

ecoRIS3 composite analysis

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1 Introduction

The main objective of the ecoRIS3 project is to promote better policies and measures to support local and regional innovation ecosystems within RIS3 strategies.

As a first step, the project has planned the preparation of partners SWOT analyses to identify the specific gaps to be addressed in the regional innovation chain policies. These SWOTs also set out to establish the parameters of the RIS effectivity, in terms of the Smart Specialisation Strategies being successfully deployed, to support sustainable growth and development in the participating partner regions. The final objective of the reports is to draw recommendations to enhance innovation ecosystems within RIS3 strategies.

A common methodology has been designed to facilitate a comparison across all partners' reports. This document is a composite analysis to map the key Strengths, Weaknesses, Opportunities and Threats of Ecosystems of Innovation in European territories.

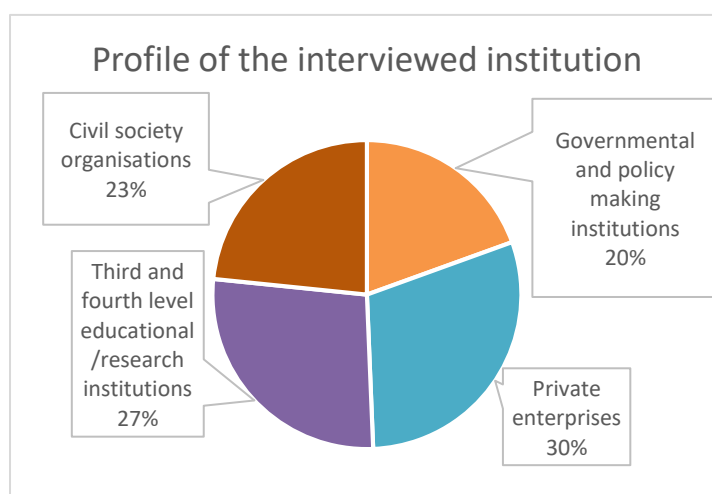
In undertaking this research, the ecoRIS3 partnership concluded that having a composite analysis of the 7 regions involved, would be highly advantageous from the dual perspectives of:

1. Having a good overview of the status of the RIS3 and
2. Feeding this information into the future Action Plans.

2 Survey methodology

Several sets of statistics and secondary sources of information have been used to elaborate this document, including the key documents describing and analysing the local and regional innovation ecosystems and policies. Additionally, 76 representatives from the four groups of the local innovation quadruple helix have been interviewed: companies, research and technology organisations, government and policy making institutions and civil society. They all answered a structured questionnaire to gather qualitative data and opinions regarding their innovation ecosystems and smart specialisation strategies to compare the results with other regions participating within the ecoRIS3 project.

Partner	Responses
Spain	10
Republic of Ireland	13
Portugal	8
Lithuania	12
Finland	8
Italy	12
Latvia	13
Total	76



3 Finding of the survey: Regional Innovation Ecosystem

In the first part of the survey, interviewees were asked about their level of agreement with several statements about the **innovation ecosystem in their regions**, assessing different topics ranging from the performance of the regional research base, the level of promotion of the entrepreneurship or the effectiveness of the level of collaboration between key economic actors.

The figure below summaries the answers provided by the quadruple helix institutions/representatives, showing 3 different trends:

a) A remarkable level of agreement with the following statements:

- ✓ There is a good connection between the Regional Innovation Ecosystem and the National Innovation Ecosystem and Strategies (62%) in Spain, Portugal, Finland and Italy (while disagreement on this topic is basically concentrated in Lithuania, Ireland and Latvia).
- ✓ The Regional Research and Knowledge Base successfully foster industrial growth in the region (44,165), supported in answers from Spain, Italy and Ireland.

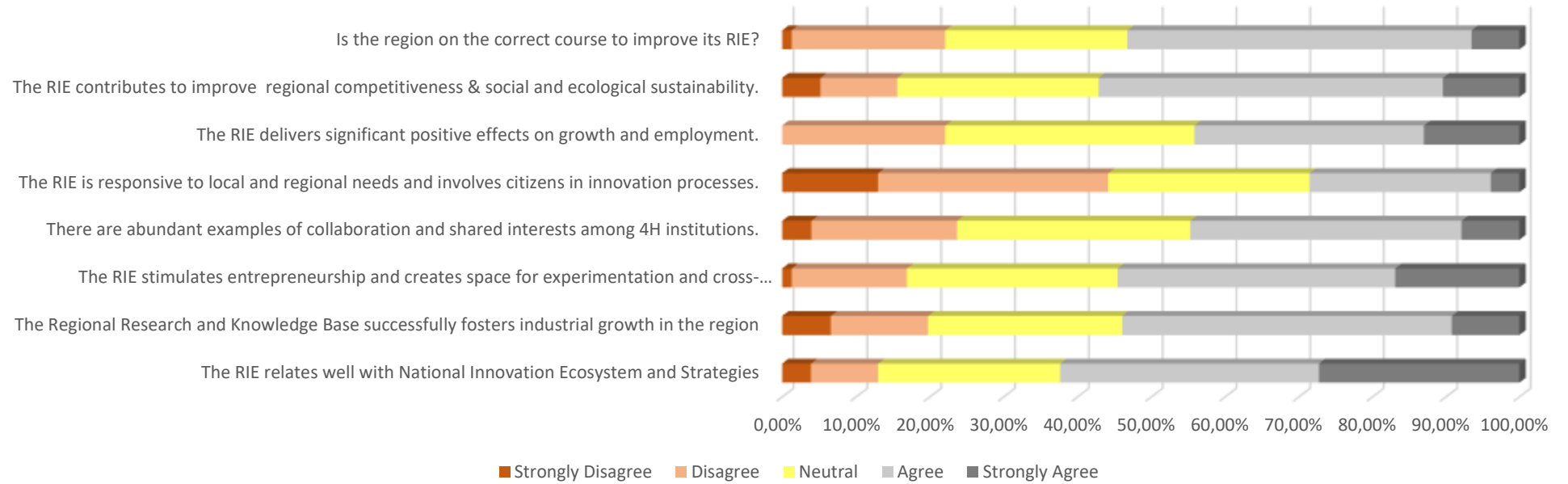
b) A high negative response to the following remarks:

