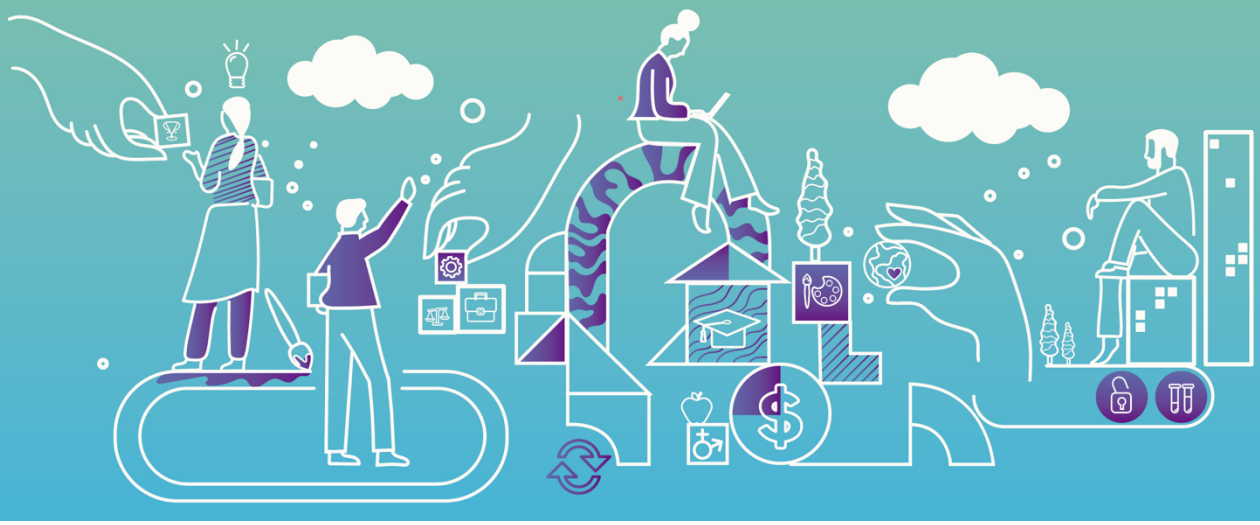
SeeRRI

Building Self-Sustaining Research and Innovation Ecosystems in Europe through **Responsible Research and Innovation**



Deliverable Title: D2.1 – Report on SEERRI methodological guidelines for active mapping

Work Package: WP2 – Active mapping of SeeRRI territorial R&I ecosystems and the inclusion of RRI

V4.0

Lead beneficiary: UNIBO

Date: 24/04/2020

Nature: Report | Diss. level: PU (Public)

This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement nº 824588.

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DOCUMENT INFORMATION

Grant Agreement Number	824588	Acronym	SeeRRI
Full title	Building Self-Sustaining Research and Innovation Ecosystems in Europe through Responsible Research and Innovation		
Project URL	www.seerri.eu		
EU Project officer	Cristina Marcone		

Deliverable number: 2.1	Title	Report on SEERRI methodological guidelines for active mapping
Work package number: 2	Title	Active mapping of SeeRRI territorial R&I ecosystems and the inclusion of RRI

Delivery date	Contractual	31/05/2019	Actual	24/04/2020
Status		Version: 4.0	Draft ☐	Final ☑
Type		Internal Deliverable ☐	Official Deliverable ☑	
Nature		ORDP ☐	Report ☑	Websites ☐ Ethics ☐
Dissemination Level		Public ☑	Confidential ☐	

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Description of the deliverable (3-5 lines)	This report presents common procedure and guidelines to be followed to implement a comprehensive mapping exercise of R&I ecosystems and RRI inclusion in regional development policies and other policy instruments and planning tools.
Key words	RRI, R&I ecosystems, active mapping, guideline, quantitative and qualitative assessment, actors, RRI tools, regional development policies, stakeholders' involvement, RIS3, SDGs

This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement nº 824588.

DOCUMENT HISTORY

NAME	DATE	VERSION	DESCRIPTION
SeeRRi_D2.1_v1.1 _UNIBO draft	16/04/2019	1.1	First draft shared with AIT
SeeRRi_D2.1_v1.2_ UNIBO+AIT draft	17/04/2019	1.2	Second draft after the meeting with AIT
SeeRRi_D2.1_v1.3_ UNIBO+AIT draft 2	26/04/2019	1.3	Third draft UNIBO+AIT
SeeRRi_D2.1_v1.4 for AIT	03/05/2019	1.4	Fourth draft UNIBO+AIT for AIT review
SeeRRI_D2.1_v.1.5	08/05/2019	1.5	Final draft for the two consortium reviewers
SeeRRI_D2.1_v2.0	21/05/2019	2.0	New draft version after comments from the first two reviewers (GENCAT and UH)
SeeRRI_D2.1_v2.1	23/05/2019	2.1	Last draft for Nhien's revision
SeeRRI_D2.1_v2.2	2705/2019	2.2	Final draft
SeeRRI_D2.1_v2.3	31/05/2019	2.3	Final version
SeeRRI_D2.1_v3.0	03/07/2019	3.0	Final version with minor changes
SeeRRI_D2.1_v4.0	24/04/2020	4.0	Final version including revision comments from the EC project officer

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DEFINITIONS & ACRONYMS

RRI	Responsible Research and Innovation
R&I	Research and Innovation
GOV	governance
PE	public engagement
GE	gender equality
SLSE	science literacy and science education
OA	open access
E	ethics
SUS	sustainability
RIS3	regional Research and Innovation Strategies for Smart Specialisation
S3	Smart Specialisation Strategies
QnM	Quantitative Mapping
QlM	Qualitative Mapping
QnDCF	Quantitative Data Collection Form
QlDCF	Qualitative Data Collection Form

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EXECUTIVE SUMMARY

WP2 aims to map the R&I ecosystem in SeeRRI territories in order to get an overview of the current situation, as well as to identify relevant stakeholders, and to understand the inclusion of RRI in regional development policies. The mapping exercise in WP2 is structured to give important contributions to the next steps (i.e. stakeholder engagement in WP3 and framework development in WP4), since it will provide a clear picture of the state of the art in terms of actors, relationships and policy instruments for the three SeeRRI territories. WP2 activities contribute to build knowledge on the state of the art, and this knowledge-phase can be considered at the ground level for the development of building self-sustaining research and innovation (R&I) ecosystems through Responsible Research and Innovation (RRI). The mapping procedure will be clearly defined, guidelines and recommendations on how to do it will be produced into this WP.

Task 2.1 (T2.1) prepare **the basis for a common procedure for actively mapping R&I ecosystems and stakeholders**, which are **guidelines for mapping exercise** (D2.1) to be applied and tested in the following tasks (T2.2 and T2.3). In particular, the current Deliverable (D2.1) includes **information on the scheme to collect existing data that are relevant for the RRI mapping of R&I ecosystems**.

The ambition of **defining a common procedure for the active mapping of R&I ecosystems and stakeholders** is to provide not just project partners, but all potentially interested R&I ecosystems, with a common methodology based on already available data bases, able to identify the relevant regional development policies for RRI implementation and the inter-linking in research activities of the relevant actors. This methodology will help not only **to support the inclusion of RRI into regional development policies and tools by showing which facets of RRI are more integrated so far and which aspects could be improved**, but also **to establish the foundations for the definition of strategies for engaging stakeholders**.

The mapping procedure consists of two parts carried out with two different approaches, the **Quantitative Mapping** (QnM) and the **Qualitative Mapping** (QlM).

The **QnM methodology**, drafted by the Austrian Institute of Technology (AIT), consists of the **identification of the R&I actors that are mostly active in regional research projects within the R&I ecosystems**. The identification of the active actors, links and, of course, the related RRI projects/programmes, is done by analyzing existing R&I databases (i.e. EUPRO, PATSTAT), and then by using a 'Quantitative Data Collection Form' (**QnDCF**) which is supposed to be filled out by the territorial representatives. **The outcome will be a map of linkages between local R&I actors,** which will clearly show their relationships in the field of RRI.

The **QlM methodology**, elaborated by the University of Bologna (UNIBO), consists of the **qualitative evaluation of the RRI state-of-the-art into the regional development policies and tools** relating to the territories by using the results from the 'Qualitative Data Collection Form' (**QlDCF**). The QlDCF should be completed first with the open data available at the EU level or local level; then the remaining data should be included by the local 'data providers', which are, basically, the territorial stakeholders and their databases. The Public Authorities (PA), especially the Regions, are considered the main actors, or 'data providers', of the qualitative data gathering campaign for most of the R&I ecosystems since they are in the position to have access to most of the required data. PA can also identify who is able to provide the remaining required data among the other local actors (such

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as Clusters and business organisations, academic and research institutions and civil society organisations). **The result of qualitative mapping will be a comprehensive picture of the RRI inclusion into the current regional development policies and tools of the selected R&I ecosystem. Such picture will not only represent the state of the art of which aspects of the RRI have been already included, to what extent and in which policy instruments, but it will also suggest which RRI dimension can be further exploited in terms of integration to current regional development policies, and on which policy instruments can be valuable to focus on when it comes to embed RRI principles.**

In summary, the **aim of the whole mapping exercise** is to provide a clear image of the R&I ecosystem state-of-the-art in relation to RRI: how RRI principles are currently integrated into the regional development policies (i.e. into projects, programmes and activities) and how the main R&I actors are linked one with the other. **Investigating the state-of-the-art represents the first step towards an improvement of RRI integration into the territory ecosystem.**

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1 BACKGROUND

The main objective of the SeeRRI project is to **establish a foundation for building self-sustaining R&I ecosystems**, which are adaptive, resilient, open, democratic and responsible. In our approach, an R&I ecosystem can be defined as self-sustained if the territory is able to integrate **the sustainability and inclusion of RRI** (Responsible Research and Innovation) into their **RIS3** (Regional R&I Strategies for Smart Specialisation) and other relevant place-based development policies.

Figure 1: Regional R&I Strategies for Smart Specialisation

Smart Specialisation Strategies (**S3**) are national or regional innovation strategies which set priorities and methodologies in order to enable regional specific competitive advantages and to turn them into marketable goods and services. The S3 are encouraged to be implemented by national and regional authorities from a specific European policy since 2013 with the formal endorsement of the EU Cohesion Policy for 2014-2020. The EU has a crucial role in supporting all regions in activating their potential for innovation, competitiveness, sustainable jobs and growth starting from the implementation of a national/regional R&I Strategy for Smart Specialisation. **But this is not enough.**

The real challenge for a **smart, sustainable and inclusive growth of the regional R&I ecosystem** is finding a way to put together the place-based vision of RIS3 approach to innovation with the social aspect of RRI approach, capable of ensuring the acceptability, desirability and sustainability of R&I processes. The **integration of the RRI principles into the regional development policies according to the smart specialisation agenda** can be a way to build an **RRI ecosystem**, which goes far beyond the previous concept of R&I ecosystem, since it can **add the societal point of view to research and innovation**.

Now the topic is to exactly define what is meant by **RRI dimensions** and by **R&I ecosystem dimensions**, to better understand the subjects of the mapping exercise addressed in this WP.

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1.1 INTRODUCTION TO RRI

Understanding **Responsible Research and Innovation** (**RRI**) and its key-areas, or 'dimensions', is **the first step for** developing the **SeeRRI mapping procedure.**
RRI is about involving society in science and innovation 'very upstream' in the processes of R&I to align its outcomes with the values of society. **RRI** can be defined as **an inclusive approach to research and innovation** (R&I), to ensure that societal actors work together during the whole research and innovation process. It aims to better align both the processes and outcomes of R&I, with the values, needs and expectations of the society. Indeed, RRI is considered an ambitious challenge for **the creation of a research and innovation policy driven by the needs of society and engaging all societal actors via inclusive participatory approaches**.

1.1.1 The 6 RRI dimensions

The concept of '**Responsible Research and Innovation**' originated from the European Commission's Directorate-General for Research and Innovation (**DG RTD**) around 2011, specifically during the drafting of the Horizon 2020 (**H2020**) Framework Programme (2013-2020). By 2014 there were already several workshops and conferences dealing with RRI around Europe, RRI was discussed in the daily news and FP-funded RRI projects were making themselves and the concept visible. By 2015 the concept was also diffusing beyond Europe and it moved beyond workshops and conferences to actions. RRI is now **a cross-cutting issue in Horizon 2020** and according to the EC the RRI framework consists of six dimensions (EC, 2014):

1. **GOV** (GOVERNANCE)
   Policymakers have a responsibility to anticipate and assess potential implications and societal expectations with regard to R&I, with the aim of fostering the design of inclusive and sustainable research and innovation. Governance is about making arrangements which lead to acceptable and desirable futures; measures which need to be robust, adaptable, responsible, shared and accountable. Through this overall dimension it is possible to develop harmonious Governance models for RRI that also integrate all the other dimensions.

2. **PE** (PUBLIC ENGAGEMENT)
   This dimension is about 'choosing together', co-creating the future by **bringing together the widest possible diversity of actors**, including researchers and innovators, industry and SME, policymakers, non-governmental organisations (NGOs), civil society organisations and citizens, on matters of science and technology, in particular to tackle the grand societal challenges. All societal actors work together during the whole process in order to align its outcomes to the values, needs and expectations of society. PE in R&I implies a multi-actor exchanges and dialogues and it fosters more societally relevant, desirable, and creative research and innovation actions and policy agenda, leading to **wider acceptability** of science and technology outcomes.

3. **GE** (GENDER EQUALITY)
   Engagement means that **all actors**, women and men, are on board, but today there is still an **under-representation of women** in R&I. GE is about promoting gender balanced teams, ensuring gender balance in decision-making bodies, and considering always the gender dimension in R&I to improve the quality and social relevance of the results.

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4. SLSE (SCIENCE LITERACY AND SCIENTIFIC EDUCATION)
   The key for co-creation within the R&I processes is one of enabling sustained dialogue. But before this can happen, **the language and tools of science need to be available to everyone**. Science education is essential to making this happen. In fact, the focus of SLSE is to enhance the current education process to better equip citizens with the necessary knowledge and skills so they can participate in R&I debates; and to increase the number of researchers (promote scientific vocations).

5. OA (OPEN ACCESS)
   Science has always been open, unlike the processes for producing research and diffusing its results. It is widely agreed that **making research results more accessible contributes to improving research and innovation**: free and earlier access to scientific work might improve the quality of scientific research and facilitate fast innovation, constructive collaborations among peers, and productive dialogue with civil society. OA addresses issues of accessibility to and ownership of scientific information and it can be moved into **Open Science**.

6. E (ETHICS)
   European society is based on shared values. In order to adequately respond to societal challenges, R&I must respect fundamental rights and the highest ethical standards. Ethics should not be perceived as a constraint to research and innovation, but rather as **a way of ensuring high quality results**. The Ethics dimension focuses on research integrity and on ethical acceptability of scientific and technological developments.

Figure 2: The six policy agendas for RRI provided by the EC

THE 6 DIMENSIONS OF RRI

- The first step to understand how to actively map the inclusion of RRI into R&I ecosystems is to define what is Responsible Research and Innovation.
- RRI is an inclusive and sustainable approach to R&I, aimed at ensuring cooperation between all the stakeholders and social acceptance of the R&I processes. It is a cross-cutting issue in Horizon 2020.
- RRI consists of 6 dimensions, which will be investigated during the mapping of the R&I ecosystems:
  1. GOV; 2. PE; 3. GE; 4. SLSE; 5. OA; 6. E.

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1.2 INTRODUCTION TO R&I ECOSYSTEMS

An official and unique definition of **R&I ecosystem** does not exist, but it is possible to understand which characteristics a territory should have to be named an 'R&I ecosystem' for the purpose of the SeeRRI project.
In addition, the selected **SeeRRI ecosystems** will be described, to better understand which properties they should have to be considered as a suitable territory in this project.

1.2.1 Definition of an R&I ecosystem for SeeRRI

To define the characteristics of an R&I ecosystem it is possible to start from these existing statements:

- An **innovation ecosystem** is defined as "a network of interconnected organisations, connected to a focal firm or a platform, that incorporates both production and user participants and creates new value through innovation" (Autio & Thomas, 2014, p.205). It's a complex of innovation activities, co-evolution and interdependency between different actors, from political, economic and technological scenes.
- A **territory** is defined as any particular area characterised by certain geographical features, or also any area with shared cultural, environmental or economic ties, this is a "highly complex living system" (Magnaghi, 2005, p.62) which consists of variable contextual interrelationships, processes, interaction and dynamics related to society, geography, economy and environment.
- **Ecosystems** are by definition "self-organizing and complex systems", which could make them potential platforms for radical innovations and niche development (Rinkinen, 2016, p.53).

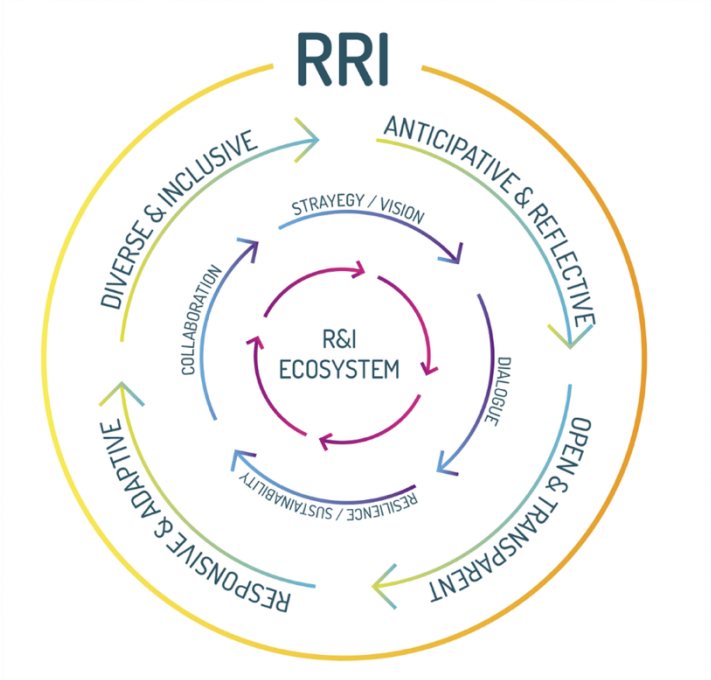

Figure 3: definition of an R&I ecosystem for SeeRRI

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According to the SeeRRI vision, a self-sustaining **R&I ecosystem** is considered to:

1. be complex and self-organizing;
2. be flexible to niche development;
3. find innovation potential from interfaces & unexpected combinations;
4. provide platforms for development and foster peer-to-peer management;
5. provide access to global business ecosystems based on the local/regional innovation ecosystem;
6. be open to innovation, co-creation, users (Quadruple Helix cooperation);
7. be trial-based, experimental, and apply rapid prototyping methods in the real world.

When it comes to platforms for development and foster peer-to-peer management, extended quantitative analytical exercises and enhanced stakeholders' participation have been considered as essential features (Panori et al., 2018). Due to the increasing importance of digital infrastructures in governance, offering a smart environment for business and promote evidence-based decision-making are additional features to be considered (Schwarz, 2016; Panori et al., 2018).

