



CHERRIES
RESPONSIBLE HEALTHCARE ECOSYSTEMS

GUIDELINE FOR TERRITORIAL MAPPING

WP2 - Deliverable 2.1

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Executive summary	The guideline for the territorial mapping provides a framework to define the sectors and scope of the mapping exercise in the context of CHERRIES project. It is based on the theoretical interface of innovation policy, RIS3, RRI and the healthcare sector with a focus on mission-based policy making and stakeholders identification.



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1. INTRODUCTION TO TERRITORIAL MAPPING GUIDELINE

This mapping guideline document is the first step in mapping the territorial policies and stakeholder ecosystems of the CHERRIES project. The core of the project is the regional healthcare innovation experimentation to be carried out in WP3 and 4. The context in which such experimentation takes place is defined by policies. Policies in healthcare, research policies, innovation policies, regional smart specialisation policies and also impact oriented policies such as RRI. These policies may be different in our three regions, they can be conducive to support the innovation experimentation, they can be synergistic, but also mutually inhibitory. The mapping period aims at characterising this baseline situation. The scope of the policy mapping is not limitative, because the delineation of what to include and what not is fuzzy. However, part of the experimentation phase is to find out which policies are helpful or even critical, and which policy mix is supportive of regional innovation in healthcare.

1.1 How to use the territorial mapping guideline

The purpose of this document is to guide you through the territorial mapping exercise in a straightforward manner. Section 2 and 3 from the guideline, namely *Research and Innovation Strategies for Smart Specialisation Framework & Mapping Stakeholder and Policy Ecosystems* respectively, are indeed conceptually and in practical terms connected to each other, as depicted in the image below (Figure 1). However, in order to simplify the follow up of each step or action, the content has been distributed in different segments. In this way, the use of the document should not necessarily follow a linear path in terms of which section to address first (2.1, 3.1 or 3.2), as a rulebook, and rather attending specific needs of the regions in the context of the project schedule.

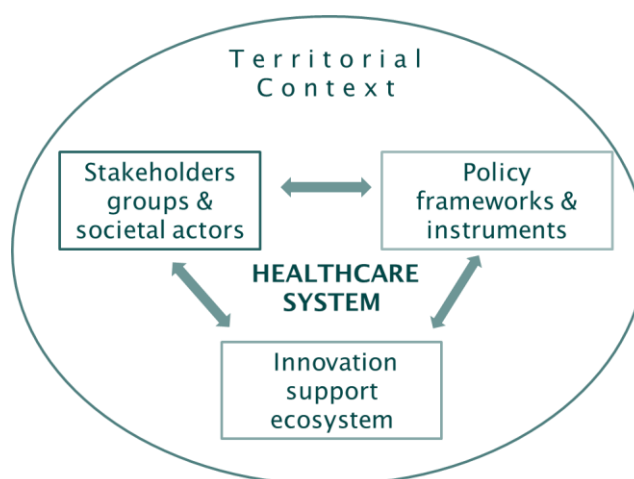


FIGURE 1. INTERRELATEDNESS AMONG THE MAIN STEPS AND ACTIONS COVERED BY THE TERRITORIAL MAPPING.

In terms of content, the Guideline for territorial mapping encloses:



- Guideline territorial mapping (Text file – *Word document*) connected to three tables in which to collect and analyse the data (Tabular files – *Excel format*), as follows:
 - o Section 3.1 - Action 1: Tabular file "**Stakeholders_mapping_data**"
 - o Section 3.1 - Action 2: Tabular file "**Organisations_dataset**"
 - o Section 3.2 - Action 1: Tabular file "**Policy sources_instruments_mapping**"

For further details on the above-mentioned files, please refer to the corresponding sections. The specific content of the tables, guidance about how to fill them and who is responsible for developing each task, is highlighted under the specified steps.

To secure comparability, the mapping exercises will be based on common guidelines but carried out by territorial actors. Along the document you will find remarks with respect to responsibilities of the project partners regarding data collection and conducting certain analysis or steps.

1.2 Conceptual framework - Interface RRI / RIS3 & Health

The guidelines are based on the theoretical interface of innovation policy, RIS3, RRI and the healthcare sector as represented in Figure 2. They assist in creating a common understanding about the presence and state of the territorial R&I systems, healthcare sectors and health related innovation pilots. The resulting framework defines the sectors and scope for the mapping exercise, covering the multi-level policy infrastructure (International- Europe – National – Sub-National - Local) affecting health innovation. The framework consists of mapping exercises within the territories. It covers the identification and classification of stakeholder involvement, the policy ecosystem, providing insight in the current policy mix in the context of RRI, and the innovation support ecosystem, to be mapped according to the RIS3 principles.

This triangular framework builds upon a mixed method ranging from desk research, expert interviews to bibliometric indicators and networks. The output of these tasks will consist of three territorial reports covering the healthcare and innovation ecosystems as well as a synthesis that will put the territories in a European context, which will serve as a baseline for further interventions and monitoring in the project.

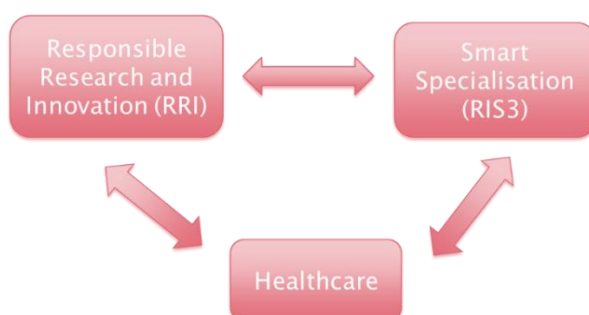


FIGURE 2. CONCEPTUAL FRAMEWORK SUPPORTING THE TERRITORIAL MAPPING.



The major mechanism for bringing actors together is public engagement, one of the EC's six RRI 'keys' along with ethics, gender equality, governance, open science and science education. The "Monitoring the Evolution and Benefits of Responsible Research and Innovation (MoRRI) project" (2014-2018)¹ conceptualised and implemented the first RRI monitoring system in Europe, and can be considered a game-changer in the pursuit of indicators and metrics for RRI (Peter *et al.* 2018). This is shown by the overall presence of MoRRI indicators in the call for proposals of the H2020 Science with and for Society work programme. Subsequently, asking for compliance by the granted projects to include these RRI indicators in their monitoring and evaluation.

There are various conceptualisations of RRI that share a number of core precepts:

- the inclusion of both scientific research and technological innovation within the framing of what needs to be transformed;
- a fundamental reliance on the integration of diverse scientific, innovation and societal actors as the transformative (social) mechanism;
- the imperative to always look beyond scientific and technological challenges, problems and opportunities to concurrently consider societal uncertainties;
- the value of diverse domains and types of knowledge; and
- a requirement that research and innovation practices and processes are more transparent, accessible and inclusive.

¹ Information on the EU-funded MoRRI project (Contract RTD-B6-PP-00964-2013) are available at <https://ec.europa.eu/programmes/horizon2020/en/news/monitoring-evolution-and-benefits-responsible-research-and-innovation-morri>



2. RESEARCH AND INNOVATION STRATEGIES FOR SMART SPECIALISATION FRAMEWORK

The European Union (EU) has launched its arguably most ambitious regional policy strategy till date with the smart specialisation (RIS3) program (Morgan, 2017). The European Commission (2012) gives three main goals to be achieved in the program, namely smart, sustainable and inclusive growth.