- ❖ The Regional Innovation Ecosystem is responsive to local and regional needs and involves citizens in innovation processes (44% of disagreement), perhaps reflecting a perceived lack of public involvement in the RIE design processes. Negative answers have been received from all partners, with the majority coming from Lithuania, Italy, Latvia and Ireland)
- ❖ There are abundant examples of collaboration and shared interests between the public sector, private sector and knowledge institutions (24% of disagreement). The majority of the answers are from the Northern partners of ecoRIS3 Lithuania, Latvia and Finland.

c) A tension exists Among agreement and disagreement in the following topics:

- The Regional Innovation Ecosystem delivers significant positive effects on growth and employment (22% disagree versus 31% agree), with no clear feature pattern depending on the country of origin.

Regional Innovation Ecosystem (RIE)



4 Findings of the survey: Regional RIS3

The second part of the questionnaire addressed several areas connected to the National/Regional Research and Innovation Strategies for Smart Specialisation, ranging from stakeholder engagement, shared vision, priorities, policy mix, synergies, communication, governance, clusters and cooperation intensity among the quadruple helix institutions.

The first question related to the overall levels of awareness to the concept of a RIS3.

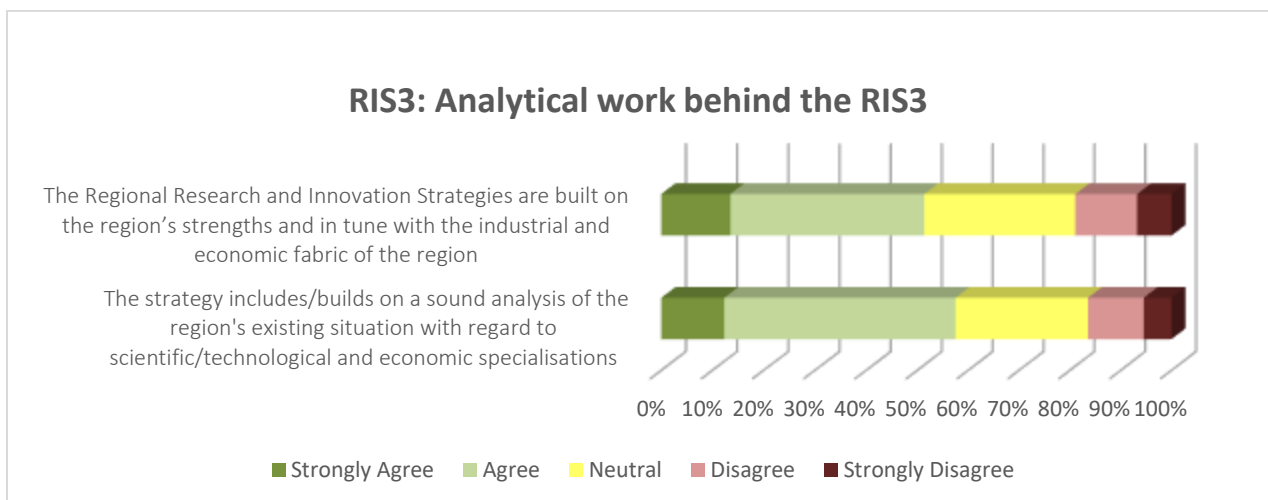
“Are you familiar with the idea of Regional Innovation Ecosystems and of Regional Innovation Strategies for Smart Specialisation?”

Of the total respondents, 74% were familiar with the concept of a RIS3 and 26% were not.

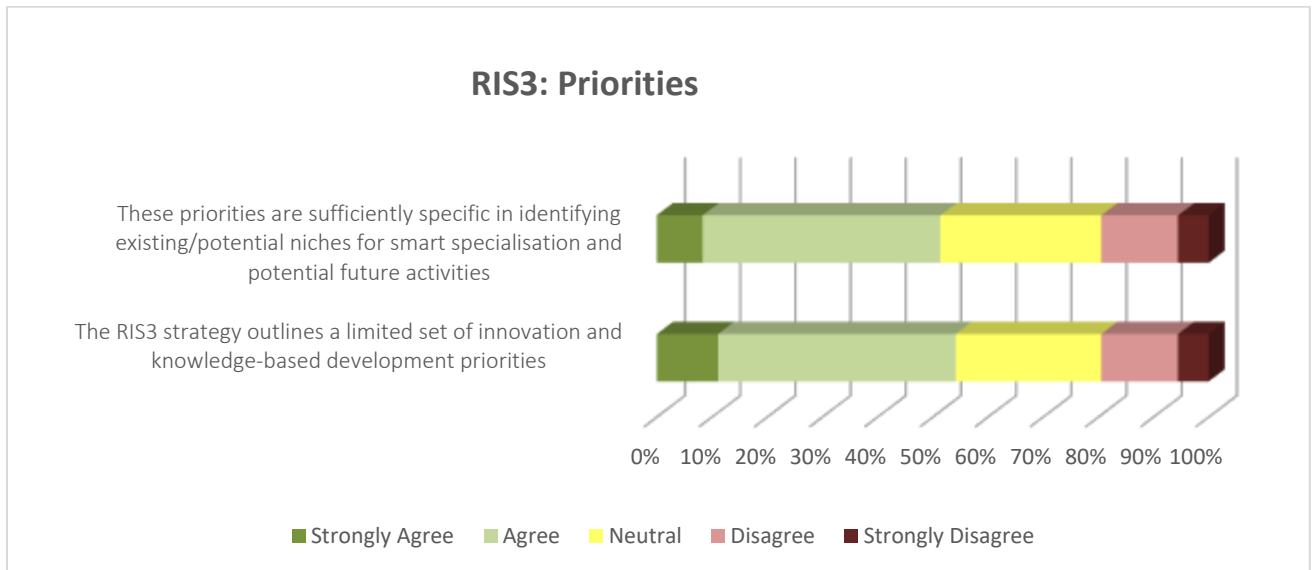
The highest awareness levels were across Government and Policy Making Institutions, Third level Higher Educational and Research Institutions and **Civil Society Institutions with Private Industry respondents reporting small and/or no knowledge of RIS3.**

This finding, immediately flags a pressing need to highlight and undertake awareness raising activities with the private sector and general public in relation to RIS3 concepts and the growing importance of the RIS3 approach to economic planning.

