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RIS3 CHALLENGES: AN ANALYSIS OF THE NOUVELLE-AQUITAINE, EUSKADI, NAVARRE CROSS- BORDER SPACE

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RESUMEN

Este trabajo se apoya en el reconocimiento de la relevancia de plantear un análisis de las apuestas regionales para la competitividad regional como punto de partida para identificar los ámbitos de oportunidad empresarial que surgen en la confluencia de estas apuestas en los tres territorios de la Euroregión Nueva Aquitania Euskadi Navarra.

Estas apuestas estratégicas en innovación se identifican en las respectivas estrategias de investigación e innovación para la especialización inteligente (RIS3) y buscan generar ventajas competitivas en el territorio en base a las oportunidades y fortalezas existentes en el territorio.

El presente trabajo pretende ir más allá del propio análisis de las estrategias y analizar los retos que las RIS3 del espacio transfronterizo enfrentan en la implementación de la misma. El objetivo final de ese análisis es servir de punto de partida para entender dónde se encuentran las convergencias y los retos de innovación compartidas por las tres regiones para contribuir al desafío del crecimiento de la economía apoyándose en la cooperación transfronteriza como factor clave de competitividad territorial.

LABURPENA

Lan honen bidez, eskualdeko lehiakortasunerako apustuen azterketa planteatzeak duen garrantzia aitortzen da, Aquitania Berria Euskadi Nafarroa Euroeskualdearen hiru lurraldeetan apustu horiek bat egiten duten enpresen aukera-eremuak identifikatzeko abiapuntu gisa.

Berrikuntzari buruzko apustu estrategiko horiek espezializazio adimendunerako ikerketa- eta berrikuntza-estrategietan (RIS3) identifikatzen dira, eta lehia-abantailak sortzea dute helburu, lurraldean dauden aukeren eta indarren arabera.

Lan honen bidez, estrategiak aztertetik haratago joan nahi da, eta mugaz gaindiko espazioko RIS3ek estrategia ezartzekoan dituzten erronkak aztertu nahi ditu. Azterketa horren azken helburua da hiru eskualdeek partekatutako konbergentziak eta berrikuntza-erronkak non dauden ulertzea. Hau abiapuntutzat hartuz, ekonomiaren hazkunde-erronkari heldu nahi zaio mugaz gaindiko lankidetzaren lurralde-lehiakortasunerako funtsezko faktore gisa erabiliaz.

ABSTRACT

This work is based on recognition of the relevance of analysing regional priorities for regional competitiveness as a starting point to identify areas of business opportunity that arise at the crossroads of those priorities in the three territories that make up the Euroregion (Nouvelle-Aquitaine, Euskadi, Navarre).

These strategic priorities for innovation are identified in the respective research and innovation strategies for smart specialisation (RIS3s) and aim to generate competitive advantages in the territory based on existing opportunities and strengths.

The analysis tries to go beyond analysis of the strategies by seeking to understand the challenges facing RIS3 implementation in the cross-border ambit. The final objective pursued is to inform and provide evidence to reflect on the convergences and innovation challenges shared by the three regions and to contribute to the challenge of economic growth, relying on cross-border cooperation as a key factor in territorial competitiveness.

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1 INTRODUCTION

This work is carried out in the framework of the COMPET PLUS¹ project undertaken between 2020 and 2022, financed by the European Regional Development Fund (ERDF) through the Interreg V-A Spain-France-Andorra programme (POCTEFA 2014-2020)². The project's main aim is to encourage business competitiveness and innovation in SMEs in the cross-border space of Euskadi, Nouvelle-Aquitaine and Navarre and consequently to have two innovation platforms for collaborative work between 'driver' companies and supplier companies that can improve these economic flows within the cross-border context.

Previous initiatives such as Competitiv'eko³ also experimented with promoting cross-border business collaboration, approaching a methodology that considered comparative analysis of research and innovation strategies for smart specialisation (RIS3) as a necessary milestone, because "*interregional collaboration is fundamental to overcome fragmented innovation efforts and to ensure full exploitation of synergies in innovation capacities as well as possibilities for cross-fertilisation among sectors and technologies*" (Alcalde H. and Lorenz U., 2019). The authors also indicated that the analysis of RIS3s of the Euskadi-NouvelleAquitaine-Navarre cross-border space served as a relevant departure point for promoting cross-border collaboration and connection of regional priorities with business needs, and the materialisation of opportunities to work together in cross-border innovation.

This paper is based on that recognition of the importance of putting forward an analysis of regional commitments as a departure point to identify areas of business opportunity that arise where the three territories come together. These strategic emphases on innovation are identified in the respective RIS3s and aim to generate competitive advantages in the territory based on existing opportunities and strengths in the territory (Foray, D., Goddard, J., Goenaga, X., Landabaso M., McCann P., Morgan K., Nauwelaers C., Ortega-Argilés, R., 2012).

The territories make choices and set priorities based on such strengths, which involve different territorial policies (science and technology, industrial policy, territorial strategy, etc). These priorities aim to have a positive effect on the production fabric, rather than to prioritise just one part of it. Another major novelty of these strategies' focus is that the intervention in priority areas requires new policymaking modes, and one of the main challenges in this respect is to generate dynamics of interaction with the private sector to achieve the benefits of the prioritisation processes in what are called 'entrepreneurial discovery processes' (EDPs). The concept of 'smart specialisation strategies' proposes that entrepreneurs (in the broad sense, including companies, society, innovation system agents, etc) are better positioned to discover areas where they are likely to excel in a territory, taking into account their capabilities and production assets (Foray, 2013, cited in Estensoro and Larrea, 2015).