Regions are instructed to realize these goals by selecting priority investment fields based on existing regional capabilities, composing a regions priority portfolio (Gianelle *et al.*, 2018; McCann & Ortega-Argilés, 2015). The priorities can be targeted towards one or multiple sectors, technologies, societal challenges and cultural and natural resources (Gianelle *et al.*, 2018).

The underlying rationale behind the Smart Specialisation concept is that by concentrating knowledge resources and linking them to a limited number of priority economic activities, countries and regions can become — and remain — competitive in the global economy. This type of specialisation allows regions to take advantage of scale, scope and spillovers in knowledge production and use, which are important drivers of productivity (European commission, 2012).

The priority fields for each EU region are set by a process of entrepreneurial discovery by regional actors (Foray *et al.*, 2011; OECD, 2013). The RIS3 approach with its idea of societal engagement, in the form of a participatory public-private dialogue defined it as *entrepreneurial discovery process (EDP)*, one of the methodological foundations of CHERRIES. This unique bottom-up approach tries to create alignment between regional capabilities and regional policy. Additionally, it enables regions to prioritize new domains which the actors view as important (Foray, 2016).

In this process entrepreneurial knowledge of regional actors is consulted, because it includes information about inputs and services, like knowledge on market potential and engineering, required for launching new activity that other sources do not have. Note that regional actors include individuals, organisations, public organisations and research and education institutions.

As RIS3 depends on research and innovation to achieve a smart, sustainable and inclusive economy at the regional level, it must also ensure the responsibility of this research and innovation process. The success of achieving this depends to no small extent on the way the entrepreneurial discovery process is practiced, or more precisely, the organisation of the governance process around smart specialization (Fijtjar, 2019). By applying the conditions of RRI—anticipation, reflexivity, inclusion, and responsiveness—to smart specialisation, you can assess which dimensions are already covered in current RIS3 practice.

The CHERRIES project does not only focus on certain aspects of the innovation process, but aims at incorporating RRI principles along an innovation process from the articulation of needs to its implementation. The experiments address opportunities and challenges that are demand driven at the crossroads of challenge-oriented, economy-enhancing, and sector-specific policy making within the healthcare sector. By addressing the Societal Grand Challenge of health, demographic change and wellbeing, the CHERRIES project is placed right in the middle of a cross-cutting challenge and demand-side innovation policy.



2.1 Step-by-step approach to RIS3 Design

The Research and Innovation Strategies for Smart Specialisation section, recognizes the previously constructed RIS3 strategies initiated by the European Commission², which set smart specialisation priorities defined for the regions of Murcia and Örebro and at country level in the case of Cyprus.

In the context of the CHERRIES project, the strategy will establish a special focus on Healthcare and Innovation sector or activities, obtaining a deeper understanding and detail for those fields. Additionally, the methodology considers to use a more recent data and information available, and likewise performing analyses not previously incorporated in the strategies. The prioritisation proposed in this section should therefore be seen as an updated and more specified complementarity to the existing RIS3 strategies.

That being said, a total of 5 steps are recommended to accomplish the Research and Innovation Strategy for Smart Specialisation, using as a reference Guidelines from the Commission (2012) and, under the CHERRIES project frame of reference:

Step 1	Analysis of the regional context and potential for innovation
Step 2	Governance: Ensuring participation and ownership
Step 3	Elaboration of an overall vision for the future of the region
Step 4	Identification of priorities
Step 5	Definition of coherent policy mix, roadmaps and action plan

Responsibilities

In connection to the duties for collecting data and regional information. It is expected from UL, (CWTS) to gather data from international sources, such as the observatories, platforms and datasets, at European and Global scale. Regional partners should lead the exploratory process and search at national, regional and local scale. The analyses and steps covered in this section, should be carried out by both; the concept partners (UL) in collaboration with the regions of Örebro, Murcia and the Republic of Cyprus.

STEP 1 - Analysis of the regional context and potential for innovation

Several methods can be used to support the identification of potential niches for smart specialisation. An integrated method that delivers a unique solution to this question does not exist: it is the combination of an array of evidence that is most likely to provide a suitable basis for this identification process. The main relevant methods are listed below, ranging from purely quantitative to more qualitative ones. In-depth cluster

² <https://s3platform.jrc.ec.europa.eu/>



case studies and peer reviews, and the incorporation of foresight analysis — provide the opportunity to integrate the field knowledge held and concrete experimentation carried out, by regional actors in the spirit of an 'entrepreneurial discovery process'.

Some consideration when performing the analyses:

- The following set of analyses correspond to a proposal and should be complemented from the regional perspective.
- The kind and level of detail to conduct the analyses will be subject to data availability and access to specific sources.
- In practice, analytical methods employed under Steps 2, 3 and 4 are highly intertwined making their separation somewhat artificial (Griniece *et al.*, 2017).

a) Analysis of (matching) Scientific and Technological specialisation: Analyses of specialisation of R&D investment, publications and citations, and patent applications and citations by 'field'. A region has a comparative advantage in a certain field if it shows an above-average concentration of these indicators compared to the value taken in the country/region or a group of countries. Concerning the provision of relevant R&I data, UL should measure bibliometric indicators based on CWTS internal database (Web of Science's (WoS) produced by Clarivate Analytics). For description of data sources, please refer to Table A1 of the Appendix.

b) Analysis of regional economic specialisation: Quantitative analyses calculate degrees of specialisation of regional economies on the basis of employment (or value-added) data. Location quotients measure whether some sectors are over-represented in a regional economy compared to other regions or countries. The table A2 of the Appendix, shows two examples of data sources for addressing this task.

c) Analysis of innovative behaviour: An examination to the regional innovative behaviour, capabilities, priorities, needs and observable trends from the country and regional perspective is considered a key step. This, towards a deeper understanding on how to approach innovation pilots in the experimentation phase of the project, and while selecting priorities or suitable single innovations. The Table A3 of the Appendix describes some examples of initiatives maintained by the European Commission to assess innovative behaviour.

d) Defining type of health care system: Health care systems are differently organized across European regions, which makes it important to identify the types of regional versions from a smart specialization perspective (Wendt, 2009). The health care system will be assessed on its public or private nature and the level of health care provided.

According to the World Health Organization (WHO), a comprehensive working definition of health innovation is: "*Health innovation is to develop and deliver new or improved health policies, systems, products and technologies, and services and delivery methods that improve people's health.*"³

- Health innovation responds to unmet needs by employing new ways of thinking and working with a special focus on the needs of vulnerable populations
- Health innovation adds value in the form of improved efficiency, effectiveness, quality, safety and/or affordability

³ link: <https://www.who.int/life-course/about/who-health-innovation-group/en/>



- Health innovation can be in preventive, promotive, therapeutic, rehabilitative and/or assistive care
- WHO engages in health innovation in the context of universal health coverage and Sustainable Development Goals

In order to identify unmet needs and health innovation priorities at the territorial level, policies will be mapped according to what their primary aim is:

- a) Prevention: Disease prevention is understood as specific, population-based and individual-based interventions for primary (e.g. vaccination) and secondary (e.g. early detection through screening) prevention, aiming to minimize the burden of diseases and associated risk factors.
- b) Health promotion is the process of empowering people to increase control over their health and its determinants through health literacy efforts and multisectoral action to increase healthy behaviours (e.g. lifestyle advice).
- c) Therapeutic care is relating to the treatment of disease or disorders by remedial agents or methods for cure having a beneficial effect on the body or mind (e.g. treatments, products, technologies or services).
- d) Rehabilitation or assistive care enables and promotes inclusion and participation, especially of persons with disability, aging populations, and people with non-communicable diseases, e.g. through hearing aids, wheelchairs, prostheses and devices.

