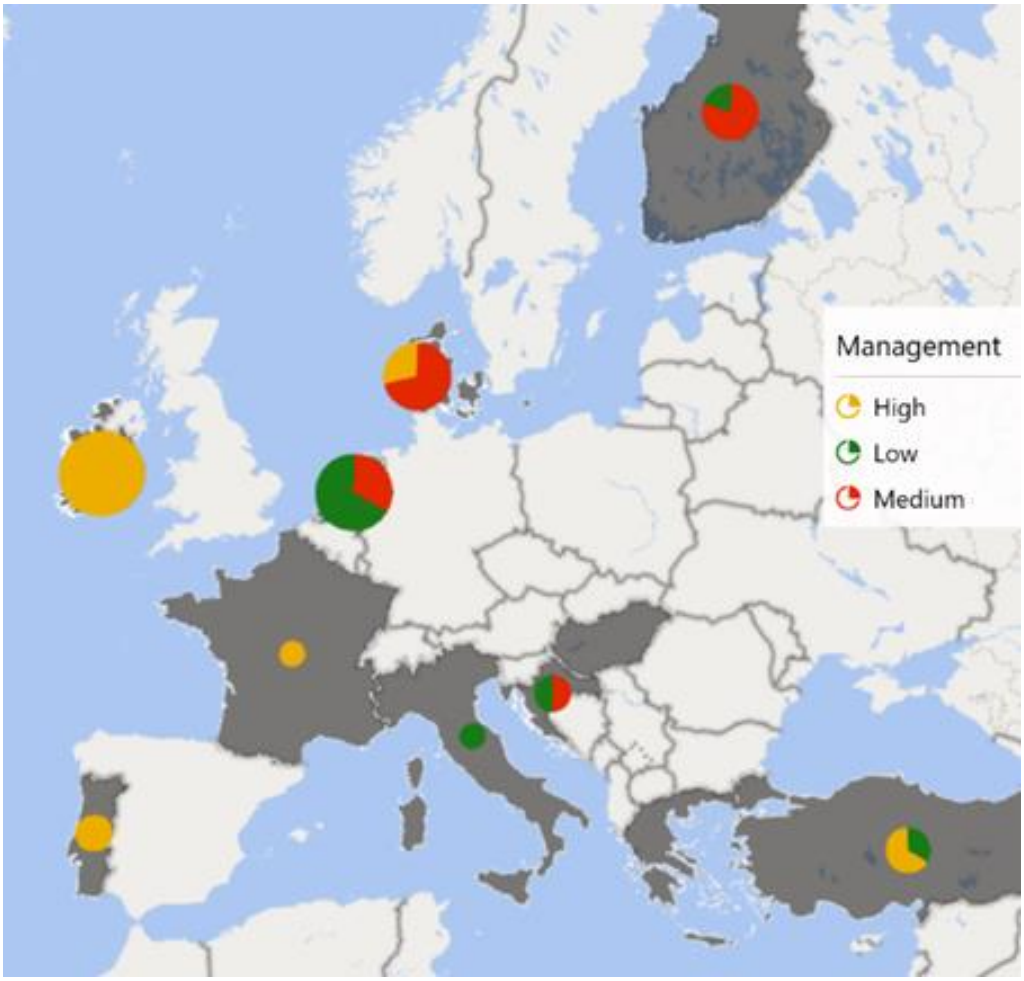


Figure 16 Management & Leadership in the national policies

Proper management and leaderships skills are essential for any researchers looking for career advancement. These skills are indispensable in leading scientific collaborations and complex initiatives that target global societal challenges like climate change for example, and most countries cover to various extent the need for reinforcing these skills within the research community.

Dissemination & Exploitation

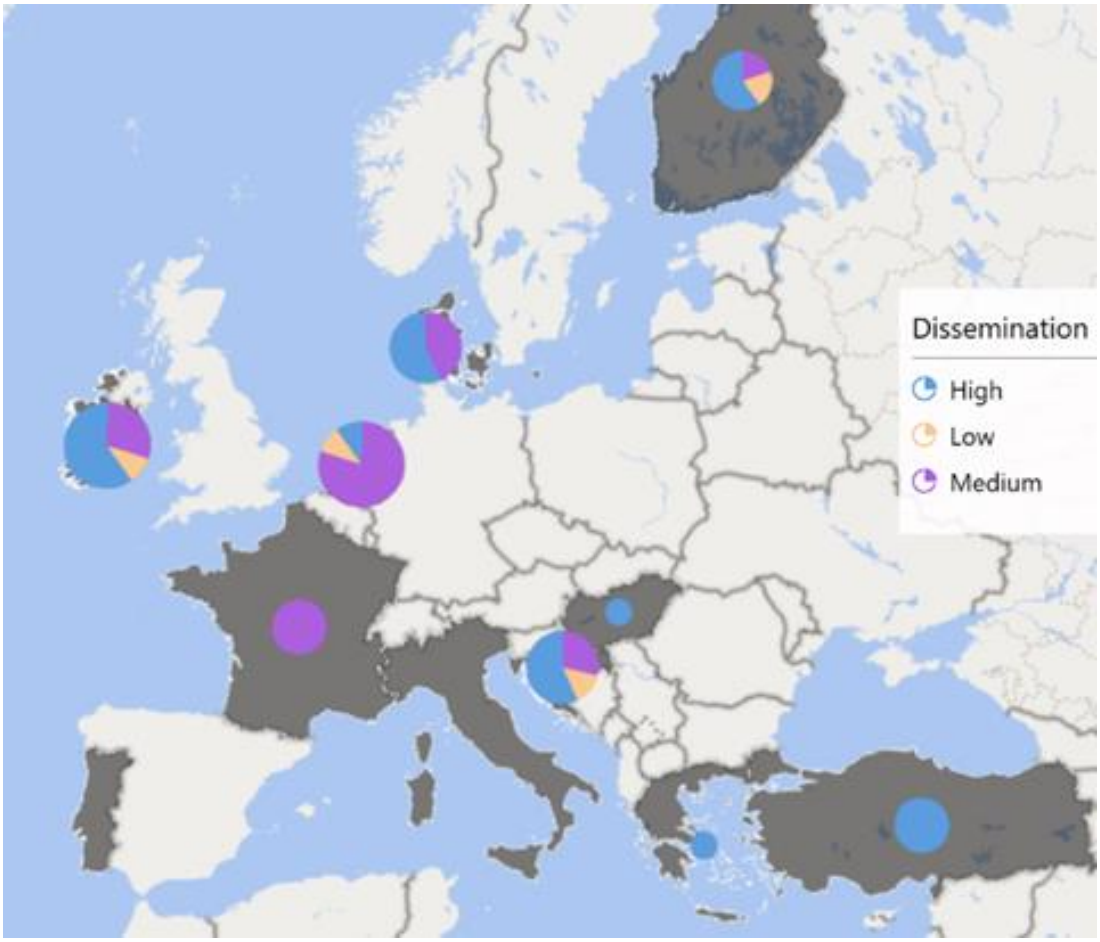


Figure 17 Dissemination and Exploitation of results in the national policies

The national policy makers underline that proper dissemination and exploitation of scientific results are essential for rebuilding and strengthening trust in science.

Citizen Science

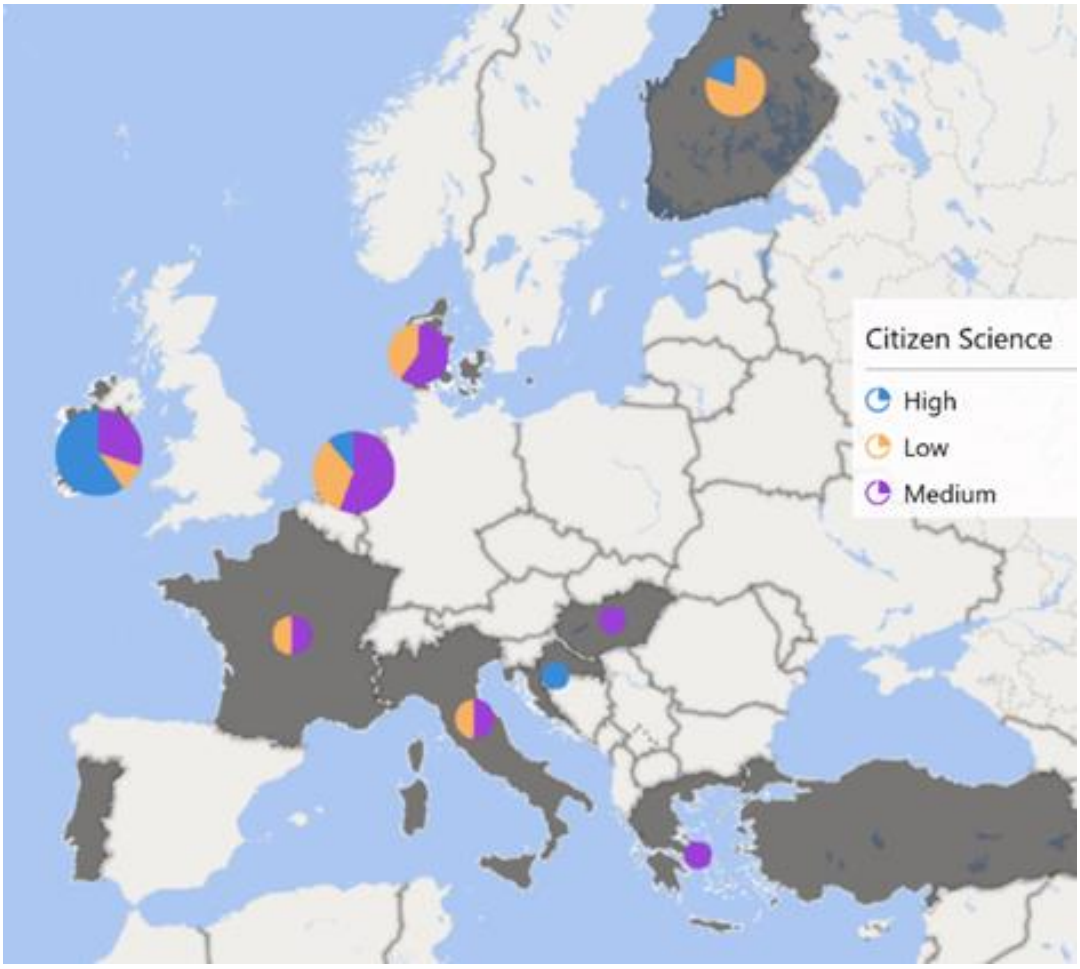


Figure 18 Citizen Science in the national policies

To tackle societal challenges, citizen engagement is indispensable. Citizen Science is still not well enough integrated in many countries, and this gap needs to be better addressed at national level. Correspondingly, the focus on training in this area is quite low compared to other OS and RRI concepts.

Science Communication

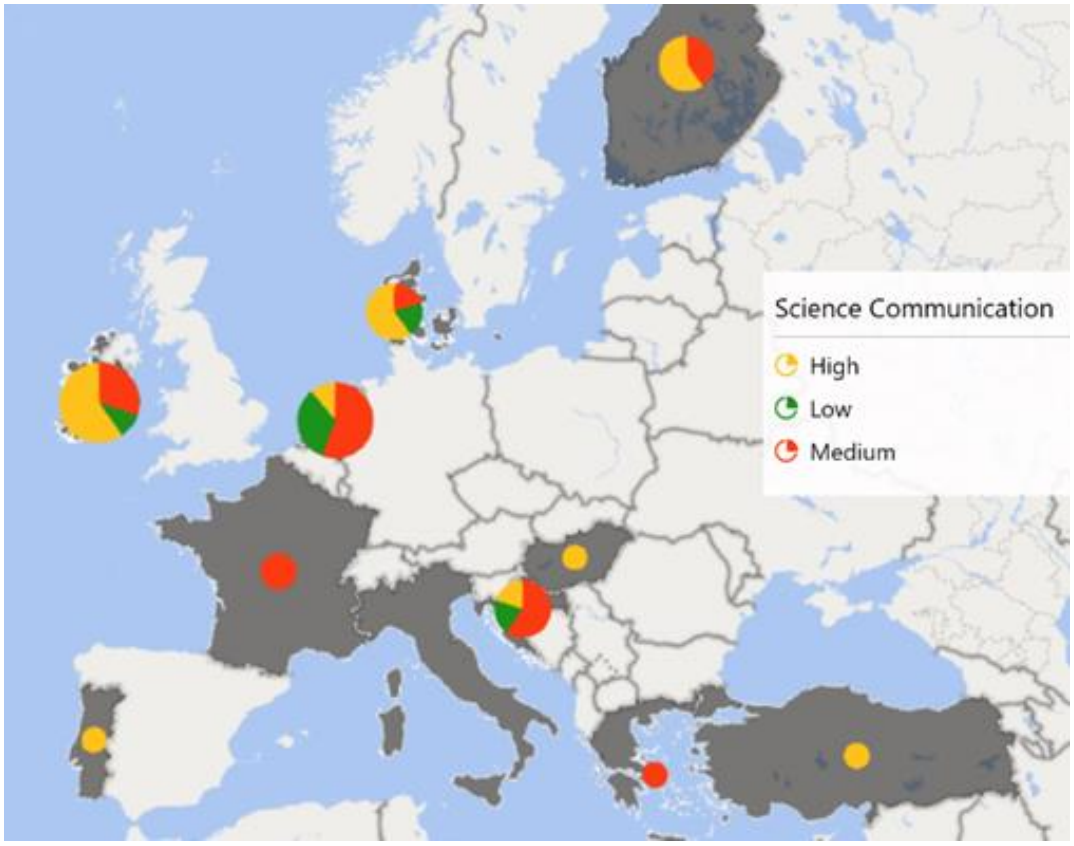


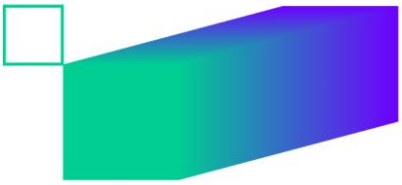
Figure 19 Science Communication in the national policies

National policies mention Science Communication as one of OS and RRI areas to develop. While traditionally the communication of research outputs was mainly focused on academic community, the need for expanding this process to the public and rebuilding trust in science, requires that the science communication skills of researchers are constantly updated.