This analysis must also take into account the stage we are at in the experience of defining and establishing the RIS3 at European level. The exercise of comparative analysis carried out in the Competitiv'eko initiative in 2016 was based on a situation in which the regions, though on heterogeneous paths, were facing the challenge of setting in motion a strategy of such characteristics. After a course of six months those initial challenges gave way to new ones, which may constitute a departure point for reflection about how to approach cross-border collaboration.

This paper hence aims beyond specific analysis of the strategies and to analyse the challenges the cross-border space's RIS3s face when being implemented. The ultimate goal is to serve as a departure point to learn where the convergences and innovation challenges shared by the three regions are found, the purpose being to contribute to the challenge of economic growth supported by cross-border cooperation in innovation as a key factor of territorial competitiveness.

¹ Acronym of the project titled: Business Competitiveness and Innovation Platforms for Relocating Activities in Cross-border Space, Creation of Stronger Value Chains and Cooperation between SMEs and Driver Companies. This programme concluded with the creation of three cross-border meta-clusters: ADDITIVALLEY (additive manufacturing), INNOVMEDICA (customised medical devices) and BIG DATIA (artificial intelligence).

² The project was 65% co-financed by the European Regional Development Fund (ERDF) through the Interreg V-A Spain-France-Andorra programme (POCTEFA 2014-2020). POCTEFA aims to boost economic and social integration of the Spain-France-Andorra border zone. Its assistance concentrates on developing cross-border economic, social and environmental activities through joint strategies in favour of sustainable territorial development.

³ <http://www.competitiveko.eu/>

2 METHODOLOGY

The investigation was based on two research questions:

- What are the current implementation challenges of RIS3s in Europe and particularly in Navarre, Nouvelle-Aquitaine and Euskadi?
- What aspects of the comparative analysis of regional RIS3s of a European cross-border space can help connect regional capacities and priorities with business needs?

To answer these questions, the analysis undertaken was developed by following a six-stage methodology: 1) analysis of the state of the art of RIS3s in Europe; 2) review of the research objectives proposed in the paper; 3) preparation of the research; 4) regional analysis of the design and implementation of regional RIS3s in light of the identified challenges; 5) interviews with territorial experts; and 6) cross-analysis of the territories.

Graph 1 Research Methodology



Source: own production

The focus followed in this analysis results from a first review of the literature about innovation policies and specialisation strategies in Europe. That review supplied evidence that helped shape the study's initial research questions: the initial focus included an analysis of main elements of the three territories' RIS3s according to the European Commission's RIS3 Guide developed by Foray et al. (2012). However, the review did highlight the need to integrate the current RIS3 challenges in accordance with the academic literature and the experience of the regions in Europe.

Based on these challenges, a search and scan of reports was begun along with the collection and analysis of data from regional RIS3s and the preparation of operating guidelines for the analysis, which included a guide on information needs required to respond to research questions resulting from the analysis of the current state. The collection of reports, assessments and associated articles was done by territory. An analysis for each region was subsequently conducted, with reflection on progress in each of the RIS3 challenges identified in point 1. This material was later reviewed by regional experts in the three territories with extensive knowledge of the practice and theory of regional innovation policies in each territory. An open semi-structured interview was also conducted with those experts. Finally, a cross-comparison of the RIS3s of the three territories was done to learn how they evolve comparatively and with respect to the main RIS3 challenges in Europe at present.

3 CURRENT RIS3 CHALLENGES

3.1 Background

In 2000 the Lisbon Strategy made knowledge and innovation a key priority on the European policy agenda. The European Council held in Lisbon set a new strategic objective for the 2000-2010 decade: *“to become the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion”*.

Its central place in drawing up policies and actions at EU level was further strengthened in the 2020 Europe Strategy, the policy agenda of the European Union meant to improve competitiveness, social cohesion and regional development during the 2014-2020 period. At the same time, the EU's cohesion policy, which aims to reduce regional differences in Europe, focused on promoting and exploiting regional innovation. Since 2014 the European Commission has been pushing the Smart Specialisation Strategies (S3), which imply a new paradigm for innovation policies meant to generate competitive advantages in the territory based on existing opportunities and strengths (Foray, 2015). The aim of these strategies is to make innovation a priority for all the regions and to centre regional investment efforts on regional strengths. These strategies became an ex ante condition for use of European structural and investment funds to finance research and innovation, leading most regions to implement an RIS3 definition process starting in 2014.

These territorial strategies are based on making choices and setting priorities based on regional strengths. The priorities involve different policies of the territory (science and technology, industrial policy, territorial strategy, etc). Another of the main novelties of the specialisation strategies' focus is that *“priorities have been identified wherever entrepreneurs discover new activities”* (Foray, 2015). The entrepreneurial discovery processes are spaces where companies, society and scientific/technological agents can pool their knowledge and capabilities to discover new areas and opportunities.

3.2 RIS3 challenges

As RIS3 implementation has been experienced and advanced, the literature has also made progress, studying the challenges and problems that many regional, urban and local governments are seeing in their daily practice.