While these 4 categories are overlapping, the EC has specific policies and programmes addressing each of them. This may affect the national and regional healthcare systems, even though the healthcare systems are mainly subsidiary (carried out at the member State level). For example:

- The European Centre for Disease Prevention and Control (ECDC) is an independent agency of the European Union (EU) whose mission is to strengthen Europe's defences against infectious diseases. ([Link](#))
- the European Commission's Health Promotion and Disease Prevention Knowledge Gateway, a reference point for public health policy makers. ([Link](#))
- The Innovative Medicines Initiative (IMI) is working to improve health by speeding up the development of, and patient access to, innovative medicines, particularly in areas where there is an unmet medical or social need. IMI is the world's biggest public-private partnership (PPP) in the life sciences between the EC and the European Pharmaceutical Industrial Agency (EFPIA). ([Link](#))
- EIT Health is a 'knowledge and innovation community' (KIC) of the European Institute of Innovation and Technology (EIT), focusing on education, acceleration and innovation also in regions. ([Link](#))

These content priorities at the European (and global) level could be translated into national or regional policies by Member States. This however depends on the organisational healthcare structures differentiated at the national level. Considering the national system as a subsidiary entity, this might influence the way that each country addresses the WHO priorities into their national Healthcare structure. In practice, to characterise each regional system it needs to be considered as the 4P framework model: *policy, patient, provider incl. practitioner and payor*.

Wendt (2009) proposed some of the dimensions to characterize the Healthcare system at National or regional level, as referring to indicators on expenditures, financing, health care provision and access to health services, indicating aspects of the 4P model. Content policy priorities will be identified in consultation with the regions, and will be subsequently classified as *prevention, promotion, therapy or rehabilitation*. Table 1



below, presents a description of the recommended indicators to take into account when analysing it from the national/regional perspective:

TABLE 1. DIMENSIONS TO CHARACTERIZE THE HEALTHCARE SYSTEM IN EUROPE.

Dimension	Description	Indicator
Health expenditure	Average level of monetary inputs invested in a person's health	Health care expenditure
Public-private mix of health financing	Degree of public responsibility in the health care sector	% of public funding in the total health care expenditure
Privatization of risk	Share of health care funding which has to be covered by the individual	% of individual private funding in the total health care expenditure
Health service provision	Indices of health care providers	Number of specialists, nurses etc.
Entitlement to healthcare	Entitlement to health care based on citizenship	Patients are covered on the basis of citizenship or social insurance contributions
Remuneration of doctors	The level of incentive doctors have to provide good health care	Salary, fee for service, cost per case
Patient's access to service providers	Costs for access to general practitioners and costs for access to specialists	Regulations

e) 'Cluster' in-depth case studies and peer reviews, more qualitative studies can be carried out on activity domains where a region shows relative specialisation. It also involves an analysis of the linkages between the cluster and other clusters or industries, in order to examine whether one can talk about related variety across the areas of regional specialisation.

Sophisticated analyses of clusters combine this type of analysis with a functional analysis linking economic structure to cluster challenges and assessing the functions taken by the cluster initiative. The functions analysed are: *knowledge creation and knowledge diffusion; identification of opportunities and barriers; stimulation of entrepreneurship/management of risk and uncertainty; market formation; mobilisation of resources; and legitimization.*

f) Tool box for RRI experiments in the territorial healthcare sectors: A valuable source of information at the RIS3 and RRI interface, is the toolbox for the RRI experiments as part of WP3 and 4 of CHERRIES project. Based on a screening and selection of promising practices, the tool box will incorporate existing resources from EU-funded, as well as national-funded projects and activities on the RRI, RIS3 and healthcare interface. The tool box consists of:

- Collection, classification and assessment of promising RRI practices in health



- Self-assessment tools, for stakeholders to be able to assess their level of performance in RRI with a link to RRI tools and Super_MoRRI project.
- RRI-based guides for RRI-based institutional change and RRI as cross-cutting issues in healthcare
- Reports, papers, handbooks etc. on the interface of RRI, RIS3 and demand-side policy in health

STEP 2 - Governance: Ensuring participation and ownership

The development of governance structures is very context specific and is expected to vary largely among regions. Most of the focus on literature concerns the structures themselves, the ways in which they are designed and how they can facilitate the RIS3 process.

The use of *community monitoring* and *community scorecards* for giving feedback and increasing accountability to all regional stakeholders of the RIS3 process, could be largely beneficial for other steps of the RIS3 process, in particular for the RIS3 update. *Opinion mining and sentiment analysis* through the use of social media data and technologies can also support public engagement and provide decision support. Equally, the use of *online participatory planning tools* can enhance the active involvement of all stakeholders in the process.

In terms of process, RIS3 design involves analyses, experimentation, debates and decision making, with a wide participation of actors and experts from within and outside the region. This needs to be communicated, understood and acknowledged: it is a time-consuming process that should be seen as an investment rather than a burden.

The most important types of organisation that need to be involved are public authorities, universities and other knowledge-based institutions, investors and enterprises, civil society actors, and international experts who can offer benchmarking and peer review services, for example.

- IMPORTANT: STEP 2 should be conducted jointly with section 3.1 associated to the Stakeholders' identification and prioritization phase.

STEP 3 - Elaboration of an overall vision for the future of the region

This step is the development of a shared and compelling Vision on the economic development potential of the region and the main direction for its international positioning. It is a highly political step. Its value mainly rests on getting the political endorsement for the subsequent steps, particularly for the implementation of the strategy.

It may, for example, present the region as a new technology hub, based on the high density of technology-driven public and private actors; it may stress its potential as the central node in a cross-border area and emphasise its connectivity assets; it may make the link between exceptional natural assets and innovation potential; it may build on the skill sets of the population as the main driving force for future development, it may use flagship projects in cultural and creative industries to develop the innovative image of the region, etc. Finally, the Vision should also include justifications for its relevance in terms of meeting societal challenges, such as providing more healthy living conditions for its citizens, reducing outmigration, providing new employment opportunities for specific categories of the population, combating social divide, etc. These justifications go much beyond the alleged classical benefits of innovation for job and economic value creation.



STEP 4 - Identification of priorities

From the process of entrepreneurial discovery, stakeholder engagement and government objectives regional priorities can be formed. The limited number of priorities will be areas in which regions can realistically hope to excel (European Commission, 2012).

- These priorities should be formulated on the right focus level to which they refer to as the right level of granularity.
- This priority level should be smaller than whole sectors, but bigger than single activities for maximal effectiveness.
- Priorities do not have to fit in one particular sector and can be connected to multiple sectors. This is important, because often innovative concepts are formed from a diverse set of capabilities.
- In respect to the importance of RRI and SDGs in today's society these priorities do not have to carry economic value only.
- stakeholders can formulate their societal visions for the future and collectively integrate these in their smart specialization priorities, making smart specialization a tool for achieving these goals

As a reference, many recent innovations in the health care industry can be attributed to sectors as ICT and bio-engineering. As an example, and according to European Commission (2015) the most common priorities in the main categories of '*research and innovation capability*' and for *EU objectives* concerning Health are **Human Health and social work activities** and **Public health and security**. Within this framework, the most common sub-categories are *Basic pharmaceutical products and pharmaceutical preparations*, *Biotechnology*, *Nanotechnology and engineering*.