More than half of the respondents consider that the **RIS3 builds on a sound analysis of the region existing situation with regards the scientific and economic specialisation in tune with the regional industrial and economic fabric.**



Moreover, **more than half of the interviewed agrees on the fact that these priorities are sufficiently specific in identifying existing or potential niches for smart specialisation and outlines a limited set of innovation knowledge –based development priorities.** This confirm that the analytical work done is leading regions to the identification of comparative advantages and potential and ambition for excellence in specific sectors or market niches.

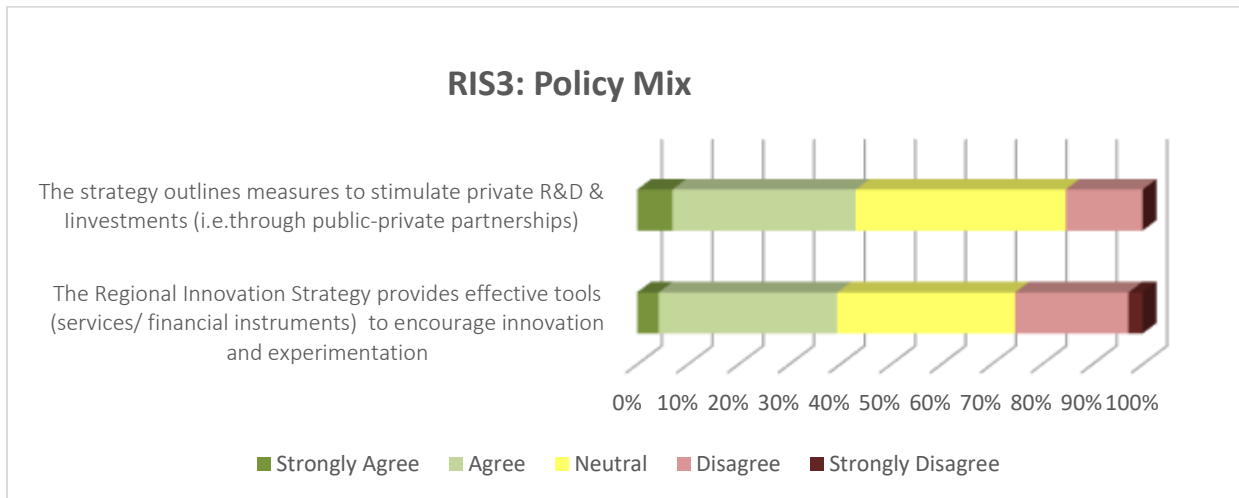


The number of neutral or negative responses increases regarding effective tools provided to encourage innovation and experimentation, **showing either the lack of knowledge (neutral answers) or the disagreement on the tools for policy experimentation to allow testing unprecedented mixes of policy measures (i.e. pilot Projects).**

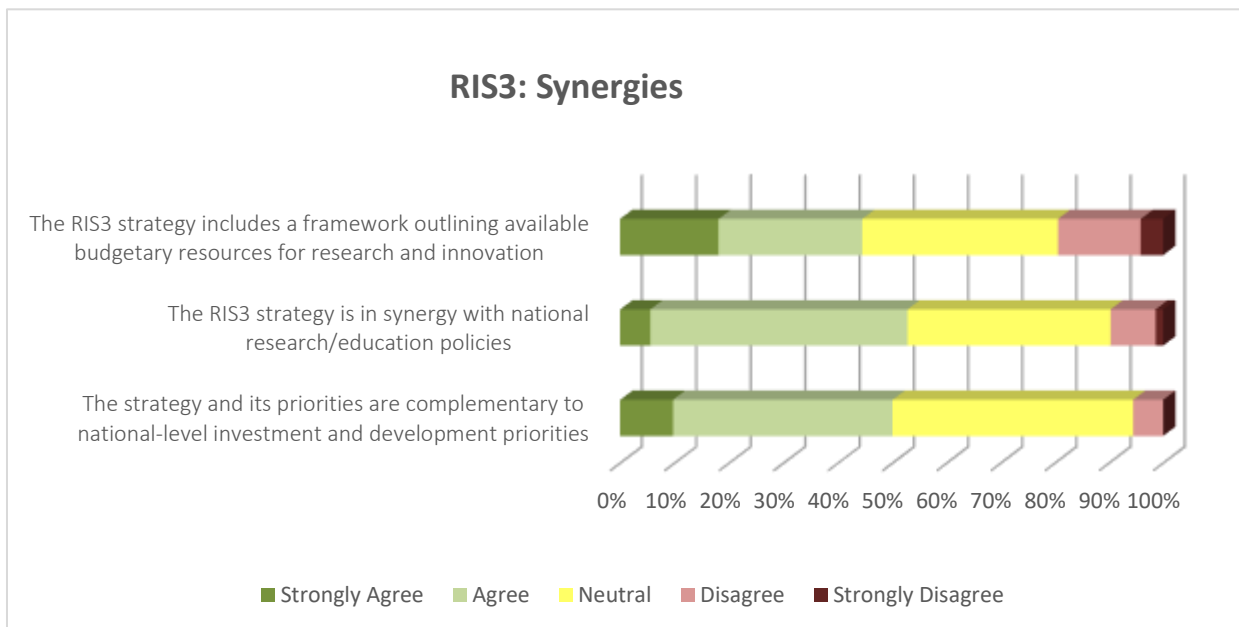
In terms of process, RIS3 design involves analyses, experimentation, debates and decision-making, with a wide participation of actors and experts from within and outside the region. This needs to be communicated, understood and acknowledged: it is a time-consuming process that should be seen as an investment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

In particular, in order to guarantee a truly place-based entrepreneurial process of discovery that generates intensive experimentation, it is imperative that new demand-side perspectives, embodied in innovation-user or interest groups of civil groups, are represented. **This means that the traditional, joint-action management model of the triple helix, based on the interaction among the academic world, public authorities, and the business community, should be extended to include a fourth group of actors representing a range of innovation users**, obtaining a ‘quadruple helix.’ This is the necessary organisational counterpart of an open and user-centred innovation policy, because it allows more direct involvement of users in various stages of the innovation process. RIS3 processes can develop environments which both support and utilise user-centred innovation activities also with the aim of securing better conditions to commercialise R&D efforts.