Another important remark is that the R&I complex ecosystems involve multiple players and flows of people, ideas and funding, thus result in multiple interactions between many stakeholders. In particular, the SeeRRI project wants to consider **four categories of stakeholders** which should be brought together (the so-called **Quadruple-Helix** cooperation or just **4H**): government, business, academia and citizen. The process of stakeholders' involvement at an early stage of R&I is in fact an important issue "for better aligning research and innovation with the values, needs and expectations of society" (EC, 2017).

Lastly, the **spatial dimension** must be discussed. For this project the ecosystem extension usually takes the form of an **institutional region**, since it relates also to the RIS3 which are regional policies. To better define the extension of the considered territory, it may be helpful following the borders defined by **NUTS partitions**[1] for the European countries. NUTS means 'Nomenclature of Territorial Units for Statistics' and it is a geocode standard for referencing the subdivisions of EU countries for statistical purposes. It is very convenient when the collection of data is needed as in this mapping exercise.
In some other cases the regional borders do not match with the R&I ecosystem ones: in these cases, a list of **postal codes** could be used to define the statistical area of interest.

1.2.2 SeeRRI ecosystems

The three SeeRRI territories were selected because of their active engagement with Smart Specialisation Strategies and Responsible Research and Innovation activities. For each of them, a thematic focus to be investigated during the SeeRRI project was identified. In particular:

NORDLAND

Nordland is a county in Norway in the Northern Norway region. It is characterised by a strong presence of industries and clusters, as well as experience-based tourism. Nordland county has implemented a Smart Specialisation Strategy since 2014 and now they want to lift S3 to a more strategic level in the region.
The detected thematic focus for the ecosystem concerns finding new ways **to develop a more sustainable society through regional strategies and planning processes** as well as **to involve different types of stakeholders**.

[1] https://ec.europa.eu/eurostat/web/nuts/background

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Finally, Nordland wants to define common and specific goals and actions to address the 17 SDGs together with relevant stakeholders.

LOWER AUSTRIA

Lower Austria is the largest province in Austria, at the center of the new Europe. Lower Austria is nowadays an important business location and an important focus of economic growth. The core of Lower Austrian RIS3 is the specialization in technologies & economic areas into technopoles and clusters. Smart Specialization is promoted through clusters thanks to the Business Agency of Lower Austria (Ecoplus), whose focus topic is Additive Manufacturing (3D-printing). This focus influences the manufacturing sector and aims to reduce the costs of production by leveraging the opportunities provided by the technology to facilitate mass customization of industrial products. The specific objective is to build up an ecosystem from education, R&D, companies, equipment producers, quality requirements and product development.

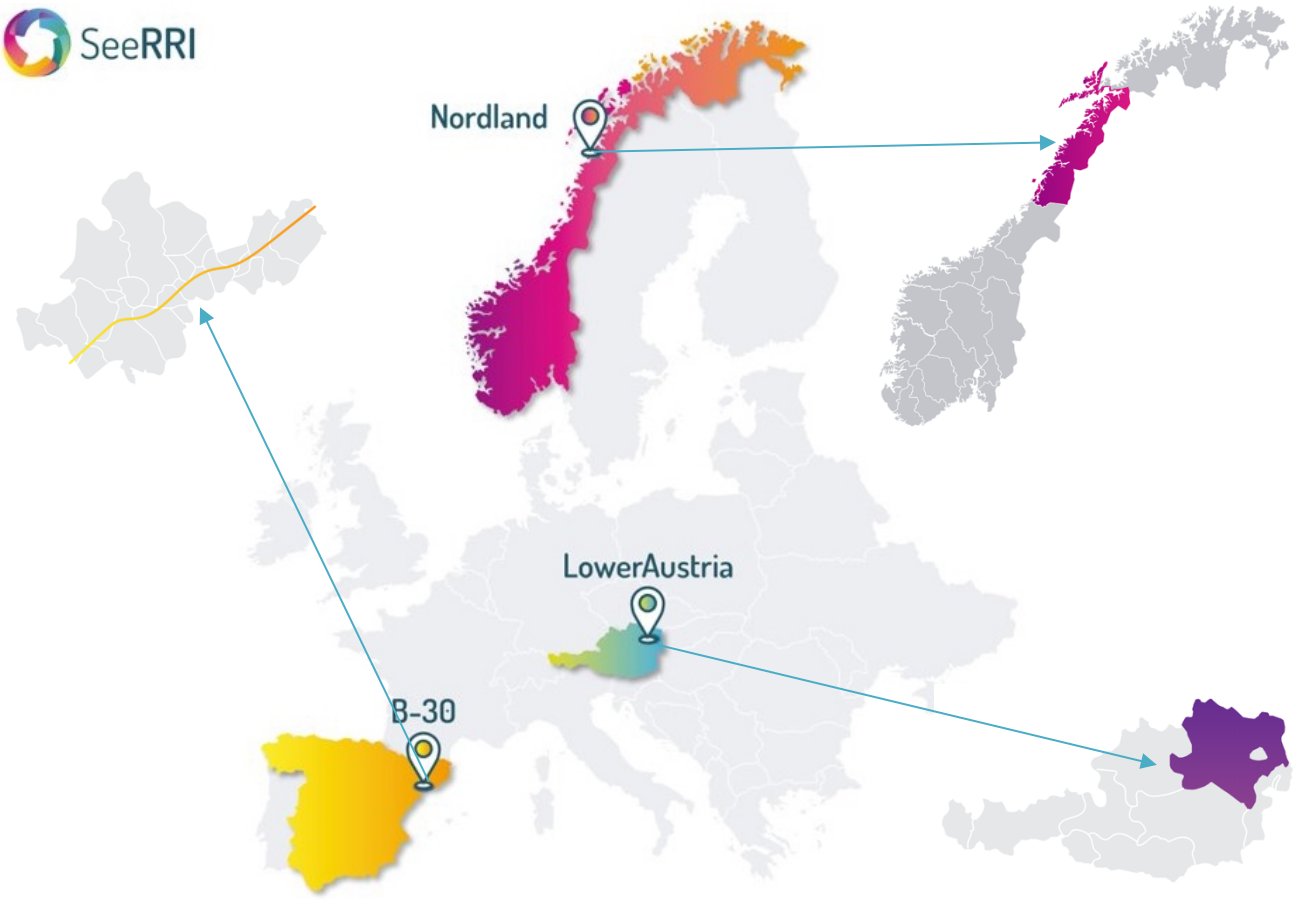

Figure 4: Map of the three SeeRRI territories

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B30

B30 is a strategic location composed by 23 municipalities of the Catalonia region, Spain. The area is equipped with R&I infrastructures and the territory is covered by Catalonia's S3 Strategy. The thematic scope of this ecosystem in the SeeRRI project is to **integrate RRI into R&I policies and ecosystem's governance.** With the strategic intent of increasing the engagement of stakeholders, the SeeRRI actions will focus will on zero waste, a relevant and shared long-term objective for the main stakeholders of the ecosystem, strongly linked to SDGs. The thematic focus in the B30 is also related on how to integrate RRI into S3 strategies and on how to promote **transnational learning**, more specifically on how to replicate and adapt to other territories what will be explored, tested and learnt in the 3 SeeRRI territories.

With respect to the mapping of R&I ecosystems of the three SeeRRI territories, **the boundaries must be clearly defined** – in particular for the quantitative data collection process. The territory of **Nordland** corresponds to the **NUTS3 region NO071** as specified by the Eurostat, the European Statistical Office[2]. Similarly, **Lower Austria** corresponds to the **NUTS2 region of AT12.** Hence, for these two cases, these specifications are used for the mapping. For the case of the **B30** territory, the boundary definition is specified using **postal codes**, since neither a NUTS2 nor a NUTS3 region correspond. The B30 region comprises 23 municipalities within the Province of Barcelona (i.e. NUTS3 ES511). A list with the postal codes underlying the mapping is provided in the Annex.

R&I ECOSYSTEMS IN SEERRI

- A self-sustaining R&I ecosystem, in the objective of SeeRRI project, is characterized as:
  - Self-sustaining, complex, open, self-organizing, responsive, flexible and resilient;
  - A network of multiple players, ideas, funds and interactions (4-Helix cooperation);
  - Advanced with regard to RIS3 and RRI activities.
- SeeRRI starts to build the framework for the self-sustaining R&I ecosystem with 3 territories, because of their engagement with S3 and RRI activities, where the mapping procedure will be tested: NORDLAND (NO), LOWER AUSTRIA (AT), B30 (ES). Each of them has identified its own thematic focus for the project activities.
- The boundaries of the SeeRRI territories were defined using the NUTS partitions or a set of Postal Codes when using NUTS was not possible.

[2] See https://ec.europa.eu/eurostat/web/nuts/background for information on NUTS.

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2 METHODOLOGICAL GUIDELINES FOR MAPPING THE R&I ECOSYSTEMS

This chapter represents the core of **the SeeRRI methodological guidelines for an active mapping of the R&I ecosystems**. As requested by the present task (T2.1), **a common procedure with guidelines** to properly map R&I ecosystems has been developed and it will be explained in detail in the following sub-sections.

Since the mapping exercise has two main goals, the mapping procedure was also divided into two separate methodologies according to their objectives:

- **OBJECTIVE 1**: to systematically identify the main actors of the R&I ecosystems, and then characterise their interactions and linkages → **QUANTITATIVE MAPPING (QnM) procedure.**
- **OBJECTIVE 2:** to understand the RRI inclusion in the regional development policy instruments and planning tools → **QUALITATIVE MAPPING (QlM) procedure.**

The two procedures combined constitute a unique guideline to map a territory and then return a clear image of the current status of the R&I ecosystem.

Both mapping procedures, the quantitative and the qualitative, are implemented as follows:

- **Step 1_ Conceptual and methodological background:** description of the tools and methods implemented into the two SeeRRI mapping procedures. In particular, the QnM describes the methodological approaches applied while the QlM starts from a review of the existing RRI-related and RIS3-related tools (especially the ones developed by previous EU-funded projects) to understand what is already available, what the tools are for and how SeeRRI can benefit from them.
- **Step 2_ Data of interest and data providers**: definition of the contents required for the mapping, identification of the data-holders within the ecosystems' actors and/or identification of the available databases.
- **Step 3_ The data collection process:** description of the data collection campaign and of the form (the QnDCF or the QlDCF) to be filled out when gathering data.
- **Step 4_ Representation of results:** description of the way to visualize the data collected.

IMPORTANT REMARK:

It should be noted that the two mapping procedures described below, and the related data collection forms (QnDCF, QlDCF), are aimed at being as much inclusive as possible, although not all the topics discussed are applicable to every R&I ecosystem. Indeed, the aim of the present Section is to set a comprehensive framework for a broad-based mapping of different R&I ecosystems. Especially during the illustration of the data of interest and data providers, the purpose is to establish an exhaustive structure which includes as much different options as possible.

For the SeeRRI territories in particular - which have been selected within the project for being complementary one to the other, in terms of territorial scale and type of stakeholders involved - not all the types of data listed are available or applicable to all. When it will come to the actual active mapping (in T2.2 and T2.3), the methodology will be tailored to the SeeRRI territories characteristics, R&I ecosystems and their specific interests (thematic focus); while here the same methodology is presented as flexible as possible in order to be able to accommodate as many perspective as possible. In fact, the guidelines for mapping the R&I ecosystems provided in this report can be adapted to the different contexts, both in terms of administrative level of the ecosystem (i.e. association of municipalities or region) and in terms of data available.

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2.1 **QUANTITATIVE** MAPPING GUIDELINES

2.1.1 Conceptual and methodological background

The creation of new knowledge and its networked character provides the conceptual foundation of the quantitative mapping in WP2. Knowledge creation is the basis for generating innovation, and is thus a crucial factor for organizations, in particular firms, to be competitive. Moreover, collaboration in knowledge creation has become a widespread phenomenon, in particular in times of converging technologies and increasing market pressures due to more rapidly changing patterns of demand in a globalizing world (see e.g. Bathelt et al. 2004). The ability to create new knowledge, but also to collaborate depends to a substantial degree on the local environment the innovating actors are embedded in, also referred to as regional R&I eco-systems. The latter are subject of the quantitative mapping approach in this task, applied to the three regions under consideration in SeeRRI.

In principle, new knowledge can be created within an organization by means of **internal research** and development (R&D) but also on an **inter-organizational** level relying on informal and formal interactions, ranging from simple networking activities of researchers to long-term and contract-based arrangements. In particular, inter-organizational collaborations are considered an indispensable and increasingly important element for an organization's knowledge creation. However, it is argued that inter-organizational network channels are by no means sufficient but rather considered complementary to internal capabilities, since similar internal capabilities are necessary to evaluate research done by collaboration partners (e.g. Inkpen and Tsang 2005; Cowan and Jonard 2009).

In the process of collaborative knowledge creation, **networks of R&D** (Research & Development) **relationships** between firms, universities and research organizations are essential means by which knowledge flows between these actors, and enable access to external, new sources of knowledge. While such knowledge flows are mostly geographically localized within regions or nations due to its 'sticky' nature, such networks are assumed to serve as channels for transmitting knowledge over larger geographical distances (see e.g. Autant-Bernard et al. 2007).

Three of the most prominent and commonly used indicators to measure knowledge creation and innovation are **patent applications**, **collaborative research projects** such as the EU Framework Programmes, and **scientific publications** (see Scherngell 2013 for an overview). Whereas, patents are generally considered output of *industrial* innovation efforts in firms, publications are typically the product of *scientific* research; EU funded joint projects cover – to a certain extent – both scientific and industrial innovation efforts bringing together industry firms, universities, and research organisations. Scientific research is to a large extent characterized by basic research, and hence, is usually performed in the higher education sector but also in the government sector (OECD 2002). Due to the characteristics of basic research, scientific research is also identified as being largely *exploration-driven*, i.e. it broadens the existing knowledge base. In contrast, the focus of industrial research is mainly applied research, striving for the development of new products or processes; nevertheless, applied research relies on scientific advances in the basic sciences (OECD 2002). This characterizes industrial research as *exploitation-driven*, in the sense that exploitative innovation deepens the core knowledge base, rather than broadens it.

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The **quantitative mapping of the SeeRRI R&I ecosystems** reflects on the conceptual points above, in the following ways:

- A general characterisation of the status quo of R&I actors in the respective territories (regions) and their technological profiles (using patent applications), shows the region-internal knowledge base reflecting the ***region-internal capabilities*** that are essential for region-internal knowledge creation but also to enable access to region-external knowledge
- The analysis of the structure of the R&D collaboration networks comprising different types of actors being interlinked through joint research projects shows the territories' ***collaboration/network capability***. The consideration of different spatial levels shows the capability of the territories to create and maintain national and global links and hence, being involved in international networks of knowledge flows to get fast and easy access to new knowledge via 'global knowledge pipelines'.
- The use of different indicators to ***measure the R&I activity*** (patent applications, EU funded R&D projects, scientific publications) of the territories ensures a comprehensive view of the R&I landscape, covering different modes and forms of knowledge creation (being the basis for innovation), such as exploitative and explorative knowledge creation – representing an industrial and scientific R&I landscape.

To get a comprehensive picture comprising a general R&I ecosystem characterization, the identification of the ecosystem's actors and their interactions, as well as a characterization of its sectoral specificities (including specialization patterns), three different **methodological approaches** are applied:

(i) A general description of the R&I ecosystems is given by simple **descriptive analyses**, comprising numbers of projects and actors with respect to their organisation type and technological fields. Moreover, most important actors are identified.

(ii) The interactions between R&I actors are represented by means of **network diagrams**, based on some general ideas of Social Network Analysis (SNA). Central to the social network perspective is the notion of *networks,* as a concept of describing an object composed of elements and interactions or connections between these elements. Formally, networks can be modelled by means of graphs. A graph is an abstract object formed by a set of vertices (nodes) and a set of edges (links) that connect pairs of vertices. The focus of SNA is on relationships (representing network links) among social entities (constituting network nodes), and on patterns and implications of these relationships.

In the context of this mapping, the central elements inherent in intra- and inter-regional R&D collaboration networks are (a) R&D actors (i.e. organisations such as industrial firms, universities, research organisations, etc.) and (b) collaboration networks measured by joint R&D projects and joint publications as linkages between these actors, within and across regional boundaries.

(iii) Specialization patterns of the SeeRRI territories are assessed by means of the **Revealed Technological Advantage (RTA)**, which is a **specialization index**[3] often applied to determine the relative thematic specialization of a given country in selected technological fields based on patent applications. Here, the reference category are regions, specifically the three territories Nordland, Lower Austria and B30. The index is defined as follows

[3] Note that the specialization index is used to determine the relative thematic specialization and is not related to the concept of "smart specialization".

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$$RTA_{ik} = \frac{p_{ik}}{\sum_{i=1}^{n} p_{ik}} : \frac{\sum_{k=1}^{m} p_{ik}}{\sum_{i=1}^{n}\sum_{k=1}^{m} p_{ik}}$$

where p is the number of patent applications, i denotes the region with $i = 1, \dots, n$ and k represents the technological field (IPC patent class) with $k = 1, \dots m.$ (p_{ik} denotes the number of patent applications from region i in technological field k)

Hence, each territory's share of patents in a specific technology is set in relation the territory's share in all patent fields. The theoretical boundaries of the index are zero and infinity, where an index above one indicates specialization of the territory i in specific technology field k, while a value below one points to less patenting activity in this technological field as compared to the reference area.

All methods and concepts will be applied to the three SeeRRI territories – Nordland, Lower Austria and B30. Additionally, selected methods will be applied to some NAT territories (Network of Affiliated Territories; see subsection 3.1).

QUANTITATIVE MAPPING - TOOLS AND METHODS

- Descriptive analyses for general description of SeeRRI R&I ecosystems
- Network visualization to illustrate collaborations measured by joint R&D projects and joint publications as linkages between actors (i.e. industry firms, universities, research organizations, etc.)
- Evaluating specialization via Revealed Technological Advantage (RTA) index to identify technological specialization patterns of SeeRRI territories
- All methods and concepts applied to the three SeeRRI territories and selected methods to some NAT territories.

2.1.2 Data of interest and data providers

The mapping of the R&I ecosystems relies on **existing and public R&I data bases** and does not intend to collect original data by means of interviews or questionnaires. For some relevant non-public datasets, local stakeholders will be approached (e.g. local cluster organizations). Specifically, data sources on different spatial levels providing information on actors in the R&I ecosystems and their interactions with respect to different kinds of R&I activities are of main interest. On each spatial level, we expect to identify different, but overlapping sets of actors involved in R&I activities. This implies involving e.g. national funding agencies and local government authorities of the SeeRRI territories (see Table 1).

Table 1. *Overview of data of interest and data providers*

Spatial level	Database	Type of data	Data providers
Supra-national (EC)	AIT EUPRO database	European Framework Programmes	Provided by AIT

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Supra-national (EPO/WIPO)	PATSTAT	Patent applications	Provided by AIT
Supra-national (Thomson Reuters)	Web of Science	Scientific publications	Provided by AIT
National	Different national R&I funding databases	National research funding	**National Funding Agencies:** - Austrian Research Promotion Agency (FFG) - Norwegian Research Council (Forskningsrådet) - State secretariat of research, development and Innovation (Ministry of Economy and Competitiveness) - Agency for Management of University and Research Support of the Catalonian Government
Regional	Different regional R&I funding databases	Regional research funding	**Regional Authorities:** - Government of Lower Austria - Nordland County Council (NFK) - Generalitat de Catalunya
Regional	Different cluster-specific databases	Cluster networks	**'Cluster' organizations:** - Ecoplus - NHO Nordland - Universitat Autònoma de Barcelona (UAB)

At the core of the quantitative mapping of R&I ecosystems are large-scale datasets on the **European Framework Programmes (EUPRO[4])** and **patent applications (PATSTAT[5])** to identify R&I actors in the SeeRRI territories that are active in large-scale R&I activities of EU-funded R&D projects (mostly collaborative), as well as in patenting. By this, the backbone of the R&I ecosystem under consideration will be identified, mostly composed of R&D intensive industry firms, universities and research organisations, but also most innovative small and medium sized firms due to their activities in patenting.