SWOT analysis

Table 3 presents results of the SWOT analysis of the national policies mapped.

Strengths	Opportunities
• **Strong trend to align national policies with the EU standards/priorities** – the policies are well aligned with overall EU trends in terms especially in terms of OS and OA • **Most of the countries engage multiple stakeholders** – while not the case for all most of the countries ensure proper	• **Support from RFOs** – aligning of the funding schemes with principles of Open RRI would allow for additional push towards embedding the principles. RFOs can help in facilitating and translating certain approaches. • **Potential to address all OS and RRI topics in the recommendations** – while most



collaboration between various actors • **All OS and RRI areas relevant to PATTERN are covered in national policies, even if to different extent** – the national policies and initiatives demonstrate a proactive approach to societal challenges and knowledge dissemination within and beyond academic communities. • **Roadmaps and plans with concrete goals** – most of the countries have established clear roadmap to achieving their objectives in terms of OS or GE	of the OS and RRI topics are covered, there are differences among the various countries. More bottom-up pressure thanks to enhanced provision of knowledge, might be helpful for change and better embedment of relevant concepts. • **Stakeholder engagement** – better collaboration between all actors of R&I ecosystems would allow improvement in identifying pertinent needs in researchers' skills. • **Ongoing moves in research assessment (CoARA)** are great opportunity for national policymakers to get ahead of curve in important changes
Weaknesses	**Threats**
• **In some cases, limited support from the governance and a lot of movement caused due to EU initiatives** • **Limited ability to ensure necessary infrastructure to translate policy in concrete actions and training** • **Overreliance on pushing the implementation details to institutions – a lot of policy remain on the level of framework and does not mandate concrete actions** • **Overall perception that OS and RRI topics are "imposed" top-down and are a "threat" -** poor understanding of relevant concepts and their applicability in research, as well as the perception of the topics as an imposed additional burden, lead to lack of wider interest from the researchers	• **Setbacks and resistance to change** – leadership turnovers, inertia, bureaucracy, power struggles and other internal factors could significantly affect the initiation and implementation of the policies, including on OS and RRI practices. • **Lack of sustainable funding** – development, delivery, update of training materials in the framework of implementation of relevant policies require funds, which is challenging in a long-term. • **Too big number of different policies** – the number of policies and guidelines might be at times overwhelming to effectively keep track of and address the changes needed • **Gender mainstreaming in research** – while all countries address gender equality at the level of staff/environment, not

	properly addressing it in the research questions/content might risk exacerbating the underlying inequalities.

Table 3 SWOT Analysis of the national policies

The SWOT analysis shows that the national policies under consideration lay a strong foundation for responsible research and development of corresponding training and awareness-raising activities. The countries strive for aligning their policies to the EU standards and requirements. Nevertheless, certain shortcomings are evident and related to diversity of country contexts. More holistic approach to OS and RRI and streamlining and easier navigation of the policies would be hugely beneficial for practitioners.

6.4 Practical implications

At national level, the policies have following practical implications as far as the links between policies and trainings on transferable skills aimed at researchers are concerned:

- Setting a framework for the institutional level policies.
- Including OS and RRI principles into national funding schemes.

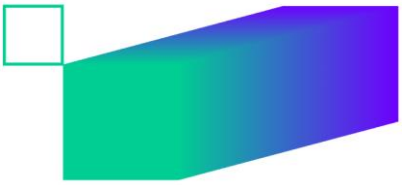
Both directions are presented below.

Setting a framework for the institutional level policies

In general, national policies in the countries under consideration provide a framework for RPOs and HEIs and have recently started recognising the significance of transferable skills for researchers, even if to different extent. However, in most cases, educational efforts on topics related to OS and RRI concepts and transferable skills, still largely operate on a bottom-up principle, with stakeholders taking the initiative to organise necessary training and develop infrastructure for OS and RRI implementation.

Even if the country does not have a comprehensive national policy on OS, some interesting developments could be noted. In Croatia, for example, one of the key goals of the HR-OOZ (Croatian Open Science Cloud Initiative), is the development of a template for institutional OS policies, laying the groundwork for individual institutions to adopt their own OS policies in the future. It is anticipated that in the coming period, this template will be formulated, and more institutions will establish and adopt their institutional OS policies.

Another strategy to implement OS and RRI in this country is integrating it into the evaluation of HEI's process. Under the specific national guidelines on quality standards for reaccreditation procedure of HEIs, the national authorities assess HEIs based on several criteria, including their dedication to promoting, supporting, and facilitating ethics, transparency, academic integrity, and academic freedom across all



levels of the institution. The authorities appraise the institution in various aspects, from the existence of an ethical code to the establishment of a disciplinary committee, regulations governing disciplinary responsibility, and documents related to the operation of the ethics committee. The standards highlight the importance of nurturing both generic and professionally specific competencies within study programmes, and providing support to educators in their professional development. Even with the absence of a national OS policy, the Quality Standards recognise the importance of adopting OS principles within HEIs. Among other criteria, the evaluation also considers whether the university has an institutional OS policy in place, the extent to which it ensures OA to publications, theses, and research data, and the implementation of OS principles into various internal and evaluation processes within the institution.

National policy makers are usually flexible as far as institutional autonomy is concerned. Even if implementing OS and RRI principles requires significant effort and resources from the institutions (cost explosion inherent in the transition to OS andOA agreements with publishers, creation of new job profiles, like CS contact person and/or some type of equality and diversity office), the institutions should define how deep and broad they engage in line with EU and national standards, allowing for a diverse approach, aligned with the institution's vision and its surrounding ecosystem and fit for the selected target groups.

OS and RRI in national funding schemes

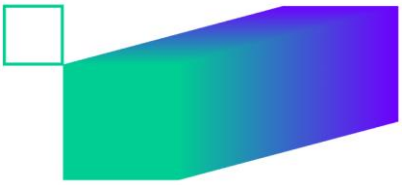
In response to the EC requirement for applicants and partners participating in Horizon Europe calls, the countries under consideration adopted national policies for Gender Equality, to build non-discrimination in society and offer equal opportunities to all, gender stereotypes aside.

National funders also require the candidates to the calls for proposals to ensure Open Access to publications resulting from the projects funded whenever possible. The awardees must also develop a research data management (RDM) plan and make it publicly accessible through an institutional repository. Furthermore, they are expected to store research data in accordance with FAIR principles whenever feasible. Having Gender Equality Plan, embedding Research Integrity and citizen engagement principles also became prerequisites for successful project proposals at national level in line with Horizon Europe requirements.

However, there is a need for further harmonisation and commitment to European standards to help facilitate national and institutional capacity building and engage a variety of stakeholders. The lack of defined researchers' career paths, unsustainable funding and insufficient support for reward mechanisms, particularly for science-society collaborations, are amongst the main barriers. A need for more inclusive and diverse incentives, interdisciplinarity, but also for investing in training opportunities should be recognised as supporting research within and outside of purely academic careers.

6.5 Concluding remarks

The national policies aim at enabling the respective countries to accelerate their movement to environmental, industrial, technological, health and cultural



independence, further developing their scientific and industrial competitiveness, but also tackling major societal challenges. The priorities for action are promotion of OS and RRI as well as enhancing connectivity between Academia, society and industry.

However, despite recent progress, particularly in embedding EU requirements for successful proposals into many national funding schemes, there is a low focus in the policies and laws on the training aimed at researchers. Most often, the institutions willing to offer more specialised training to their research communities, take initiative, which is still a challenge for many of them, particularly because of funding issues and lack of appropriate infrastructure.

Some OS and RRI areas are better covered than others. This is primarily due to the EU requirements for successful project proposals. While gender equality, open access, FAIR data, research integrity and citizen engagement gradually become part of the national policies and laws, others like management and leadership remain insufficiently addressed. There is a slow, but obvious process of awareness raising on OS and RRI concepts as well as on transferable skills.

The countries should prioritise an adoption of comprehensive OS and RRI policies, which will also be helpful to fill the current overarching gap of low focus on the trainings for researchers and ensure consistency between countries and institutions.

7 Institutional policy mapping and analysis

7.1 Overview of the policies mapped

In total, 107 institutional policies were mapped and analysed in 14 institutional policy mapping reports submitted by partners representing PATTERN pilot institutions (AU, DANS, HEAL-Link, IZTECH, LPI, OpenAIRE, RBI, SISSA, Sci-Link, TCD, UDebrecen, UHelsinki, UMinho, UniSR).

All pilot institutions have policies either specifically dedicated to certain OS and RRI areas, or at least mentioning their alignment with OS and RRI principles and practices in general.

The largest number of relevant policies is in TCD (26%). In other pilot institutions, there are fewer policies mentioning the need to provide knowledge on transferable skills for researchers. However, it is not only the number of documents that is important, but also the legal quality, level of detail, and description of concrete actions and mechanisms that warrant researchers' access to training on transferable skills.

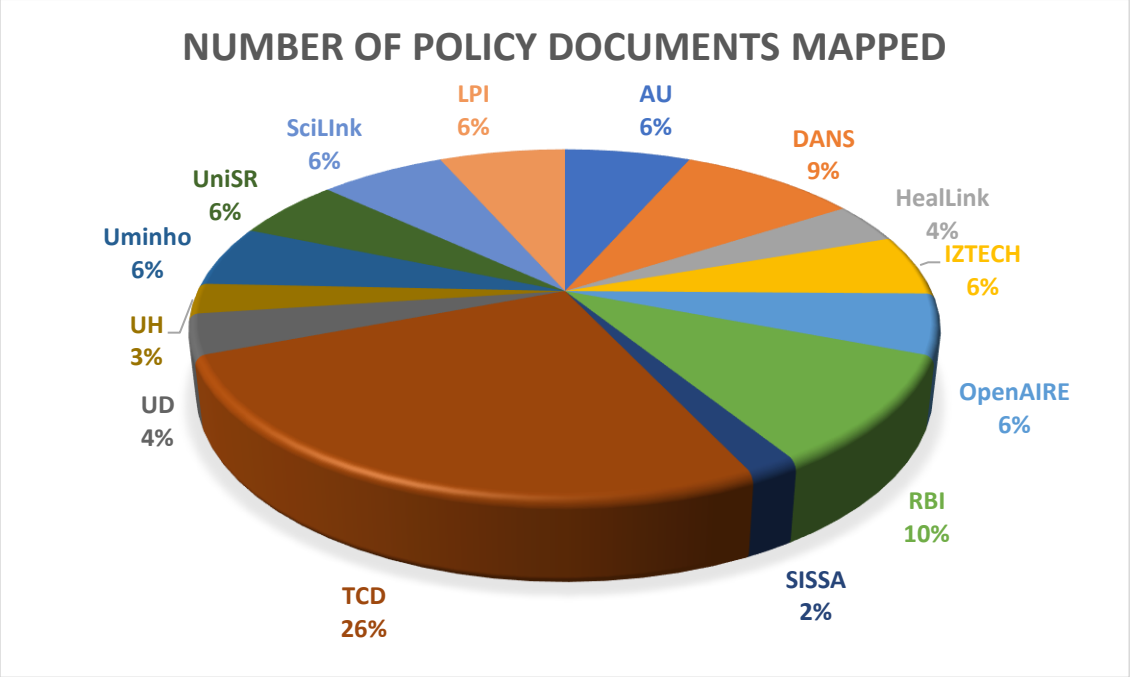


Figure 20 Proportion of the policies mapped per institution in a total number of the policies mapped

In terms of type of institutional policies mapped, the majority are strategic documents and guidelines, while thematic documents such as Gender Equality Plans, for example, and support policies follow.

Support policies include relevant HR policies and other documents such as projects outputs that are considered as part of institutional policies. These are mostly Institutional Roadmaps or guidelines deriving from participation of respective institutions in the EU projects.

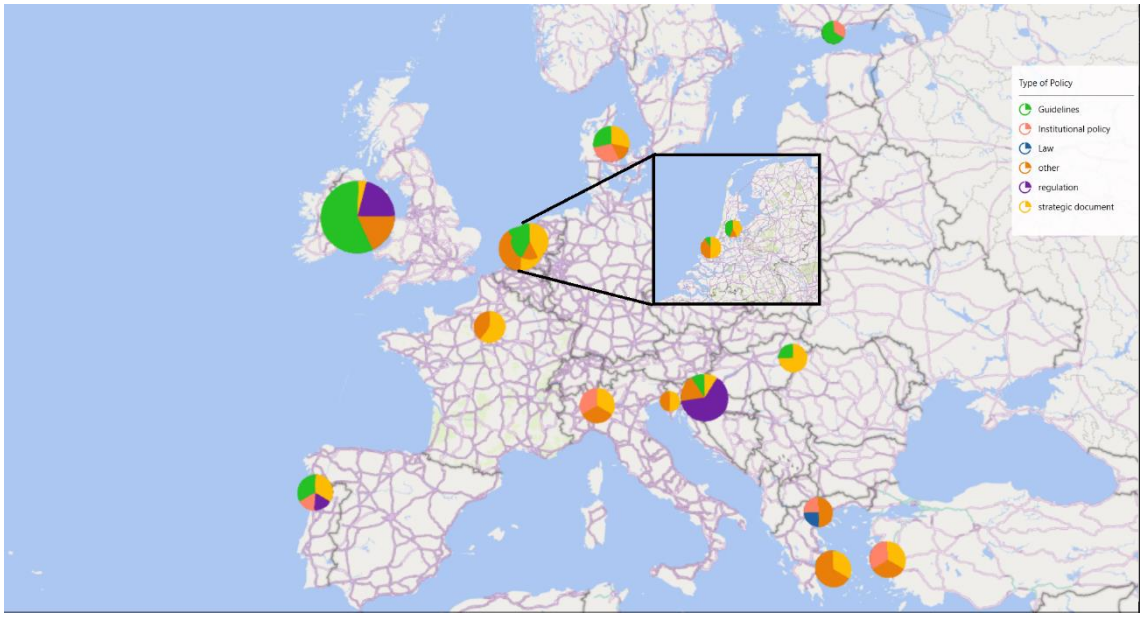


Figure 21 Types of the institutional policies mapped

An overview of the number of policies mapped in relation to different OS and RRI areas is presented in the Table 4 below.