Some RIS3 implementation challenges have to do with: (i) the difficulty of developing bottom-up strategies (entrepreneurial discovery process); (ii) the necessary existence of capabilities and learning mechanisms linked to the respective implementation; and (iii) new governance modes (Estensoro and Larrea, 2016; Aranguren, 2018; Aranguren, M.J., Magro, E., Morgan K., Navarro N. and Wilson J., 2019).

Linked to the difficulty of developing bottom-up strategies, the entrepreneurial discovery processes have since the emergence of RIS3 garnered a great deal of attention due to how hard it is to set them in motion and their innovative nature. These processes are what distinguishes the RIS3 from traditional innovation processes; given their novelty and short time in practice, many RIS3 implementation challenges are associated to their development and deployment (Giannelle, C., D. Kyriakou, C. Cohen and M. Przeor 2016; Estensoro and Larrea, 2016; Hassink, R., and Gong, H., 2019; Hassink, R., and Gong, H., 2019).

Governance in the context of this report refers to what Giannelle et al. (2016) define as being “how the entire S3 design and implementation process is governed, including who is involved, the structures that are implemented and how decisions are made”.

Next, an analysis is conducted of the main debates that the scientific and empirical literature has identified as associated to these challenges, and in connection to the three phases that Foray (2019) summarises as the RIS3 policy process:

1. Identification of thematic priority areas;
2. Translating those priority areas into roadmaps for transformation;
3. Implementing the transformation activities in action plans.

These phases pose an alternative to the six RIS3 design phases identified by Foray et al. (2012) in the RIS3 Guide: (1) analysis of the regional context and potential for innovation; (2) establishment of a governance structure; (3)

production of a shared vision about the region's future; (4) selection of a limited number of priorities for regional development; (5) establishment of a mix of appropriate policies; and (6) integration of monitoring and evaluation mechanisms.

3.2.1 Identification of thematic priority areas

The selection of priorities indicates a direction of change in the transformation agenda for regional competitiveness. That identification poses challenges associated to the depth and form of those priorities, and also to the process of their selection. Foray (2015) stresses the delicate balance between defining very broad or focused challenges, because the former would make it hard to achieve clustering effects and the latter would exclude players who can be involved in the transformation process. There does not seem to be a clear direction in this regard, as indicate Aranguren et al. (2019) when examining different empirical studies on regional S3 experimentation. They hold that the lack of focus in the priority areas does not have to be a problem if they lend themselves to experimentation. They also indicate that some experiences have shown that overly broad emphases may be a failure if they are unable to convert priorities into viable projects.

One of the mechanisms established to determine regional priorities in the RIS3 definition process were the EDPs. The analysis of the RIS3 implementation practice revealed the confusion and problems it has generated for regional policymakers (Hassink, R., and Gong, H., 2019; Estensoro and Larrea, 2016; European Commission, 2012; Foray, 2015). First, as Foray (2019) indicates, because there is confusion between what is a participative process and an entrepreneurial discovery process. Second, because it does not distinguish a planning process from a process in discovery mode; owing to their nature, they pursue different objectives. The former aims to approach via planning a design process, while the latter aims to discover new horizons. Therefore, the priority determination phase as part of RIS3 planning should not necessarily set in motion a process in discovery mode; a participative process would suffice.

Regarding governance in this priority identification phase, it is the government that assumes a leadership role, due to its knowledge of the region and of its economy, competitive position and existing innovation capacities, endowing it with ample knowledge enabling it to set priorities for the region.

As for the participative processes of the priority identification phase, the European regions have been experimenting with different participative models and introducing tools and instruments. The regional governments have progressed in this knowledge, which is also key for RIS3 design. Gianelle (2019) cites and provides examples of some of the more common participative models such as working groups, associations and public/private committees, websites designed for participation and citizen consultation, as well as methodologies based on action research. Among the most common tools they mention SWOT analyses, studies on scientific, technological and economic trends, mapping of skills and players, and surveys of interested parties.

3.2.2 Translating these priority areas into roadmaps for transformation

This phase consists of defining the nature, extent and meaning of the investments for transformation. Considering the recent debate about the function in practice of the EDPs introduced in the previous paragraphs, it is in this phase of converting priorities into specific roadmaps where EDPs arise. Starting with this phase, entrepreneurial discovery becomes important for building and developing the transforming activity into each priority. That activity begins with determination of a roadmap that includes the direction of the change; it should therefore be built up based on the knowledge that different players possess, especially regarding the market and innovation opportunities, rather than by government decision or imposition (which would be equivalent to a top-down approach).

The governance aspects pose numerous challenges in this RIS3 phase: a larger number of players enter to form part of this phase and there is a change in decision-making, which in this phase does not lie entirely with public decision-makers (Aranguren, M.J., Magro, E., Morgan K., Navarro N. and Wilson J., 2019; Estensoro and Larrea, 2016; Gianelle, C., D. Kyriakou, C. Cohen and M. Przeor (2016).

First of all, the companies, clusters, universities, technology centres and organisations of civil society and governments (quadruple helix) are called on to participate in the EDPs (European Commission, 2012). But what are the results of such collaboration to date? The experience from traditional regional innovation policy has shown that not even tripartite coalitions (triple helix: governments, universities and businesses) have been shown to be well organised. So to assume that regional players collaborate and align their interests to a common goal is not yet

a reality and even less so when we consider new players or players with less experience, such as organisations from civil society and cities, respectively. Other challenges have to do with the potential positions of dominance or power of the participants and the participation balance.