To avoid missing important players (mostly small firms) not active in the EU FP and also not in patenting, we aim to complement this picture by getting as much information as possible from **regional** and **cluster-specific R&I funding data bases** on

- which type of actors are active in which topics and/or in what kind of programme
- who collaborates with whom in which research projects

The main priority is the identification of R&I actors that are most active in national and regional research projects within the three SeeRRI territories and within the three regional areas of focus. However, also links to other national and international R&I actors are of interest (given that the data is available).

[4] The EUPRO database is constructed and maintained by the AIT Austrian Institute of Technology. The database comprises systematic information on collaborative research projects of FP1–FP7 as well as H2020 (until 2016), including information on respective participating organizations, e.g. name and type or participating organization and their geographical location in the form of organization addresses. For access to EUPRO refer to risis2.eu.

[5] The PATSTAT database of the European Patent Office (EPO), provides structured information on patent applications including details on the patent itself, e.g. date of application and technology classes, as well as information on applicants and inventors, such as their names and location.

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Together, all datasets complement each other in the analysis of the R&I ecosystems of the SeeRRI territories; not only by insights into the ecosystems themselves as isolated territories, but also by embedding the regional R&I ecosystems in national and global R&I networks and hence, putting them into perspective with other actors active in same or similar areas of expertise.

Building upon the general mapping of the R&I ecosystems of the territories, a **thematic mapping** of the territories' R&I ecosystems is carried out. Each SeeRRI territory specifies a distinct thematic focus (see subsection 1.2.2) that is covered by an additional in-depth analysis of R&I actors and their interactions. Selected theme-specific **keywords** – provided by the territories' representatives – serve as basis for this analysis. These keywords are used to systematically screen **scientific publications** drawn from the Web of Science, as well as **projects** extracted from the EUPRO data base (both provided by AIT). By this, a thematic landscape for each territory is created showing the involvement of the R&I actors in the distinct topics (see Figure 5).

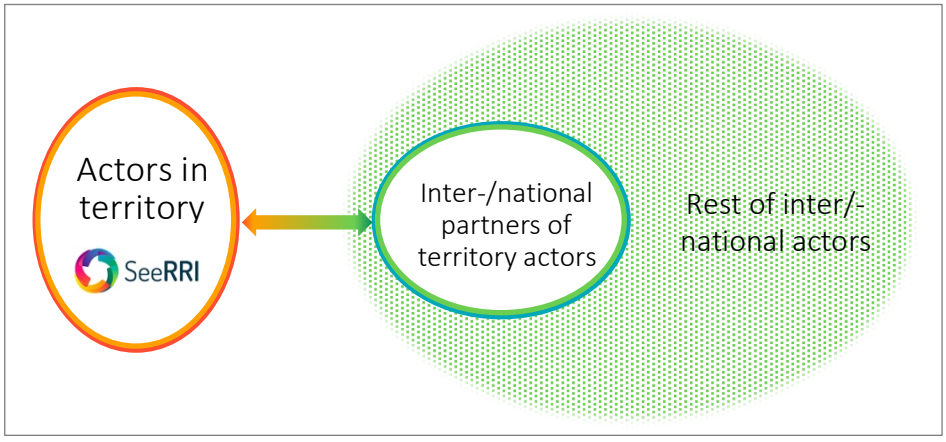

Figure 5: Illustration of data dimensions of interest

Importantly, the results and the scope of the analysis depends on the availability of data. The identification of R&I actors in the three SeeRRI territories is the overarching and main goal; the identification of interactions between these actors and extra-territorial actors is a supplementary goal.

QUANTITATIVE MAPPING - DATA OF INTEREST

- Data on different spatial levels: global, national and regional
- Data representing different forms of R&I: patent applications, R&D collaborations, publications
- Data on interactions between R&I actors: to show knowledge flows within territory and cross-regional knowledge pipelines

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2.1.3 The data collection process

The quantitative mapping of R&I ecosystems relies on existing R&I data bases on different spatial levels - supra-national, national and regional. Data bases on the supra-national level, comprising European Framework Programmes (EUPRO), Patent application (PATSTAT) and Scientific Publications (Web of Science) are provided by AIT and serve as backbone of the mapping of R&I ecosystems. However, to avoid missing important players (mostly small actors) not active in EU FP and patenting, **representatives of the SeeRRI territories** are involved in the data collection process. Especially data on

- regional R&I funding
- cluster networks

are expected to be accessed through the territories' representatives. The core of the selected data sets should include the actors (and their projects) in the specific territory, as well as national/international actors that these actors are linked to by means of collaborative projects (if available; dependent on source of data).

Table 2. *Variables of interest*

Variable type	Variable	Description
Project-related information	Project ID	ID that uniquely identifies project
	Project Title	Title of project (preferably in English)
	Project Description	Project description, e.g. abstract, objective, …
	Project Start Date	Start date of project (year or approx. timeframe sufficient)
	Project End Date	End date of project (year or approx. timeframe sufficient)
	Project Subject	e.g. topic assigned by funding agency, …
	Funding Instrument/Programme	Type of funding instrument or programme
Organisation-related information	Organisation ID	ID that uniquely identifies organisations involved in projects
	Organisation Name	Name of organisation (original, English or both)
	Organisation Type	Type of organisation (e.g. Education, Industry, Research Organisation, Government, Consultant, etc.)
Spatial information[1]	NUTS2 region[2]	NUTS ID of NUTS2 where organisation is located (if not located in territory)
	NUTS 3 region	NUTS ID of NUTS3 where organisation is located (if not located in territory)
	Postal Code	Postal Code of city/municipality where organisation is located
	City/Municipality	Name of city or municipality where organisation is located

[1] Or at least some indication whether within territory, national, or international actor/partner

[2] See https://ec.europa.eu/eurostat/web/nuts/background for information on NUTS

Representatives of each territory are asked to provide data drawn from existing R&I data bases covering a **set of *variables of interest*** (Table 2). The variables '*Project ID*', '*Organisation ID*' and '*Organisation Name*' are specified as a minimal requirement for the data to be processed and hence, for the data set to be included in the analysis. The other variables will be used for additional analyses (e.g. for thematic characterisation of the R&I ecosystems).

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In the case data sets need to be limited to actors and projects active in the specific territories (e.g. for national funding databases), the territories' contact person(s) are provided with additional territory-specific information regarding the spatial specification of the territories and hence, how to subset the original data set (see subsection 1.2.2). Throughout the data collection process, the representative(s) in charge will be assisted, if necessary, by WP2 participants.

As a further request during the data collection on regional and cluster-specific R&I funding, representatives of the territories are also asked to provide a **list of keywords** that relate to the thematic focus they selected. This set of keywords will be used to screen the EU projects and scientific publications to characterize the thematic R&I landscape of the territories (as outlined in 2.1.2 Data of interest and data providers).

QUANTITATIVE DATA COLLECTION

- Access existing large-scale data sets (PATSTAT, EUPRO, Web of Science) and extract relevant information for basic mapping comprising main R&I actors
- Address territory representatives to request data on regional R&D funding and on cluster networks used for more detailed mapping
- Project-, and organization-related as well as spatial information should be included in gathered data sets to complement basic mapping
- When it will come to the actual active quantitative mapping (in T2.2), the methodology will be tailored to the SeeRRI territories characteristics, R&I ecosystems and their specific interests (thematic focus).

2.1.4 Representation of results

For each SeeRRI territory, the results of the R&I ecosystem quantitative mapping are presented along the following dimensions:

(i) General ecosystem characterisation
(ii) R&I actors and collaborations
(iii) Thematic landscape

The **(i) general ecosystem characterisation** comprises an **institutional**, as well as a **sectoral composition.** Moreover, **specialization patterns** will be displayed. In a descriptive and aggregated manner, the R&I ecosystem actors are characterized with respect to their *organisation type* (e.g. industry firm, education, research organization, etc.) and their *technological fields* (as specified by the IPC patent class classification). As for the specialization patterns, a portfolio diagram will be used to illustrate the relation between the *growth in patent activity* in the IPC patent classes and the *Revealed Technological Advantage (RTA)*.

In **(ii) R&I actors and collaborations**, the *top R&I actors* – in terms of their EU project participation and patenting activity – will be listed. In a further step, the interactions stemming from collaborations in EU-funded projects between these actors are analysed and visualized by means of network visualization. Thereby, the focus is on *regional*, *national* and *global interactions*. However, the global interactions are presented on an aggregated country level, due to the high number of actors involved; nevertheless, most important international collaboration partners of the territories are highlighted.

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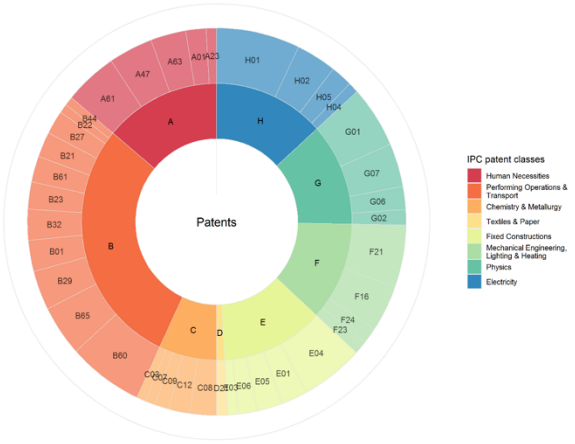
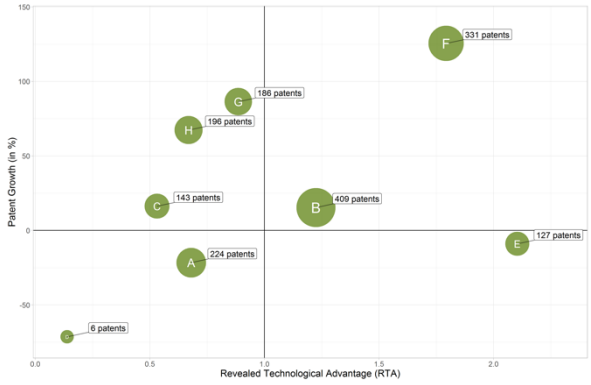
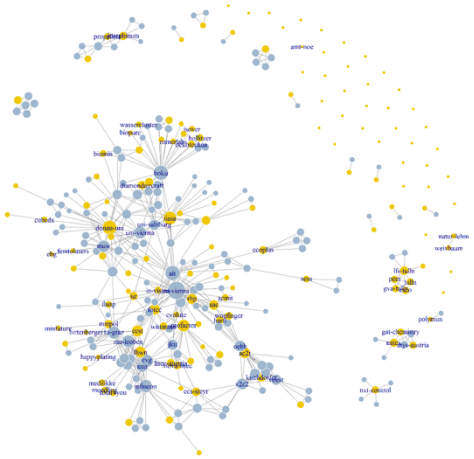
(a) Sectoral composition



(b) Specialization patterns



(c) R&I collaborations – actor-level (national)



(d) R&I collaborations – country-level (international)

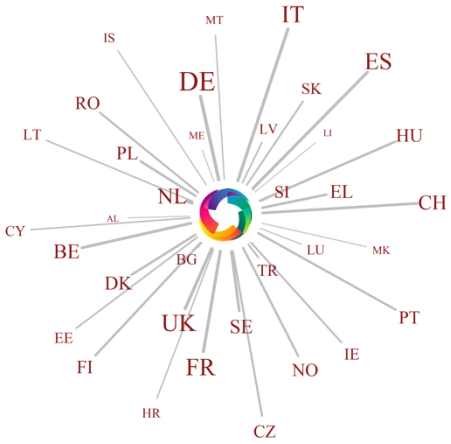


Figure 6: Illustrative examples of graphical display of results
(a) Example of sectoral distribution according to patents; (b) Example of a portfolio diagram to illustrate the relationship between sectoral growth in patent classes and the specialization therein; (c) Example of R&I actors at national level according to national projects collaborations; (d) Example of R&I actors at national level in terms of participation in EU projects.

The **(iii) thematic landscape** is subject to the territory-specific thematic focus, and hence strongly depends on the regional and cluster data provided by the territories. This section is intended to feature two aspects: First, if data is available, an analysis of R&I actors and their interactions in the sectors and fields of industry relevant for the thematic focus. And second, a characterization of the thematic landscape based on selected *keywords* that are used to search for EU projects and scientific publications of actors within the territories. By this, a *thematic mapping of topics* and clusters of topics territory actors are active in is created.

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Figure 6 provides a compact overview of the graphical elements to be employed for an effective and illustrative presentation of the results. The top of the figure (a, b) features a multi-layered pie chart for visualizing the sectoral composition, and a portfolio approach for demonstrating specialization patterns. The bottom (c, d) provides some smaller examples of network visualization for interpreting collaboration networks, both at actor- and country level, respectively.

QUANTITATIVE MAPPING – REPRESENTATION OF RESULTS

- Different dimension of representation:
  - (i) general ecosystem characterisation: institutional and sectoral composition, and specialization patterns
  - (ii) R&I actors and collaborations: top R&I actors w.r.t. patenting and EU projects, as well as their interactions in the form of R&D collaborations
  - (iii) thematic landscape (based on territory-specific selected focus) using cluster network data and keywords to identify relevant projects and publications within territories
- Use of network diagrams, advanced pie charts, portfolio diagrams, etc.

2.2 **QUALITATIVE** MAPPING GUIDELINES

2.2.1 Conceptual and methodological background

The overall objective of the section 2.2 is to provide a clear and comprehensive methodology for mapping the current situation of the inclusion of RRI in the regional development policies of the R&I ecosystems. The goal of QlM is not influencing all policies or evaluating the impact of SeeRRI project, **what the QlM aims to do is mapping the current integration of RRI into existing policies and planning instruments**.

In order to define how to establish a common methodology for the QlM, **a review of the currently available 'mapping tools'** is needed. What is meant here by 'mapping tool' is whatever tools (mainly developed by previous EU-funded projects concerning RRI and RIS3) which might be helpful for the SeeRRI QlM methodology in terms of defining:

- the **fields of interest** of the mapping of R&I ecosystems and dissemination of RRI and RIS3 (MAIN TOPICS – what to search?);
- the **detailed topics and themes** to be investigated (DETAILED DATA OF INTEREST – what to map?);
- **how to find the data**, in terms of which are the **available data bases** (DATA SOURCES – where to search?) and who are the **people involved** who can help find the missing data regarding the territory (DATA PROVIDERS – who to ask?)

This analysis is to **understand the background related to RRI dissemination into R&I ecosystems** and then to overcome the gaps and critical points of the existing tools in order to build a comprehensive methodology for the mapping. First, the relevant **EU-funded past projects with RRI as a key-topic** have been reviewed. Since the QlM

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of the R&I ecosystems is dealing not only with RRI but also with **RIS3**, EU-projects regarding the RIS3 mapping were considered as well.

The two reasons why a project might be considered useful for the building of the SeeRRI QIM methodology are the following:

- The application of **techniques, guidelines or strategies** developed by these projects could have increased the embedding of RRI principles into specific territories and it also demonstrates the willingness of these territories to implement RRI principles into their development policies, included the Smart Specialisation Strategies;
- These projects developed **online tools** (online platforms, online databases, online toolkits and so on) that can be used as data sources, guidelines or just inputs for the qualitative data collection campaign.

According to Meijer et al. (2016), inability to evaluate, compare, and benchmark 'performance' in terms of RRI at the national as well as disaggregated levels, constitutes a barrier to any revision of reward schemes and dilutes the potential vitality of the organisational or national 'horse race' for high performance in this area. Identification of useful indicators and metrics for RRI might then contribute to bringing issues of responsibility from a peripheral position and closer to the centre of activity.

Monitoring the Evolution and Benefits of Responsible Research and Innovation (MoRRI) is a research project that has been commissioned by the European Commission to contributes to conceptual work on RRI, provides extensive exploration of existing metrics capturing RRI, and develops new indicators requiring primary data collection. It is concerned with the development of conceptually and empirically sound RRI indicators, and it takes first steps towards identifying the impacts of responsible practices in research and innovation. It combines review activities with an extensive empirical programme to formulate and populate measures of RRI. Components of the empirical programme include large-scale survey-based data collection among European researchers, research funding organisations, research performing organisations, societal stakeholder organisations, and manufacturing businesses; an extensive set of case-studies addressing the benefits of RRI; collection and analyses of databases, including bibliometric and patent data; secondary analyses of existing datasets at individual- and country-level; and desk research and qualitative data collection.

The first phase of the indicator development work consisted of review of the literature on the six RRI keys. The first step was to identify the relevant literature and documents dealing with RRI issues. A systematic review covering a variety of RRI related documents, including academic literature, EC and other policy documents, conferences and on-going projects, provided central insights into each of the six RRI key dimensions, their policy context and main definitional elements. Informed by these theoretical and conceptual explorations, the main next step has been to develop a ***functional vocabulary*** covering each of the six RRI keys. This procedural step has involved a stocktaking and assessment of all existing data sources considered relevant in the monitoring of the six RRI dimensions, including reflections on data gaps and assessments of the need for primary data collection in the subsequent tasks of the project. The six keys are:

- Citizen engagement and participation of societal actors in research and innovation – **Public Engagement (PE).** The synthesis of core literature performed within the MoRRI project shows that 'citizen engagement and participation of societal actors in research and innovation', or PE, is today a rich and diversified field of practice and academic studies, and the concept of PE is multifaceted. Building on the results of the literature review, a functional vocabulary of PE was developed that presents the definitions and terminology related to PE that will allow an empirical and practical approach to the concept of PE. From this, it was concluded that there is no singular conception of 'engagement' and no single model of its

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implementation. In the MoRRI project, the operational understanding of PE while recognizing the complexity of objectives for PE and the variation in mechanisms for engagement, distinguishes five main categories of PE, namely 'public communication', 'public activism', 'public consultation', 'public deliberation', and 'public participation'. This categorisation was originally developed by the PE2020 project.