Institution/ Total Number of relevant policies	Number of policies mentioning OS and RRI areas in general and thematic institutional policies							
	OA	FAIR data	Citizen Science	Research Integrity	Gender, Inclusion	Science Comm	Dissemination & Exploitation	Management
AU/7	3	3	1	2	2	4	2	1
DANS/10	7	8	7	9	10	8	9	7
HEAL-Link/3	1	1	0	1	1	1	1	0
IZTECH/6	6	6	6	6	6	6	6	6
LPI/7	4	3	3	3	4	3	3	4
OpenAIRE/6	2	4	0	1	1	2	3	1
RBI/11	3	2	0	7	7	3	9	6
SISSA/2	1	1	0	1	1	1	1	0
Sci- Link/7	7	7	5	7	7	7	7	4
TCD/36	18	16	4	15	6	12	16	8
UD/4	2	1	1	2	2	3	2	1

UH/3	3	3	3	3	3	3	3	3
UMinho/6	2	2	2	2	4	2	3	4
UniSR/6	2	2	1	2	1	1	1	0

Table 4 Overview of the number of the national policies mapped in relation to different OS and RRI areas

In terms of initiation of the institutional policies, the main actor, especially at strategic level, is the governance. Correspondingly, it is crucial to further raise awareness about OS and RRI practices not only among researchers, but also within the decision-making group.

The willingness to take part in the EU and national projects and apply for relevant funding, is a key factor for aligning the institutional policies with OS and RRI principles, also because of enlarged networking and mutual learning opportunities when the governance members could influence and be influenced by their peers and adopt good practices.

Another key factor for including OS and RRI practices in the institutional documents is understanding of the important role that the HEIs and research centres have nowadays as far as the social responsibility of science is concerned. The institutions' dedication to promoting OS and RRI culture is evident in their continuous educational and research support efforts. These institutional initiatives are, of course, structured to primarily benefit their own researchers, while also expanding their reach and know-how to the broader local and national communities.

The integration of OS and RRI principles, at least in general, into the institution's strategic or thematic policy documents, enables the institutions to reflect more thoroughly on the resources that could be allocated for practical implementation of the policies. Staff, infrastructures, communication campaigns, development and delivery of the trainings require substantial reflection and funding effort. Therefore, the policies mapped should be regularly assessed and reviewed through their impact on research practices and educational activities.

In terms of enforcement level, the institutional policies mapped are usually mandatory. "Optional" character mainly refers to the recommendations part, e.g. on researcher competences' self-assessment.

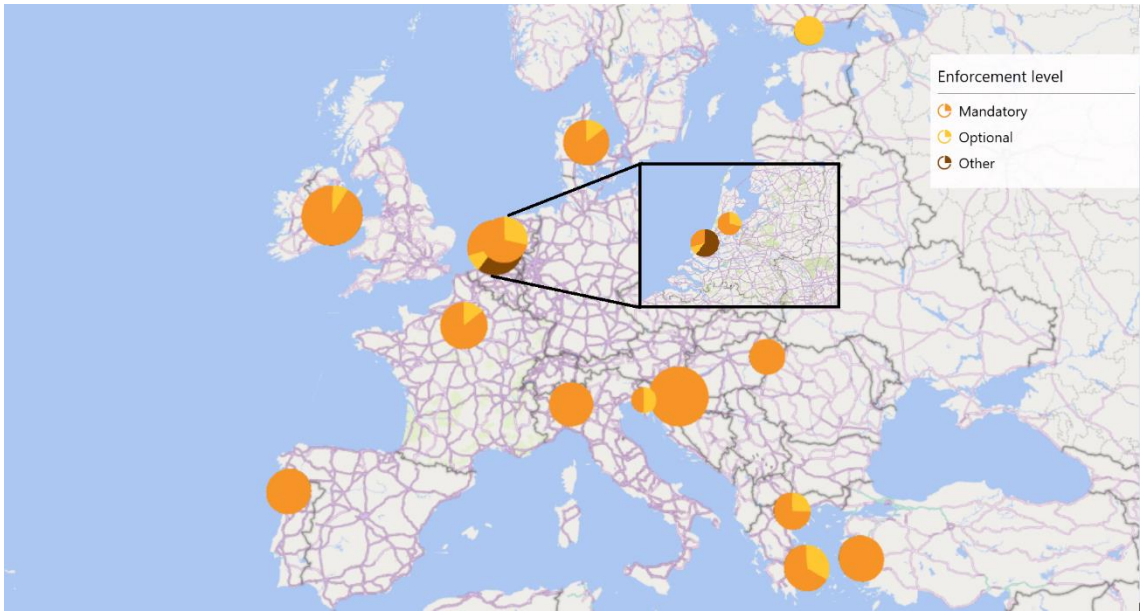


Figure 22 Enforcement level of institutional policies

In terms of timeframe, most of the policies are open-ended which allows for more flexibility and time to raise awareness on the OS and RRI topics among students, researchers and other staff members. Subsequently, more opportunities to increase interest in existing training offerings and/or developing new ones could arise.

Moreover, many policies have a limited timeframe, but are reviewed at the end of their implementation period and could be transformed into "next round" similar document. This is often the case for example, for institutional strategic plans that have a limited timeframe, but then are renewed for the next implementation period.

As the need to provide knowledge on transferable skills to researchers is usually recognised at the institutional level (even if to different extent), and relevant trainings should be reusable and sustainable, the documents provide a basis for long-lasting training offerings. It also explains the fact that most policies under consideration are long-term.

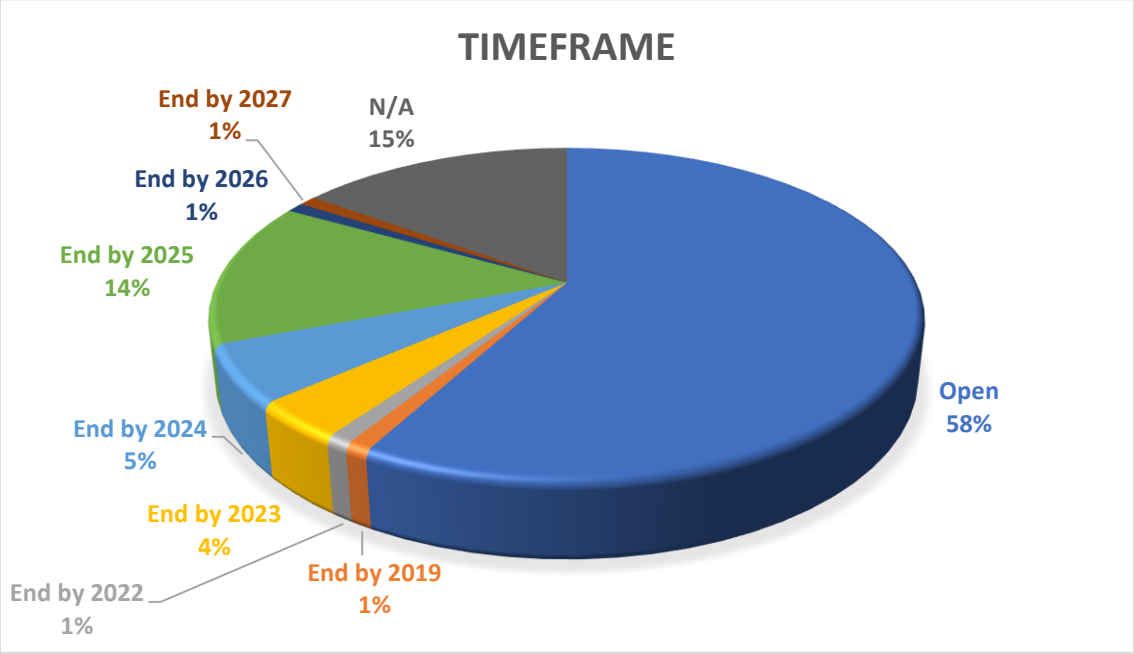


Figure 23 Timeframe of all institutional policies mapped

Overall, the institutional policies mapped show a good balance in terms of policy types, enforcement levels, and timeframes. The policies lay a strong foundation for responsible and ethical research conduct, while also taking into consideration that cultural change takes time.

7.2 Context and theory of change

An increasingly complex and rapidly evolving research landscape, a need to respond to societal challenges, as well as digital transformation, require adaptive and flexible policymaking to react faster at all levels. Institutional policies in research organisations build on the values, principles and requirements set at EU and national levels, and express the need to step up efforts in implementing RRI practices, including through reinforcement of transferable skills within the research community.

The changes that the institutional policies look for, incorporate those declared at EU and national levels, but reflect the institutional level of granularity:

- **Integrating and particularly, putting into practice a common set of values and principles for R&I**, which are often presented in institutional policies as "strategic goals" or "directions" for upholding values (Ethics and Research Integrity), freedom of scientific research, gender equality and equal opportunities, working better (free circulation and mobility, pursuit of excellence) and working together (communication, management, coordination, inclusion, societal responsibility).

- Incentivising and enhancing OS and RRI skills and practices by concrete practical measures and actions for **change in research culture and mindset**;

- Making the **institutions eligible for national and EU funding** by adopting relevant requirements, such as having a Gender Equality Plan, policies on Open Access to research papers, Ethics, FAIR data.

- Being aligned with commonly accepted principles and practices, but envisioning **tailored, institution-specific approaches** and ways of doing in regard to OS and RRI and provision of relevant knowledge.

The context of adopting relevant institutional policies and the change expected, are largely determined by global trends at EU and national levels. Even if the research and Higher Education ecosystems could often be resistant to change, including at the institutional level due to specific leadership styles, socio-cultural background, field(s) of research and other factors, the dynamics towards more understanding and acceptance of OS and RRI practices clearly exists.

7.3 Content analysis

The policies mapped are either general documents, such as institutional strategic plans, or thematic ones relevant to a specific RRI area. Figure 11 demonstrates that all eight areas identified by PATTERN as a focus for training on transferable skills aimed at researchers, are mentioned in the institutional policies, albeit to varying extents. This creates a potential for development and delivery of relevant trainings.

Engaging in regular dialogues within the institutional research community and governance as well as through interdisciplinary collaborations, external partnerships and exchanges with national bodies and peer institutions, could be helpful for keeping the policies content aligned with the EU and national standards.

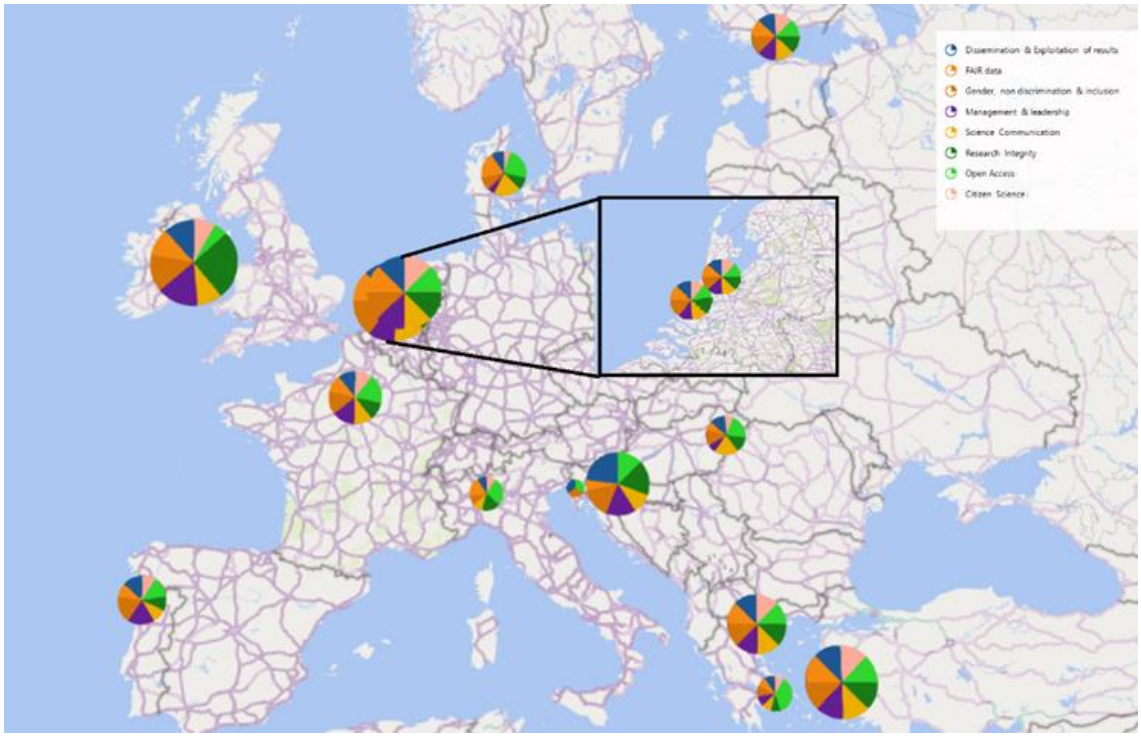


Figure 24 OS and RRI areas in the institutional policies

The following sub-sections show the extent to which specific OS and RRI areas of trainings on transferable skills are covered in the institutional policies mapped.