Second, the government's role in the process varies with respect to what it is assigned in the priority identification phase (Aranguren et al., 2019). The government's role in this phase of the strategy changes and takes on a facilitating role that includes the task of including key players of a region and empowering those players to participate, leading the process in an open, transparent, responsible and effective manner, and evaluating the results. In this phase business and market knowledge becomes more important, to orient priorities toward transformation areas, whereby the integration of regional players is an especially critical task.

This facilitating role of regional governments requires the existence of internal capacities inside institutions so that it can be carried out (Giannelle, 2016). Some of those capacities are associated to working with new programmes and methodologies, facilitating regional networks and connections between players, or the ability to work with other administrations (Estensoro and Larrea, 2016; Aranguren et al. 2018). Giannelle et al. (2016) refer to the abilities and capacities needed to transform entrepreneurial knowledge into policy intervention. Among these abilities, the authors identify the existence of appropriate infrastructure for identification and interchange among interested parties (i.e. updated datasets, interaction platforms, etc), participative leadership methodologies for joint decision-making, the multidisciplinary method or an attitude not averse to risk linked to innovative behaviours.

The regional players should likewise have capacities to supply and contribute to these processes.

The RIS3 has allowed regions to make progress in their governance structures linked to innovation policies, even though the latter present different patterns depending on prior experience. Empirical studies thus suggest that regions with certain experience in regional innovation policies present dissimilar governance patterns, more dependent on their previous path, while regions with less experience have made more progress in creating effective and sustainable structures, considering that they started from a much more initial state (Aranguren, M.J., Magro, E., Morgan K., Navarro N. and Wilson J., 2019). In any case, both this phase and the next one (implementing the transformation activities) are governed by more decentralised governance systems which require greater coordination, monitoring and follow-up of projects and their contribution to the priorities.

3.2.3 Implementing the transformation activities in action plans

The regions are generally finding it difficult to materialise the priority roadmaps in projects and players committed to their development (Foray, 2019; Aranguren et al, 2019; Giannelle, 2016). This materialisation is actually what differentiates the regions that share similar priorities, because their materialisation is where the specific response is given to the opportunities and problems posed by the priorities per the specific realities of each region (and how they can respond to same). Such activities can cover multiple factors that include the adoption of new technologies and cooperation, etc.

During this phase the EDPs are still critically important for identifying information leading to the definition and implementation of projects. One hoped-for result of this phase would be that of defining projects that contribute to transformation as the result of an entrepreneurial discovery. Few projects, unconnected and not very innovative, could be indicative of a poorly formulated priority.

According to Navarro⁴, the practice of EDPs does not fully adjust to what might be implied by the respective name or suggested about them in the guides or seminal literature of RIS3 (Foray, 2015; European Commission, 2012). In the spaces created for their development, processes for the creation of entirely new companies, implying substantial novelties or discoveries vis-à-vis those heretofore existing in the region, are not directly generated or set in motion. He acknowledges that those spaces and entrepreneurial discovery processes are nevertheless vital for interchanging knowledge (about technologies, skills or qualifications, business models, future market needs, etc) through different kinds of agents (companies, knowledge organisations, government and civil society representatives), which may be key for setting in motion such innovative or discovery projects, to build up knowledge or contacts with possible allies for such projects or jointly develop some conditions or key factors (e.g. demonstration infrastructures) that can facilitate the development of such projects by companies.

⁴ M. Navarro, interview, 12 March 2020.

Navarro stresses that generally the real undertaking of such novel projects is soon carried out by companies, often individually, outside of such spaces. The government's detection of such entrepreneurial discovery projects may occur in the management of its programmes supporting R&D&I, because the company will usually present its project under such programmes, and per its definition of the specific project the government can see the respective linkage to one or another priority. Yet it is certainly possible that the company's innovative project is not presented in the calls for programmes of a regional government.

Giannelle et. al (2016) refer to the critical aspects of good governance that must be considered in this phase: project selection in public tenders; legislative and structural changes needed to generate an appropriate environment (education, taxation, etc); continual review of priorities to ensure that they respond to new realities and opportunities; outside cooperation, both to learn from other experiences and to enable cooperation with third parties; audits and state aid; and continual monitoring and evaluation to be able to reflect and improve.

4 RIS3 IN NAVARRE

4.1 Background

Navarre forms part of that group of regions with lengthy experience in determining strategic regional development plans. Therefore, as the EU begins to promote RIS3 in European regions, Navarre already has experience in regional strategy planning. Three distinct periods in RIS3 evolution in Navarre can be distinguished.

A first period, which consisted of determining and approving in 2010 the Plan Moderna, a middle and long term strategy plan that impelled change in the economic development model of Navarre toward a knowledge-based economy centred on people. That plan is considered the first RIS3 of Navarre, making the region one of the first to present an RIS3 and have it approved by the EC (Zabala Consulting and Universidad Loyola Andalucía, 2018).

Regarding the interregional networks, among which the cross-border ones can be found, as indicated in Orkestra (2015), where an analysis of the region's smart specialisation practices was conducted, the cross-border space was not considered an important interregional network for innovation. The only network the interviewees in that study were able to identify and mention was Campus Iberus (a consortium of the public universities of Navarre, La Rioja, Zaragoza and Lleida, which obtained the International Excellence Campus Prize). During this period, around eight clusters, called Moderna clusters, were operational, offering specialised services⁵ to the companies of each cluster.