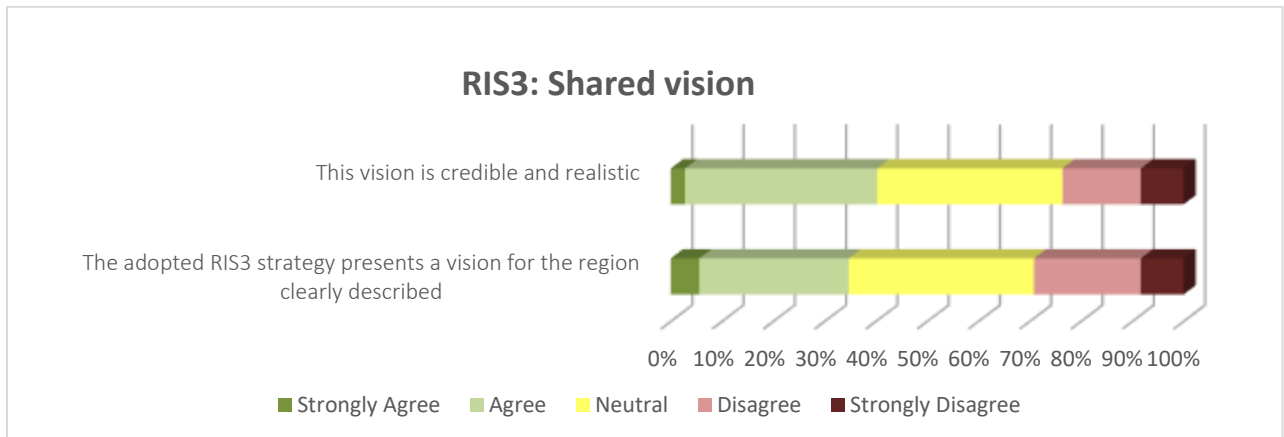
More active involvement of regional and local stakeholders will also lead to strengthen ownership and encourage private R&D investment through public- private partnerships.



RIS strategies are expected to be implemented through a road map, with an effective Action Plan. This plan is a way of detailing and organising all the rules and tools a region needs in order to reach its prioritised goals, and it should provide for comprehensive and consistent information about strategic objectives, timeframes for implementation, identification of funding sources, tentative budget allocation. Nevertheless, as shown in the figure below, **more than half of the respondents expressed neutral and/or negative answers regarding the availability of information on the budgetary resources for research and innovation.**



In connection with the previous question, respondents show that **there is still room for improvement to present the vision in a credible, realistic and clearly described strategy.**

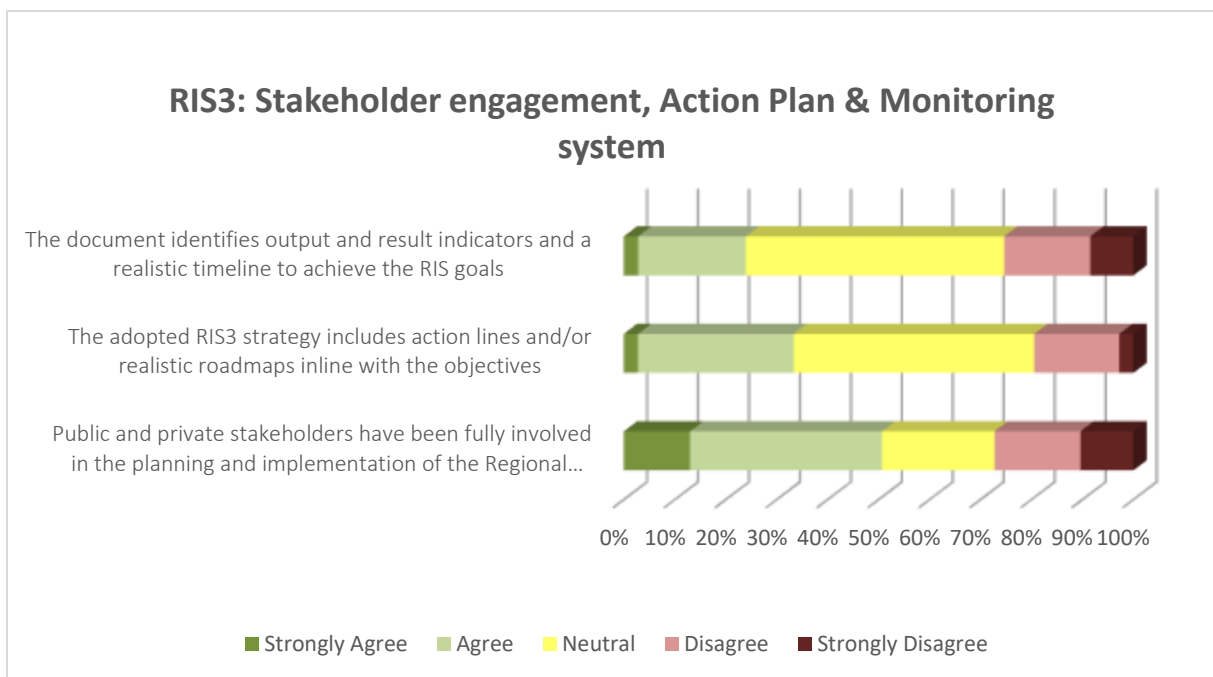
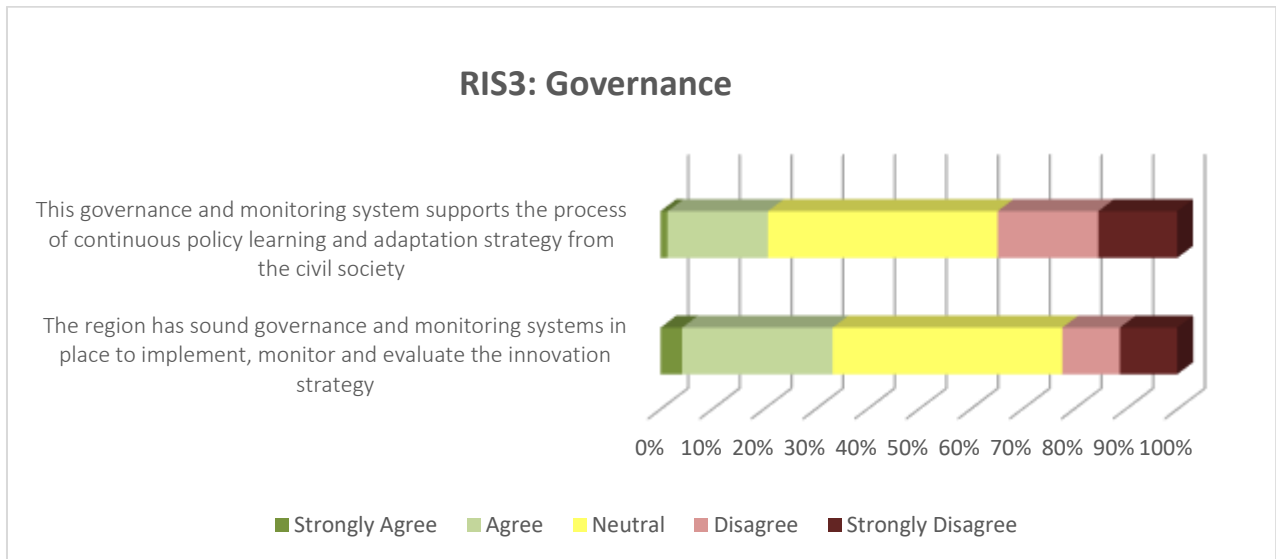