- Science literacy and scientific education (SLSE). Science literacy and scientific education have been topics of academic and public discussions for a long time and continues to do so, especially in the light of the challenges of modern societies. For the purpose of this project we define science literacy as the ability of citizens to read about, comprehend and express opinion about science, as well as the ability to contribute to "doing science". By building on this idea, the focus of our understanding of science literacy is put on the idea of developing capacities for science and innovation. Science literacy is generated through activities aiming to provide citizens with a deeper understanding of science, to shape their attitudes towards science and to develop their abilities to contribute to science and science-related policy-making. The operational understanding of SLSE applies a tripartite categorisation for the multifaceted field of science literacy. Science literacy can be generated through three main mechanisms: Science education; Science communication; Co-production of knowledge
- Gender equality (GE). Since the turn of the century, the topic of gender equality in science and research has been intensively discussed. Accordingly, a broad range of literature, pilot projects and empirical evidence is available which deals with gender inequalities in this area. This provides the starting point for the discussion on gender within responsible research and innovation (RRI) and the development of indicators for the gender dimension in RRI. Following the recent political and scientific discourse, the operational understanding of gender equality is defined as a three-dimensional construct addressing: 1) the (under-) representation of women in research and innovation with the objective to reduce gender segregation; 2) the structural and organisational changes in research institutions with the aim to break down structural gender barriers by means of action plans, gender budgeting, among others actions; 3) the inclusion of gender in R&I content, thereby aiming at:
    - Integration of women in all fields and at all levels in research and innovation (reduction of horizontal and vertical segregation); This comprises measures to promote women in fields, where they are underrepresented as well as to increase female participation in management and decision-making positions. The goal here is to reduce gender segregation.
    - Structural change in research institutions in order to abolish structural barriers for women. This comprises structural measures aimed at revising existing organisational arrangements to progressively eliminate barriers impeding women's advancement to top positions and factors inducing women to drop out of science.
    - Integration of gender in the content of research and innovation to ensure that women's needs and interests are adequately addressed. Explicit gender issues are rarely included in the content, and it is argued that research results are not valid or reliable if they only consider male research subjects. This is legitimised by the gender mainstreaming strategy on the one hand and by quality standards in science and research on the other.

  The gender equality key is closely connected with the ethics and governance dimension.
- Open Access (OA). Historically, open science relates to the need to build a publicly recognised reputation. The scholarly tradition of open knowledge was turned into a procedure for establishing knowledge claims that could be evaluated and recognised by peers and then utilized by others. Knowledge was considered a public good, and likewise a publication (any kind) as well. Since then, propertisation of knowledge

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occurred through copyright imposed by the academic publishing market. A lack of policy coordination and/or framework conditions impeded the free movement of research activities and knowledge, hindering access to publicly funded research results and knowledge transfer. Open access is the idea of making research results freely available to anyone who wants to access and re-use them. Nowadays, it is increasingly recognised that making research results more accessible contributes to more efficient science, and to innovation in the public and private sectors.
In the context of the MoRRI project, two specific aspects are of interest: 'The Open Access instrument for publications' and 'Developments in Open data'

- The term **Ethics** is rarely defined comprehensively, while it seems to assume a different facet in the specific context of the research and innovation it is immerse in. Key qualities of ethics in the context of R&I demanded by many authors are process qualities such as: 1. Openness towards stakeholders and the public; 2. Public participation (including information, consultation of, and with deliberation public); 3. Transparency and accountability of processes; 4. Thematic openness in terms of which questions can be raised; 5. Systematic argumentation in terms of a priority of arguing over (political) bargaining (this also includes scholarly integrity). The operational understanding of ethics in research and innovation and delineation of the institutionalization of ethics is categorized in: 'ethical governance', 'ethical deliberation', and 'ethical reflection'.
- **Governance**. The relationship between governance, research and innovation is far from simple, and far from linear. 'Governance' here refers to control or management. It can be found not just in the state, but also in businesses or any social organization. The operational understanding of the horizontal dimension of governance is defined as steering innovation through the establishment of goals, the establishment of means and the verification of performance. Particularly important in the case of the governance of science is the realisation that much governance happens within and is done by the scientific community itself.
  MoRRI project has categorised a typology of governance approaches that helps to structure discussions about changing governance:
  - Discretionary governance: Policies in this category are made without explicit interaction with 'the public'. Governance is presented primarily as a matter for government, which is seen as serving universal goals of progress.
  - Corporatist governance: This involves a formal recognition of differences of interest as an input to negotiation. As negotiation takes place within a closed or highly regulated space, the decisive feature of this mode is the admission of stakeholders.
  - Educational governance: This assumes that policies for science and technology have foundered on the shoals of public ignorance. Hence, it is necessary to create an informed citizenry.
  - Market governance: Science and technology are best regulated by demand and supply. The value of science comes from the surplus value created through its commercialization and contribution to the generation of wealth. The public participates as customers and consumers.
  - Agonistic governance: This form of governance occurs in a context of confrontation and adversity. The storage of nuclear waste in the UK is a case where policy seems to have stalled in the face of public opposition: opposition to GM foods has also taken agonistic form.
  - Deliberative governance: This rests on the assumption that open debate and engagement can create a satisfactory foundation for decision-making. In this mode, the public are not consumers of science, but rather 'scientific citizens'.

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Despite the growing interest around the concept of RRI, a cross-cutting issue in the Horizon2020 framework programme, most actors of the European R&I system still do not know what is RRI and, more importantly, how are they supposed to implement it at their work.

This is one of the results of the consultation workshops conducted by the **RRI Tools: Building a better relationship between science and society (RRI Tools)** project during 2014. Thus, if the RRI approach is going to become a real game changer in the scientific and technological arena, potential adopters need ***guidance on how to put it in practice***. This is precisely the main objective of the RRI Tools project: to develop a Toolkit that helps all R&I stakeholders to familiarise with RRI and make it a reality, to train on its use, and to disseminate it throughout Europe. These actors include the research community, policy makers, R&D-intensive industries and businesses, the education community, civil society organizations and individual citizens. The RRI Toolkit addresses all of them, with special emphasis on newcomers to spread the word on the concept and on policy makers to impact in the future governance of research and innovation. The ultimate goal of the Toolkit is to accompany and empower all these actors through the RRI learning process, from the very first steps to becoming autonomous practitioners, or even experts. This goes from introducing the concept to beginners, offering a crash course and documentation on RRI, to presenting inspiring examples of what others have done, to providing tools to plan and implement responsible R&I initiatives, to fostering the reflection on such practices, and to facilitating the means to become active trainers and advocators of the RRI approach. For doing so the Toolkit provides, through a clean and user-friendly structure, a wealth of resources related to RRI and tailored to the challenges faced by each group of actors. These resources are classified in four types:

- Library elements to inform on RRI and its various facets;
- Projects on RRI and closely related fields to build upon and collaborate with;
- Good practices to inspire and adapt to other contexts;
- Tools to plan, implement, evaluate, and disseminate a more socially responsible research and innovation.

The Toolkit aims to be flexible and cover a wide scope, so that users can choose and adapt the resources that fit best their professional and social contexts.

Another goal of the Toolkit is providing the visibility and credit these efforts deserve by facilitating a quick and easy introduction and access to them. In this respect, the Toolkit aims to become the entry gate to the multiple initiatives related to the concept. The Toolkit provides as well guidelines on how to put RRI in practice in specific contexts, a Self-Reflection Tool to promote users deeply think on the RRI aspects of their professional practice, and training and communication resources to help others grasp the concept, design their own training programs, and advocate on RRI.

Two components of the RRI Toolkit has been considered particularly relevant for the definition of the SeeRRI mapping methodology and for drafting the guidelines for supporting SeeRRI territories in completing the qualitative mapping exercise:

- ***How-To application guidelines***. These sections of the Toolkit provide users with practical guidance on how to address common challenges faced by R&I actors when putting the RRI principles into practice. For doing so the How-Tos combine examples of what different institutions have done and explanations on how to use specific resources of the Toolkit on each case.
- ***Self-reflection tool***. At the core of the RRI approach is the idea of reflecting on the way research and innovation are conducted. For this respect, the Toolkit includes a self-reflection tool (SRT) to assist users in thinking about their own application of RRI. The SRT is not intended to be an evaluation tool or a black box that offers ready-to- use solutions for the users' needs. On the contrary, it is designed to stimulate users to reflect on their own practice, offering them possible ways to improve their modus operandi and leaving room as well for their own contributions.

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RRI provides principles to facilitate the transformation of research and innovation systems. According to the European Commission (2012), inclusive engagement, commitment to gender equality, more science education, ethics defined as shared values reflecting fundamental rights, open access to data and developing new models of governance open up and democratise the current research and innovation establishments. These definitions, however, leave room for various interpretations and practical implementations; ranging from views and practices that strive for the radical transformation of the current R&I systems to views and practices that hardly challenge current structures. While RRI is a normative concept, with values such as ecological sustainability and social inclusion in its core, its normative anchor points are blurred. This again leads to a diversity of RRI approaches concerning their ethical and political positions, their understanding of responsibility and their transformative potential (D'Haese et al., 2018).
In addition, it should be noted that R&I has always been an important economic driver. Today the world is facing big ecological and social crises and in many parts of the world the economy is struggling. It is commonly agreed that Responsible Research & Innovation (RRI) should aim at solutions for these challenges. However, what is to be understood by this 'responsibility' and who is responsible for what, is still a matter of debate (Snick, 2016). Therefore, **Fostering a Transition towards Responsible Research and Innovation Systems (FoTRRIS)** project introduces co-created responsible research and innovation (co-RRI). This is a concept that does not substitute former definitions and principles of RRI. It attempts to supplement them in order to clarify our normative position and our understanding of RRI principles. Co-RRI is characterised by its normative assumptions, content, its approach and its process (D'Haese et al., 2018). As a web service to foster Co-RRI, FoTRRIS has realised a web Platform that is meant to support stakeholders to address glocal challenges. It defines several services, to support the conceptual framework for Co-RRI. More specifically, the platform is aimed at providing:

- Innovation services to facilitate interactions between stakeholders and to support knowledge actors to co-design RRI-projects in order to realize co-projected visions of solutions to local manifestations of global societal challenges according to RRI methods and standards by following the Co-RRI process architecture;
- Communication and dissemination of Co-RRI activities and results;
- Storage of lessons learnt from past RRI projects, best cases examples and data on sustainability challenges.

To the purpose of the mapping of SeeRRI territories, the Co-RRI Platform will be used, on the one side, to benefit from lessons learned already detected by the FoTRRIS, relevant for the SeeRRI territories (if any); on the other side to better understand what to map in the context of the SeeRRI territories, learning from the practices and lessons learned included in the web collaborative RRI platform.

When it comes to provide a solid empirical knowledge base on RRI implementation, **Responsible Research and Innovation in Practice (RRI-Practice)** project contributes to furthering the implementation of RRI in practice by understanding barriers to and drivers for successful implementation of RRI thorough conceptual and empirical analysis of discourses and initiatives in 22 research conducting and research funding organisations across 12 countries and, on this basis, developing action oriented plans or 'Outlooks' for further strengthening of RRI work in these organisations. To this aim, RRI-Practice has developed a ***Comparison methodology*** based on 10 steps:

1. Comparison of Ethics key according to: research activities in ethics of science and technologies; deliberative methodologies and ethical debate in research institutions; ethics boards, committees, or panel, their role and the use of their recommendations.
2. Comparison of Societal engagement key according to: the extent and form of practices related to societal engagement which are initiated by the organisations examined (their formal and informal components, drivers and barriers to RRI implementation); the existence and influence of environmental constraining

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and enabling factors (policy mandates, regulation, incentive systems, political or social pressures, etc.) for organisations to start and maintain societal engagement activities, as external (open-systemic) conditions for RRI implementation.

3. Comparison on Gender key according to: the relative number of men and women at different levels and functions in the research and innovation work; their respective carrier paths; the embedding of gender perspectives in research and innovation processes.
4. Comparison of Open Access key based on a comparative analysis of open access initiatives across the case studies, with specific focus on understanding and analysing organisations' approaches to facilitating open access publications and open data, and on open source alternatives to intellectual property rights.
5. Comparison of Science Education activities organised or supported by the national organisations with a focus on scalable best practices. The following two items are addressed and compared: new methodologies of scientific education for secondary-school and university students aimed at presenting the latest scientific results; popular science activities and activities to increase scientific literacy in the general population.
6. Comparison of other RRI dimensions included by the reviewed organisations. Discourses of RRI across the case studies are compared, using established qualitative, inductive research methods to code the data from each of the national case studies. These data are used to establish primary themes and overarching 'RRI narratives' for each organisation. This supports a subsequent cross comparison analysis across the case studies which looks for commonalities, key thematic elements and areas of difference both in RRI framing and translation into practice, as well as barriers, drivers and best practices.
7. Study of how the keys and dimensions interact and overlap with each other. The different RRI keys and dimensions are interrelated and partially overlapping. How these interactions and overlaps play out is therefore assessed on the basis of the empirical findings.
8. Comparison of the national discourses and practices on RRI. A comparative analysis of national discourses and practices on RRI and elaboration of a typology that aims to understand why certain keys and dimensions of RRI are developed in some national contexts and not others.
9. Comparison based on types of organisations (funding organisations/research organisations, etc.) – scaling up to general recommendations for these organisations
10. Collation of the above analysis into two public reports. One report focuses on the comparison of the RRI dimensions, and the other on the national and organisational analysis.

Although comparing territories is beyond the scope of the mapping exercise of SeeRRI territories, RRI-Practice comparison methodology has been taken into consideration for the definition of SeeRRI mapping methodology, in particular when it comes to the definition of general recommendations to be delivered to the three SeeRRI territories based on the results of the qualitative mapping campaign.

In addition to the EU-funded projects on RRI presented above, the **ONLINE Platform for Smart Specialisation Policy Advice (ONLINE-S3)** project has been also considered relevant for dealing with RIS3 mapping in SeeRRI. The Online-S3 project is founded on the disharmony between the poor design of RIS3 and the considerable funds that became available to implement smart specialisation strategies, aiming to tackle complex and interconnected societal challenges. In order to fill this gap in strategy development, competences and methods, the Online S3 project has been set out to develop a web-based solution that facilitates the creation of a user engagement environment, easy access to datasets and implementation of complex methodologies. The Online S3 platform has developed and tested innovative technologies, tools and e-services, which are in line with the methodological principles of smart specialisation as conceived by the EC, innovation experts, and academics (Komninos et al., 2018).

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To the aim of SeeRRI project, the Online-S3 Platform has been considered as useful tool to navigate in order to collect information on the S3 for the SeeRRI territories.

The EU-projects introduced and described above are summarised in Table 3, together with the key elements that are considered as relevant for the development of the SeeRRI qualitative mapping methodology.

Table 3. *Relevant EU-projects for QlM*

Project name	Timeline	Relevance to SeeRRI mapping	Available tool
MoRRI (Monitoring the Evolution and Benefits of RRI)	2014-18	MoRRI provides a set of RRI indicators whose fields of investigations can be applied for the mapping of R&I ecosystems. The *functional vocabulary* defined by the project has been largely applied to the definition of what to map within SeeRRI project	**MoRRI indicators**
RRI tools (building a better relationship between science and society)	2014-16	RRI tools provides a toolkit with 950+ resources (tools, inspiring practices, projects and library elements) to help all actors involved to put RRI into practice and it helps to share the mapping methodology by providing guidelines to SeeRRI territories to understand what is relevant for the RRI mapping.	**RRI toolkit**
FoTRRIS (Fostering Transition into RRI Systems)	2015-18	Integrating the lessons learned regarding "co-created RRI" projects based on a conceptual framework integrating complexity sciences and systems thinking approaches. The collaborative process around the RRI implementation has been taken into consideration to develop the SeeRRI qualitative mapping methodology	**Co-RRI Platform**
RRI-Practice (Responsible Research and Innovation in Practice)	2016-19	The methodology developed for the best practices' comparison on RRI key-dimensions is a useful starting point for the SeeRRI mapping methodology.	**Comparison methodology**
ONLINE-S3 (ONLINE Platform for Smart Specialisation Policy Advice)	2016-18	The Online S3 Platform provides free online tools and a comprehensive guide for creating, monitoring and updating regional or national S3 and might support the SeeRRI QlM regarding the RIS3.	**Online-S3 Platform**

A focus on the **developed tools** (Table 4) is needed to better understand their purpose and how SeeRRI can benefit from them to build its own qualitative mapping methodological guideline.

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Table 4. *Relevant tools for QIM*

Tool name and link	What is the tool for?	How SeeRRI can benefit from it?
MoRRI indicators http://ec.europa.eu/research/swafs/pdf/pub_rri/rri_indicators_final_version.pdf	The **36 RRI indicators** were developed to identify the **impacts of responsible practices in R&I** and **provide scientific evidence, data, analysis and policy intelligence** to support directly DG-RTD research funding activities and policy-making activities in relation with RRI.	SeeRRI can benefit from the **fields of investigation** developed by MoRRI **for each of the 6 key-areas of RRI** which are: **1. GOV** – governance of the other principles: PE; GE; SLSE; OA; E **2. PE** – PE in higher education; funding structures; PE as evaluation criteria; democratisation; infrastructures **3. GE** – equality plans; female researchers; gender content; female authors & inventors; glass ceiling for top positions; wage gaps **4. SLSE** – critical science in curricula; training in RRI; science communication culture; citizen science **5. OA** – social media; publications; open data; citations; data sharing **6. E** – ethics committees; research integrity; funders
RRI toolkit https://www.rri-tools.eu/it/the-toolkit	This is **a collection of tools** and other resources **to apply RRI concepts and strategies in particular contexts**. The resources can be searched using filters (types, stakeholders, policy agendas, etc.) and they are built with and for the Community of Practice.	The SeeRRI project can determine **which types of policies, projects, tools and practices are currently available** on a global stage. Moreover, it helps the QIM in terms of organization of the information needed, according to stakeholders, societal challenges, types of policy, etc.
Online-S3 platform http://www.s3platform.eu/	The platform provides a **practical guide to the RIS3 development process** complete with examples and case studies from European regions and a toolbox with a set of easy-to-use online tools that support the planning and implementation of RIS3 processes.	The Online S3 Platform hosts a total of **28 tools covering the complete RIS3 process** and it is useful to SeeRRI QIM to **understand how the RRI principles could be integrated into S**3.
Co-RRI platform http://ingenias.fdi.ucm.es/fotrris/description.php	The co-RRI platform is a web-based platform that provides several **functions, utilities and services to support the co-RRI hubs**. The platform **provides tools for checking the compliance with co-RRI principles in the process** and it supports	The tools check the compliance with co-RRI principles in the process can also be indicative for the **checking of compliance with RRI principles in regional development policy instruments and planning tools**.

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	stakeholders in addressing glocal challenges.	
Comparison methodology https://www.rri-practice.eu/work-programme/comparison/	A comparison methodology is provided in the Work Programme to explain **how to analyze and compare barriers to and drivers for successful implementation of RRI for each of the EC RRI policy keys**, as well as other interpretations of RRI provided by the organisations studied.	The 10 tasks provided help SeeRRI QIM **to understand what is relevant to be mapped for each RRI principle** and also how to provide recommentations to territories.

The above analysis of past projects and tools related to RRI and RIS3, especially **noting the types of data processed** by them, brought to the definition of a **QIM methodological approach** based on **the breakdown of RRI into its dimensions** and then mapping the inclusion of each of them into regional policies and place-based activities.

According to the definition given by the EC and the MoRRI indicators, the **main 6 dimensions of RRI** (see Chapter 1.1.1.) will be investigated for the SeeRRI QIM.

Moreover, from previous evidence and from the specific objectives of the QIM mapping of R&I ecosystems, the 6 dimensions of RRI should be accompanied by an additional dimension: **sustainability (7. SUS)**. The 7th dimension is not a foreign concept to RRI, but it is rather an overall aspect of RRI and also, to map the existing planning and policy instruments, the SDGs are very much relevant.