The second period refers to the period in which the 2016-2030 update of Navarre's smart specialisation strategy, called the S3 of Navarre, was carried out. This plan was approved in 2016 and is meant to be an improvement and adjustment of the Plan Moderna, including an updated diagnosis of Navarre's competitiveness factors from a standpoint compared to other regions, in a participative and consensual process. The selection of strategic priorities and cross-cutting axes was based on this new diagnosis and carried out by the government. After a first period and a second period wherein RIS3 definition centred a large part of the political agenda in Navarre, during the second period and after approval of Navarre's S3 the subsequent years were marked by challenges stemming from the introduction and implementation of this strategy.

The third RIS3 period, starting in 2019, is characterised by the update of Navarre's S3 and implies above all an update of the entire implementation part, i.e. regarding the challenges and the control panel. After a three-year period, from 2016 to 2019, during which the strategy was set in motion, experimenting and working on its respective implementation, this new period addresses an update of the implementation.

4.2 The RIS3 of Navarre: S3 of Navarre

As described in the previous section, the reference document in the region is the S3 of Navarre, which was revised in Navarre and is an update of the 2016-2019 period of the Plan Moderna. This section will describe the main elements that describe it in accordance with the RIS3 stages proposed by Foray (2019).

4.2.1 Identification of thematic priority areas

During the 2016-2019 period the S3 of Navarre based the identification of thematic areas on the diagnosis of regional strengths and the region's progress according to a competitiveness model. That model established several result indicators for the region, indicators of intermediate performance (which do not reflect the region's final result, but help achieve it) and the competitiveness determinants concerning business behaviour and the region's specialisation (productive and technological). An evolving and comparative analysis was conducted with the reference regions of Navarre (those that share structural conditions similar to Navarre).

The evaluation of the S3 of Navarre published in 2018 considered that analysis adequate and established among the improvements the need for deeper knowledge of the sectors, analysis of the micro-business aspect for the case of companies with a certain significance in the region and the need to determine an information system to ascertain the impact of the government's direct action.

The S3 of Navarre distinguished the specialisation areas, the S3 priority areas, which can better drive the regional economy based on the diagnosis of the region's competitiveness factors. The strategic prioritisation distinguishes

⁵ Specialised training, international support, meetings between companies, meetings/alliances with other clusters, preparation of R&D&I projects, joint purchasing actions, joint communication and commercialisation.

between priority economic areas and cross-cutting axes or competitiveness factors. The economic areas represent sectorial areas where greater strengths are identified and the potential to generate new diversification and entrepreneurial opportunities in the implementation phase, distinguishing for each the bases of the existing regional strengths, the objectives and the vision to 2030.

Table 1 S3 thematic priorities of Navarre, objectives and vision

Thematic priority	Objectives	Vision 2030
Automotive and mechatronics	Transformation and specialisation More investment in R&D – own product 4.0 technologies	Navarre stands out for its industrial performance, improving its overall competitiveness and creating jobs
Food chain	Gain business scale, exports, strengthen value chain, add R&D&I value	Specialised in natural and healthy quality products; increase in employment and GDP
Renewable energies and resources	Reduction of fossil fuel and raw material consumption - Δ production of renewable energies / consolidation of emergent sectors	Navarre 2050 – no fossil fuel consumption
Health	Innovative ecosystem: improve arrival at market, Δ exports / new prototyping opportunities	Reference in R&D and services in biomedicine, provision of health services / attract professionals
Integral tourism	Enhanced professionalism, diversification and customised tourism offering	Unique reference destination
Creative and digital industries	Development of the sector, entrepreneurship and talent attraction	Creative territory, toward digitalisation

Source: S3 of Navarre

The cross-cutting axes or competitiveness factors are the areas which need to develop in Navarre to generate an environment that fosters innovation and competitiveness, deriving from the SWOT drawn up in the diagnostic phase. These areas are business development, R&D&I, infrastructures, public administration and taxation, and education and training.

The prioritisation was done by the government along with the steering committee and reflects its clear leadership focus. There was also a participative process, in which the challenges were shared.

The evaluation of the S3 of Navarre considers adequate the definition of the six vertical priorities and the five horizontal priorities and highlights the methodology and process followed. It also places value on the participative process followed, which sought to instil consensus and debate in the region. This evaluation focuses on the need to evaluate the results of that prioritisation.

The review of the S3 2020-2023 Challenges does not revise the priorities but rather reviews the roadmap and their materialisation.

4.2.2 Translating these priority areas into roadmaps for transformation

This is the scope of the RIS3 of Navarre, where more evolution can be seen since its approval in 2016. The S3 CHALLENGES are the work axes that address the transformation process linked to each priority. These challenges are the actions of deploying the strategy in the short and middle term, and constitute Navarre's main S3 implementation tool.⁶ They are set by the government, along with a proposed challenges team. The teams' leadership falls in the public scope (mainly in the different general directorates along with the public agencies), although the team also includes representatives of other socioeconomic agents of public/private nature such as universities, clusters and companies, etc. After the challenges team is set up, it first analyses whether it is necessary to include new members, to subsequently translate the challenge into concrete goals with specific actions and

⁶ As of March 2020, these challenges are in the process of approval.

indicators. The challenges team assumes responsibility for landing the challenge in specific objectives and setting out the roadmap for transformation.

During the 2016-2019 period, the priorities were embodied in 24 challenges, 11 of them corresponding to vertical priorities and 13 to horizontal priorities. With respect to the previous Plan Moderna, it streamlined the strategy emphases. The challenges were developed with teams of up to 49 managers from different departments and public enterprises, to coordinate 102 actions or programmes.