Open Access

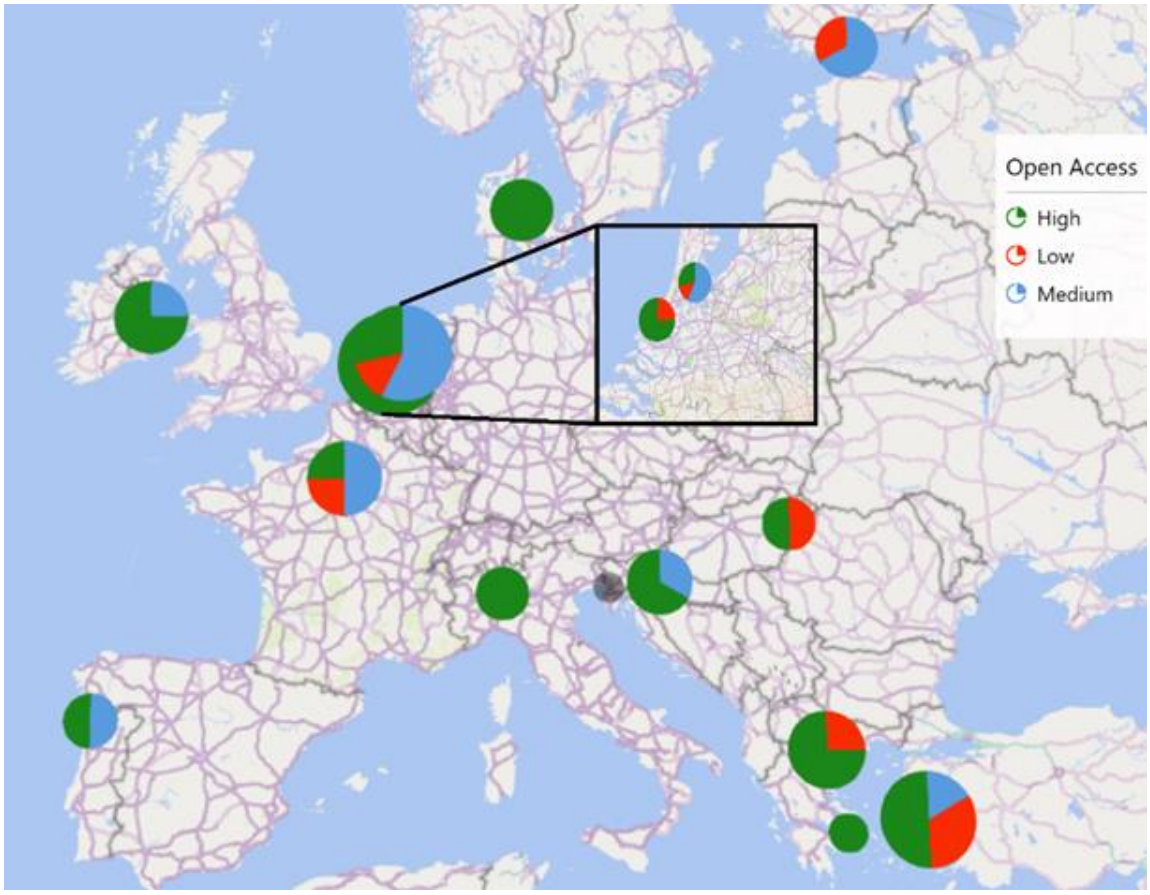


Figure 25 Open Access in institutional policies

OA is clearly one of the main foci of relevant institutional policies. Most often, the mandate for archiving research papers in the institutional repositories raises high expectations in increase in the repositories' contents. Researchers should be trained and guided on the implementation of OA principles in their everyday work, to foster the accessibility of research outputs and change of publication culture.

Another trend is to include all members of the institutional community who carry out relevant activities (management staff, researchers, lecturers, administrative and support staff) and produce research outputs (such as publications, research data, and software), as well as Master and PhD students (as regards their thesis and scientific papers). This could expand the target audiences for the trainings featuring OA matters.

Finally, the policies mentioning OA principles often explicitly rely on the academic libraries as main support for their implementation. In this context, the libraries often

offer training activities on both explaining the requirements of OA and its technical aspects like the use of information systems.

FAIR data

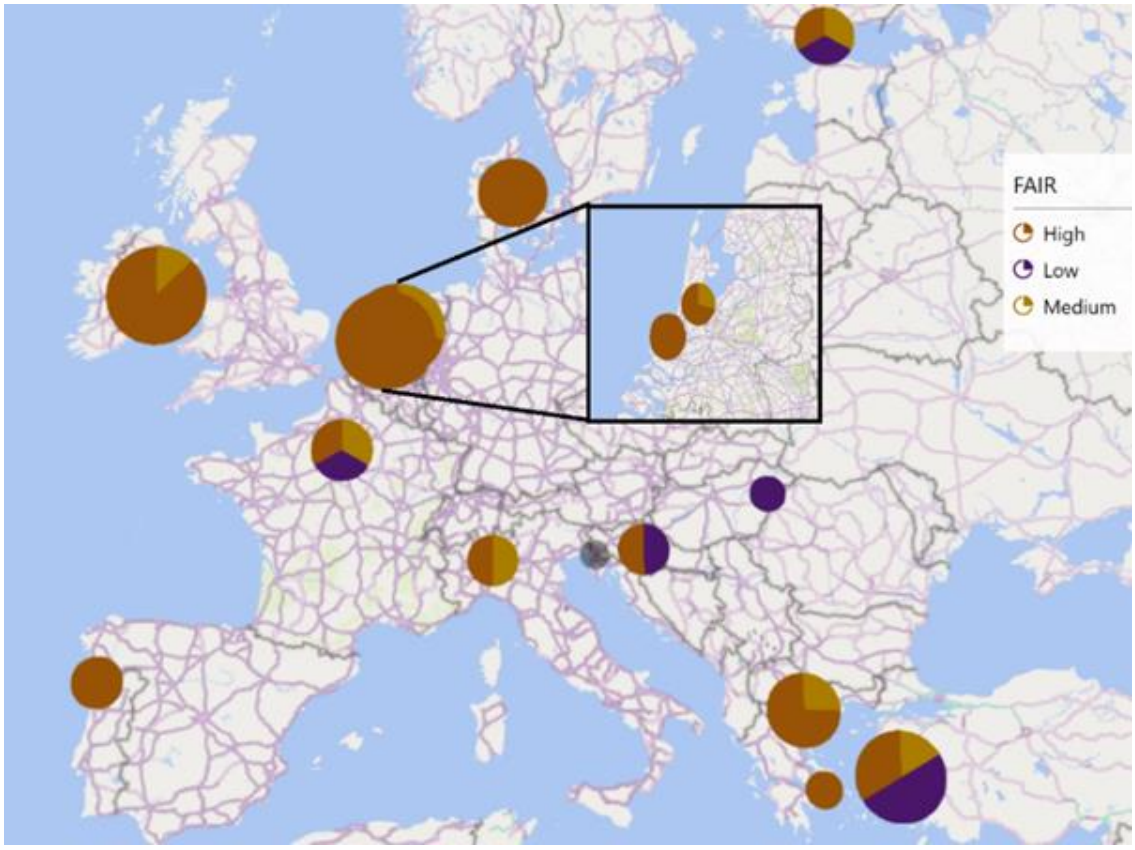


Figure 26 FAIR data in institutional policies

FAIR data and Research Data Management (RDM) are also one of the main targets of the institutional policies due to relevant national and EU requirements, usually interlinked with OA area.

Various strategies to adopt FAIR data principles have been outlined in the institutional policies, to achieve three pivotal objectives:

- to adhere to FAIR data principles and practices while integrating diverse research outputs;
- to embed data management within research endeavors, ensuring transparency and integrity;
- to set definitive standards for data handling throughout its lifecycle, with a stipulated storage duration (at least five years in most cases).

To bolster these aims, the institutions ensure the provision of technical infrastructure, avail expertise and facilitate advanced training, including at PhD level, acknowledge data-sharing efforts as research-centric activities, and determine the data's value in terms of reusability as interoperability of data, as well as extended storage.

The institutional policies are quite comprehensive and often comprise a direct reference to the trainings aimed at researchers, to guide them on these matters. The policies enable the development and support of OS and data support infrastructure, completed with helpdesk services at different levels: institution, but sometimes also at faculty/unit levels. The establishment of a single Contact Point at institutional level is also a helpful institutional arrangement aimed at receiving and handling queries related to FAIR data and RDM.

Gender, inclusion & non-discrimination

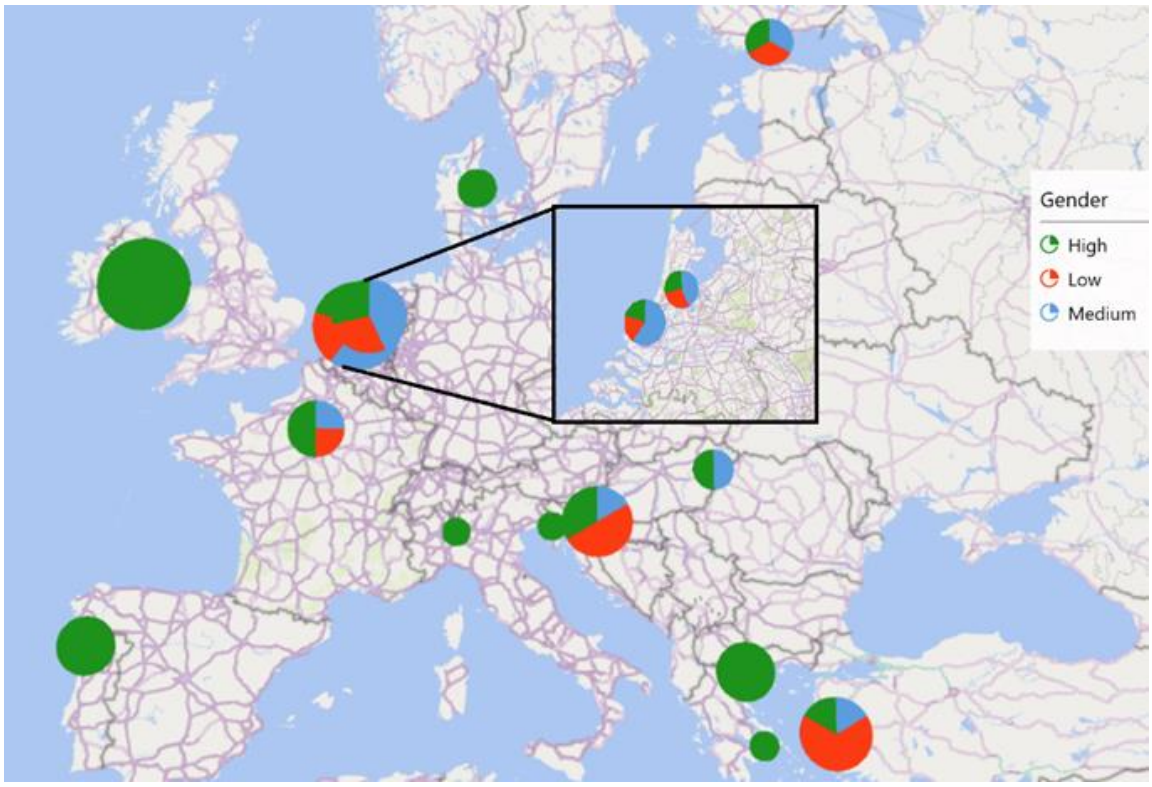


Figure 27 Gender, inclusion & non-discrimination in institutional policies

The Gender Equality Plans are commonly adopted to promote gender equality within the institutions. These documents were drawn up in response to the EU requirements for research institutions and HEIs seeking to access funding from the Horizon Europe Programme.

These Plans indicate the importance of gender equality, define measures to eliminate existing inequalities and gender-based violence, and empower women in the scientific community to active participation. This institutional commitment to

maintaining equality and inclusion ensures that research endeavors should be conducted on a level playing field, free of favoritism. The need to support a provision of knowledge to the researchers on these matters is not usually directly mentioned in the Plans but is nevertheless a powerful tool to raise awareness on different aspects of gender equality.

Other aspects of inclusion and non-discrimination, such as disability, socio-economic background of research staff and students, ethnic and national origin, are more present in the institutional HR policies, rather than in specific thematic documents. These policies comprise generally formulated principles that ensure equal conditions for all candidates and employees to secure job positions, fulfill their research tasks and engagements, and express their intellectual abilities.