Mechanisms for monitoring and evaluating should be integrated in the strategy and its different components from the very beginning.

Monitoring refers to the need to follow progress of implementation. Evaluation refers to assessing whether and how strategic objectives are met. In order to perform evaluation, it is essential that objectives are clearly defined in a RIS3 in measurable terms at each level of implementation, i.e. from the strategic overall objectives to the specific objectives of each of its actions. A central task of RIS3 design is to identify a succinct yet comprehensive set of output and results indicators and to establish baselines for the result indicators and target values for all of them.

The design effort a RIS3 strategy does not come to an end when it moves in to the implementation phase. A strategy for smart specialisation should evolve and adjust to changes in economic and framework conditions, as well as to the emergence of new evidence provided during implementation through evaluation and monitoring activities.

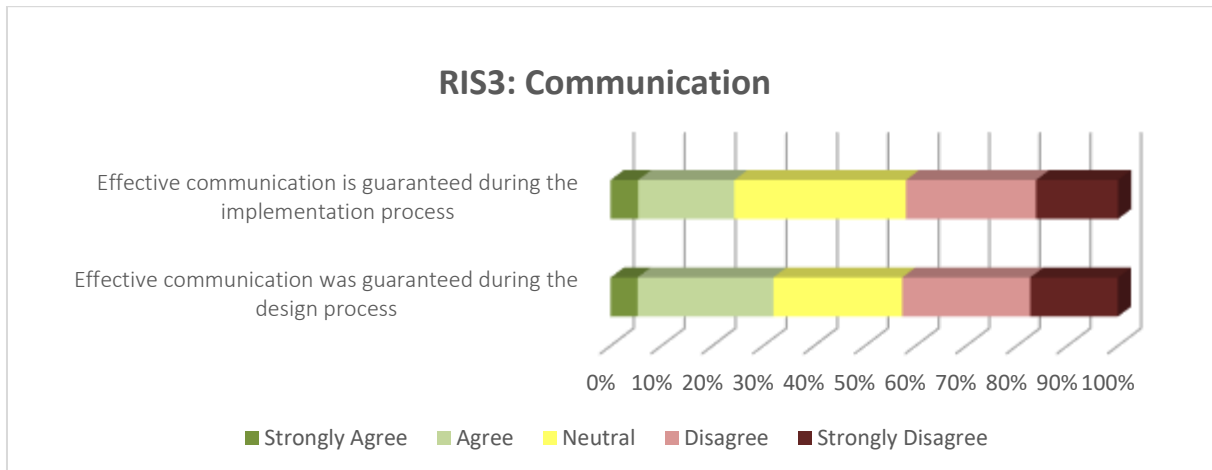
In terms of communication, local and regional governments are also learning the importance of evaluation, to check if the channels and tools chosen are connecting with and reaching the right audience. Evaluation provides evidences of the impact of communication that helps to take the right decisions to improve and increase it. This is particularly important in an increasingly complex environment. Nevertheless, there is a remarkable percentage of neutral and negative answers indicating a **high lack of awareness among respondents of the monitoring system and the involvement of the private stakeholders in the planning and implementation of the RIS3** in the table below.



An element closely intertwined to formulating an effective vision is RIS3 communication. Good communication of the RIS3 is essential to ensure its endorsement by all stakeholders of the region, and beyond. Communication is needed all along the process, adapting the content to the appropriate stage (adoption of a vision, adoption of policy priorities, endorsement of an action plan, implementation of key projects, etc.).

Interviewees have highlighted **effective communication during the design and implementation process as one of the main areas for improvement regarding the RIS3**: in particular the majority of the negative responses are those from the Third level educational and research institutions and the Governmental and policy making institutions. This leads to a conclusion that although those

institutions are aware of the concept of the RIS3 they considered that communication and public engagement should be improved at regional level with quadruple helix stakeholders.