Table 2 Challenges of the S3 of Navarre, 2016-2023

PRIORITIES	CHALLENGES 2017/2020	CHALLENGES S3 2020/2023	
		Challenges	SDGs (Sustainable Development Goals)
Vertical priorities – SECTORIAL CHALLENGES	AUTOMOTIVE AND MECHATRONICS	1. Stimulus for electric vehicles 2. 4.0 transformation of Navarre's industry	CHALLENGE 1: INNOVATIVE AND EFFICIENT AUTOMOTIVE (NAVEAC) 8. 9 11 13
	FOOD CHAIN	3. Structure the food value chain 4. Emphasise healthy diet	CHALLENGE 2: ENCOURAGE RENEWABLES 8 9 12
	RENEWABLE ENERGIES AND RESOURCES	5. Lower fossil fuel consumption 6. Stronger wind-power sector	CHALLENGE 3: HEALTHY AND PROXIMAL DIET 7 8 9 13
	HEALTH	7. Promote the circular economy 8. More efficient health services 9. Development of personalised medicine	CHALLENGE 4: I 3 8 9
	INTEGRAL TOURISM	10. New niches – integral tourism offering	CHALLENGE 5: SECURE AND DIGITAL TOURISM 8 9 10
	CREATIVE AND DIGITAL INDUSTRIES	11. Creative and digital industries	CHALLENGE 6: AUDIOVISUAL AND ENTERTAINMENT INDUSTRY 8 9 10
Horizontal priorities – CROSS-CUTTING S3 CHALLENGES	BUSINESS DEVELOPMENT	12. Clusters for innovation and competitiveness 13. Increase in average business size 14. New business management culture 15. Support for strategic projects of Navarre 16. Improved financing for strategic projects	CHALLENGE 7: INNOVATION IN LOCAL COMMERCE 8 9 10
	R&D&I	17. Commitment to R&D&I 18. Technology transfer to companies	CHALLENGE 8: SUPPORT FOR THE BUSINESS FABRIC 9
	INFRASTRUCTURES	19. Improved communication and regional competitiveness 20. Economic development at district level	CHALLENGE 9: INNOVATIVE OUTPUT 8 9
	PUBLIC ADMINISTRATIONS AND TAXATION	21. Administrative agility and proximity 22. Change of Navarre's external image	CHALLENGE 10: MORE DIGITAL COMPANIES AND ADMINISTRATION 9

		23. Navarre Smart Region project for public innovation		
	EDUCATION AND TRAINING	24. Vocational training close to companies	CHALLENGE 11: ENERGY TRANSITION	4,5,8,9,10
	SUSTAINABLE NAVARRE		CHALLENGE 12: INDUSTRIAL STRENGTHENING AND ROOTING	7, 11, 12, 13
	COHESIVE NAVARRE		CHALLENGE 13: BOOSTED EXPORTS	8, 9
			CHALLENGE 14: DEVELOPMENT, TALENT ATTRACTION AND RETENTION	5, 8, 9, 10
			CHALLENGE 15: NEW BUSINESS AND LABOUR RELATIONS MODEL	8, 9

Source: own production, based on Sodena

For the 2020-2023 period, a first version of the revision of the S3 challenges was approved in February 2020 and later modified in reaction to the COVID-19 crisis. These new challenges indicated in Table 3 are thus the adjustment of the smart specialisation strategy to the specific opportunities and needs of Navarre as a contribution to the 2020-2023 Reactivate Navarre (Reactivar Navarra – Nafarroa Susperatu) Plan (plan for Navarre's response to the COVID-19 crisis). This revision does not imply any change to the sector-related and cross-cutting thematic priorities, but rather an adjustment of the 2020-2023 S3 Challenges so that they coincide with the proposals made from the S3 area to the Reactivate Navarre Plan.

A total of 15 S3 challenges were identified. Compared to the previous period, the lower number of challenges, down from 24 to 15, stands out. The proposed teams and the landing of each challenge and its respective roadmap must still be addressed. Table 2 reflects the main challenges, though their realisation and specific objectives have yet to be defined. With respect to the previous period, it can be seen that these new challenges include support for the commercial sector, which has been especially hurt by COVID-19 (see challenge 7).

One of the novelties that can be appreciated in the analysis of the challenges and their overall aims is the link established with the 2030 Agenda, whereby each challenge is connected to its contribution to the different Sustainable Development Goals (SDGs). The challenges thus present an orientation of Navarre's innovation policy which takes sustainable development into consideration and acknowledges Navarre's role in its contribution thereto. That Agenda sketches a vision of the future of humanity and the planet for the year 2030. The 2030 Agenda sets objectives in five critical areas (5 Ps): people, planet, prosperity, peace and partnership. The 2020-2023 challenges contribute above all to the prosperity area and within it more intensely to SDG 8 (promoting sustained, inclusive and sustainable economic growth, full productive employment and decent work for all) and SDG 9 on industry, innovation and infrastructure.

4.2.3 Implementing the transformation activities in action plans

This phase consists of mobilising and coordinating financial instruments with different objectives (R&D, infrastructures, etc) and assessing their projects, to obtain information about the projects and the direction in which they are headed.

In Navarre, the challenge teams are in charge of converting the general aim of each challenge into more specific objectives and actions.