Research Integrity

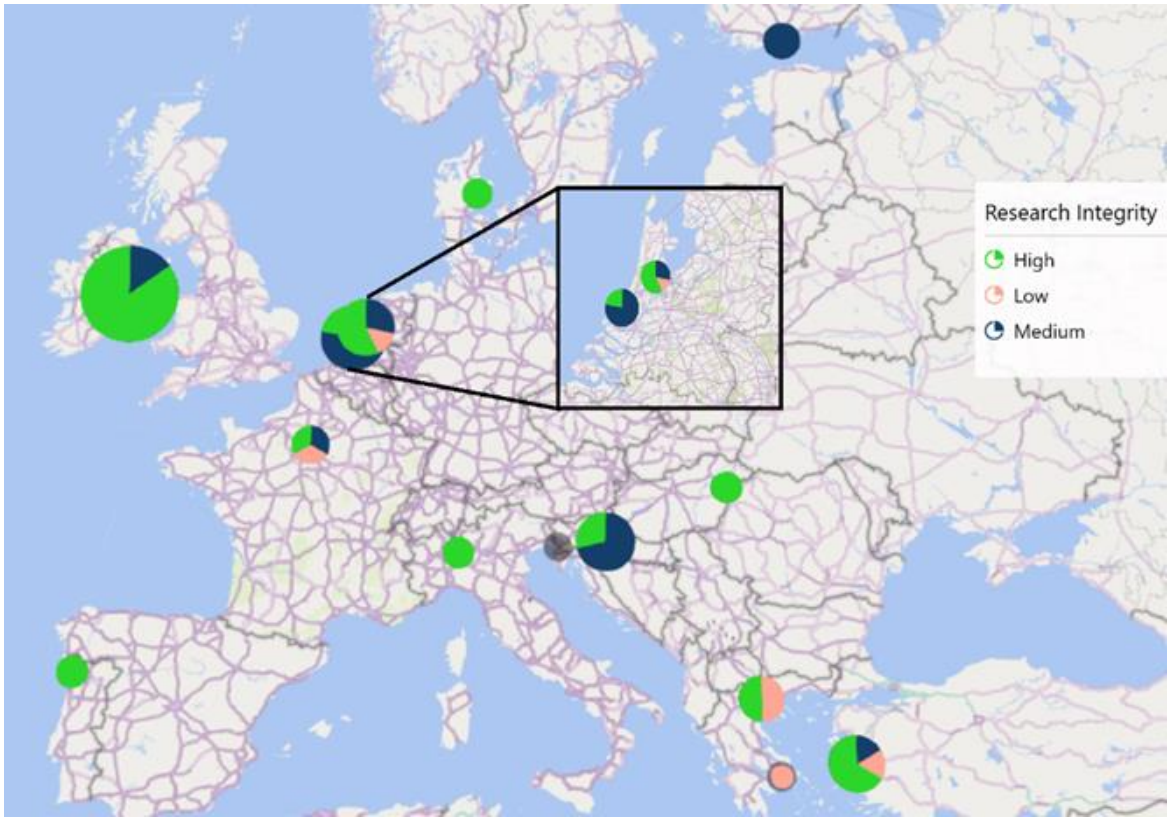


Figure 28 Research Integrity in institutional policies

The institutions' ethical stance based on Research Integrity, entails the planning, development and presentation of research outputs as well as handling the conflicts of interest, in strict accordance with the high standards of research ethics.

In the institutional thematic documents, such as Research Code of Conduct, Research Integrity Charter, regulations on work organisation, there is a strong emphasis on proper storage, preservation, processing and responsible sharing of research

documentation, as well as protecting the privacy and identity of study participants to ensure the secure sharing of raw data after the publication of research outputs.

Such an approach safeguards against the risk of data loss, destruction, or misuse, and recognises the importance of maintaining confidentialty of study participants. The institutional environment is usually stimulating for provision of training on ethics and research integrity matters, as the institutional policies are quite detailed in formulating the guiding principles and values for responsible and ethical conduct of research; they outline the framework, define central concepts and articulate the responsibilities and obligations of the different parties at the institution in relation to ethics and freedom of research.

Management & Leadership

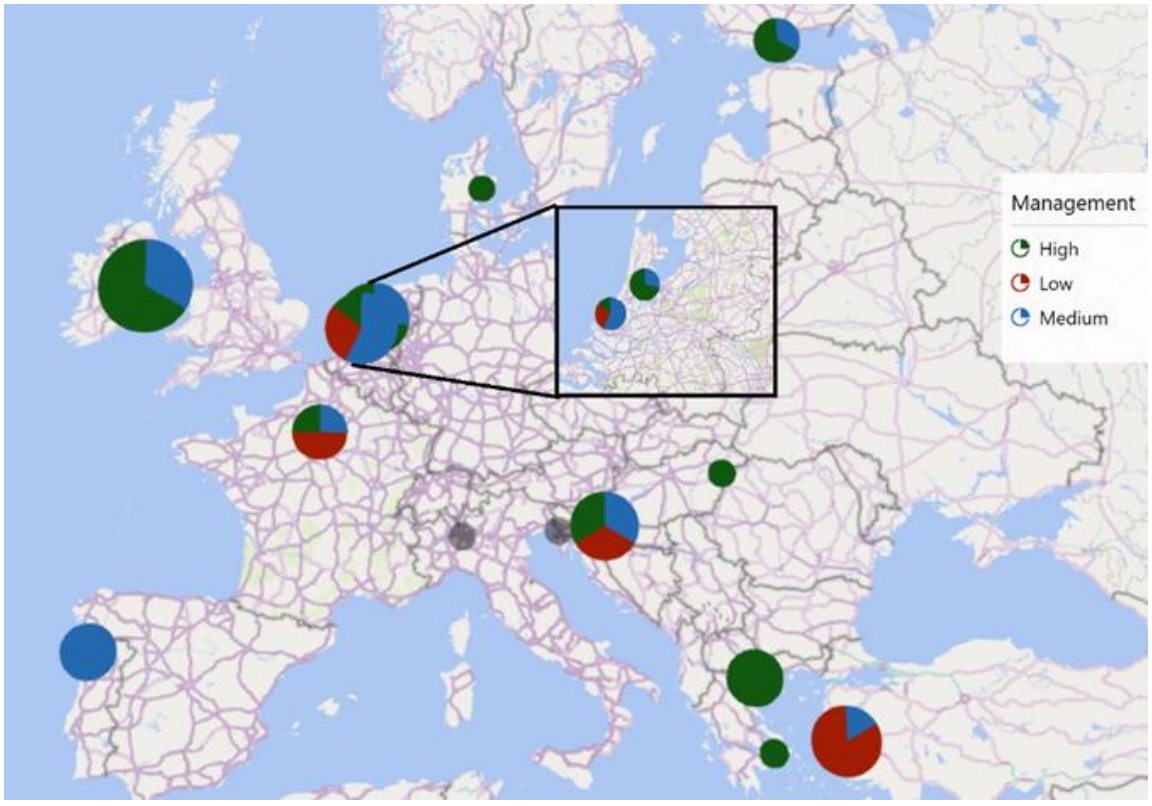


Figure 29 Management & Leadership in institutional policies

Development of management and leadership skills is also an important topic at the institutions. Three dimensions of leadership could be distinguished: personal, organisational, and strategic management.

Dissemination & exploitation of results

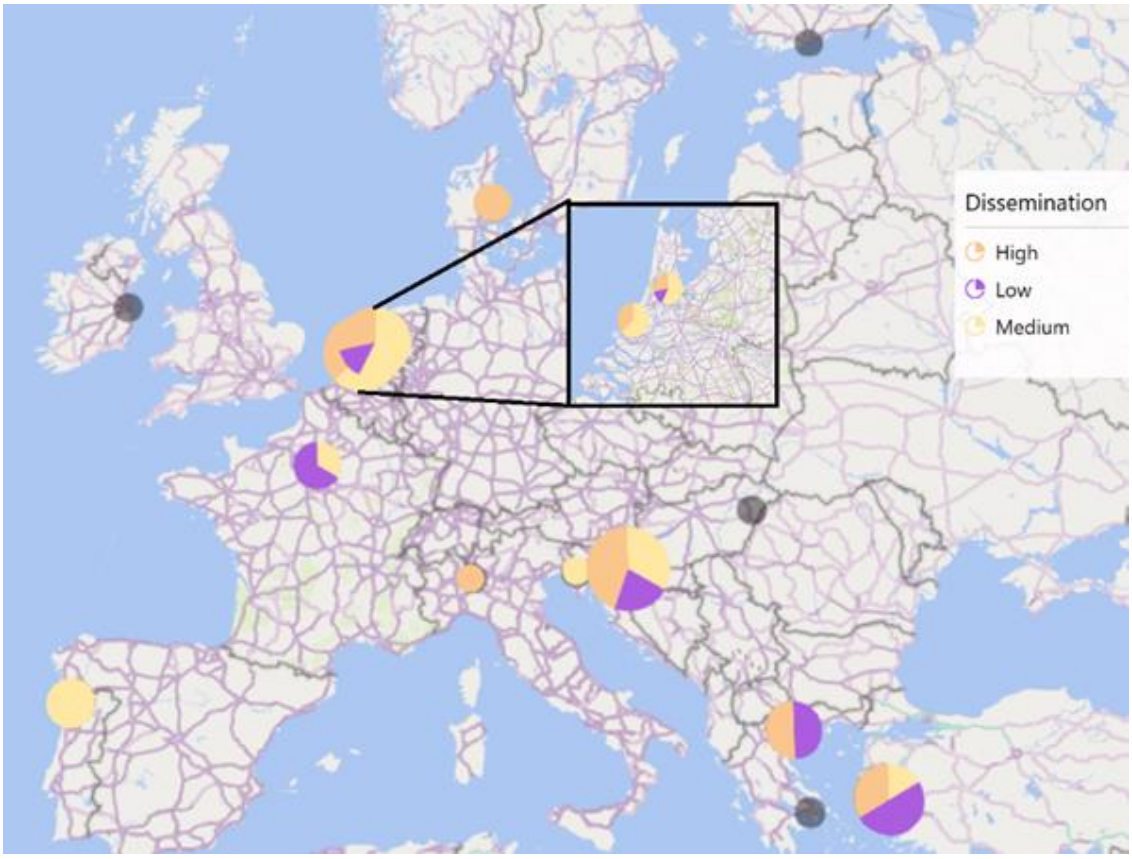


Figure 30 Dissemination & exploitation of results in institutional policies

The focus of dissemination and exploitation in institutional policies' stipulations is on the results, i.a. all research output generated by research activities, but also by participation of the instititutions in various projects, especially in EU funded projects. The policies mention, to different extent, the scientific know-how, algorithms, databases, new infrastructures, networks, and research methodologies. The scientific results have the potential to be either commercially exploited or lay the foundation for further research.

Citizen Science

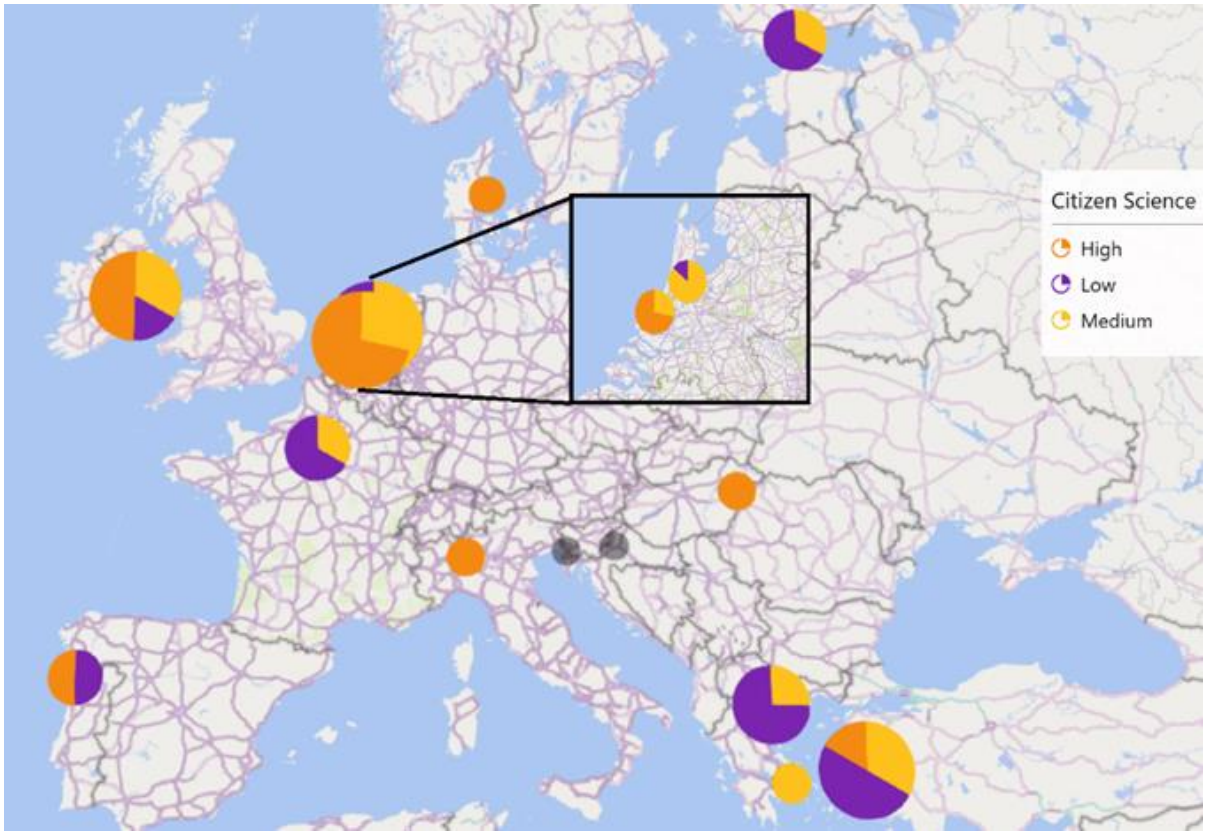


Figure 31 Citizen Science in institutional policies

Citizen Science is usually present in institutional policies as part of OS in a broader perspective. Some institutions have already started a process of institutional change to adopt Citizen Science and benefit from both scientific and societal benefits that it can bring to their research practices. However, in many cases knowledge and understanding of this research methodology and policy orientation are still quite limited at the institutional level.

This knowledge deficit is conducive to training and awareness-raising activities, especially taking into account that citizen engagement became one of the horizontal prerequisites for successful proposals in Horizon Europe. By elaborating on concepts, providing examples, concrete expertise, explaining benefits and ways to approach Citizen Science, the institution, individual researchers, as well as members of the public could be more easily engaged into Citizen Science activities.