7. **SUS** (SUSTAINABILITY)
   RRI is closely linked to the concept of **Sustainability**, which is a core principle of all modern-day policies and projects. This is because all Countries are encouraged to adopt the Sustainable Development Agenda 2030[6] drafted by United Nations in 2015. The Agenda has set **17 Goals for Sustainable Development** (**SDGs**) with the aim of promoting prosperity while protecting the planet. The UN recognized that ending poverty must go hand-in-hand with strategies that build economic growth and address a range of social needs including education, health, social protection, and job opportunities, while tackling climate change and environmental protection. Most of these Goals are **in line with the RRI principles**, addressing the challenges for the Society regarding sustainable development and growth.
   At the regional level, some Regional Authorities have adopted the Agenda and rearranged the challenges and objectives to tackle local issues. Once verified the presence/absence of the Agenda at the local level, since it is not granted for all R&I ecosystems, it will be possible (during the T2.3) to go into details and see specifically how they include RRI. This can be useful to better understand the sustainability objectives assumed by the regional ecosystems.
   Moreover, it should be noted that in 2017 the General Assembly adopted **the Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development**[7], which is a list of 232 indicators to assess the SDGs implementation in each Country. This list can be also useful for the detection of the relevant topics to be mapped and evaluated

[6] https://www.un.org/sustainabledevelopment/development-agenda/
[7] https://unstats.un.org/sdgs/indicators/indicators-list/

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All together the 6 RRI dimensions defined by the EC and the 7th dimension identified by SeeRRI project, constitute the '**7 SeeRRI mapping dimensions'**, which will be analysed during the QIM.

QUALITATIVE MAPPING - TOOLS AND METHODS

- First, an overview of the existing EU-projects and related tools concerning RRI and RIS3 mapping is given to define:
  - MAIN TOPICS (what to search?) & DETAILED DATA OF INTEREST (what to map?);
  - DATA SOURCES (where to search?) & DATA PROVIDERS (who to ask?).
- The EU-projects considered useful to build SeeRRI QIM methodology are the ones which have developed techniques, guidelines and strategies for RRI embedding or online tools such as online databases, platform, toolkit, etc.
- The available projects and their tools were analyzed according to these questions:
  - What is the project's relevance for SeeRRI mapping?
  - What is the developed tool and what is the tool for?
  - How SeeRRI can benefit from it?
- Finally, the QIM methodological approach was defined. It is based on the breakdown of RRI into its dimensions and then the mapping of each of them, and of the additional SeeRRI dimension, into regional policies and place-based activities in the R&I ecosystem.
- 7 SeeRRI dimensions to be mapped: 6 arise directly from RRI definition (1.GOV, 2.PE, 3.GE, 4.SLSE, 5.OA, 6.E) while one is an additional dimension of the project (7.SUS).
- When it will come to the actual qualitative mapping (in T2.3), the methodology will be tailored to the SeeRRI territories characteristics, R&I ecosystems and their specific interests (thematic focus).

2.2.2 Data of interest and data providers

In the previous section we gave an overview of the **relevant information and tools for RRI mapping** from previous EU-projects and used them to define the **7 spheres of interest for SeeRRI QIM (the '7 SeeRRI mapping dimensions')**. The actual mapping of the R&I ecosystems consists of **two practices**:

(i) A **general mapping of the territory**, to have an overall framework of the R&I ecosystem and to help visualize the territory broadly-speaking: data regarding geography, society, economy and internal organization of clusters. In this practice are also included general data regarding the prevalence of the thematic focus that each ecosystem has decided to fully investigate.

(ii) A **targeted mapping for dimensions**, as regards to relevant policies/projects/actions/etc. strictly connected with the thematic focus, but also as regards to Public Authorities' initiatives as well as other relevant territorial stakeholders' activities (in particular Clusters'). During this practice, the data are collected **with reference to one main SeeRRI dimension**, which represents its core objective (i.e. a spatial planning plan was born to govern the territorial development of the considered area, so the main SeeRRI dimension will be 1.GOV). Some of the policies/plans/actions/etc. into account need to be investigated through more than one dimension, so they will be classify and analyzed by using a main SeeRRI dimension and a secondary one, which we will call '**SeRRI sub-dimension**' (i.e. the main objective of a participated spatial plan – which is a spatial planning plan (1.GOV) – is to engage the public, so the sub-dimension of this type of policy is 2.PE). This system will be clearer by looking at the Annex II. The concept of looking at the policy instruments through the 7 SeeRRI mapping dimensions will contribute to establish whether a territory is committed or not into a specific dimension. We are going to check first if a specific RRI

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dimension is relevant or not; then we are going into details with qualitative descriptions when needed and, in some cases, also with quantitative numbers and an additional box to rate the quantitave figures, which will help to define levels or categories in relative terms, that can complement the rest of the information.

In the following tables (Table 5 and Table 6) a more comprehensive list of the **Data of Interest** (**DoI**) for the QIM are listed according to **two levels of details** of the information requested. As already mentioned, the mere presence of a policy instrument with a particular relevance to RRI dimensions already reveals the commitment of the ecosystem towards a specific direction. Then, the detailed **type of data** required could be key-words, examples and descriptions but also numbers, names or amounts (€), in order to build a more complete framework of the ecosystem's current situation based on different perspectives. The selected categories of the Data of Interest, especially for the targeted mapping for dimensions, try to be as comprehensive as possible, by mentioning examples of policies, activities and so on that could be related to each SeeRRI dimension.

The expected **Data Providers** (**DPs**) of the required information are also specified. The identification of the DPs will facilitate the data gathering process. The DPs are grouped into two main categories:

- **PA** (Public Authorities): this is the institutional level that includes the whole ecosystem. It will depend on the territorial extent of the R&I ecosystem and on the governmental structure of the territory. It can be the regional authority, or an association of municipalities, a province or even a national authority. In general, it refers to the **lowest institutional level that includes the whole ecosystem**. In order to be as flexible as possible, each R&I ecosystem can consider as PA whichever level of institutional government they believe is able to provide relevant documents and information, even more than one. For the analysis of RIS3 documents, the PA level is meant to be the Region in any case, since we are talking about regional R&I strategies for smart specialization.
- **OS** (Other Stakeholder): this level refers mostly to clusters organisations based on the ecosystem, but it could include also other relevant business/productive organisations, civil society organisations, private academia, RPOs, etc.

Table 5 gives an overall framework of the data of interest and data providers for the general mapping. Looking at the Secondary level of the data of interest, just the last type of data required ('policies/plans/...') will be further analysed according to the 7 SeeRRI mapping dimensions (targeted mapping practice), the other data are part of the general mapping practice.

Table 5. *Overview of Data of Interest (**DoI**) and Data Providers (**DPs**) for the **general mapping** of the territory*

Main level (DoI)	Secondary level (DoI)	DPs
1_ **General** info	General data about the territory	PA
	General data about the clusters within the territory	OS
2_ **Thematic** info	Territorial data regarding the thematic focus	OS
	Policies/plans/projects/ planning tools/actions/ campaigns/etc. strictly linked to the thematic focus	OS

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Table 6 describes the main objectives of the targeted mapping. Here it is also specified the **main SeeRRI dimension** to which the data refers, in the column **Main Dim.**, and of course the Data Providers (**DPs**).

The data of interest of this table, along with the policies/plans/etc. linked to the thematic focus, **are the primary objects of the QIM.** It should be specified at this point that not all the following types of data are expected for all the R&I ecosystems. Especially for the SeeRRI territories – which have been selected within the project for being complementary one to the other, in terms of territorial scale and type of stakeholders involved – it is not possible to expect that all the types of data listed are available or applicable to all. **When it will come to the actual active mapping (in T2.2 and T2.3), the methodology will be tailored to the SeeRRI territories characteristics, R&I ecosystems and their specific interests (thematic focus)**. The list of contents in this table is then as inclusive as possible, trying to cover all the possible territorial development policies and all the 7 SeeRRI mapping dimensions. During the actual mapping, the first step will consist in identifying which of the SeeRRI mapping dimensions have been taken into account in policy and planning policy instruments. The second step will be going into details of to what extent it has been included, according to which aims, and towards which results (if possible to asses).

The Secondary level of details of the Data of interest is further explained below; a more detailed description of each (also by using some relevant examples) is given to help the territories to understand which the possible targets of the QIM are and which ones are applicable to them.

Table 6. *Overview of Data of Interest (**DoI**) and Data Providers (**DPs**) for the **targeted mapping** for dimensions*

Main level (DoI)	Secondary level (DoI)	Main Dim.	DPs
3_ Public Authorities (PA) **info**	Spatial planning tools where RRI principles have a main role	1. GOV	PA
	Current regional/provincial policies addressing RRI principles	1. GOV	PA
	Regional Research and Innovation Strategies for Smart Specialisation	1. GOV	PA
	Awareness campaigns on RRI principles upon the local communities	2. PE	PA
	Gender Equality representative	3. GE	PA
	Science Literacy representative	4. SLSE	PA
	Open Access representative	5. OA	PA
	Ethics representative	6. E	PA
	2030 Agendas and actions/tools to monitor SDGs implementation	7. SUS	PA
4_ Other Stakeholders (OS) **info**	Activities related to RRI principles put forward by OS	1. GOV	OS
	Awareness campaigns on RRI principles put forward by OS	2. PE	OS
	Gender Equality representative	3. GE	OS
	Educational and training activities related to RRI principles available in the territory put forward by OS	4. SLSE 5. OA	OS
	Open Access representative	6. E	OS
	Ethics representative	7. SUS	OS
	Sustainability plans		OS

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- **Spatial planning tools where RRI principles have a main role (1.GOV)** are all the regional or local/urban planning policies/plans/regulations/actions/etc. addressing one of the SeeRRI dimension as their main goal. We can find some examples of these tools and their connection with RRI principles establishment: for instance, a participated spatial plan (i.e. Agenda Urbana de Cataluña) shows the intention from the PA of engaging the citizens **(2.PE)** or a gender spatial plan (i.e. Gender Mainstreaming, Vienna) shows how the PA aims to balance the gender gap by customizing the urban environment **(3.GE)**. Moreover, a PA may have promoted some spatial tools or plans within the territory where science or literature are the main regeneration subjects (i.e. Science Parks; Scientific and Technical Pole; public university campus; research centers; schools' areas; etc.) with the intent of increase the Scientific Education **(4.SLSE)**. The presence of an Online Platform ensures the open access **(5.OA)** while the presence of an Ethic commission on the spatial planning acts ensure the ethical standards **(6.E)**. Finally, it should be mapped the presence of spatial plans focused on sustainability (i.e. Sustainable Mobility Plans, Climate Change Plans, Sustainable Energy Plans, etc.) and their contents **(7.SUS).**
- **Current regional policies addressing RRI principles (1.GOV)** are economic policies, labour market policies, cohesion policies, etc. with one of the other SeeRRI dimensions as a main topic **(2.PE, 3.GE, 4.SLSE, 5.OA, 6.E, 7.SUS).** They refer to the territory as a whole (in some cases event to an area bigger than the R&I ecosystem under consideration) but they are not specifically spatial planning tools such as before. They have been chosen for mapping since they are believed to complement the overview on regional and planning policy instruments, but from a thematic perspective.
- Specifically at the Regional Government level, the R&I ecosystems are asked to go into the main priorities/pillars and also the connected actions/instruments of the **Regional R&I Strategy for Smart Specialisation (1.GOV)**. Also here, the analysis of the RIS3 documents is carried out by dimensions **(2.PE, 3.GE, 4.SLSE, 5.OA, 6.E, 7.SUS)**. The related monitoring and evaluation system, if existing, is required too to map the **inclusion of RRI into RIS3**, which is one of the main type of development policy to take into account during the QIM procedure.
- The presence, number and main objectives of **awareness campaigns on RRI principles (2.PE)** provide the basic knowledge on the promotion of each RRI principle **(1.GOV, 3.GE, 4.SLSE, 5.OA, 6.E, 7.SUS)** upon the local communities.
- For some of the SeeRRI dimensions **(3.GE, 4.SLSE, 5.OA, 6.E)**, where it is hard to find specific tools/plans/policies, an effective way to map their inclusion into the administrative set-up of the territorial PA could be checking the **presence of an institutional representative** (that could be one person or even an entire dedicated office) **or of organisations/associations promoting these principles as a core mission.**
- Some Governments, especially Regional ones, may have adopted (but it is not mandatory in all Countries) a targeted **2030 Agendas and actions/tools to monitor SDGs implementation**. Identifying then the main challenges/objectives for the region linked to each SDGs helps to map the implementation of Sustainability into the territory **(7.SUS)**.

The public sphere's mapping is the predominant regarding the implementation of regional development policies (which are the main topic of this mapping), but, in addition of it, we may also have some interesting actions/activities put forward by cluster organisations or other local organisations (**OS** level) based in the area related to RRI principles which should be mapped as well to have a more comprehensive picture of the ecosystem. In particular we consider:

- **Activities related to RRI principles (1.GOV)**, such as EU projects or non-EU projects carried out by local organisation in the area and focused on **2.PE, 3.GE, 4.SLSE, 5.OA, 6.E, 7.SUS.**

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- **Awareness campaigns (2.PE)** of the clusters organisations or other local-based organisations to provide the knowledge on the current situation of the promotion of RRI principles upon the local communities of one specific SeeRRI dimension **(1.GOV, 3.GE, 4.SLSE, 5.OA, 6.E, 7.SUS)**.
- Presence of an **institutional representative for 2.GE, 5.OA and 6.E** within the administrations of the cluster organisations and other relevant organisations in the area.
- **Educational and training activities (4.SLSE)**, for example projects/programmes or scholarships available in the territory for courses/masters/doctorate, both focused on one SeeRRI dimension **(1.GOV, 2.PE, 3.GE, 5.OA, 6.E, 7.SUS)**.
- Presence and contents of eventual **Sustainability Plans (7.SUS)** of the cluster organisations and other relevant organisations based in the territory.

These are the **main subjects of the QlM**, they are the policies and planning instruments of the territory including the RRI principles, or better, the **SeeRRI dimensions**. As stated before, this is the all-embracing list of contents, but it is not expected to have relevant data from all the R&I ecosystems regarding each data of interest presented. Starting from this perspective of being as comprehensive as possible during the mapping and **with the objective of creating an exhaustive picture of the integration of "responsible principles" into territorial development policies**, probably not only the concept of RRI need to be investigate but also the one of **Corporate Social Responsibility (CSR)**, and then the related CSR regulations of the territorial stakeholders. As seen in Section 1.1.1, the term RRI is a very recent expression, used mostly by the RPOs (Research Performing Organisations). However, industry and many public administrations have been using the concept of **CSR** as a form of corporate self-regulation, to refers to their impact on society. Over the last decades, the CRS concept has moved considerably from voluntary decisions at the level of individual organisations, to mandatory schemes at regional, national and even transnational levels. Today, the implementation of CSR goes beyond compliance with regulatory requirements and engages in "actions that appear to further some social good, beyond the interests of the firm and that which is required by law" (McWilliams, 2006) and it is perfectly in line with the societal aspects of RRI.

A final remark in connection with the **Data Providers**. As for the QnM of R&I ecosystems, for the QlM of the SeeRRI territories, the intent is to use **existing data bases.** Each territory can choose the best method to collect the data and can also improve the 2 forms provided by WP2 to better fit with their territorial needs. All the required data should be available at the Public Authorities level or in databases of Clusters and other organisations within the defined territory (i.e. NGOs, no profit, etc.), whether they are not available, the issue could be the non-application of the required data or the need of further investigation among the territorial stakeholders' databases.
In the European context, the Data Providers, or more in general whoever aims to map the RRI inclusion into a specific R&I ecosystem, may be supported in the gathering of some of the required data by the use of supra-national data platforms and data sets directly developed by the EC or by EU-funded projects such as:

- EUROSTAT (https://ec.europa.eu/eurostat)
- KETs OBSERVATORY (https://ec.europa.eu/growth/tools-databases/kets-tools/kets-observatory)
- RIM Plus - Regional Innovation Monitor Plus reports (https://ec.europa.eu/growth/tools-databases/regional-innovation-monitor/)
- EU Cluster observatory (http://www.clusterobservatory.eu/index.html)
- European Innovation Scoreboard (https://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards_en) and Regional Innovation Scoreboard (https://ec.europa.eu/growth/industry/innovation/facts-figures/regional_en)
- Smart Specialisation Platform (http://s3platform.jrc.ec.europa.eu/)

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- ONLINE-S3 Platform (http://www.s3platform.eu/) EUPRO, PATSTAT (see section 2.1.2)

QUALITATIVE MAPPING – DATA OF INTEREST AND DATA PROVIDERS

- The QlM consists of two practices:
  (i) a general mapping of the territory (data on geography, society, economy, internal organization of clusters and the thematic focus);
  (ii) a targeted mapping for dimensions in order to map the 7 SeeRRI mapping dimensions into PA or OS policies and activities on the territory.
- For both the detailed list of the Data of Interest (DoI) and the related Data Providers (DPs) is specified, including also the main related SeeRRI dimensions (Dim.) for the second practice.
- The selected Data of Interest, especially for the targeted mapping for dimensions, try to be as comprehensive as possible, by mentioning examples of policies, activities and so on that could be related to each SeeRRI dimension.
- The Data Providers are grouped into two: Public Authorities (PA) and Other Stakeholders (OS).
- Some additional data bases for the European context are provided with links.

2.2.3 The data collection process

The data collection campaign consists of an **excel questionnaire** (the **QIDCF** – see Annex II) to be filled out by the **representatives of the territorial actors**, for both the Public Authorities (PA) level of information and the Other Stakeholders (OS) level. By representatives, we understand a designated office (or officer) of the Public Authorities and of the identified clusters and relevant stakeholders in the area which has access to the relevant databases. In the case of SeeRRI, there are representatives of the SeeRRI territories involved as project partners which represent both the public sphere (ECOPLUS, GENCAT, NCC) and the other stakeholders' sphere (ECOPLUS, AIT, UAB, NHO, NRI). The excel form will be distributed to the representatives to be filled out from their existing databases, no further surveys or questionnaires to third parties are expected, as mentioned at the end of the section 2.2.1.

The excel form (**QIDCF**) consists of **6 sheets**:

(i) INSTRUCTIONS on how to fill in the form. In particular, it is explained who should fill in which cells: the light-blue cells by the PA while the green cells by the OS.
(ii) 1_ GENERAL INFO: data regarding the features of the territory and its clusters.
(iii) 2_ THEMATIC INFO: data regarding the thematic focus of each territory.
(iv) 3_ PA (Public Authorities) INFO: data regarding the RRI-related policies and planning instruments of the institutional government.
(v) 4_ OS (Other Stakeholders) INFO: data regarding RRI-related activities of the Clusters and all the other relevant stakeholders involved (i.e. business/productive organisations, civil society organisations and private academia). The activities within WP3 should support the SeeRRI partners to identify and interact with these actors.
(vi) Info DESCRIPTION: a more detailed description of the information required in the sheets '3_PA info' and '4_OS info' in provided below.

By following the instructions sheet (i), both the PA and the OS representatives should be able to fill in the subsequent sheets with the required data.