STEP 5 - Definition of coherent policy mix, roadmaps and action plan

From these priorities effective action plans should be derived on how to achieve the formulated plans (European Commission, 2012). In making an action plan, it will be clear for all stakeholders what objectives, timeframes and funding sources are included. As already considered under the CHERRIES project framework, it is advised by the EU guidelines to test the new concepts in practice by setting up pilot projects in which can be experimented with policy mixes before applying policies on the larger scale. For effective use of these pilot projects, well-constructed evaluation mechanism should be in place to effectively assess which policy mixes are favorable. Furthermore, also other regions which might have experience with certain activities can be consulted to learn lessons from their past experiences.

- **IMPORTANT:** Step 5 should be conducted jointly with section 3.2, associated to the policy ecosystem mapping.



3. MAPPING STAKEHOLDERS AND POLICY ECOSYSTEMS

The European Commission (EC) conception of RRI emerged from its science with and for society (SwafS) policies and R&D work programmes. The EC describes RRI as diverse sets of societal actors (researchers, citizens, policymakers, business, third sector organisations, etc.) that “work together during the whole research and innovation process in order to better align both the process and its outcomes with the values, needs and expectations of society”. The major mechanism for bringing actors together is *public engagement*, one of the EC’s six RRI ‘keys’ along with ethics, gender equality, governance, open science and science education.

Bottom-up involvement of all kind of citizens, irrespective of their age, gender, ethnicity and socio-economic background (European Commission, 2018) need to be considered when choosing collaboration partners. The underlying idea is that continuous involvement of societal stakeholders will ensure the best possible outcome.

3.1 Step-by-step approach to Stakeholders' identification and prioritization

A total of four steps should be followed in order to put into practice the mapping exercise:

Step 1	Identify stakeholders from current regional network
Step 2	Addition of potential new partners from datasets
Step 3	Selection criteria for stakeholders (Ranking)
Step 4	Categorize stakeholders regarding their degree of involvement in the project

ACTION 1 - Creating a list of stakeholders from current network

Step 1 refers to the primary phase of registering organisations, actors or individuals from your current network. This entails actors with whom you may have worked together previously or not, but from whom you are aware of their relevance in the Health/Innovation arena.

Some question to use as guidance to reflect upon which stakeholders to convoke are (Softić, M, Zdravko & K. & Iskriva (2016):

- *What organizations or individuals are in charge or have an interest in Health/Innovation?*
- *Who are the people that represent them?*
- *What is the information/knowledge that they need?*
- *Who will be directly affected by the project results?*
- *Who is directly responsible for making decisions on the discussed issues?*



- *Who is influential in this topic/region/organization?*
- *Who has been involved in this issue in the past?*
- *Who was not involved but should have been involved?*
- *Who are they key “movers and shakers” that can help further promote the results and decisions?*
- *Who are the opponents or “blockers” of your ideas, initiatives that are better to be included in the process in general.*

Stakeholders groups and actors in the scene

A set of different organisation types is given below, aiming to guide the selection of partners by the regions, acknowledging that stakeholders can correspond either to a single actor, organisations or even a group of organisations, networks, consortia. etc.:

- Higher Education Institutions (HEI) or Universities
- Public Research Organisations (PRO)
- Public Administration Organizations (PA)
- (Healthcare & Innovation Policy makers)
- Hospitals or Research Hospitals (RH) (Healthcare provider including practitioner)
- Research Funding Organisation (RFO)
- Civil society Organisation (CSO)
- Firms, business and the private sector / SME's / Spin-offs
- Venture capital
- Start-ups
- Patients
- Payor

Even though strictly speaking it does not correspond to a particular type of organisation and rather to the role they play, **Intermediary organisations** are crucial elements of any innovation system that are often forgotten. They work as boundary organisations, engaging in relational work to connect and bridge different actors. They possess unique sectoral knowledge and can facilitate dialogue, provide guidance, bridge gaps, or pioneer novel forms of interaction.

For a more detailed understanding of each organisation type, please refer to Table B3 of the Appendix. The definitions used in Table B3 are based on the RISIS project (*Research Infrastructure for Research and Innovation Policy Studies*) which uses Frascati Manual⁴ as a source (OECD, 2015), and also incorporates definitions from CWTS (Centre for Science and Technology Studies, Leiden University):

From the RIS3 perspective, the most important types of organisation that need to be involved are public authorities, universities and other knowledge-based institutions, investors and enterprises, civil society actors, and international experts who can offer benchmarking and peer review services, for example. As a reference, Table B4 in the Appendix exemplifies a number of organisations belonging to each of the previous categories.

⁴ <https://www.oecd.org/publications/frascati-manual-2015-9789264239012-en.htm>



STEP CONNECTED TO FILE “[Stakeholders_mapping_data](#)” (Tabular format)

Once you have identified the stakeholders from your current network, in the practice you should store the data in the tabular template “[Stakeholders_mapping_data](#)”. Concretely, this file should contain a list of organisations or actors for which to describe at least the following fields:

- *Type of organisations:* The most common societal actors to find in the mapping exercise. Use as reference the table B4 & B3 from the Appendix. Some institutions can belong to more than one type of institutions or even not correspond exactly to the categories provided. We encourage regional partners to complete this list with local knowledge and experience.
- *Interest 4P model:* will be used to cover stakeholder interest: policy, patient, provider incl. practitioner and payor. Table B3 (Appendix) can be used as a reference. For a more detailed explanation, refer to the section 1.3.3.2 from the project Proposal.
- *Territorial scale:* In order to understand and contextualize the geographical coverage of each type of Institution. This field encompasses 4 territorial scales: International, European, National, Regional.
- *Contact:* When identifying and analysing stakeholder representatives, it is of key importance to identify not only the involved organisations, but also the persons that are in charge of or affected by the topic we are dealing with. On the basis of this list of stakeholders, the contact list with addresses, e-mails and phone numbers of all relevant persons has to be prepared, to be used in all communication with stakeholders.

IMPORTANT: The entire responsibility to fill this table relies on the regional partners in an organized and collaborative effort.

It is essential to be aware that the list of stakeholders (relevant organizations, groups and individuals) is never finished and the analysis is never concluded – it will at all times be rethought and if needed amended based on the development of the project.

ACTION 2 - Addition of potential new partners from institutions datasets and initiatives

This step considers the construction of a list of institutions by the conceptual partners (Leiden University) providing additional options of potential stakeholders for each region/country. This list may enrich the register of stakeholders listed by the regional partners in the previous section (Step 1).



Some of the sources we use to find suitable institutions to suggest are: Organisation database (CWTS), OrgReg & FirmReg (RISIS project), GRID (Global Research Identifier Database), The integrated Civil Society Organizations (iCSO) System, SEDIA - Single Electronic Data Interchange Area - EU –Find a partner tool, among others.