Actions corresponding to the 2016-2019 period were classified according to the classification of instruments that the Regional Innovation Monitor uses to examine innovation policy instruments. The instruments are classified in research promotion calls, science/business cooperation measures, human resource support measures for C&T, support for business R&D and innovation, measures to support the innovation environment, demand innovation policies and others. The analysis of the actions included in the challenges, as the main tool for implementing the classification of these instruments, shows some interesting conclusions for the 2016-2019 period:

- The implementation of the challenges concerning competitiveness factors or vertical priorities was achieved above all via two kinds of instruments: the support measures to promote a suitable environment for innovation, especially by stimulating and developing cluster initiatives; and the intense approach to determining and deploying government strategy plans (in the areas of industrialisation, entrepreneurship, internationalisation, social economy, science and technology, energy, broadband, vocational training and climate change) as a key tool for implementing the competitiveness factors;
- The implementation of vertical challenges or economic areas was achieved above all by means of measures to promote R&D and business innovation and to reinforce the environment to favour innovation and the business ecosystem.
 - Standing out among the former are programmes meant to encourage development of projects in different economic priority areas, actions to boost cooperation in different value chains and cooperation between business and science;
 - As for the measures meant to create a favourable environment for innovation, the efforts to create specialised infrastructures stand out (installations for young farmers, accelerators for technological centres and research infrastructures), along with awareness networks such as platforms, etc;
- When implementation of the vertical priorities is analysed on an individual basis, it can be seen that even though implementation measures to encourage business R&D prevail, some priorities focus on the implementation of measures to promote the innovation environment. For example, the strategic priority of promoting the circular economy also focuses on maintaining some infrastructures that facilitate the adoption of efficiency measures for resources (offices, maintaining municipal associations). The priority given to new integral tourism offering niches also centres on underpinning certain structures, such as, for example, the tourist attention network and support for regional projects such as Senda Viva.

The *Balance of the Smart Specialisation Strategy of Navarre – 2016-2019* produced by Sodena identifies the main good practices and challenges of the implementation phase.

Standing out as positive aspects are interdepartmental collaboration in development of 70 percent of the challenges, improved interdepartmental cooperation, the start of public/private collaboration with intermediate institutions (clusters, development agencies, etc), the adjustment of financing calls to support thematic areas, more resources in some areas and the setting in motion of the strategic platform as a body that gathers information from companies and institutions on the vertical priorities.

As challenges, they identify the need to simplify the number of challenges, strengthen the coordinators' leadership, improve coordination between challenges and public plans, review and monitor the objectives and evaluate the policies. At present, and for the 2020-2023 period, challenge teams have been set up, though their eventual work on determining actions is still pending.

4.3 RIS3 governance

The governance designed in 2016 is still maintained. It is distinguished by the existence of three working areas in the strategic and decision-making scope of Navarre's S3 and one in the area of support and stimulation.

In the strategic area, a first advisory body is defined, with no broadly participated decision-making capacity representing the quadruple helix, the S3 Strategy Platform of Navarre. It usually meets once a year, gathering about 140 organisations.

A second body is the Public Coordination Committee, an interdepartmental body focused on competitiveness factors and on ensuring coordination and tracking of different policies from government departments associated to the strategy.

The Management Committee is the executive management body for S3 in Navarre. It comprises one executive representation of the government and several representatives of the quadruple helix. It is in charge of validating the strategy (vision, aims, priority areas, cross-cutting factors, etc) so it can be submitted to the Government Council for respective approval. It also assumes the function of monitoring and follow-up.

In the support and stimulation area, the Technical Coordination Team managed by Sodena notably provides support to the strategy in the areas of technical assistance, support to management entities, S3 follow-up and monitoring and communication.

The thematic desks defined in the Plan Moderna became the S3 Challenges Teams, seeking more emphasis on these entrepreneurial discovery spaces whose focus was too broad. They are spaces meant to identify the roadmap of the priorities and action plans, hence the formal space for EDPs to occur. As such, they should seek the participation of major regional players in the detection of newly emerging niches of opportunity.

According to Sodena data on the balance of the S3 in Navarre, during the 2016-2019 period the governance bodies in the strategic and decision-making area were above all set in motion: the Management Committee, the Public Coordination Committee and the Strategy Platform. As the main executive body, the Management Committee had more representativeness in terms of meetings and working groups, especially in the first year of existence of Navarre's S3. The Public Coordination Committee met twice a year, the Strategy Platform once.

4.4 Monitoring system and evaluation mechanisms

Navarre's S3 establishes different follow-up and monitoring mechanisms. There is a control panel to monitor progress in the region of the main competitiveness factors set out in the diagnosis. This control panel, which Sodena updates on a half-yearly basis, reflects the performance of 26 regional indicators, 6 latest objectives concerning quality of life, sustainability and prosperity, and 20 intermediate indicators associated to regional competitiveness factors. In May 2018 the control panel sketched out a positive evolution of the region's performance in terms of quality of life, sustainability and prosperity. However, the data reveals a certain delay in attaining the final regional objectives regarding income distribution (indicator of the quality of life competitiveness factor). Also, the region has experienced certain delays in fulfilling the educational dropout objectives (indicator of the education and employability competitiveness factor), R&D&I investment and export volume (indicator of the business development competitiveness factor).

A specialisation control has also been established to monitor progress on the different vertical priorities; it measures the contribution of each specialisation area. In 2018 Sodena presented the monitoring of the budget, actions and results of the challenges in 2017.