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In practice, the **qualitative data gathering campaign** follows these **3 steps**:

(1) The form will be distributed first to the **PA** operating in the whole territory considered. Note: most of the information required for the QIM should be available at the PA level since the core mission of the QIM is to map the inclusion of RRI within existing regional development policy instruments and planning tools. The inclusion in the mapping of the Other Stakeholders is made to be more comprehensive and return a broader picture of the R&I ecosystems, which consists of 4 types of stakeholders: government, business, academia and civil society.

(2) At the same time, the PA should identify one or more representatives of the **OS** (which are mainly Cluster Organisations) able to fill out the related questions. In the case of SeeRRI territories, the OS representatives are already identified. The form will be forwarded to the OS representatives for the compilation of their part.

(3) **If** the information required is **not available** in the representatives' databases, the issues could be:

- The data of interest is not relevant to the territory: the related cell should be filled out with the sentence '**n.a.**' (not applicable), or with '**no**' when the presence/absence of a specific policy/activity is requested.
- The data of interest could be available in other databases: the questions related to the missing information should be **forwarded to other territorial actors** which can provide the missing data. If the data is still not available, then and put '**n.a.**'/'**no**' as above. In this situation, the activities within WP3 should support the SeeRRI partners to interact with other actors/stakeholders.

QUALITATIVE DATA COLLECTION

- 3 steps to be followed for a proper data gathering campaign:
  (1) Distribution of the excel form (QIDCF) to the PA representative → compilation of the form using PA databases;
  (2) Identification of the OS Representative (if not yet established) and then forwarding of the QIDCF → compilation of the form using OS databases;
  (3) Possible issues with not available data in the PA or OS databases:
  - Not applicability of the request for the territory,
  - Chance that the requested data relies in other available databases → forwarding of the requests to other territorial actors. Consider the WP3 activities for the SeeRRI territories.
- SeeRRI territories will be supported during the data collection by UNIBO through the planning of bilateral meetings before the actual start of the data gathering campaign. Moreover, each territory will be allowed to send one relevant document as a 'pilot case' to be analyzed by the UNIBO team in order to better show the procedure of the targeted mapping for dimensions.

2.2.4 Representation of results

The results of the qualitative data collection campaign could be presented in different ways, i.e. through a descriptive report, through lists and tables or through a combined system of descriptions, connections and zoom levels. To support this kind of graphical display of the mapping results, SeeRRI will use **Prezi presentation** (https://prezi.com), an open software for building professional presentations which are interactive and allow the general framework of the mapping to be visible at all stages.

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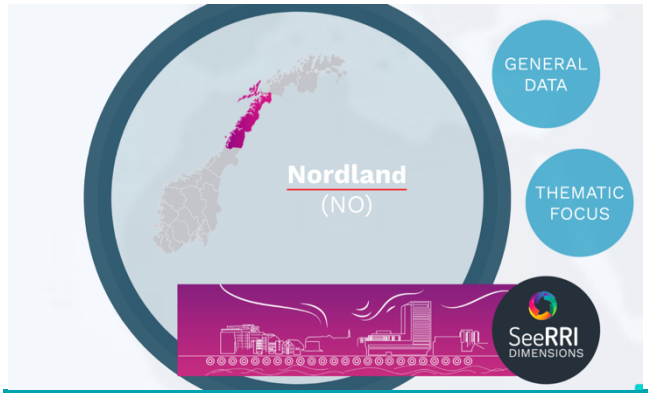
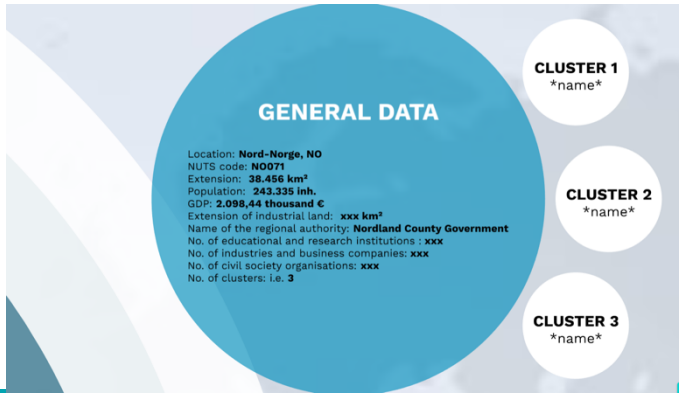
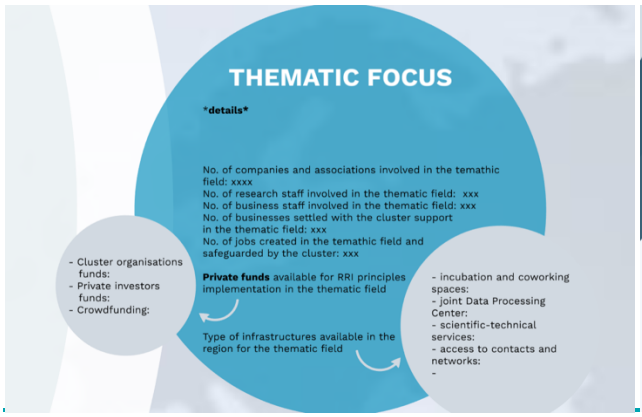
(a) General overview of the territory (i.e. Nordland)



(b) General data display



(c) Thematic focus display



(d) SeeRRI dimensions display

(e) 1.GOV dimension display

(f) Inside 1.GOV_1st element display

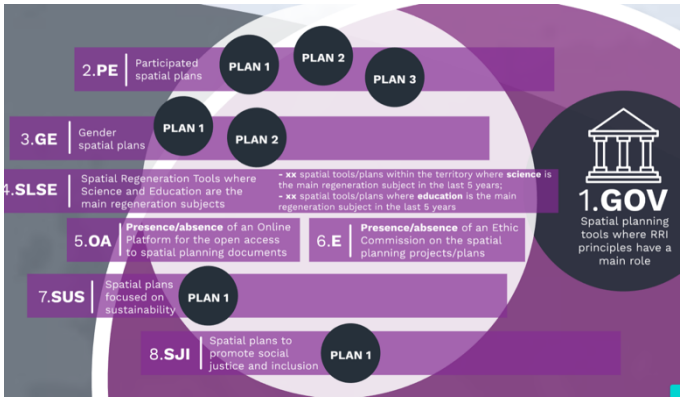


Figure 7: Illustrative examples of graphical display of results for the SeeRRI territory of Nordland
(a) Example of the main page of the Nordland territory; (b) Example of the main page of the section 'general data' for Nordland; (c) Example of the main page of the section 'thematic info' for Nordland; (d) Example of the main page of the section 'SeeRRI dimensions' for Nordland; (e) Example of the inside of the section '1.GOV (governance)' for Nordland; (f) Example of the inside of the section 'Spatial planning tools where RRI principles have a main role' as the first element inside '1.GOV (governance) for Nordland.

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It should be noted that the actual availability of data of the QlM exercise will influence how to report them. Since the present report is just the first deliverable of three, here it is provided just the general overview of the mapping results' visualization, while a detailed image will be presented in the D2.3.
The Prezi tool designed during the D2.1 has the aim to visualize the results in a catchy way and without losing the overall vision when it comes to the details. For each SeeRRI territory, the results of the R&I ecosystem QlM will be presented along the 7 SeeRRI mapping dimensions and the territorial features, seen as bubbles with detailed contents inside. **The aim of such a tool is to report the current commitment of the ecosystems with RRI, in particular to visualize whether concrete actions were put into practice by the local actors**. The establishment of specific RRI principles-related policies/projects/campaigns/etc. contribute to build the state of the art of the inclusion of RRI into the R&I ecosystem. In fact, this tool will help showing a global picture of the current inclusion of the RRI principles into the regional development policies currently available for each territory.
The data collected will be analysed in order to identify interesting patterns and insights and consider their policy implications. A factsheet will be developed for each of the dimension addressed, to explicit the results of the RRI institutionalisation level analysis based on the challenges, goals and drivers of the policy and planning instruments addressed. **The results will show which RRI dimensions have been more relevant for the territory until now and will support the territories in understanding which ones could be included with a more active role in future strategies.** Such activity will be carried out on the basis of the data collected through the QlDCF and from specific interviews with the territorial stakeholders to better understand the figures and documents collected from their perspectives and future objectives of growth.

In Figure 7 illustrative examples of the graphical display of results of the QlM are presented.

QUALITATIVE MAPPING – REPRESENTATION OF RESULTS

- The results of the qualitative mapping are displayed using a Prezi presentation structure able to combine an overall view of the territorial features and then go into details of each sphere analyzed during the data gathering campaign.
- The outcomes will show the state of the art of integration of RRI dimensions into regional development policies, relevant policy instruments and planning tools, to build the ground to understand to what extent RRI is currently integrated in the policies and tools responsible to shape the current and future decisions of the SeeRRI territories.
- Since the methodology of the qualitative mapping is going to be tailored to each territory, also the outcomes can vary from one to the other according to the availability of the policy instruments investigated or not. In fact, the qualitative mapping methodology has been designed to include a variety of policy instruments but not all of them are present for every territory.
- Some examples of the graphical display of results are provided while a more detailed version of the presentation tool will be provided in the D2.3, in accordance to the availability of data of each SeeRRI territory.

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3 BEYOND SeeRRI

3.1 NETWORK OF AFFILIATED TERRITORIES (NAT)

In order to build an adaptive resilience ecosystem in a complex context using responsible research and innovation, the SeeRRI project has decided to build a network of affiliated territories (NAT) (Figure 8).
The framework of RRI principles and regional development policies built from the three territories will be tested by a Network of Affiliated Territories which will help improve the concept and the framework of SeeRRI. NAT members are from European states, associated countries and third countries who will help leverage the SeeRRI impact not only at the European level but also at the global level. The other territories have been invited to join the Network of Affiliated Territories (NAT) which include members who act as "critical friends" (Mariussen and Virkkala, 2013). NAT members come from other territories, with compositions that could mirror actors of the three focal territories regarding regional development policies, and innovation ecosystems, including, but not limited to, Badajoz, Haifa Municipality, Burgos, South-Eastern Europe, Ostrobothnia, Sardinia, Montenegro, and Southeast of Mexico.

NAT members will attend selected workshops to get feedback on the framework and to disseminate SeeRRI knowledge at the European level; they will have at their disposal the project tools and results to be ready to identify their state of the art on R&I ecosystems and to build self-sustaining R&I ecosystems through RRI.
To this aim, the tools for quantitative and qualitative data collection for active mapping of the R&I ecosystems are available in the Annexes.

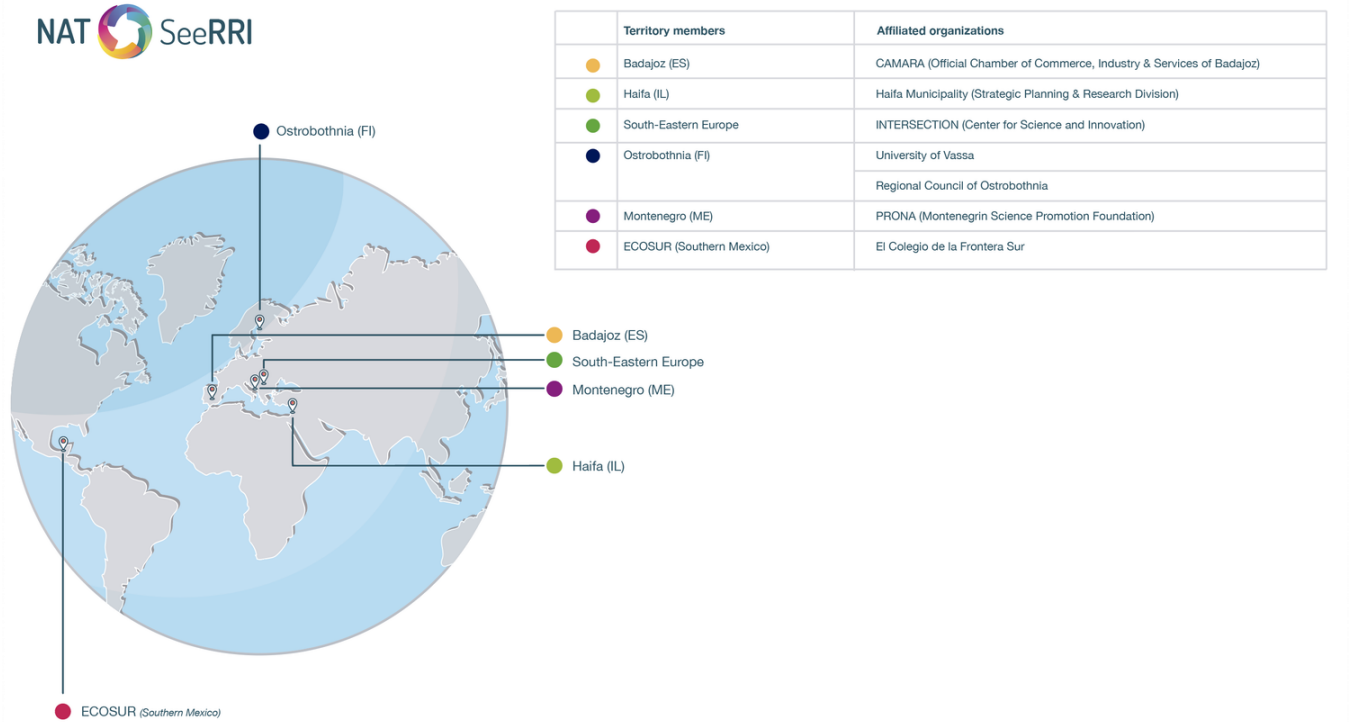

Figure 8: Map of the Network of Affiliated Territories (NAT)

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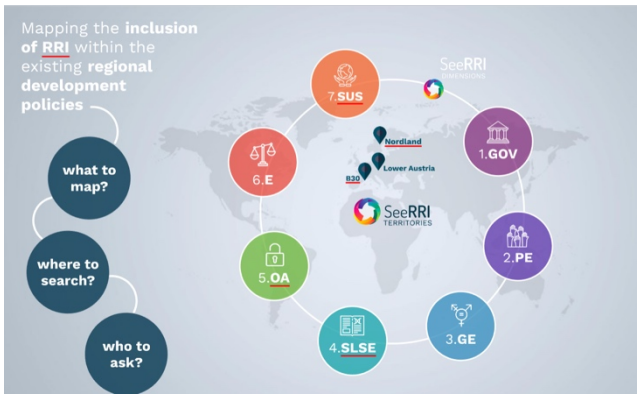
The QlM of the SeeRRI's affilitated territories may be carried out in two steps:

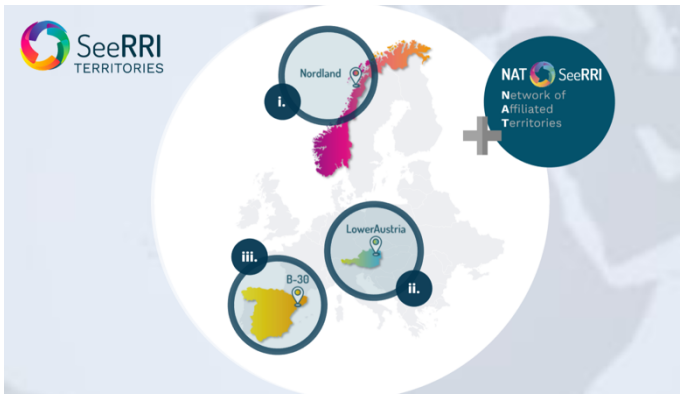
- first by distributing the same QlDCF used by the SeeRRI territories to the representatives of PA and OS of the NAT under consideration;
- then by using the Prezi online tool to return the data collected in the same way the WP2 team will do for the SeeRRI territories (in Del 2.3)

In Figure 9 illustrative examples of the graphical display of the online tools for QlM of the NAT are presented.

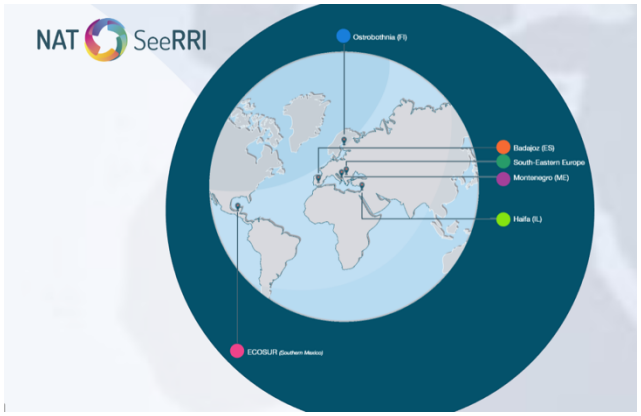
(a) Main page of the online tool



(b) Zoom into the SeeRRI territories



(c) Zoom into the NAT



(d) Zoom into one affiliated territory (i.e. Ostrobothnia)

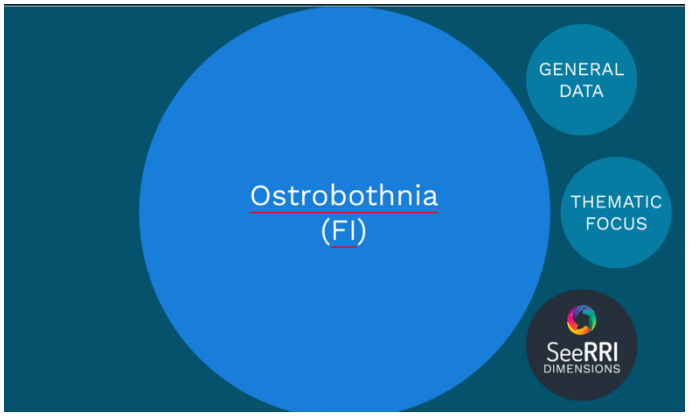


Figure 9: Illustrative examples of graphical display of results for the SeeRRI NAT
(a) Example of the main page of the online tool; (b) Example of the main page of the SeeRRI territories and NAT ; (c) Example of the main page for the NAT; (d) Example of the main page of one of the affiliated territories as a template to display the results as for the SeeRRI territories.

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BEYOND SEERRI - NETWORK OF AFFILIATED TERRITORIES (NAT):

- The Network of Affiliated Territories (NAT) is composed by members that have expressed their interest in SeeRRI project since the proposal stage;
- NAT members are available to contribute to SeeRRI by providing feedback and by disseminating project results, while at the same time they aim at benefitting from the close contacts with SeeRRI partners to build their own R&I ecosystems;
- Tools for quantitative and qualitative data collection for active mapping of the R&I ecosystems are available for the NAT territories in the Annexes, to get an idea of the key elements that are included in the active mapping process of R&I ecosystems.

3.2 RECOMMENDATIONS FOR OTHER POTENTIALLY INTERESTED R&I ECOSYSTEMS

The following recommendations have been developed as a pathway to support potentially interested ecosystems other than SeeRRI territories and NAT members to map their own R&I ecosystem:

- A general characterisation of the status quo of R&I actors in the respective territories (regions) and their technological profiles (using patent applications) shows the *region-internal capabilities* that are essential for region-internal knowledge creation but also to enable access region-external knowledge. To build this knowledge, identifying the R&I actors and their expertise/ profile is the first main step;
- The analysis of the structure of the R&D collaboration networks comprising different types of actors being interlinked through joint research projects shows the territories' *collaboration/network capability*. Before being able to map these links, networks and databases on them should be built;
- In order to *measure the R&I activities*, different indicators should be used (e.g. patent applications, EU funded R&D projects, scientific publications). This is very important to embed a comprehensive view on the R&I landscape and it also requires the territories to build their own networks to agree on what and how to measure;
- When it comes to regional development policies and strategies reflecting the 7 SeeRRI mapping spheres (see Section 2.2.1), the public authorities are supposed to have an overview of their territories. However, in order to be able to provide data and information, databases and monitoring systems should be put in place before starting the mapping exercise;
- At the same time, the public authorities should identify one or more territorial clusters and additional stakeholders. Within SeeRRI, they have already been identified and they are mainly within the consortium. For the territories beyond SeeRRI, results from WP3 – Stakeholder Engagement will be important to identify the target groups for questions aimed at mapping the state of the art of the R&I territories.