STEP CONNECTED TO FILE “**Organisations_dataset**” (Tabular format)

This file consists of a list of diverse types of institutions per region/country (Örebro, Murcia and Cyprus), including additional relevant data for assessing their importance in the context of the project. That means supplementary information regarding their Health & Innovation profile, as follows:

Participation in Health projects: It refers to CHAFEA (Consumers, Health, Agriculture and Food Executive Agency - database) which identifies projects and institutions that have been involved in Health programmes. Within the Tabular file, you will find a column named “*Project_EUhealth_CHAFEA*”, with their respective project description “*Project_CHAFEA_Desc*”.

Health innovation profile: The Single Electronic Data Interchange Area (SEDIA), is a free platform for participants and experts in funding programs and tenders managed by the European Commission and other EU bodies. Using this database, we added organisations deemed relevant in the health sector or for innovation development.

IMPORTANT: This table should be filled by the conceptual partners (Leiden University) and used by the regions as a complementary source for supporting the stakeholder identification process.

ACTION 3 - Selection criteria for stakeholders

Key stakeholders are a subset of stakeholders, indispensable for the project to achieve its full set of objectives. Their absence/non-contribution may potentially cause the project to fail. Based on the integration of the stakeholders’ network raised by regions in the steps 1 and 2, the methodology considers an assessment of each potential stakeholder by a set of criteria. This correspond to a proposal of variables to evaluate during the prioritization process, and the regional partners should enhance it in accordance with local criteria, acknowledging territorial conditions and on-site needs:

- Previous positives professional experiences
- Prior participation in EU projects
- Experience and Health projects
- Experience in Innovation sector
- Representativeness of their organisation type
- Relevance of the potential team involved, beyond the organisation profile
- The level of interest of a stakeholder
- Attitudes of stakeholders towards the project



- Power or influence
- The degree of impact of an issue on a stakeholder
- Experience in the regions - local knowledge

The assessment and integration of the aforementioned variables and other aspects that may not be included in the set of criteria listed above, will lead to the overall *Level of importance* of the stakeholder. In order to assess the criteria, qualitative or quantitative approach can be employed, using values that range from 1-3, where 1 = Less relevant; 2 = Important and 3 = Extremely important.

ACTION 4 - Categorize stakeholders by degree of involvement in the project

By step 4 you should have an enlarged version of the stakeholders' list containing the current and potential partners for engagement in the successive phase of the project, classified into the 3 categories of *Level of importance*.

This step consists of creating operative groups of stakeholders according to their interest, role and level of involvement, considering the four different groups shown in Figure 3. The description of each group is presented in Table 2 (Softić, Zdravko & Iskriva, 2016):

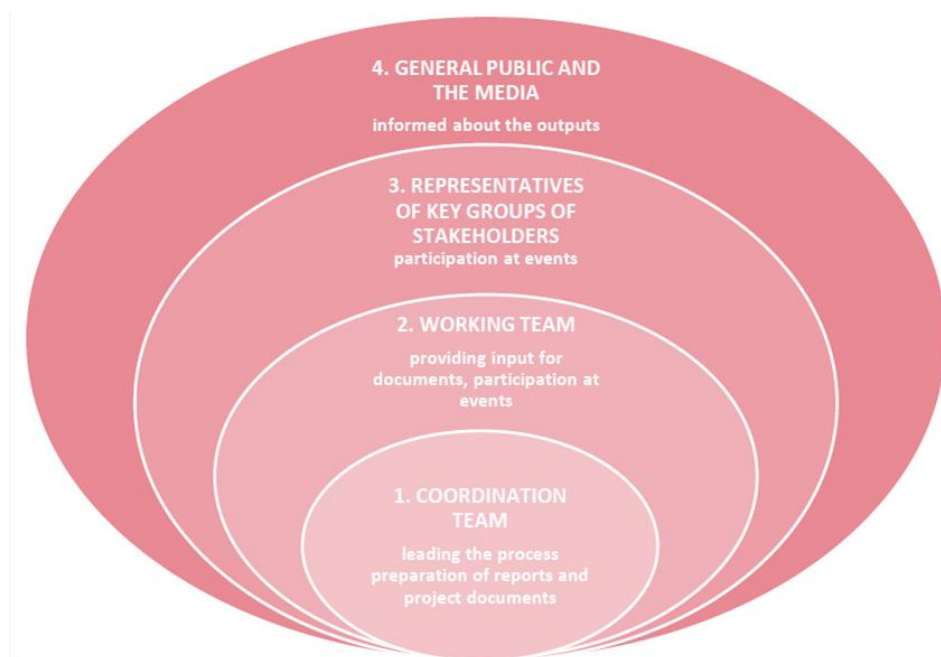


FIGURE 3. STAKEHOLDERS GROUPS BASED ON THE LEVEL OF THEIR INVOLVEMENT.

**TABLE 2. DESCRIPTION OF THE ROLE AND TASKS FOR EACH GROUP OF STAKEHOLDERS.**

Group	Role description
Coordination team	Representatives of the coordinating organisation(s), i.e. project partners and observers from each country/region: cooperate in all project activities, define, plan and implement the participation process, organise events, write texts and reports. They lead and implement the whole process and prepare documents.
Working team	Representatives of key organisations, they provide input for preparation of analyses and reports, and participate at events with stakeholders. They have an active role throughout the process. Besides the events, smaller meetings can be organised with them to assure proper planning, implementation and follow-up of the participation process and assure up-to-date data for the reports. They give input to the documents and participate at events with stakeholders.
Representatives of key groups of stakeholders	Representatives of different groups of stakeholders (sectors and types of organisations), which represent also key decision-makers and opinion makers. They are affected by the activities, and their voice has to be heard. Their crucial role is to provide their opinions and information at the consultation events. If needed, they can be consulted also in between. They participate at events.
General public and the media	Representatives of the media and general public, interested in the topic: they are targeted by the general promotional activities, such as the project website, articles, leaflets and brochure. They are informed about the project.

In order to translate the *Level of importance* of the stakeholders obtained in the previous step, into the degree of involvement categories for stakeholder groups, you should use the correspondence between categories, as shown below in Table 3:

TABLE 3. CORRESPONDENCE TABLE BETWEEN LEVEL OF IMPORTANCE AND GROUPS OF STAKEHOLDERS REGARDING THEIR DEGREE OF INVOLVEMENT IN THE PROJECT.

Level of importance	Score	Group of stakeholders
Extremely relevant	3	Coordination team
Important	2	Working team & Representatives of key groups of stakeholders
Less relevant	1	General public and the media

Worth to mention is that this step considers to tailor the process to our possibilities for implementation and the desired outcome. That means that, not only the groups of stakeholders can be adapted to each territory, but also the connection between the *Level of importance* and the respective *Degree of involvement* in the project are open to further discussion and adaptation.



3.2 Step by step approach to gather and screening policy instruments

This step entails the revision of sectoral policies, strategies and innovation support, based on the theoretical interface of innovation policy, RIS3, RRI and the healthcare sector, with a focus on mission-oriented policy making and build on experiences in other territories or projects.

The exercise focusses on existing (European) policy frameworks for territorial innovation, a selection of elaborated smart specialization strategies; and health innovation (and reimbursement) strategies, as well as other policy mixes at national and regional scale.

The actions needed to conduct the policy mapping exercise are listed below:

Step 1	Gathering policy instruments by domain at institutional level
Step 2	Identifying policy documentation
Step 3	Relevant policy instruments and strategies

Figure 4 below summarizes the core elements to consider when developing the policy mapping process. It connects with the tabular file “[Policy_mapping_data](#)” (Tabular file), regarding Policy sources and Instruments.