Communication of public policies fulfils the deeply rooted democratic values of government transparency and accountability. Moreover, transparency and accountability of public institutions are now at the centre of the contemporary public sphere in a context of deep economic crisis which implies a renewed governance based on a culture of public communication and different understanding and management of the relationship with citizens. The right to information and freedom of expression are at the heart of democracy in Europe. References to these principles are included in the EU Treaty and in the European Charter of Fundamental Rights and in most of EU Member States' constitutional texts.

Academic research highlights that the changing information environment is creating a new generation of people with distinctive information processing characteristics and discusses what this means for how governments communicate with their citizens. The overloading of information may have relevant implications for policy communication:

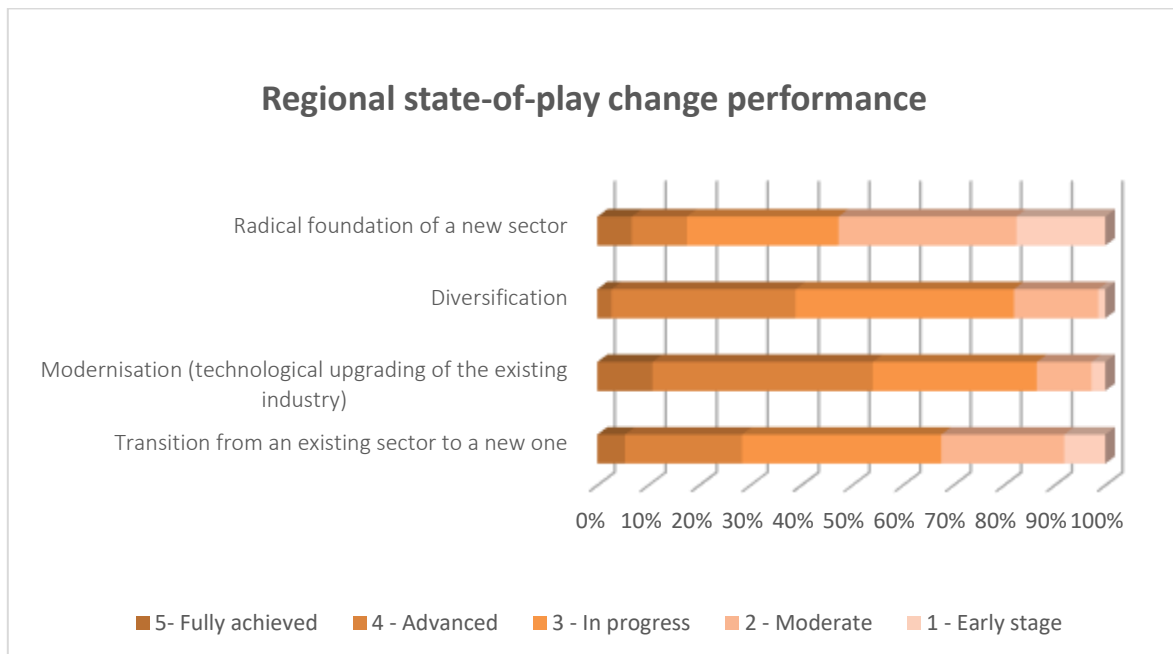
- It is unlikely government communication can reach citizens effectively, and Governments must compete against other entities for the attention of the people. Unless governments effectively catch the attention of the people, government communication will be buried in the flood of all other information.
- The goal of policy communication can be thought of as informing citizens of the existence of a policy and persuading them to participate in and/or comply with the policy requirements. People are less likely to be persuaded by the government's traditional ways of communication, and the rate of policy participation or compliance may decline in the new information environment.

Respondents were also asked to score the motion regional change, which could follow from one of the following not mutually-exclusive processes:

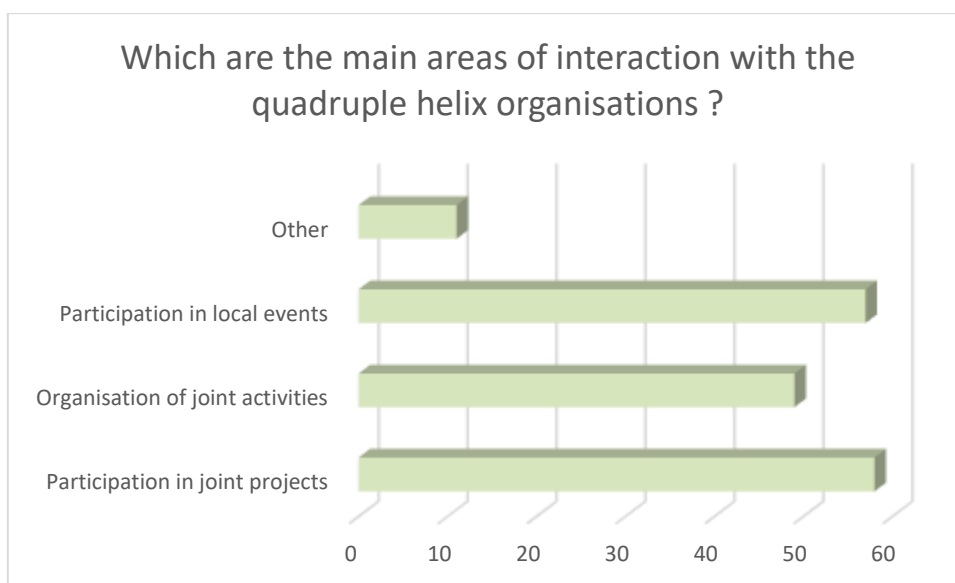
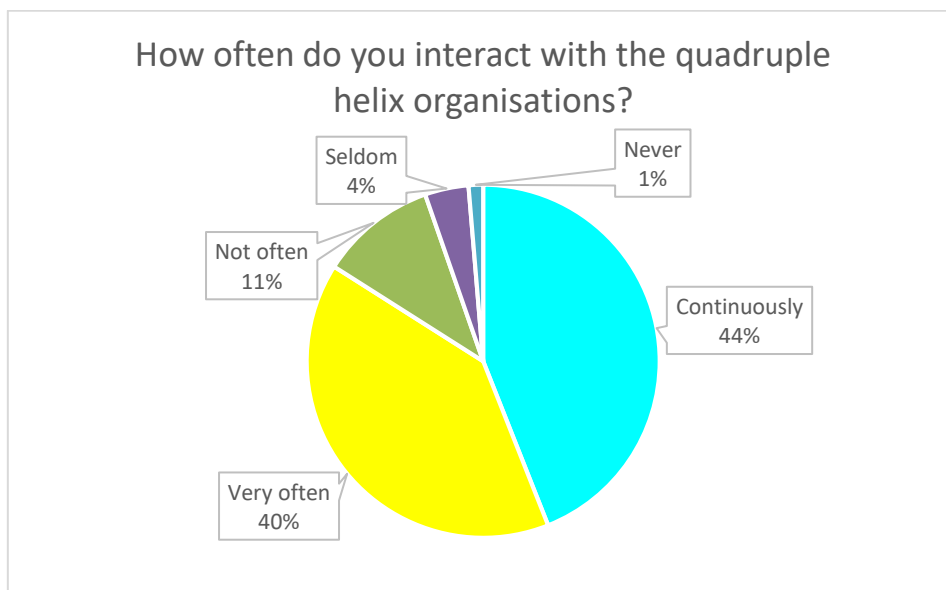
- a) Firstly, a transition from an existing sector to a new one based on cooperative institutions and processes, i.e. the collective R&D, engineering, and manufacturing capabilities that form the knowledge base for development of the new activity.