BEYOND SEERRI - RECOMMENDATIONS FOR OTHER POTENTIALLY INTERESTED R&I ECOSYSTEMS:

- Some recommendations have been made available for additional potentially interested R&I ecosystems rather than SeeRRI territories and NAT members, to support them to bridge the gap between the willingness to build R&I ecosystems based on RRI and the availability of data for mapping the ecosystems.

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This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement nº 824588.

ANNEXES

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Annex I – Quantitative Data Collection Form (QnDCF)

An Excel file containing two separate sheets will be sent to the Territories representatives: the first sheet contains **general information and instructions**; the second sheet is an **example data set serving as a guideline** for the data collection process.

Information & Instructions (extract from the first sheet)

General information

This data collection serves TASK 2.2 in WP2 (Mapping of R&I ecosystems); the mapping relies on existing R&I data bases on different spatial levels - supra-national, national and regional. On each level, we expect to identify different, but overlapping sets of actors involved in R&I activities. Data bases on the supra-national level, comprising European Framework Programmes (EUPRO) and Patent application (PATSTAT) are provided by AIT and serve as backbone of the mapping of R&I ecosystems. However, to avoid missing important players (mostly small actors) not active in EU FP and patenting, we rely on **data from different regional and cluster-specific R&I funding data bases**.

Overall, we are interested in as much information as possible on
-) which type of actors are active in which topics and/or in what kind of programme
-) who collaborates with whom in which research projects
The main priority is the identification of R&I actors that are mostly active in regional research projects within the SeeRRI territories: Lower Austria, Nordland and B30. However also links to ther national/international R&I actors are of interest if data is available.

Instructions for data collection

Representatives of each territory are asked to provide data drawn from **existing** R&I data bases as specified in *"Data bases of interest"* and *"Variables of interest";* moreover an **example data set** (sheet 2) is provided within this document. **Please note some important points:**

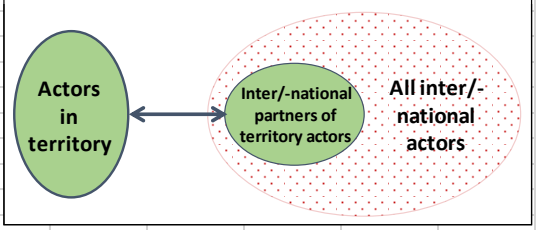
i. Please look out for existing data bases; additional questionnaires and interviews are **not necessary**
ii. Please indicate clearly:
- the source of data,
- timeframe of data (data should cover periods somewhere between 2002 - 2016) and
- description of variables (if any other than in the template are given, or they deviate to some extent)
iii. If there are multiple sources of data bases or different funding schemes, please provide them in separate files or clearly indicate the source in a separate column
iv. If two or more data sheets belong together, make sure there is an unique identifier to merge these sheets (unique Project ID in all sheets).
v. Although *'the more information, the better'* , if certain data or specific information is not available in different data bases, it does not do any harm; still there is some absolutly necessary information that should be provided (see *"Variables of interest"* below). Generally, the more information on the territories we get, the more detailed the characterisation of the R&I ecosystems will be.

Data bases of interest

Note: Core of the selected data sets should include the actors (and their projects) in the specific territory covered by the original data set, as well as national/international actors that they are linked to by means of collaborative projects - i.e. '*Actors in territory* ' plus '*Inter/ -national partners of territory actors* ' in Figure 1. (if available; dependent on source of data). Hence, actors not located in the territory of consideration and actors not being linked to any of the regional actors are not relevant.

Data on…	Data (possibly) available from…
Regional R&I research funding	***Regional authorities***
	Government of Lower Austria
	Nordland County Council
	Generalitat de Catalunya
Cluster networks	***'Cluster' organizations***
	Ecoplus
	NHO Nordland
	Universitat Autònomia de Barcelona (UAB)

Figure 1: Illustrative example of data sample



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Information & Instructions (cont.) (extract from the first sheet)

Variables of interest

Note: Variables highlighted in **bold** are minimum requiry for the data set to be included in the analysis; the others will be used for additional analyses (e.g.for topic-specific characterisation)

Variable	Description	
Project ID	ID that uniquely identifies project	
Project Title	Title of project (prefereably in english)	
Project Description	Project description, e.g. abstract, objective, …	
Project Start Date	Start date of project (year or approx. timeframe sufficient)	
Project End Date	End date of project (year or approx. timeframe sufficient)	
Project Subject	e.g. topic assigned by funding agency,…	
Funding Instrument/Programm	Type of funding instrument or programme	
Organisation ID	ID that uniquely identifies organisations involved in projects	
Organisation Name	Name of organisation (original, english or both)	
Organisation Type	Type of organisation (e.g. Education, Industry, Research Organisation, Government, Consultant, etc.)	
NUTS2 region[1]	NUTS ID of NUTS2 where organisation is located (if not located in territory);	**OR: at least some indication whether within territory, national, or international actor/partner**
NUTS 3 region	NUTS ID of NUTS3 where organisation is located (if not located in territory)	
Postal Code	Postal Code of city/municipality where organisation is located	
City/Municipality	Name of city or municipality where organisation is located	

[1] see https://ec.europa.eu/eurostat/web/nuts/background for information on NUTS

In the case data sets need to be limited to actors & projects in territory regions (e.g. in the case of national funding databases)

Information for **Nordland**

The territory of Nordland is specified as the **NUTS3** region **NO071** hence if possible use this classification to extract the relevant actors and respective projects. If you do not have NUTS classification but information on the actors' adresses, in the data set of interest, we can provide you with a list of postal codes to extract relevant actors.

Information for **Lower Austria**

The territory of Lower Austria is specified as the **NUTS2** region **AT12,** hence if possible, use this classification to extract the relevant actors and respective projects. If you do not have NUTS classification but information on the actors' addresses, in the data set of interest, we can provide you with a list of postal codes to extract relevant actors.

Information for **B30**

Since the B30 territory is neither a NUTS2 of NUTS3 region, it is specified by the **postal codes** of the included municipalities that are also used to select relevant actors and their projects. You can either extract the actors using

-) the list of postal codes (that we can provide you with), **OR**

-) using the NUTS classification (if available) with **NUTS3 ES511** - and we will then further restrict the sample on our own

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Example data set (extract from the first sheet)

Project-related information						
Project ID	Project Title	Project Description	Project Start Date	Project End Date	Project Subject	Funding Instrument/
73419	Advanced Metho	ASSEMIC is devoted to	30.09.2002	31.12.2006		FP6
73419	Advanced Metho	ASSEMIC is devoted to	30.09.2002	31.12.2006		FP6
73419	Advanced Metho	ASSEMIC is devoted to	30.09.2002	31.12.2006		FP6
73419	Advanced Metho	ASSEMIC is devoted to	30.09.2002	31.12.2006		FP6
73419	Advanced Metho	ASSEMIC is devoted to	30.09.2002	31.12.2006		FP6
73419	Advanced Metho	ASSEMIC is devoted to	30.09.2002	31.12.2006		FP6
73419	Advanced Metho	ASSEMIC is devoted to	30.09.2002	31.12.2006		FP6
73419	Advanced Metho	ASSEMIC is devoted to	30.09.2002	31.12.2006		FP6
73419	Advanced Metho	ASSEMIC is devoted to	30.09.2002	31.12.2006		FP6
73419	Advanced Metho	ASSEMIC is devoted to	30.09.2002	31.12.2006		FP6
73419	Advanced Metho	ASSEMIC is devoted to	30.09.2002	31.12.2006		FP6
73419	Advanced Metho	ASSEMIC is devoted to	30.09.2002	31.12.2006		FP6
73419	Advanced Metho	ASSEMIC is devoted to	30.09.2002	31.12.2006		FP6
91026	Monitoring Syste	"The MONITOR propos	01.01.2007	31.12.2013		FP7
91026	Monitoring Syste	"The MONITOR propos	01.01.2007	31.12.2013		FP7
91026	Monitoring Syste	"The MONITOR propos	01.01.2007	31.12.2013		FP7
91026	Monitoring Syste	"The MONITOR propos	01.01.2007	31.12.2013		FP7
91026	Monitoring Syste	"The MONITOR propos	01.01.2007	31.12.2013		FP7
104073	Magnetic Nano A	The MANAQA project i	01.01.2007	31.12.2013		FP7
104073	Magnetic Nano A	The MANAQA project i	01.01.2007	31.12.2013		FP7
104073	Magnetic Nano A	The MANAQA project i	01.01.2007	31.12.2013		FP7
104073	Magnetic Nano A	The MANAQA project i	01.01.2007	31.12.2013		FP7
104073	Magnetic Nano A	The MANAQA project i	01.01.2007	31.12.2013		FP7
104073	Magnetic Nano A	The MANAQA project i	01.01.2007	31.12.2013		FP7

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Example data set (cont.) (extract from the first sheet)

Organisation-related information			Spatial information			
Organisation ID	Organisation Name	Organisation Type	NUTS2 region	NUTS 3 region	Postal Code	City/Municipality
71606	PROGENIKA BIOPHARMA S.A.	IND	ES21	ES213	48160	Derio-Vizcaya
62856	NASCATEC GMBH	IND	DE73	DE731	34131	Kassel
71542	Profactor Produktionsforschungs GmbH	IND	AT12	AT127	2444	Seibersdorf an der Leitha
2930	AIT Austrian Institute of Technology GmbH	IND	AT13	AT130	1210	Vienna
86199	Technische Universität Wien/ Technical Ur	IND	AT13	AT130	1010	Vienna
77652	Scuola Superiore di Studi Universitari e di	IND	ITI1	ITI17	56127	Pisa
34625	Fondation Suisse pour la Recherche en Mi	IND	CH02	CH024	2000	Neuchatel
2930	AIT Austrian Institute of Technology GmbH	IND	AT13	AT130	1210	Vienna
14375	Carl von Ossietzky Universität Oldenburg/	IND	DE94	DE943	26129	Oldenburg
90884	UNINOVA - Instituto de Desenvolvimento	IND	PT17	PT170	2825	Monte Da Caparica
94985	Warsaw University of Technology / POLITE	IND	PL12	PL127	00-661	Warszawa
97393	Fraunhofer-Gesellschaft zur Förderung de	IND	DE21	DE212	80686	Muenchen
86199	Technische Universität Wien/ Technical Ur	IND	AT13	AT130	1010	Vienna
79924	SLOT CONSULTING LTD	ROR	HU10	HU101	1186	Budapest
91571	Universität Sankt Gallen/University of San	ROR	CH05	CH055	9000	St Gallen
48848	International Institute for Applied System	ROR	AT12	AT127	2361	Laxenburg
62902	National Aerospace Laboratory (NLR)	ROR	NL32	NL326	1059CM	Amsterdam
37904	German Aerospace Center	ROR	DEA2	DEA23	51147	Koeln
90272	UAB Universitat Autonoma de Barcelona -	IND	ES51	ES511	8193	Cerdanyola Barcelona
30597	ETH Zürich - Eidgenössische Technische Ho	IND	CH04	CH040	8092	Zürich
11890	Bogazici Univertesi - Bogazici University (B	IND	TR10	TR100	34342	Istanbul
9647	Bayerische Julius-Maximilians-Universität	IND	DE26	DE263	97070	Wuerzburg
1766	AEON SCIENTIFIC AG	IND	CH04	CH040	8092	Zürich
40463	HAPPY PLATING GMBH	IND	AT12	AT127	2700	Wiener Neustadt

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Annex II – Qualitative Data Collection Form (QIDCF)

For the QIM, another Excel file containing 6 sheets (see Chapter 2.2.3) will be sent to the territories Representatives. The first sheet contains general information and instruction; the remaining sheets (i.e. 1_general info; 2_thematic info, 3_PA info; 4_OS info) contain the requests and the corresponding empty cells (highlighted in light blue for the PA data and in green for the OS data) where the data should be entered. The last sheet (sheet 6) contains descriptions on the data requested.

Instructions

INSTRUCTIONS

The file is divided into **4 sheets**, in accordance with **4 themes**:
- 1_ GENERAL INFO: data regarding the **features** of the territory and its clusters
- 2_ THEMATIC INFO: data regarding the **thematic focus** of each territory
- 3_ PA (Public Authorities) INFO: data regarding the **institutional government**
- 4_ OS (Other Stakeholders) INFO: data regarding **Clusters** and all the **other stakeholders** involved (such as business/productive organisations, civil society organisations and private academia)

HOW TO FILL IN THE FORM

Please **insert** the requested data in the coloured cells following these guidelines:

	insert the data into the light-blue cells: these data should be available at the **Public Authorities** level.
	add **comments** if relevant (PA level)
	insert the data into the **green** cells: these data should be available at the **Cluster Organisations** (or other local organisations) level.
	add **comments** if relevant (OS level)

Please **check** the data (and eventually **modify/update**) if they are already entered by **UNIBO** with the **AIT** support (the data sources is specified on the right; i.e. EUROSTAT, EUPRO)

NOTE: if the requested data doesn't apply for you please enter '**n.a.**' (not applicable)

Columns with **orange text** refers to:

• the type of data	*e.g.* name, key-words
• the unit of measure	*e.g.* no.; km²
• the action	*e.g.* (choose) = choose one value from the drop-down list

The **red text** at the top of the sheet provides some **additional guidelines** to clarify what the data provider has to do, when needed (check the * on the corresponding row or column)

ACRONYMS FOR THE 'SEERRI MAPPING DIMENSIONS'

1. GOV	governance
2. PE	public engagement
3. GE	gender equality
4. SLSE	science literacy and science education
5. OA	open access
6. E	ethics
7. SUS	sustainability

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1_general information

ADDITIONAL GUIDANCE NOTES TO FILL OUT THE FORM
*by codes is meant NUTS code (if matches) or list of postal codes
**add as many rows as you need (copy and paste the same template) if you have more than 5 clusters
***if you have any relevant comment please feel free to add it here (i.e. if you want to specify the different types of civil society organisations present in the territory, or the grades of academic institutions, etc.)

Territory name

			type of data	data	comments***
GENERAL DATA ABOUT THE **TERRITORY**	Location		Region, Country		
	Boundaries identification		codes*		
	Municipalities		no.		
	Extension		km²		
	Population		no. Inh.		
	GDP		thousand €		
	Extension of industrial land		km²		
	GOVERNMENT: name of the regional authority upon the whole		name		
	ACADEMIA: number of educational and research institutions		no.		
	BUSINESS: number of industries and business companies		no.		
	CITIZENS: number of civil society organisations		no.		
GENERAL DATA ABOUT THE **CLUSTERS** WITHIN THE TERRITORY **	**cluster 1**	name of the cluster	name		
		key topics (at least 3)	key-words		
		number of business and companies	no.		
		no. of academic institutions	no.		
		no. of civil society organisations	no.		
	cluster 2	name of the cluster	name		
		key topics (at least 3)	key-words		
		number of business and companies	no.		
		no. of academic institutions	no.		
		no. of civil society organisations	no.		
	cluster 3	name of the cluster	name		
		key topics (at least 3)	key-words		
		number of business and companies	no.		
		no. of academic institutions	no.		
		no. of civil society organisations	no.		
	cluster 4	name of the cluster	name		
		key topics (at least 3)	key-words		
		number of business and companies	no.		
		no. of academic institutions	no.		
		no. of civil society organisations	no.		
	cluster 5	name of the cluster	name		
		key topics (at least 3)	key-words		
		number of business and companies	no.		
		no. of academic institutions	no.		
		no. of civil society organisations	no.		

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2_thematic info

ADDITIONAL GUIDANCE NOTES TO FILL OUT THE FORM
*explain by key-words the thematic focus of the territory
**if you have any relevant comment please feel free to add it here (i.e. add a description or a clarification if needed for each type of infrastructure)
***add as many rows as you need
**** i.e. economic policy, cohesion policy, awarness campaign, etc.

Territory name

			type of data	data	how would you rate it?	comments**
TERRITORIAL DATA REGARDING THE **THEMATIC FOCUS**	Thematic focus details*		key-words			
	Number of companies and associations involved **in the tematic field**		no.			
	Number of research staff involved **in the thematic field**		no.			
	Number of business staff involved **in the thematic field**		no.			
	Number of businesses settled with the cluster support **in the thematic**		no.			
	Number of jobs created **in the tematic field** and safeguarded by the		no.			
	Private funds available for RRI principles implementation in the thematic field	- Cluster organisations funds	thousand €			
		- Private investors funds	thousand €			
		- Crowdfunding	thousand €			
	Type of infrastructures available in the region for the thematic field	- incubation and coworking	no.			
		- joint Data Processing Center	no.			
		- scientific-technical services	no.			
		- access to contacts and	no.			
		- ***	no.			

	SeeRRI dimension		name of the document	type of document****	year	promoter	relation to the corresponding SeeRRI dimension (description)
Policies/plans/projects/ planning tools/actions/ campaigns/etc. **strictly linked to the thematic focus**	1. GOV	1					
		2					
		3***					
	2. PE	1					
		2					
		3***					
	3. GE	1					
		2					
		3***					
	4. SLSE	1					
		2					
		3***					
	5. OA	1					
		2					
		3***					
	6. E	1					
		2					
		3***					
	7. SUS	1					
		2					
		3***					

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3_PA info

ADDITIONAL GUIDANCE NOTES TO FILL OUT THE FORM

* If there's no spatial planning tools regarding the referred RRI principle (or less then 3) please leave the unnecessary cells empty;
on the contrary, if the given cells are less then the available tools, please add as many columns as you need using the same tamplate

**if you have any relevant comment please feel free to add it here

Territory name

All the data refers to the **Public Authorities** level

SeeRRI dimension	information topic	SeeRRI sub-dim.		details	type of data	data		how would you rate it?		
	Spatial planning tools where **RRI principles** have a main role*	2. PE	**Participated spatial plans** *(i.e. Agenda Urbana de Cataluña)*	name of the spatial plan with Public Engagement as a main topic	name	plan 1			plan 2	
				spatial level	(choose)					
				timeline	(choose)					
				link to the online document/reference	link					
				budget allocated (if any)	€					
				number of stakeholders already involved in participation	no.					
				provide at least 3 examples of different strategies/actions to be implemented in the plan	e.g.					
		3. GE	**Gender spatial plans** *(i.e. Gender Mainstreaming, Vienna)*	name of the spatial plan with Gender Equality as a main topic	name	plan 1			plan 2	
				spatial level	(choose)					
				timeline	(choose)					
				link to the online document/reference	link					
				budget allocated (if any)	€					
				different gender/age groups with different needs identified in the territory for whom actions are provided in the plan *(i.e. women, immigrants, elderly, youths, LGBT, unemployed, etc.)*	name					
				targeted public spaces identified in the plan *(i.e. streetscapes, housing, schools, parks, public transport, social infrastructures, public open spaces, etc.)*	name					
				provide at least 3 examples of different strategies/actions to be implemented in the plan	e.g.					
		4. SLSE	**Spatial Regeneration Tools** where **Science** and **Education** are the main regeneration subjects	number of spatial tools/plans within the territory where **science** is the main regeneration subject in the last 5 years *(i.e. Science Parks; Scientific and Technical Pole; etc.)*	no.		rate →			
				number of spatial tools/plans where **education** is the main regeneration subject in the last 5 years *(i.e. public university campus; research centers; schools' areas; etc.)*	no.		rate →			
		5. OA	**Presence of an Online Platform for the open access to spatial planning documents**		(choose)					
		6. E	**Presence of an Ethic Commission on the spatial planning projects/plans**		(choose)					
		7. SUS	**Spatial plans** focused on **sustainability** *(i.e. Sustainable Mobility Plans, Climate Change Plans, Sustainable Energy Plans, etc.)*	name of the spatial plan with Sustainability as a main topic	name	plan 1			plan 2	
				spatial level	(choose)					
				timeline	(choose)					
				link to the online document/reference	link					
				budget allocated (if any)	€					
				sustainability sphere	(choose)					
				provide at least 3 examples of different strategies/actions to be implemented in the plan	e.g.					