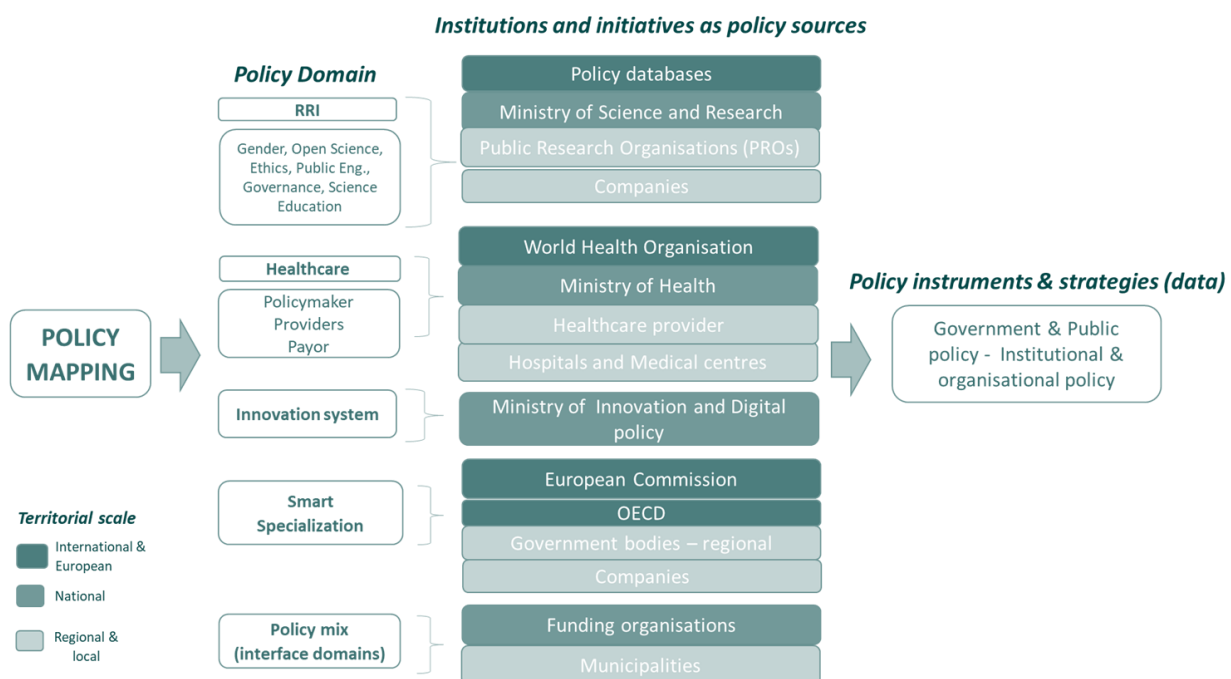


FIGURE 4. SEQUENCE OF STEPS STEERING THE POLICY MAPPING EXERCISE.



Responsibilities

It is expected that relevant policy instruments and strategies at International and European level should be collected by the Centre for Science and Technology Studies (CWTS- UL). The regional effort is essential to explore the National and Sub-National policy ecosystem.

ACTION 1 - Gathering policy instruments by domain at institutional level

For the purpose of organizing the searching process, table 4 displays different policy domains to guide the process. The same categorization as listed in table 4, can be found in the file “**Policy sources_instruments_mapping**” (Policy_sources tab).

TABLE 4. POLICY DOMAINS CATEGORIES

Responsible Research & Innovation
<i>Gender</i>
<i>Open Science</i>
<i>Ethics& Integrity</i>
<i>Public Engagement</i>
<i>Governance</i>
<i>Science literacy and Science Education- Citizen sciences</i>
Healthcare policies
<i>Public Health policies (Policymaker)</i>
<i>Healthcare -Insurance policies (Payor)</i>
<i>Hospital policies and procedures (Provider)</i>
<i>Health workforce policy (Provider- physicians, nurses)</i>
Innovation and Technologies
Smart specialisation
Interface Healthcare- Innovation -RRI- Smart specialization

Once you have defined the Domain or specific topic to track down the policy documentation from, you should look at the *policy sources* or institutions related to the selected domain, as exemplified in Figure 4. Listing policy-making organisations or initiatives from the regional perspective, would be helpful to other regional partners as well, in order to find their own strategies and policy-related documentation.

STEP CONNECTED TO TABLE “**Policy_sources_instruments_mapping**”

The documentation collected during the policy mapping process should be stored in the file “**Policy_sources_instruments_mapping**” (Tabular file), which will serve as a repository for policy data.



The file is divided in two tabs:

Policy sources: you will find a list of organisations, initiatives, and datasets as a reference or guidance on where to focus the policy search effort. These sources will vary from region to region, and a territorial multi-sector approach is needed to find local sources.

Policy instruments: it contains each policy instrument or strategy found during the search, describing some related information to the instrument such as: Organisation or platform, Partners involved, Date, Territorial scale, Link, Comments.

IMPORTANT: This document is meant to be filled by both, the conceptual partners (Leiden University) and each one of the regions, in a collective effort.

It is worth to mention that, in the same way as stakeholders may be involved at different stages during the project development, the policy mapping is an **iterative process**, which entails a dynamic pulse in which new frameworks appear during the course of the project. At the time in which we advance toward a finer scale, with a clearer idea for the pilot initiative, a more local and operative/technical policy may arise. Related to institutional levels or the sub-topic in which the pilot idea will be implemented.

ACTION 2 - Identifying policy documentation

There are many classifications regarding types of public policy. In the European commission context, the body of law that comes from the principles and objectives of the treaties is known as secondary law; and includes regulations, directives, decisions, recommendations and opinions⁵. A more detailed description of each policy intervention can be found in Table B1 from the Appendix.

If analysing a more detailed scale of policy instruments, different categorization possibilities emerge. For definitions of each category, please refer to Table B2 of the Appendix (Marume, Ndudzo & Jaricha, 2016):

- Political policy
- Executive policy
- Administrative policy
- Technical/Operational policy
- Development plans & strategies
- Investment incentives
- Public projects

In this way, either categories at International or National level of action, aim to provide guidance or a reference for understanding the main policy types you may encounter during the searching process and, in practice, deciding what to add or not into the “**Policy sources_instruments_mapping**” file.


⁵ https://ec.europa.eu/info/law/law-making-process/types-eu-law_en



ACTION 3 - Relevant policy instruments and strategies

In general, the selection of policy instrument begins with the precise articulation of the problem to be addressed. Problems that legitimize policy intervention are commonly associated with certain market failures or system failures. Often, policy intervention aims to remove a barrier in the development of a new set of activities. A 'Logical Framework Analysis' might be helpful in expressing which sequence of behaviour you expect to result from implementing the intervention (Borrás & Edquist, 2013).

The policy instrument choices can be broadly defined in three categories: carrots, sticks and sermons (adapted from Bemelmans-Videc, 1998).