Science Communication

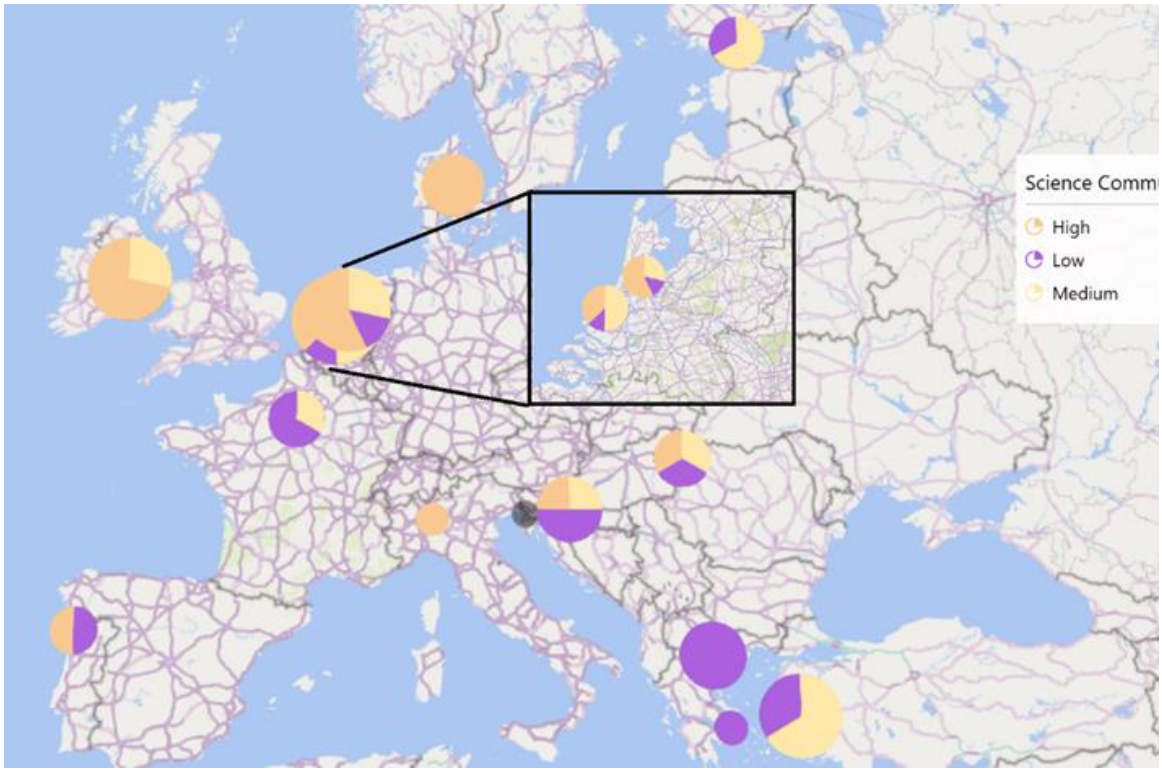


Figure 32 Science Communication in institutional policies

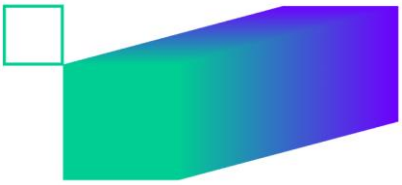
The pivotal importance given at the EU level to science communication is also reflected in the institutional policies, again to a different extent. The purpose of relevant institutional policies is to establish and describe procedures regarding the involvement of researchers in outreach communication activities. These activities may consist of writing books addressed to the public, participating in outreach activities, giving interviews to the media, using websites, social media platforms as well as contributing to drafting and revising content for the institution's website, press-releases, and events with participation of internal and external actors.

By participating in activities of science communication, the researchers can make their research results accessible to a non-expert audience in the spirit of RRI and meet the demands of many funding agencies.

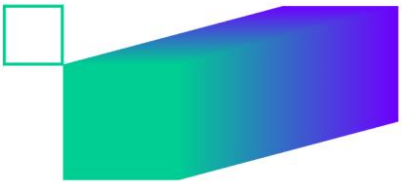
SWOT analysis

The SWOT analysis was done to assess the institutional policies mapped. The results are presented in the Table 5 below.

Strengths	Opportunities
• **Strong trend to align institutional policies with the EU and national requirements**	• The **collaborative nature of projects** like PATTERN reinforces the institutions' commitment to



and standards – the policies seek to develop an innovation culture and more dynamic and interactive learning and research environment. • **Strategic importance of transferable skills for researchers** – the transferable skills and provision of relevant knowledge are seen not only as support and empowerment of individual researchers, but as a strategy for embedding the institution to local, national and EU R&I ecosystem. • **All OS and RRI areas relevant to PATTERN are covered in institutional policies, even if to different extent** – the institutions' policies and initiatives demonstrate a proactive approach to societal challenges and knowledge dissemination within and beyond academic communities. • **Institutional arrangements to support provision of knowledge –** creating and/or further supporting institutional training units, libraries, contact points and other infrastructures, internal funding reflect a willingness and interest of the institutions to invest resources to re- and upskilling the researchers on relevant topics.	fostering a culture of open communication and knowledge exchange, ensuring that institutional policies and training methodologies remain at the forefront of promoting **excellence in research and OS.** • **Potential to address all OS and RRI topics in the training** – some training topics more typically associated with OS and RRI, such as Open Access and FAIR data, are more popular, but other topics progressively attract more interest due to the requirements of funding bodies and increased researchers' trans-sectoral mobility, reflected in institutional policy documents. • **Stakeholder engagement** – the policies provide opportunities for better collaboration within the institution as regards the development of a knowledge base on transferable skills, including the governance, researchers, professors, support staff, students, but also outside the institution through communication activities, mutual learning with peer institutions, exchanges with experts, policymakers and funding bodies at national and local levels.
Weaknesses	**Threats**
• **Limited awareness of institutional policy makers on OS and RRI topics and practices –** except the topics directly featured by funding agencies, the policies are often less responsive and comprehensive as far as other topics are concerned, including the provision of knowledge on these topics.	• **Setbacks and resistance to change** – leadership turnovers, inertia, bureaucracy, power struggles and other internal factors could significantly affect the initiation and implementation of the institutional policies, including on OS and RRI practices.



• **Limited ability to ensure necessary infrastructure** to link the institutional policies' goals to concrete training activities leading to potential inconsistencies in implementation within the institution. • **Limited targets for provision of knowledge –** the policies mostly encourage the training for "all researchers, while important targets are also governance of the institution themselves, as well as research support staff, to complement and enrich the training offerings. The trainings for more specific researcher audiences, like PhD students, would also be relevant. • **Overall perception that OS and RRI topics are "imposed" top-down -** poor understanding of relevant concepts and their applicability in research as well as perception of the topics as imposed additional burden, lead to lack of wider interest to them from researchers.	• **Lack of sustainable funding** – development, delivery, update of training materials in the framework of implementation of relevant policies require funds, which is challenging in the long-term.

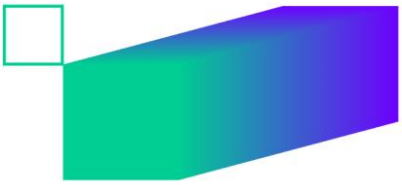
Table 5 SWOT analysis of the institutional policies mapped

The SWOT analysis shows that the institutional policies under consideration lay a strong foundation for responsible research and development of corresponding training and awareness-raising activities. The institutions seek to adapt their policies to the EU and national standards and requirements, while enjoying academic freedom and policymaking within their individual institutional contexts.

7.4 Practical implications

At the institutional level, the policies have following practical implications as far as the links between policies and trainings on transferable skills aimed at researchers are concerned:

- OS and RRI topics are progressively integrated to the curricula and training materials;



- Process of institutional arrangements to support provision of knowledge on transferable skills is ongoing.

Both directions are presented below.

Integration of OS and RRI topics to the curricula and training materials

The institutional policies under consideration demonstrate commitment to OS and RRI values and practices. The partner institutions are all different, and the level of detail and attention to these themes are also different. However, in most cases the policies either directly refer to OS and RRI as strategic priorities and a need to have relevant competences, or at least leave a room for progressive awareness raising, training and mutual learning with the institutions' peers and experts.

The trainings most often address "all researchers", and priority in terms of content is given to OA, FAIR data and research integrity. Often the researchers receive trainings in science communication, while other topics are less well covered.

Participation of an institution in an EU or national project on OS and RRI encourages the development of training and outreach activities. Getting knowledge on Citizen Science methodology or Gender Equality Plans, for example, lead to adopting relevant policy orientations at the institutional level, but also resulted in the development of trainings aimed at different target audiences to explain relevant concepts, provide appealing examples and boost motivation of researchers to know more and apply relevant knowledge in their research.

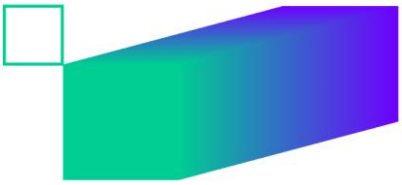
Institutional arrangements in support of training on transferable skills

Institutional arrangements are a necessary condition for successful adoption of OS and RRI values and practices at the institutional level. Strong institutional support is needed for development and delivery of training for researchers, as well as for communication activities to attract interest in the training and ensure attendance.

Involving different stakeholders in discussions on how to better embrace the need to provide and get knowledge on transferable skills, is crucial for a successful change process. Governance, training units, IT units, libraries, committees (e.g. ethics committee, gender equality committee/officer and others, depending on a specific institution), researchers, students – all groups should be engaged in the exchanges around content for the training and the support infrastructure.

Coordination of training activities within the institution is often challenging, particularly in multi-faculties HEIs, so some institutions opted for establishment of institutional Contact Points on a specific RRI areas, most often on Open Access, FAIR data, Citizen Science, and Research Integrity. Communication offices, training units, scientific project managers, lecturers are also often mobilised to contribute to the development and implementation of trainings. Corresponding staff and financial effort should be embedded to the institutional strategy to ensure sustainability, regular review, and high quality of the training programmes and activities and further expand their outreach.

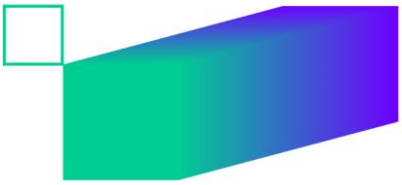
7.5 Concluding remarks



The institutional policies under consideration provide a solid starting point for developing training modules in alignment with the EU and national principles and requirements.

However, integration of OS and RRI at the institutional level is a relatively new endeavour and changing educational programmes is a complex and highly contextualised process, which requires understanding and commitment of the governance, researchers and teaching staff. This process will likely take a considerable amount of time. Moreover, the development and integration of training materials is a delicate process, as the HEIs' professors would like to strike a balance between developing their own materials from scratch and re-using materials developed by others.

Collaborations within and outside of PATTERN project, mutual learning and monitoring of the process will be crucial for successful and sustainable integration.



8 Results of the policy mapping

This chapter outlines the linkages between three levels of policy mapping as regards the transferable skills and provision of relevant training aimed at researchers. It also presents the gaps identified as well as ways forward for potential policy advancements.

8.1 Linkages between policy levels

The policy mapping shows that national and institutional policies are broadly in line with relevant EU policies, while specific national and institutional contexts and needs are to be considered as well.

Cross-cutting principles and points seen at all three levels are the following:

- Integrating the need for enhancing skills on OS and RRI practices in research sector, into strategic priorities as part of core values and goals.

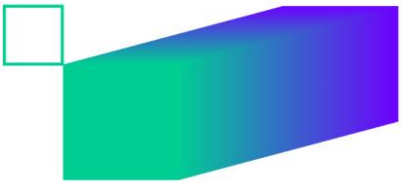
- Focus on social responsibility of science. Provision of knowledge on OS and RRI is a way to link research environment, content and methodologies to communities, integrating the researchers' expertise into activities and discussions that promote the education of students and members of the public, thereby enhancing interest in science and public engagement.

- Slow, but clear dynamics towards progressive harmonisation of policies at all three levels: referring to the same main concepts (even if sometimes the terminology differs depending on national or institutional specificity), multi-stakeholder approach, progressive creation of relevant policy ecosystem (not isolated legal texts, policies and initiatives, but synergies and building on each other).

- Even if national funding is less visible than the EU one, it often sets the same requirements and eligibility criteria for institutions that wish to access funding, particularly on gender equality plans, ethics, transdisciplinarity and others matters presented in chapters 5 and 6 of this document. Mandatory nature of these provisions requires equipping researchers with relevant transferable skills.

- There are two ways to approach the need for researchers to get relevant knowledge: i) broader perspective – provision of knowledge on transferable skills as part of researchers' professional development and career advancement and ii) directly mentioning a need to receive a training for a specific transferable skill, most often on Open Access and FAIR data.

- The policies have a different level of detail and granularity but have in common the need for additional time and the willingness to translate them into concrete actions. These include stimulating interest in, and integration of, the trainings on transferable skills within research activities and the HEIs environment.



8.2 Gaps identified

Several overarching gaps in policy landscape were identified, thus enabling a further reflection on possible ways to approach a co-creation of policy recommendations at a later stage of the project.

Sustainable funding issue needs to be balanced across the research ecosystem. Funding is pivotal if the research institutions and HEIs are to increase their provision of training opportunities. The lack of sustainable funding forces HEIs to focus on attracting and retaining students and generating a managerial model based on short term objectives that prevents investment in research in the longer term. To ensure long term strategic planning, there is a need to improve the synergies across research and education policies from one side, and funding schemes at all levels from the other.