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(cont.)

1. GOV	Current regional/provincial policies addressing RRI principles (i.e. economic policies, labour market policies, cohesion policies, etc.)	2. PE	Policies with Public Engagement as a main topic	number of current policies with Public Engagement as a main topic	no.		rate →		
				type of policies *(i.e. economic policies, lobour market policies, cohesion policies, etc.)*	name				
				list by key-words the main objectives of the current policies	key-words				
				presence of a monitoring and evaluation system for the policies	(choose)				
		3. GE	Policies with Gender Equality as a main topic	number of current policies with Gender Equality as a main topic	no.		rate →		
				type of policies *(i.e. economic policies, lobour market policies, cohesion policies, etc.)*	name				
				list by key-words the main objectives of the current policies	key-words				
				presence of a monitoring and evaluation system for the policies	(choose)				
		4. SLSE	Policies with Science Education as a main topic	number of current policies with Science Education and Science Literacy as a main topic	no.		rate →		
				type of policies *(i.e. economic policies, lobour market policies, cohesion policies, etc.)*	name				
				list by key-words the main objectives of the current policies	key-words				
				presence of a monitoring and evaluation system for the policies	(choose)				
		5. OA	Policies with Open Access as a main topic	number of current policies with Open Access n as a main topic	no.		rate →		
				type of policies *(i.e. economic policies, lobour market policies, cohesion policies, etc.)*	name				
				list by key-words the main objectives of the current policies	key-words				
				presence of a monitoring and evaluation system for the policies	(choose)				
		6. E	Policies with Ethics as a main topic	number of currentpolicies with Ethics n as a main topic	no.		rate →		
				type of policies *(i.e. economic policies, lobour market policies, cohesion policies, etc.)*	name				
				list by key-words the main objectives of the current policies	key-words				
				presence of a monitoring and evaluation system for the policies	(choose)				
		7. SUS	Policies with Sustainability as a main topic	number of current policies with Sustainability n as a main topic	no.		rate →		
				type of policies *(i.e. economic policies, lobour market policies, cohesion policies, etc.)*	name				
				list by key-words the main objectives of the current policies	key-words				
				presence of a monitoring and evaluation system for the policies	(choose)				

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(cont.)

	Rregional Research and Innovation Strategies for **Smart Specialisation (RIS3)**	1. GOV	List by keywords the priorities/priority pillars linked to 1.GOV		key-words				
			List the main actions/instruments linked to 1.GOV		key-words				
			System of indicators of the RIS3 to monitor 1.GOV		key-words				
		2. PE	List by keywords the priorities/priority pillars linked to2.PE		key-words				
			List the main actions/instruments linked to 2.PE		key-words				
			System of indicators of the RIS3 to monitor 2.PE		key-words				
		3. GE	List by keywords the priorities/priority pillars linked to 3.GE		key-words				
			List the main actions/instruments linked to 3.GE		key-words				
			System of indicators of the RIS3 to monitor 3.GE		key-words				
		4. SLSE	List by keywords the priorities/priority pillars linked to 4.SLSE		key-words				
			List the main actions/instruments linked to 4.SLSE		key-words				
			System of indicators of the RIS3 to monitor 4.SLSE		key-words				
		5. OA	List by keywords the priorities/priority pillars linked to 5.OA		key-words				
			List the main actions/instruments linked to 5.OA		key-words				
			System of indicators of the RIS3 to monitor 5.OA		key-words				
		6. E	List by keywords the priorities/priority pillars linked to 6.E		key-words				
			List the main actions/instruments linked to 6.E		key-words				
			System of indicators of the RIS3 to monitor 6.E		key-words				
		7. SUS	List by keywords the priorities/priority pillars linked to 7.SUS		key-words				
			List the main actions/instruments linked to 7.SUS		key-words				
			System of indicators of the RIS3 to monitor 7.SUS		key-words				
2. PE	**Awareness campaigns: impact and promotion** of **RRI principles** upon the local communities	4.SLSE	**if yes**	number of promoted awareness campaigns in the past 5 years	no.		rate →		
				people reached	no.		rate →		
				description of the main objectives	key-words				
		5. OA	**Presence of Open Access campaigns**		(choose)				
			if yes	number of promoted awareness campaigns in the past 5 years	no.		rate →		
				people reached	no.		rate →		
				description of the main objectives	key-words				
		6. E	**Presence of Ethics campaigns**		(choose)				
			if yes	number of promoted awareness campaigns in the past 5 years	no.		rate →		
				people reached	no.		rate →		
				description of the main objectives	key-words				
		7. SUS	**Presence of Sustainability campaigns**		(choose)				
			if yes	number of promoted awareness campaigns in the past 5 years	no.		rate →		
				people reached	no.		rate →		
				description of the main objectives	key-words				

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(cont.)

3. GE	Gender Equality representative	1. GOV	Presence of an institutional Gender Equality representative		(choose)			
		2. PE	Organisations/associations promoting Gender Equality as a core mission		no.		rate →	
4. SLSE	Science Literacy representative	1. GOV	Presence of an institutional Science Education/Literacy representative		(choose)			
		2. PE	Organisations/associations promoting Science Education/Science Literacy as a core		no.		rate →	
5. OA	Open Access representative	1. GOV	Presence of an institutional Open Access representative		(choose)			
		2. PE	Organisations/associations promoting Open Access as a core mission		no.		rate →	
6. E	Ethics representative	1. GOV	Presence of an institutional Open Access representative		(choose)			
		2. PE	Organisations/associations promoting Open Access as a core mission		no.		rate →	
7. SUS	2030 Agendas and actions/tools to monitor SDGs implementation at regional level	-	**Presence of a regional Agenda 2030 where RRI principles has a main role**		(choose)			
			Presence of a monitoring and evaluation system for the Agenda implementation		(choose)			
			SDG1: No Poverty	identified **challenges/objectives** for the Region linked to the SDG1	key-words			
			SDG2: Zero Hunger	identified **challenges/objectives** for the Region linked to the SDG2	key-words			
			SDG3: Good Health and Well-being	identified **challenges/objectives** for the Region linked to the SDG3	key-words			
			SDG4: Quality	identified **challenges/objectives** for the Region linked to the SDG4	key-words			
			SDG5: Gender	identified **challenges/objectives** for the Region linked to the SDG5	key-words			
			SDG6: Clean Water and Sanitation	identified **challenges/objectives** for the Region linked to the SDG6	key-words			
			SDG7: Affordable and Clean Energy	identified **challenges/objectives** for the Region linked to the SDG7	key-words			
			SDG8: Decent Work and Economic	identified **challenges/objectives** for the Region linked to the SDG8	key-words			
			SDG 9: Industry, Innovation and	identified **challenges/objectives** for the Region linked to the SDG9	key-words			
			SDG10: Reduced	identified **challenges/objectives** for the Region linked to the SDG10	key-words			
			SDG11: Sustainable Cities and	identified **challenges/objectives** for the Region linked to the SDG11	key-words			
			SDG12: Responsible Consumption and	identified **challenges/objectives** for the Region linked to the SDG12	key-words			
			SDG13: Climate	identified **challenges/objectives** for the Region linked to the SDG13	key-words			
			SDG14: Life Below	identified **challenges/objectives** for the Region linked to the SDG14	key-words			
			SDG15: Life on Land	identified **challenges/objectives** for the Region linked to the SDG15	key-words			
			SDG16: Peace and Justice Strong	identified **challenges/objectives** for the Region linked to the SDG16	key-words			
			SDG17: Partnerships to achieve the	identified **challenges/objectives** for the Region linked to the SDG17	key-words			

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4_OS info (1)

ADDITIONAL GUIDANCE NOTES TO FILL OUT THE FORM

*if you have any relevant comment please feel free to add it here

Territory name

All the data refers to **Clusters** and **Other Stakeholders** level

SeeRRI dimension	information topic	SeeRRI sub-dim.	details		type of data	data	how would you rate it?	type of data
1. GOV	activities related to RRI principles put forward by cluster organisations or other local organisations based in the area	2. PE	EU projects focused on public egagement		no.			NAMES (acronyms)
			non-EU projects focused on public engagement		no.			NAMES (acronyms)
		3. GE	EU projects focused on gender equality		no.			NAMES (acronyms)
			non-EU projects focused on gender equality		no.			NAMES (acronyms)
		4. SLSE	EU projects focused on science education		no.			NAMES (acronyms)
			non-EU projects focused on science education		no.			NAMES (acronyms)
		5. OA	EU projects focused on open access		no.			NAMES (acronyms)
			non-EU projects focused on open access		no.			NAMES (acronyms)
		6. E	EU projects focused on ethics		no.			NAMES (acronyms)
			non-EU projects focused on ethics		no.			NAMES (acronyms)
		7. SUS	EU projects focused on public egagement		no.			NAMES (acronyms)
			non-EU projects focused on public engagement		no.			NAMES (acronyms)
2. PE	Awareness campaigns: impact and promotion of RRI principles upon the local communities	1. GOV	**Presence of RRI-related Governance campaigns**		(choose)			
			if yes	number of promoted awareness campaigns in the past 5 yea	no.			
				people reached	no.			
				description of the main objectives	key-words			
		3.GE	**Presence of Gender Equality campaigns**		(choose)			
			if yes	number of promoted awareness campaigns in the past 5 yea	no.			
				people reached	no.			
				description of the main objectives	key-words			
		4.SLSE	**Presence of Science Literacy/Science Education campaigns**		(choose)			
			if yes	number of promoted awareness campaigns in the past 5 yea	no.			
				people reached	no.			
				description of the main objectives	key-words			
		5. OA	**Presence of Open Access campaigns**		(choose)			
			if yes	number of promoted awareness campaigns in the past 5 yea	no.			
				people reached	no.			
				description of the main objectives	key-words			
		6. E	**Presence of Ethics campaigns**		(choose)			
			if yes	number of promoted awareness campaigns in the past 5 yea	no.			
				people reached	no.			
				description of the main objectives	key-words			
		7. SUS	**Presence of Sustainability campaigns**		(choose)			
			if yes	number of promoted awareness campaigns in the past 5 yea	no.			
				people reached	no.			
				description of the main objectives	key-words			

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3. GE	**Gender Equality** representative	1. GOV	Presence of an institutional Gender Equality representative	(choose)			
4. SLSE	**educational** and **training activities** related to **RRI principles** available in the territory	1. GOV	Presence of an institutional Science Education/Literacy representative	(choose)			
			training programmes/projects focused on RRI governance	no.			
			scholarships available for courses/masters/doctorates focused on RRI	no.			
		2.PE	training programmes/projects focused on public engagement	no.			
			scholarships available for courses/masters/doctorates focused on	no.			
		3. GE	training programmes/projects focused on gender equality	no.			
			scholarships available for courses/masters/doctorates focused on	no.			
		5. OA	training programmes/projects focused on open access	no.			
			scholarships available for courses/masters/doctorates focused on	no.			
		6. E	training programmes/projects focused on ethics	no.			
			scholarships available for courses/masters/doctorates focused on	no.			
		7. SUS	training programmes/projects focused on sustainability	no.			
			scholarships available for courses/masters/doctorates focused on	no.			
5. OA	**Open Access** representative	1. GOV	Presence of an institutional Open Access representative	(choose)			
6. E	**Ethics**	1. GOV	Presence of an institutional Open Access representative	(choose)			
7. SUS	**Sustainability** plan	1. GOV	Presence of Sustainability plan	(choose)			

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Info DESCRIPTIONS to support the fulfilment of the mapping activity

DESCRIPTIONS

A more detailed **description of the information required** in the sheets '**3_PA info**' and '**4_OS info**' in provided below.

Please note that **not all these data are applicable to all the territories**, once understood what the information is you will be able to check if the data is applicable to your territory or not.

3_ Public Authorities (PA) info

SeeRRI dimension	information topic	description
1. GOV	Spatial planning tools where RRI principles have a main role	**Spatial planning tools where RRI principles have a main role (1.GOV)** are all the regional or local/urban planning policies/plans/regulations/actions/etc. addressing one of the SeeRRI dimension as their main goal. We can find some examples of these tools and their connection with RRI principles establishment: for instance, a participated spatial plan (i.e. Agenda Urbana de Cataluña) shows the intention from the PA of engaging the citizens **(2.PE)** or a gender spatial plan (i.e. Gender Mainstreaming, Vienna) shows how the PA aims to balance the gender gap by customizing the urban environment **(3.GE)** Moreover, a PA may have promoted some spatial tools or plans within the territory where science or literature are the main regeneration subjects (i.e. Science Parks; Scientific and Technical Pole; public university campus; research centers; schools' areas; etc.) with the intent of increase the Scientific Education **(4.SLSE)**. The presence of an Online Platform ensures the open access **(5.OA)** while the presence of an Ethic commission on the spatial planning acts ensure the ethical standards **(6.E)**. Finally, it should be mapped the presence of spatial plans focused on sustainability (i.e. Sustainable Mobility Plans, Climate Change Plans, Sustainable Energy Plans, etc.) and their contents **(7.SUS).**
1. GOV	Current regional/provincial policies addressing RRI principles	**Current regional policies addressing RRI principles (1.GOV)** are economic policies, labour market policies, cohesion policies, etc. with one of the other SeeRRI dimensions as a main topic **(2.PE, 3.GE, 4.SLSE, 5.OA, 6.E, 7.SUS).** They refer to the territory as a whole (in some cases event to an area bigger than the R&I ecosystem under consideration) but they are not specifically spatial planning tools such as before. They have been chosen for mapping since they are believed to complement the overview on regional and planning policy instruments, but from a thematic perspective.
1. GOV	Regional Research and Innovation Strategies for Smart Specialisation	Specifically at the Regional Government level, the R&I ecosystems are asked to go into the main priorities/pillars and also the connected actions/instruments of the **Regional R&I Strategy for Smart Specialisation (1.GOV)**. Also here, the analysis of the RIS3 documents is carried out by dimensions **(2.PE, 3.GE, 4.SLSE, 5.OA, 6.E, 7.SUS)**. The related monitoring and evaluation system, if existing, is required too to map the **inclusion of RRI into RIS3**, which is one of the main type of development policy to take into account during the QIM procedure.
2. PE	Awareness campaigns on RRI principles upon the local communities	The presence, number and main objectives of **awareness campaigns on RRI principles (2.PE)** assess the impact and promotion of each RRI principle **(1.GOV, 3.GE, 4.SLSE, 5.OA, 6.E, 7.SUS)** upon the local communities.
3. GE	Gender Equality representative	For some of the SeeRRI dimensions **(3.GE, 4.SLSE, 5.OA, 6.E)**, where it is hard to find specific tools/plans/policies, an effective way to map their inclusion into the administrative set-up of the territorial PA could be checking the **presence of an institutional representative** (that could be one person or even an entire dedicated office) **or of organisations/associations promoting these principles as a core mission.**
4. SLSE	Science Literacy representative	
5. OA	Open Access representative	
6. E	Ethics representative	
7. SUS	2030 Agendas and actions/tools to monitor SDGs implementation	Some Governments, especially Regional ones, may have adopted (but it is not mandatory in all Countries) a targeted **2030 Agendas and actions/tools to monitor SDGs implementation**. Identifying then the main challenges/objectives for the region linked to each SDGs helps to map the implementation of Sustainability into the territory (**7.SUS**).

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4_ Other Stakeholders (OS) info

SeeRRI dimension	information topic	description
1. GOV	Activities related to RRI principles put forward by OS	**Activities related to RRI principles (1.GOV)**, such as EU projects or non-EU projects carried out by local organisation in the area and focused on **2.PE, 3.GE, 4.SLSE, 5.OA, 6.E, 7.SUS.**
2. PE	Awareness campaigns on RRI principles put forward by OS	**Awareness campaigns (2.PE)** of the clusters organisations or other local-based organisations to assess impact and promotion of RRI principles upon the local communities of one specific SeeRRI dimension **(1.GOV, 3.GE, 4.SLSE, 5.OA, 6.E, 7.SUS)**.
3. GE	Gender Equality representative	Presence of an **institutional representative for 2.GE** within the administrations of the cluster organisations and other relevant organisations in the area.
4. SLSE	Educational and training activities related to RRI principles available in the territory put forward by OS	Educational and training activities (4.SLSE), for example projects/programmes or scholarships available in the territory for courses/masters/doctorate, both focused on one SeeRRI dimension (1.GOV, 2.PE, 3.GE, 5.OA, 6.E, 7.SUS).
5. OA	Open Access representative	Presence of an **institutional representative for 5.OA** within the administrations of the cluster organisations and other relevant organisations in the area.
6. E	Ethics representative	Presence of an **institutional representative for 6.E** within the administrations of the cluster organisations and other relevant organisations in the area.
7. SUS	Sustainability plans	Presence and contents of eventual **Sustainability Plans (7.SUS)** of the cluster organisations and other relevant organisations based in the territory.

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Annex III – Additional Material for territory identification

Postal codes B30 municipalities

B30 municipalities	Postal codes
Badia del Vallès	08205, 08214
Barberà del Vallès	08204, 08210, 08214
Castellar del Vallès	08211
Castellbisbal	08740, 08755, 08760
Cerdanyola del Vallès	08193, 08214, 08290
el Papiol	08754
Granollers	08401, 08402, 08403
Martorell	08760
Mollet del Vallès	08100, 08104
Montmeló	08150, 08160
Montornès del Vallès	08170
Palau-solità i Plegamans	08184
Parets del Vallès	08104, 08150, 08160
Polinyà	08213
Ripollet	08291
Roca del Vallès	08430
Rubí	08191
Sabadell	08192, 08202, 08204, 08204, 08206, 08208, 08201, 08203, 08205, 08207, 08805
Sant Cugat del Vallès	08172, 08173, 08174, 08195, 08196, 08197, 08198
Sant Quirze del Vallès	08192
Santa Perpètua de Mogoda	08130
Terrassa	08221, 08222, 08223, 08224, 08225, 08226, 08227, 08228
Vilanova del Vallès	08170, 08404, 08410

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