- b) Secondly, modernisation is the technological upgrading of an existing industry, involving the development of specific applications of a Key Enabling Technology to improve efficiency and quality in an existing (perhaps traditional) sector.
- c) Thirdly, diversification: In such cases the discovery concerns potential synergies (economies of scope and spill-overs) which are likely to materialise between an existing activity and a new one. Such synergies make the move towards the new activity attractive and profitable.
- d) Finally, radical foundation of a new domain: The discovery here is that R&D and innovation in a certain field can make previously low growth activities suddenly become attractive. Such radical foundation involves the co-emergence of R&D / innovation and related entrepreneurial activity.

As shown in the figure below, there is a consensus on advanced stages on the modernisation of the process and industry. Although transition from an existing sector to a new one as well as diversification is still in progress.



Findings reveals high levels of collaboration among the 3 helix stakeholders (Academia/Research, Industry and Policy Making), with “very often” and “continuously” scored a total of 84%. A further analysis of responses from sectors shows that those reporting “never” or “seldom” were mainly enterprises and one civil organisation. This information highlights the urgency to foster collaboration amongst the different innovation system actors, with special focus on the companies and the importance in the course of ecoRIS3 to ensure an active participative role for enterprises and civil society representatives.



The interviews show a **high awareness (84% of the interviewed) about the role of clusters as an important policy tool in their region. European funds are a building block for the support to the clusters.** These funding schemes have as ultimate objective is to help Member States and regions in designing smart specialisation and cluster strategies to assist companies in developing new, globally competitive advantages in emerging industries through clusters, and thus strengthen the role of cluster policies for the rejuvenation of Europe’s industry as part of the Europe 2020 Strategy.

At a participative [TCI Cluster Evaluation workshop](#) hosted by ecoRIS3 partner Cork Institute of Technology on the 14th and 15th of May 2018, the themes of cluster and smart specialisation evaluation were discussed in depth by participants from Ireland, Europe and the US. The Competitiveness Institute (TCI) is the leading global network of organisations with deep expertise in clusters and competitiveness. There were 32 people in attendance – from foreign visitors and presenters to ecoRIS3 local stakeholders.

In TCI Cluster Evaluation workshop - the 'GROW your REGION' conference which took place in 2015 was discussed. It aimed to find joint avenues to help drive growth through innovation, collaboration and the breaking of sectoral and regional silos (core to the ecoRIS3 agenda). It was the first joint event of this kind by the European Commission's DG GROW and DG REGIO. The conference highlighted the common priorities regarding clusters, industry policy and smart specialisation. Walter Deffaa (DG REGIO) noted that "Clusters can bring in knowledge needed to make smart specialisation successful." Daniel Calleja (DG GROW) supported this statement, saying that "Clusters are a huge driving force [since they] represent 39% of all European jobs." Furthermore, Mikel Landabaso, Head of Cabinet of Commissioner Corinna Crețu, responsible for Regional Policy, emphasized that "Clusters are the DNA of Smart Specialisation".

The content from the TCI Cluster Evaluation workshop held in Cork can be downloaded through the following link: <http://www.cit.ie/vlinc/events>.

5 Joint SWOT analysis

5.1.1 Strengths

Natural resources:

- Affluence of natural resources; strong potential of cultural (including historical resources) that are not tapped yet.
- Region's natural resources and raw materials (stone, ore, wood, berries, water, snow, energy; uranium = connection to nuclear power) are a strength as well as the high-tier metal industry.
- Availability of endogenous energy resources, with special focus on hydropower, wind, solar radiation and biomass production.

Solid innovation support policies, endowed with relevant resources:

- Helpful and well engaged public agencies driving job creation and innovation.
- Strong focus on driving and supporting entrepreneurship.
- Highly respected incubation facilities and associated services.
- Good research infrastructure.

Base of qualified human capital:

- Good skills in ICT.
- Base of qualified human capital: Average level of education, secondary and higher education, above the national average.
- Large research workforce.
- Citizens (especially young people) are not afraid to take on new challenges.

Solid industrial fabric:

- High number of innovative enterprises.
- Competitive capacity of traditional industries strengthened.
- Small open economies able to react to market changes.
- Ecosystem is compact and links between actors are tight.

5.1.2 Weaknesses

Governance complexity:

- Lack of coordination between different administrative and political levels. Cooperation between institutions is limited, as they are extremely jealous of their competences.
- Defragmented Innovation support system (many players, duplicating functions).
- Weak representation of the civil society.