The policies typically do not explicitly address the necessity of a holistic educational approach covering all aspects of OS and RRI. There is a broad consensus among stakeholders at different levels that OS and RRI should become the new *modus operandi* of research and that relevant transferable skills should be reinforced within the research community. However, there is a need to strengthen policy support to make the transition.

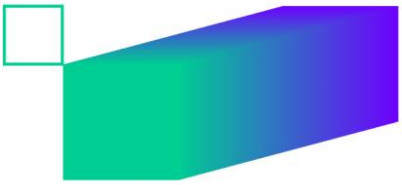
Knowledge on certain OS and RRI related skills is better reflected in the policies and trainings than on the other skills. Open Access, FAIR data and Research Integrity are the most popular, while various aspects of inclusion and non-discrimination (except Gender Equality Plans), management, citizen science and others among those identified by PATTERN, are not appropriately covered. Similarly, the links between different transferable skills are insufficiently explored, for example, between those relevant to citizen science and science communication, or between gender equality and leadership.

Many policy documents, especially at EU level, but also multiple strategic documents at national and institutional ones, provide general principles, but lack more detailed guidance. Both researchers and trainers may benefit from additional resources or examples that illustrate how to effectively incorporate OS and RRI principles into training programmes.

Insufficient acknowledgement of potential challenges and variations in implementing OS and RRI principles across different cultural, disciplinary and other contexts. While many documents acknowledge the importance of national and institutional contexts, more explicit guidance could be useful on fostering international collaboration and addressing challenges associated with cross-border research, intellectual property rights and knowledge exchange.

Lack of comprehensive mechanisms for monitoring the policies' implementation. The relevant policies do not usually outline specific processes, bodies, or indicators to monitor their degree of implementation.

OS challenges in public-private partnerships merit discussions between academia and industry, including how best to identify the transferable skills needed for trans-



sectoral mobility of researchers. This will enable subsequent refinement of the policies.

Including OS practices into research evaluation. Despite the recent progress, researchers mostly continue to be rated on authorship of peer-reviewed publications. Such change might enable more interest in OS transferable skills within the research community, in addition to multiple benefits of OS as such.

8.3 Possible ways forward

Addressing the gaps and limitations in policy formulation and implementation calls for some steps that could entail:

- Enhanced policy support and advocacy for new career paths, opportunities and assessment models within research community, provision of guidance for recognition and reward for research staff which enables leadership, interdisciplinary thinking, and OS and RRI practices.

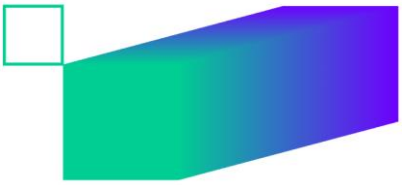
- Framework conditions and access to stable and long-term funding will enable the institutions to achieve the diverse set of goals and ambitions relevant to OS and RRI. This is also required for provision of relevant knowledge aimed at researchers.

- Reflection on the balance between development of standardised educational programmes, with a focus on OS and RRI and acquiring transferable skills, on one hand, and the specific national and institutional contexts on the other, is crucial. This balance is essential to ensure that training is consistent, comprehensive and high-quality.

- Policies in the relevant fields are often too vague and not formulated as concrete strategies, but more as simple recommendations. Thus, they are not appealing enough in terms of implementation expectations. Detailing the policies with key performance indicators (KPI) or other monitoring mechanisms could ensure their tangible implementation, making the policies more actionable and clearer.

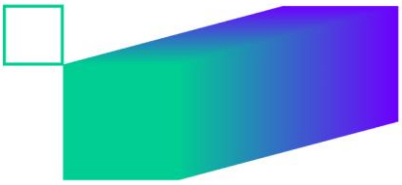
- Engaging the public more actively in the research and policy making discourse can serve as a pivotal step in making OS and RRI the norm. Enhanced advocacy for citizen engagement at the policy forefront will be essential given not only its significant potential in tackling pressing societal issues, its role in upholding and boosting trust in scientific endeavours, but also its direct links with researchers' transferable skills.

- The institutional investment in infrastructures and training is recommended. It will allow the researchers to understand which OS and RRI practices benefit their research the most and be able to implement them.



- To empower researchers into following OS and RRI practices, policy incentives on reforming research evaluation mechanisms and metrics should be reinforced, in accordance with recent initiatives such as CoARA.

- Stronger partnerships between the institutions, partners outside of the Academia, also through policy support, will be relevant for development and adoption of new training modules integrating the needs of researchers, institutions, society, industry and reinforcing transferable skills.



9 Conclusions

The need to respond to economic, demographic, geopolitical, environmental and other global challenges, requires a continuous support for re- and upskilling research community via more effective and inclusive investment into training activities. Strengthening skills relevant to job-to-job transitions, opening the research, and matching researchers' aspirations and skills-set with labour market opportunities, progressively lead to a closer cooperation with social partners, companies, education and training providers as well as to development of joined-up approaches with all branches of policy makers.

Transferable skills play an important role in researchers' career development, but also have impact on the research environment, content and methodologies, increasing social responsibility of science and contributing to more transparency and accountability of research. Despite inertia and resistances from the institutional environment and sometimes lack of comprehensive OS and RRI policies at national level, some results have already been noticed.

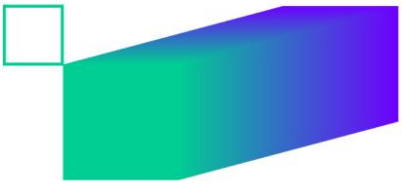
At the EU level, many of the solutions proposed relate to increases in funding, supporting exchange of good practices and mutual learning, or the increase of synergies between existing programmes, instruments and frameworks, such as Horizon Europe, ERA, European Higher Education Area and other policy instruments. These instruments support research excellence, funding, stimulate interdisciplinary research, but also a provision of knowledge on transferable skills aimed at researchers.

The EU level support fosters partnerships that develop innovative pedagogies and educational practices. The EU institutions establish frameworks and guiding principles aiming at progressive harmonisation of relevant policies at all levels.

At the national level, the governments and funding bodies broadly commit to European standards to help facilitate institutional capacity building and knowledge exchange, including in transferable skills area. However, as the HE sector remains under national sovereignty and therefore, is subject to potential changes in national policies and politics, it is crucial to further promote institutional freedom, flexibility and importance of specific institutional contexts.

At the institutional level, support for OS and RRI practices in general and for relevant trainings aimed at researchers in particular, can and should take the form of strong, strategic and forward-looking leadership that benefits from university-wide engagement and implementation of the policies. A multifaceted approach is also helpful to address the needs of specific institutions, researchers, social partners, industry and policymakers for embedment of transferable skills into curricula in a more inclusive, relevant and efficient way.

The digital transformation of the HEIs and research institutions is ongoing. The institutional digital capabilities that support the educational offer and research activities through blended learning, online data repositories and other digital



infrastructure are crucial for successful implementation of OS and RRI practices but are also directly linked with a need for researchers to be equipped with the transferable skills. Enhanced investments in infrastructure, support services (e.g. data scientists, data stewards, specialists in IT and intellectual property law), training offerings and facilities for research staff and students should provide opportunities for a more data rich environment, cross-disciplinary research and better support personalised journeys in education and research.

The policies mapped can serve as a valuable reference and inspiration for RPOs, RFOs and trainers involved in developing and implementing OS and RRI training programmes to enhance the researchers' transferable skills. By aligning with the principles outlined in the documents, future training modules and standards can contribute to the promotion and embedment of inclusive R&I practices.

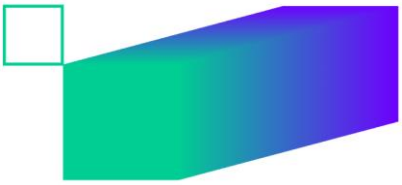
The guiding principles outlined in the policies are also a basis for determining the content and curriculum of future trainings to be developed in PATTERN and beyond and ensuring that the trainings cover all essential aspects of OS and RRI. The policies can influence the design and delivery of OS and RRI training by making them accessible, reproducible, sustainable, and inclusive.

However, there is a lot of potential for policy advancements as well as for better implementation of existing policies. From establishment of a new paradigm for rewards and recognition of both scientific and societal value of research, to more comprehensive and harmonised approaches in addressing OS and RRI in general and knowledge on transferable skills in particular, especially at the national and institutional levels. This calls for guidance, incentives, funding support and willingness to take responsibility for change. The policy recommendations to be developed under WP4 at a later stage of PATTERN project, aim at tackling the gaps identified.

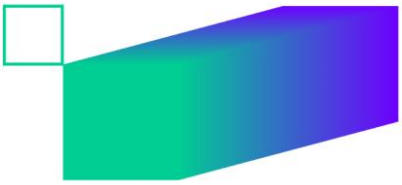
10 Annexes

10.1 List of EU policies and initiatives mapped

Title of the policy/initiative	Type	URL
European Charter for Researchers	Recommendation	https://euraxess.ec.europa.eu/sites/default/files/am509774cee_en_e4.pdf
Code of Conduct for the Recruitment of Researchers	Recommendation	https://euraxess.ec.europa.eu/sites/default/files/am509774cee_en_e4.pdf _THIS IS THE SAME LINK AS ABOVE
European Code of Conduct for Research Integrity	Framework for the self-regulation of RPOs	https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/european-code-of-conduct-for-research-integrity_horizon_en.pdf
European Education Area strategic framework	Policy Framework	https://education.ec.europa.eu/about-eea/strategic-framework
European Competence Framework for Research Careers	Framework	https://circabc.europa.eu/sd/a/d1ae7fdd-e80f-4b54-973b-dcea380132e4/ED-20120315-WG3-Point%203-Framework%20Research%20Careers-short.pdf
European Skills Agenda for Sustainable Competitiveness, Social Fairness and Resilience	Guidelines	https://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=9723
Science for Policy	Competence Framework	https://publications.jrc.ec.europa.eu/repository/handle/JRC129623
ERA policy agenda	Policy Framework	https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2000:0006:FIN:EN:PDF
Pact for R&I in Europe	EC initiative -for Council recommendation	https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12960-Pact-for-research-innovation-in-Europe_en
EU strategy for Universities	Strategy	https://education.ec.europa.eu/sites/default/files/2022-01/communication-european-strategy-for-universities-graphic-version.pdf
European Universities initiative	Initiative	https://education.ec.europa.eu/education-levels/higher-education/european-universities-initiative



European Higher Education Area	Strategy	https://ehea.info
EURAXESS Researchers in Motion initiative	Initiative	https://euraxess.ec.europa.eu
ERA Hubs initiative	Initiative	https://horizon-europe.gouv.fr/testing-era-hub-concept-pilot-phase-27593
Digital Education Action Plan	Initiative	https://education.ec.europa.eu/focus-topics/digital-education/action-plan
EOSC Observatory Initiative	Initiative	https://eosc-portal.eu/policy/ec-documents
Horizon Europe Programme 2021-2027	Funding scheme	https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-prgrammes-and-open-calls/horizon-europe/how-horizon-europe-was-developed_en
Cohesion policy	Funding scheme	https://ec.europa.eu/regional_policy/policy/themes/research-innovation_en
WomenTechEU initiative	Funding scheme	https://eismea.ec.europa.eu/programmes/european-innovation-ecosystems/women-techeu_en
EU Gender Equality strategy	Strategy	https://commission.europa.eu/strategy-and-policy/policies/justice-and-fundamental-rights/gender-equality/gender-equality-strategy_en
European Innovation Agenda	Policy Framework	https://research-and-innovation.ec.europa.eu/strategy/support-policy-making/shaping-eu-research-and-innovation-policy/new-european-innovation-agenda_en
Recommendation on the guiding principles for knowledge valorisation in R&I	Recommendation	https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022H2415
Council Conclusions on Advancing Gender Equality in R&I	Conclusions	https://data.consilium.europa.eu/doc/document/ST-1213-2018-INIT/en/pdf
Council Conclusions on Future Governace of the ERA	Conclusions	https://consilium.europa.eu/en/press/press-releases/2021/11/26/new-pact-and-governance-structure-for-the-european-research-area-era/
Ljubljana Declaration on GE in R&I*	Declaration	https://www.gov.si/assets/ministrstva/MIZS/Dokumenti/PSEU/Ljubljana-Declaration-on-Gender-Equality-in-



		Research-and-Innovation-_endorsed_final.pdf
UNESCO Open Science Recommendation *	Recommendation	https://en.unesco.org/science-sustainable-future/open-science/recommendation
Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters*	Convention	https://unece.org/environmental-policy-1/public-participation
Council Conclusions on high quality, open, trustworthy and equitable scholarly publishing	Conclusions	https://data.consilium.europa.eu/doc/document/ST-6903-2023-INIT/en/pdf
Turning FAIR into reality. Action Plan from EC Working group	Action Plan	https://data.europa.eu/doi/10.2777/1524
Strategic Research and Innovation Agenda (SRIA) and Multi Annual Roadmap (MAR)	Strategy	https://eosc.eu/sria-mar
EUROPASS	Initiative	https://europa.eu/europass/en
European Year of Skills 2023	Initiative	https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/european-year-skills-2023_en
Innovation Principle	Initiative	https://research-and-innovation.ec.europa.eu/system/files/2022-07/ec_rtd_factsheet-innovation-principle.pdf

*Although these documents are not EU level policies, they were included to the mapping due to their relevance to the topics under consideration

10.2 Template for EU policy analysis

PATTERN WP4 – Task T4.1

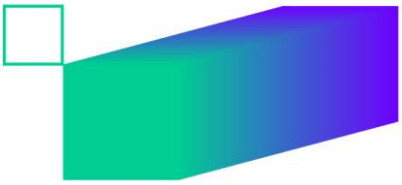
EU POLICY ANALYSIS TEMPLATE

Template :

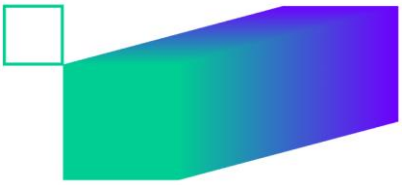
- The column entitled "Name/Title" alludes to the mapping variable.
- The column "Description and Guidelines" explains what the mapping variable signifies and how partners should proceed in inserting data.