Policy Instruments	Government / Public Policy	Institutions / Organisational Policy
Sticks (Regulatory measures)	Laws & Regulations Directives Impact assessment requirements	Rules / Constitution By-Laws / Charters Governance Policies
Carrots (Economic / Market Interventions)	Taxes Tax relief Incentive schemes / subsidies / grants Licensing	Professional sanctions Prizes and awards Codes of practice Professional Policies
Sermons (Info. measures) – Suasory Instruments	Strategies Plans Standards Voluntary Agreements	Public Benefit Policies Procedures / Guidelines (Best practices) Briefing kits
Hybrids	Sustainability reporting requirements	

FIGURE 5. POLICY INSTRUMENTS DEFINED BY CARROTS, STICKS AND SERMONS

The selection of crucial instruments and strategies constitutes a dynamic process and is partially conditioned to the subsequent steps during the project development, being influenced by activities regarding WP3 and WP4:

- *Definition of the innovation action:* The definition of the type of experiment to implement will open up a new and more specific niche of information to explore in the policy landscape.
- *Stakeholders participation:* During the engagement process (WP3) consultation activities to relevant actors around pertinent policy frameworks to address in the mapping process, may offer a new source of information.



Ranking policy instruments and strategies

Input from the regional partners is highly relevant to provide insightful criteria when choosing useful frameworks to analyse, especially during the policy experimentation phase. Local needs related to regional priorities - at different territorial scales (research agendas, funding priorities, strategy reports, etc.) are some variables to consider when analysing policy documents and assigning a value in the ranking.

3.3 Connecting key stakeholders & relevant policy frameworks

Under the CHERRIES project, this step considers the integration of meaningful policy instruments and key stakeholders. In the same way that key actors will nurture the project, suggesting relevant policy instruments to incorporate into the discussion, once we start to analyse policy interventions, the documents will distinguish appropriate actors to involve.

The *Snowball Research Strategies* method has been used in the context of mapping of networks of relations between policy actors and policy instruments, analysing the implementation of Framework Directives.

Based on the assumption that a significant majority of actors in a policy network are known to each other, the approach begins by analysing the documents of a single organisation, and follows a chain of references from this point. This approach is traditionally used to sample large populations based on the assumption that actors are typically known to each other (Bainbridge, Potts & O'Higgins, 2011).

Each of these referenced actors and instruments is then used as a new starting point and the process is repeated. When referrals ceased to reveal new actors or instruments related to the relevant directive the process was terminated (Atkinson & Flint, 2001).

4. TOWARDS THE NEXT STEPS

These guidelines on the mapping of stakeholders, policies and priorities will ensure a well-structured continuation of WP 3, 4 and 5. They provide a holistic understanding of the territorial context, which is essential for the territorial framework and policy experimentation of WP 3 and 4. This will guarantee that the resulting policy mix of WP 5 will be comprehensive and be backed by regional actors and regional characteristics. These factors assure a solid ground for widely supported, successful and responsible innovation.



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Appendix A – Data sources for Smart Specialisation Strategy

TABLE A 1. DESCRIPTION OF TWO DATA SOURCES TO EMPLOY FOR ASSESSING SCIENTIFIC AND TECHNOLOGICAL SPECIALISATION.

Data source	Description	Source
CWTS publications database	Enhanced version of Clarivate Analytics' Web of Science database. A combination of smart computer algorithms and manual data cleaning ensures a high-quality unification of the names of research institutions. CWTS is continuously expanding its data system to include other major scientific databases, such as Scopus, PubMed, Crossref, PATSTAT, Mendeley, and ORCID.	
Knowmak project	Complementary tool to analyse and visualize scientific and technological variables created under the Knowmak project (Knowledge in the Making in the European Society). It provides interactive visualisations and indicators on knowledge co-creation in the European research area. The tool is structured around three integrative elements: Research topics, by developing an ontology on Societal Grand Challenges (SGC) and Key Enabling Technologies (KET); Research actors, both “conventional” and social actors; Geographical spaces and, more specifically, countries and regions.	Link

TABLE A 2. PLATFORMS FROM THE EUROPEAN COMMISSION TO ANALYSE REGIONAL ECONOMIC SPECIALISATION.

Platform name	Description	Source
EUROSTATS at regional level	<p>Overview of Regional Indicators from the European Pillar of Social Rights are presented by region (NUTS2 level). Some of the relevant and accessible indicators and sub-indicators for S3 analysis of the regional context are (a more exhaustive set can be found at National scale):</p> <ul style="list-style-type: none"> • Gender equality in the labour market: Gender employment gap • Labour force structure: Employment rate by activity • Labour market dynamics • Healthcare: Self-reported unmet need for medical care (Out-of-pocket expenditure on healthcare, Healthy life years at age 65, Life expectancy at age 65) • Digital access: Individuals' level of digital skills (Connectivity dimension of the Digital Economy and Society Index (DESI)) 	Link



R&I Observatory	Consist of country reports from 2017, which provide a brief analysis of the R&I system covering the economic context, main actors, funding trends & human resources, policies to address R&I challenges, and R&I in national and regional smart specialisation strategies.	Link
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TABLE A 3. EXAMPLES OF INNIATIVES FROM THE EUROPEAN COMMISSION TO ASSESS INNOVATIVE BEHAVIOUR PER REGION.

Platform name	Description	Source
Smart specialisation platform - EU	The S3 Platform assists EU countries and regions to develop, implement and review their Research and Innovation Strategies for Smart Specialisation (RIS3). The role is to provide information, methodologies, expertise and advice to national and regional policy makers, as well as promote mutual learning, trans-national co-operation and contribute to academic debates around the concept of Smart Specialisation.	Link
European Observatory for Clusters and Industrial Change Mapping Tool	The Cluster Mapping Tool provides and visualises data on Evolution towards a more innovative regional economy, new and emerging technologies, Digitalisation, Firm investments, Entrepreneurship, Internationalisation, Creativity and Eco-efficiency. The territorial scale encompasses country and regional level.	Link
European innovation scoreboard	Provides a comparative analysis of innovation performance in EU countries and regional neighbours. It assesses relative strengths and weaknesses of national innovation systems and helps countries identify areas they need to address. There are available, country reports and interactive tools to visualize and compare innovation behaviour for different indicators and dimensions.	Link
The regional innovation scoreboard (RIS)	Regional extension of the European innovation scoreboard, assessing the innovation performance of European regions on a limited number of indicators. Possible to analyse observable trends (2011-2019).	Link



Appendix B – Definitions for Territorial mapping exercise

TABLE B 1. EU TYPES OF PUBLIC POLICY⁶

EU legal acts	Description
Regulations	Regulations are legal acts that apply automatically and uniformly to all EU countries as soon as they enter into force, without needing to be transposed into national law. They are binding in their entirety on all EU countries.
Directives	Directives require EU countries to achieve a certain result, but leave them free to choose how to do so. EU countries must adopt measures to incorporate them into national law (transpose) in order to achieve the objectives set by the directive. National authorities must communicate these measures to the European Commission.
Decisions	A decision shall be binding in its entirety. A decision which specifies those to whom it is addressed shall be binding only on them.
Recommendations	Recommendations allow the EU institutions to make their views known and to suggest a line of action without imposing any legal obligation on those to whom it is addressed. They have no binding force.
Opinions	An 'opinion' is an instrument that allows the EU institutions to make a statement, without imposing any legal obligation on the subject of the opinion. An opinion has no binding force.
Delegated acts	Delegated acts are legally binding acts that enable the Commission to supplement or amend non-essential parts of EU legislative acts, for example, in order to define detailed measures.
Implementing acts	Implementing acts are legally binding acts that enable the Commission – under the supervision of committees consisting of EU countries' representatives – to set conditions that ensure that EU laws are applied uniformly.