Poor Communication:

- Very poor communication with stakeholders and failure of making clear what the potential benefits are and how they are going to be achieved.

Lack of connectivity between research centres, and between those and the enterprises:

- Interdisciplinary or interinstitutional cooperation between manufacturing and knowledge-transfer centres is not systematic.
- Traditional industry has low absorption capacity for innovation and is not motivated enough to cooperate with research.

Lack or -inefficient use of fund-difficult access to finance/capital-lack of financial support:

- Limited financial support instrument, currently oriented mostly to large companies.

Gaps in the education system:

- The most innovative enterprises found it difficult to find highly qualified human capital that can add real value. Local workforce profile is quite uniform: a standard scientific and industrial profile prevails, and there is scarce diversity of professional profiles, origins or gender balance.
- Insufficient number of graduates in STEM (Science, Technology, Engineering and Maths).
- Fragmented institutional structure of higher education.

5.1.3 Opportunities

Policy coherence and alignment with RIS3 priorities:

- Alignment of local strengths with RIS3 priorities.
- Implementation of an intelligent specialisation strategy that promotes resource concentration and exploits cross-sectoral synergies in innovation and the building of competitive advantages.
- Good awareness of the levels of operation of the RIS3 strategy at regional and national levels.

Cluster policies:

- Clusters and Technological Platforms, as they provide opportunities to create links between people, build local chains, find new solutions to production challenges and to have access to external markets.
- Existence of developed clusters is a precondition for the structural transformation, especially in the traditional sectors. Clusters benefit from access to specialised suppliers, service providers, use of resources, ideas, studies and other external factors.

EU funds:

- Available EU funding for business R&D and applied research.
- The participation and exploitation of the opportunities offered by European programmes and funds is fundamental to support the increase of activities and research in innovation of the private sector.
- Internationalisation of regional innovation system by increasing participation and presence in European networks and projects and by taking advantage of funding opportunities under Horizon 2020.

Increased cooperation within the innovation ecosystem:

- There is still much room for improving collaboration amongst the different innovation system actors: between the knowledge generation and transfer centres; between those ones and the enterprises; between companies themselves; with the public sector or the end-users. Interdisciplinary and hybrid cooperation enables, speeds up and widens the impact of innovation. Collaboration is a key skill, but it is a highly sophisticated competence that requires trust, learning and practice. Therefore, it is necessary to create the pre-conditions to collaboration, facilitating the ecosystem members to meet. The local/regional environment and neighbouring offer the adequate framework to raise propose complex projects with the participation of diverse actors, to create such cooperation culture.

Public consultation and dissemination:

There is a great opportunity to involved civic society in the design, implementation and monitoring of the RIS3, especially by including new communication channels e.g. social networks.

5.1.4 Threats

Ageing:

- Demographic ageing can have serious consequences if measures are not adopted to improve the human capital base and attract talent. The combination of ageing with talent drain could dangerously reduce the availability of highly qualified workforce in the region, limiting its growth potential.

Talent Drain:

- Fewer openings to allow the return of people who completed education or had working experience abroad. Policies to promote mobility should be accompanied by measures enabling the return.
- Failure to adopt to global changes and to switch to global mind-set.

Duplicities, inefficiencies and lack of policy coordination:

- The cooperation among the different levels of the Administration proves to be challenging. Dialogue between different government levels remains difficult, as of the levels of responsibility and control over territorial levels are a difficulty and have blurred lines. There are risks of policy duplicity and loss of efficiency.

Weak cooperation:

- A great obstacle for the improvement of the local ecosystem is the difficulty when creating and facilitating of stable connections between local actors. Often, even if there are possibilities and measures to develop this aim, people often tend to refuse the risk of building new partnerships. In turn this slows the spread of knowledge outside the environment where it is created and usually used.

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6 Conclusions

Europe is experiencing a period of momentous change. Globalisation, automation, decarbonisation, emerging and digital technologies: all have an impact on jobs, industrial sectors, business models, the economy and the society as a whole. It is indispensable to help Europeans adapt to these profound changes and to help the EU economy to become more resilient.

EcoRIS3 partnership believes that local and regional authorities have a crucial role to activate their potential for innovation, competitiveness and sustainable jobs and growth.

The SWOTs analyses carried out by the partners have highlighted that smart specialisation have helped to address many research and innovation challenges. However, in certain cases, the unbalanced participation of representatives from various sectors including research, industry, higher education, public administration and civil society undermined broader reform efforts. A major focus of the strategies was therefore to break down silos between various administrative bodies and improve multi-level governance.

Reform efforts need to be intensified in order to create an enabling business environment and an efficient and transparent public administration to foster innovation and increasing dynamism in product and services markets and improving conditions for the creation and growth of start-ups. At the same time, these efforts should also encourage investment in skills and human capital as well as making better use of clusters and support SMEs policy.

Member States are invited to reinforce the dialogue with all concerned stakeholders including regions and local authorities. They should also support the implementation of priorities identified in smart specialisation strategies by increasing the quality and openness of research and the higher education system, ensuring competitive funding of research, strengthening knowledge transfer, linking vocational education and training to innovation systems and contributing to skills intelligence and skills matching.

Less developed regions still face obstacles linked to fragmentation and sustainability of research and innovation infrastructures and often experience difficulties in building institutional and legal environments conducive to innovation. While smart specialisation is relevant to all regions, less developed regions require specific attention with regard to human capital, skills development and a more inclusive innovation process. Innovation actors in less developed regions are often not very well connected to the wider research and innovation community and global value chains

Regions in industrial transition face specific challenges, notably where this is associated with a lack of an appropriate skills-base, high unit labour costs and deindustrialisation. These regions may be unable to attract sufficient extra-regional investment to encourage innovation through the development of new supply chains, as well as sufficient commercial research structures and firms that could form the basis for broad industrial modernisation. Continuous support for mutual learning is therefore essential to adopt best practices, benchmark their structures against world-class standards and map the diversity of research and innovation capacities.