ID	Title	Description and guidelines
1	Title of the policy	Write the title of the policy, as mentioned in the official policy document.
2	Link to the policy's website	Insert the link to a website where the policy is officially published (if not applicable, to a website describing the policy)
3	Type of policy	Indicate the type of policy, as mentioned in the official policy document (strategy, regulation, statement, recommendation, resolution, directive, decision, opinion, etc)
4	Main objectives of the policy	Describe what the policy is primarily about – short summary (abstract)
5	Responsible institution	Write the name of the institution, primarily responsible for the initiation and implementation of the policy
6	Other relevant organisations and stakeholders' consultation in policy-making process	Mention other key organisations involved in the initiation and/or implementation of the policy, if any. If applicable, indicate if and how relevant stakeholders participated in the development of the policy (RPOs, RFOs, HEIs, industry, etc). Were there debates or resistances against the creation/approval of the policy? What did the stakeholders think of the policy, of its effectiveness, equitability, cost and feasibility?
7	Enforcement level	Indicate whether the policy is mandatory or optional

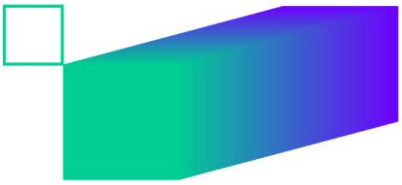
8	Time frame	Mention the time frame of the policy: - Whether it is still implemented (and specific start date); - Whether it is closed/completed policy (and specific start and end date)
9	Context	Indicate if the creation/approval of the policy was enabled by any particular occurrence. Was there any coincidence with or support of other policies?
10	Societal concerns	Indicate if the policy mentions structural societal issues and addressing them by enhanced provision of knowledge on transferable skills (e.g. discrimination, gender-based violence in academia and research organisations, insufficient public engagement, etc).
11	Theory of change	Indicate if the policy makes it explicit what/who needs to change (e.g. organisational culture, mindset, quality of research management and research environment, better collaborations between academia and industry on researchers' training needs, etc). Who is responsible for this change?
12	Relevance to trainings on Open RRI for researchers at all career levels	Describe how the policy is related to trainings on Open RRI for researchers. Indicate if the policy centers explicitly on transferable skills or is about broader researchers' development.
12.1	Open RRI area(s) – - Open Access; - FAIR Data; - Citizen Science; - Research Integrity; - Gender, Non-discrimination and inclusion; - Dissemination and exploitation; - Science Communication (towards media and policy makers); - Management and Leadership.	Describe how the policy is related to trainings in transferrable skills associated with specific Open RRI area(s). Indicate if there is a direct link of the policy to a specific training(s) mapped within the WP1, that you are aware of. If applicable, indicate overarching relevance as well.



12.2	Standards setting on trainings for researchers	Indicate if the policy sets standards on quality assurance for trainings (accreditation, increasing consistency among training offerings, improving work methods, evaluation of HEIs and research organisations, evaluation of training outcomes such as career tracking, etc)
12.3	Key targets for the trainings	Indicate if the policy addresses a specific target and/or career level (research staff in general, research staff in leadership roles, PhD students, etc) and/or any specific need for researchers' training offerings
13	Monitoring and evaluation	Indicate if the policy sets a mechanism(s) for monitoring its implementation. Does the policy contain measurable indicators to assess the degree of implementation?
14	Funding allocation mechanisms	Indicate if the policy includes knowledge on transferable skills for researchers as precondition to get funding
15	Relevance to R&I	If applicable, explain how this policy links to or affects a specific area/focus listed among the Horizon Europe pillars and clusters.
16	Capitalisation and opportunities	Describe whether and how this policy can be positively capitalised for embedding Open RRI principles and requirements to relevant trainings for researchers and if this policy has already had any significant results. Does the policy further promote the value of transferable skills making the trainings more relevant and attractive for researchers? Does it help to improve the quality of the content and delivery of the trainings? Were there any unintended positive effects of the policy?
17	Gaps and limitations	Mention whether there are gaps and/or limitations regarding the formulation and/or application of the policy, e.g. limited time frame, limited scope, public acceptance, attention to societal concerns, uncertainties, etc. How could these barriers be overcome? If there are any unintended negative effects of the policy, how could they be mitigated?



18	Sustainability	Indicate if the policy mentions any plans or further steps to introduce new policies or support existing policies in the field.
19	Sources of information	If applicable, list the sources of information employed for filling in this grid. These may refer to websites, reports, media releases, etc.
20	Further comments and clarifications	If necessary, add any further details or clarifications to the information in this grid.



10.3 National policy mapping report template

PATTERN WP4 – Task T4.1

NATIONAL POLICY MAPPING REPORT TEMPLATE

Country: [country]

Report done by: [please include the name of the report's author and the name of the institution]

Date: dd/mm/yyyy

INSTRUCTIONS

Please write max. 5-6 pages about how national (and regional, if relevant) policies contribute to including Open and RRI practices in training aimed at researchers at all career levels.

Please use the information provided in the grid to comment on the following aspects, as well as any additional references such as media releases, policy reports, academic articles or other resources you consider helpful and relevant.

INTRODUCTION

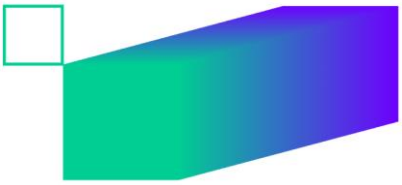
Please describe the attitudes towards the need to act on provision of knowledge on Open and RRI practices aimed at researchers at national policy level in your country and their evolution, including if the theme got (enough) attention at national level and if there were any major changes on how the theme has been addressed in recent years.

The following questions for the introductory paragraph are optional, based on the availability of information, the number of HEIs and RPFOs in a particular country:

- How many HEIs in your country have policies/strategies/statutes (publicly accessible, e.g. on their websites) addressing the need for researchers to get knowledge on transferable skills identified by PATTERN and/or featuring upskilling as a part of researchers' professional development at institutional level? Please provide the number of HEIs in relation to the total number of HEIs in your country with a short comment.

- How many research institutions in your country have policies/strategies/statutes addressing the need for researchers to get knowledge on transferable skills identified by PATTERN and/or featuring upskilling as a part of researchers' professional development at institutional level? Please provide the number of research institutions in relation to the total number of research institutions in your country with a short comment.

MAPPING OF POLICIES AND LEGAL FRAMEWORKS



Topics to be addressed:

· Laws, policies, and strategies that exist at different levels (national level, regional level if relevant, and RFOs). Please kindly note that the grid should be completed for each policy.

· Main responsible actors/stakeholders. Please also comment if other types of actors than national/regional authorities have or may have a role to play (umbrella organisations or other).

· Changes expected following the adoption and implementation of the policies (e.g. improved research culture, mindset, quality of research environment, etc) and how they can be achieved (e.g. better collaboration between Academia and industry on researchers' training needs, etc.).

· Assessment of the extent to which the national/regional as well as RFO policies embed relevant EU practices (e.g. if the policies mention structural societal issues and addressing them by enhanced provision of knowledge on transferable skills, horizontal values as cross-cutting priorities – Gender Equality, Ethics, FAIR data, etc)

· Assessment of the extent to which the national/regional as well as RFO policies provide a relevant framework for HEIs and research institutions. Please comment if and how national/regional policies encourage the development and delivery of training on transferable skills for researchers at the institutional level (e.g. in relation to the role of RPOs in providing relevant knowledge, if and how relevant topics should be included in the HEIs curricula, if knowledge on transferable skills for researchers is a precondition to get national funding, etc.)

CONTEXT AND PUBLIC OPINION

Topics to be addressed:

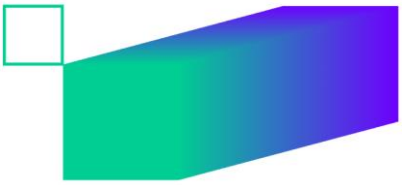
- Please provide a brief overview of the context and any debates around the policies development and adoption (e.g. regarding the #MeToo movement on combatting gender-based violence or other similar movement if any, and specifically in relation to HEIs and research institutions that can/should provide relevant training). Please feel free to also refer to the debates/surveys that took place in national language(s).
- Please comment if the policies in question are supported by other national policies.

GAPS AND LIMITATIONS

Topics to be addressed:

- Please comment if there are any gaps and limitations regarding the formulation and/or implementation of the policies.
- Please give your opinion on how the barriers identified could be overcome.

CONCLUSION

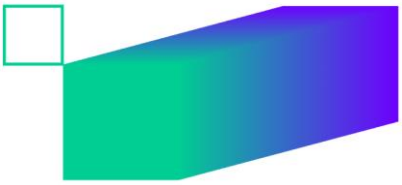


Please comment if the policies have already had any significant impact, what are possible ways forward and potential for further policy recommendations.

REFERENCES

Please format references to conform the APA style guidelines (see https://apastyle.apa.org)

Please specify if you have contacted National Contact point, or other responsible person in your country and if not, would you recommend it for further understanding of the state-of-the-art of national policies in relation to relevant trainings for researchers.



10.4 Institutional policy mapping report template

PATTERN WP4 – Task T4.1

INSTITUTIONAL POLICY MAPPING REPORT TEMPLATE

Name of the institution: (name of the institution)

Country: (country)

Report done by: (please include the name of the report's author)

Date: dd/mm/yyyy

INSTRUCTIONS

Please write max. 5-6 pages about how institutional policies/guidelines/action plans/statutes/other documents contribute to including Open and RRI practices in training aimed at researchers at all career levels at your institution.

Please use the information provided in the grid to comment on the following aspects, as well as any additional references you consider helpful and relevant.

Please note that "institutional level" refers to the whole institution, not just its parts such as individual faculties, departments or units.

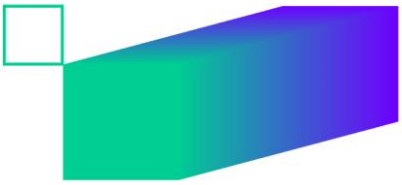
INTRODUCTION

Please describe the attitudes towards the need to act on provision of knowledge on OS and RRI practices aimed at researchers at institutional policy level and their evolution, including if the theme got (enough) attention and if there are any major changes on how the theme has been addressed in recent years.

MAPPING OF INSTITUTIONAL POLICIES AND STRATEGIES

Topics to be addressed:

- Policies/directives/statutes/other documents and strategies that exist at institutional level. Please kindly note that the grid should be completed for each policy. If your institution has carried out activities which are not related to the implementation of an internal policy but are relevant to the training on transferable skills for researchers, please report them here. This applies particularly to institutions that do not have a policy or strategy in place.
- Main responsible actors/stakeholders at the various institutional levels.
- Context and any debates around the policies development and adoption (e.g. regarding the #MeToo movement on combatting gender-based violence or other similar movement if any). Please feel free to also refer to the debates/surveys that took place in national language(s).



- Changes expected following the adoption and implementation of the policies (e.g. improved institutional culture, mindset, quality of research environment, etc) and how they can be achieved (e.g. better collaborations between Academia and industry on researchers' training needs, etc.).
- Targets (if the policies address a specific target, e.g. a specific career level, specific transferable skill and/or any other need for researchers' training offerings).
- Assessment of the extent to which the institutional policies follow relevant EU practices (e.g. if the policies mention societal aspects and addressing them by enhanced provision of knowledge on transferable skills, horizontal values as cross-cutting priorities – Gender Equality, Ethics, FAIR data, etc.)
- An assessment of the extent to which the institutional policies follow national/regional as well as RFO policies practices for HEIs and research institutions. Please comment if and how institutional policies encourage the development and delivery of training on transferable skills for researchers at the institutional level (e.g. in relation to the role of RPOs in providing relevant knowledge, if and how relevant topics are included in the HEIs curricula, if knowledge on transferable skills for researchers is a precondition to get local funding or is a part of evaluating researchers, etc.)
- Any observable impact of the policies. Please specify at which level (institution, faculty, department).

GAPS AND LIMITATIONS

Topics to be addressed:

- Please comment if there are any gaps and limitations regarding the formulation and/or implementation of the policies.
- Please give your opinion on how the barriers identified could be overcome.

CONCLUSION

Please comment on possible ways forward and potential for further policy recommendations.

REFERENCES

Please format references to conform the APA style guidelines (see https://apastyle.apa.org)

Please specify if you have contacted responsible persons at your institution and if not, would you recommend it for further understanding of the state-of-the-art of institutional policies/strategies in relation to relevant training for researchers.

PATTERN.

Empowering Open and Responsible Research and Innovation

OUR CONSORTIUM

APRE – Agenzia per la Promozione della Ricerca Europea
AARHUS UNIVERSITY
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SCIENCE CONNECT – YOUR PARTNER IN SCIENCE
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OpenAIRE
Open AIRE affiliated entities
SISSA
PLANET INSTITUTE
EARMA – European Association of Research Managers and Administrators
UniSR – Università Vita-Salute San Raffaele
DANS – Data Archiving and Networked Services
UNIVERSITY OF HELSINKI
Trinity College Dublin – Coláiste na Tríonóide, Baile Átha Cliath – The University of Dublin
UNIVERSITY of DEBRECEN
IZMIR INSTITUTE OF TECHNOLOGY
RB
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pattern-openresearch.eu info@pattern-openresearch.eu