TABLE B 2. POLICY INSTRUMENTS AND STRATEGIES AT NATIONAL AND SUB-NATIONAL LEVEL.

Policy instruments	Description
Political policy	Is the policy lay down by the supreme political authority on the different levels of the government. As such, is the it is the policy by which the government of the day is generally guided.
Executive policy	Is the form in which the executive body, which may be a cabinet, an executive committee, or a management committee, carefully shapes the features of the political policy that it may be put in practice. The formulation of an executive policy is largely done by those political office bears or institutions, constituting the super structure of the institution, for example, the

⁶ https://ec.europa.eu/info/law/law-making-process/types-eu-law_en



	cabinet committee, and ministers, assisted by top officials. However, the most important exposition of the executive policy is always the budget because it lays down the annual programme of the political party in power.
Administrative policy	Is the form in which the policy officials carry out the will of the government of the day into practical effect and also facilitate to lay down executive policy. This policy is mainly concerned with the practical steps to give effect to the stated executive policy. It should involve practically feasible steps, programmes, systems, methods and procedures to effect political and executive policies.
Technical/Operational policy	Apart from policy made at the three levels described above, decisions on various other matters of policy may still have to be taken at the level where the work has to be done, that is, at the operational level. Therefore, technical policy is the day –to –day policy adopted by public officials, technical personnel and experts in implementation the already decided administrative policies.
Development plans & Strategies	Sets out long term goals in sector(s), society etc. to be achieved and what actions/investments are desirable to reach these goals.
Investment incentives	Promotes direct investment. Such fiscal, financial, or other investment incentives must be carefully assessed in terms of long-term costs and benefits before they are implemented. The costs and benefits of incentives must be periodically reviewed to ensure they are effective in achieving their desired goals
Public projects	Government or public-private run projects, which gives governmental bodies a tool to have direct societal impact with policy-making.

TABLE B 3. DESCRIPTION OF ORGANISATIONS TYPES.

Organisation type	Description
Higher Education Institutions (HEI) or Universities	Nationally recognized as HEIs or Universities, and whose major activity is providing education at the tertiary level (ISCED 2011 level 5, 6, 7 and/or 8). R&D activities might be present, but are not a necessary condition to include them. They might be public and private.
Public Research Organisations (PRO)	Defined as entities whose main activity is to carry out Research and Development (R&D). Have the legal status of public organization or be publicly owned by the Government (i.e. created by a political process). Be publicly funded on a regular basis, receive significant parts of its budget from the Government. The PRO perimeter excludes companies whose main mission is to sell for profit goods or services.



	<p>Examples include large national umbrella organizations like CNRS and MPG, CSIC or laboratories.</p>
<p>Public Administration Organizations (PA) (Healthcare & Innovation Policy makers)</p>	<p>The governmental institution category lumps together all identified institutions that are primarily governmental. This definition considers institutions that are not primarily research or funding organisations. In practice, this category encompasses Ministries and departments of public administration.</p> <p><i>Healthcare Policymakers</i> establish the framework within which health care is provided to the country's citizens.</p> <p><i>Innovation Policymakers</i> shape the complex environment in which creation, diffusion, and learning as well as the exploitation of economically valuable knowledge in innovation takes place.</p>
<p>Hospitals or Research Hospitals (RH) (Healthcare provider including practitioner)</p>	<p>Research hospitals are hospitals that, alongside their clinical activity, perform a sizeable amount of R&D or clinical research; many research hospitals are also closely associated with universities and, therefore, are involved to some extent in teaching. This collaboration partnership would be an advantage when working with groups of stakeholders.</p> <p><i>Healthcare provider</i> operationalizes care delivery within the policy framework. They provide health services to patients and maintain health information about them. The providers coordinate patient care with other providers as care team members. Many providers are independent businesses that must manage their operations and finances.</p>
<p>Research Funding Organisation (RFO)</p>	<p>Funding organizations are organizations whose primary stated goals are concerned with the stimulation and support of science through the allocation of funds. The word primary is key here: organisations which allocate funding next to doing their own research (such as the various Academies of Science) are classified as research institutions (R).</p>
<p>Civil society Organisation (CSO)</p>	<p>Non-State, not-for-profit, voluntary entities formed by people in the social sphere that are separate from the State and the market. CSOs represent a wide range of interests and ties. They can include community-based organizations as well as non-governmental organizations (NGOs).</p>
<p>Firms, business and the private sector / SME's / Spin-offs</p>	<p>This category refers to for-profit companies and is used for large multinationals as well as for SMEs. Spin-offs from universities, whether independent or affiliated to the university, fall under this category as long as they are for-</p>



	profit. Other organisations that fall under this category are pharmaceutical and biomedical companies for despite acting as funding agents of research institutes, their core activity is still to sell products and services.
Venture capital	Also called risk capital. Venture capital is a type of funding for a new or growing business. It usually comes from venture capital firms that specialize in building high-risk financial portfolios. With venture capital, the venture capital firm gives funding to the start-up company in exchange for equity in the start-up.
Start-ups	A start-up is a venture that is initiated by its founders around an idea or a problem with a potential for significant business opportunity and impact.
Patients	Patients are typically citizens, and voters, and sometimes taxpayers. Policymakers have a fiduciary duty to this population, and the country's policy framework is established to benefit patients. Patients receive care services from providers and are the beneficiary customers of the payors.
Payor	Payors operationalize the financial elements of the policy framework. Payors enrol patients as beneficiaries. They procure care services from the providers on behalf of their patient beneficiaries. They also must take on the actuarial task of ensuring the financial sustainability of the care program.

TABLE B 4. TYPES OF STAKEHOLDERS IN RELATION TO RIS3 STRATEGIES.

Types	Stakeholders
Public authorities and their agencies	<ul style="list-style-type: none"> • Regional Development Agency • Regional Innovation Agency • City • Region • Regional Energy/Environment Agency • Public investment funds • Industrial parks • Incubators • Regional Employment Agency
Civil society	<ul style="list-style-type: none"> • Associations • Qualified people • Trade unions • Political parties



	<ul style="list-style-type: none"> • Regional banks • Centres for public welfare
Actors of knowledge	<ul style="list-style-type: none"> • Schools • Universities • Research centres • Technology centres • Technology parks • TTos & IPR centres • Knowledge transfer • Centre for professional education • Observatory of professional qualifications • Proof of concept advisors • Consultants • Living labs • Cluster managers
International experts	<ul style="list-style-type: none"> • Peer review • Prospective • Benchmark • Regional offices abroad • Expats • FDI consultants
Enterprises	<ul style="list-style-type: none"> • Start-ups • Multinationals • Entrepreneurial growth companies (gazelles) • Newly-developed companies • Spin-outs and spin-offs of large businesses, research centres and universities • Locally-rooted companies (micro-businesses and craft companies) • Innovative businesses and companies leveraging RTD outcomes • Companies in the process of being transferred • Subcontractors • Companies at risk of bankruptcy or engaged in a restructuring process • Phoenix enterprises • Social enterprises • Enterprises engaged in a relocation and/or outsourcing process
Investors	<ul style="list-style-type: none"> • Banks • Business angels • Venture capitalists • Seed fund



- Serial entrepreneurs
- Crowdfunding
- Micro-credit
- Spin-off fund
- Corporate venturing
- Guarantees
- Export credit
- Investment readiness consultants
- Real estate development

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