The aim of the territorial deployment is to measure progress of the strategy in the sub-regional area. For their part, the challenges will be actions monitored in terms of execution and development of the respectively assigned budgets. Finally, the government's different strategy plans will include their own monitoring tools.

The evaluation of Navarre's S3 spotlights the need to conduct an analysis of the effectiveness of the resources invested per challenge, and also, especially, to follow the activity carried out by the clusters and their contribution to the specialisation.

5 RIS3 IN NOUVELLE-AQUITAINE

5.1 Background

The course taken by Nouvelle-Aquitaine (NA) in planning innovation strategies at regional level is relatively young. The experience of French regions in determining innovation policies dates to the implementation of the Regional Innovation Strategies (RISs) during the 2007-2013 programming period. When drawing up these strategies, the regions became very familiar with their innovation ecosystem and existing regional governance (Pelletier, 2017).

In 2015 the state⁷ awarded French regions powers in economic development, assigning them the production of a strategy for economic development, investment and internationalisation along with a vision of the region's development. Those strategies are the so-called SRDEII⁸ or Regional Scheme for Economic Development, Innovation and Internationalisation. They determine the regions' roadmap in terms of assistance for companies, such as support for internationalisation, property investment and innovation, as well as guidelines associated to the appeal of the regional territory. They also include a section devoted to the social and solidarity economy. This strategy is prescriptive, meaning that it is imposed on other local authorities in terms of economic development. France's 12 regions were required to adopt their SRDEII before 31 December 2016.

This strategy should be complementary to other strategies; its development must be participative and its approval is by the French state's representative in the region, to ensure the coordination of national interests.

In 2015, after the territorial merger and reform, the three historic regional councils of the Southwest (Aquitaine, Limousin and Poitou-Charentes) came together to constitute a new region in a new regional order in France. This entailed the difficulty of coordinating and understanding the flows of this large territory, as well as its different internal features.

The RIS3 of the French regions is associated to a more comprehensive framework of regional public policies, such as those associated to research and innovation, examples being the SRDEII strategies and the plans for higher education, research and innovation (SRESRI) (Pelletier, 2017).

5.2 The RIS3 of Nouvelle-Aquitaine: the SRDEII

The RIS3 of NA is understood to be a furthering and consolidation of the SRDEII and is linked to the EFDF programming periods. The SRDEII mainly addresses companies and should be complemented by other strategy documents and regional plans adopted after the SRDEII, which should take into account the orientations and priorities set out therein. Those plans are the regional plan for higher education, research and innovation (SRESRI), the regional plan for development of capacity-building and orientation of vocational training (CPRDFOP) and the regional plan for sustainable development and equality of territories (SRADDET).

The RIS3 of the 2014-2020 Operative Programme for the three regions it covers is therefore now in force, and the SRDEII is the reference document in Nouvelle-Aquitaine. The preparation of the RIS3 corresponding to the new 2021-2027 programming period is being prepared.

5.2.1 Identification of thematic priority areas

NA is the first-ranked region in area and third-ranked in terms of inhabitants in France, implying a challenge when it comes to identifying the territorial innovation capacities of the three regions which before 2015 were autonomous. The region's RIS3 strategy responds to the different innovation capacities existing in the territories of Aquitaine, Limousin and Poitou-Charentes.

The Regional Council is the authority responsible in its territory for setting the priorities in terms of economic development, i.e. for drawing up the SRDEII. This was done in a participative process that consisted of consulting the interested local authorities (metropolitan Bordeaux, conurbation communities, communities of municipalities, departments) and players in the regional economy. This consultation consisted of five workshops, one

⁷ NOTRe (New Organisation of the Territory of the Republic) Law of August 2015.

⁸ Schéma Régional de Développement Economique, d'Innovation et d'Internationalisation (SRDEII) de Nouvelle-Aquitaine.

questionnaire, contributions and specific working groups in which a total of 8,000 people participated; also, more than 1,500 contributed to developing the SRDEII.

This plan identifies four priority questions, seven action principles and nine strategic orientations:

Table 3 Priority questions, action principles and strategic orientations of Nouvelle-Aquitaine

Priority questions	Action principles:	Strategy orientations
<ul style="list-style-type: none"> • Creation of dynamic ecosystems • Innovation and competitiveness • Joint development of territories • Complementarity of efforts at the service of economic development 	<ol style="list-style-type: none"> 1. Creation of employment 2. Balanced regional planning 3. Sustainable development 4. Search for simplification 5. Broad vision of the undertaking 6. Gender equality 7. Desire for permanent cooperation with local interested parties 	<ol style="list-style-type: none"> 1. Anticipate and support regional transitions. Support digital transformation. Promote ecological and energy-related transition. Promote mobility and smart transportation. 2. Continue and strengthen the policy to support priority areas. 3. Improve industrial performance of regional enterprises and implement the Factory of the Future. 4. Speed territorial development through innovation. 5. Strengthen the territorial economy, entrepreneurship and the territory's network. 6. Anchor for the long term the different forms of social and solidarity economy in the regional territory. 7. Support change, reactivation of territories and companies. 8. Boost internationalisation of companies, ecosystems and the appeal of the territories. 9. Develop the ecosystem of corporate finances.

Source: SDREII

The RIS3 strategy of NA is based on the action principles of regional intervention, applied to all fields of regional action: the aim to create jobs, a vital lever for social cohesion and the fight against poverty; regional cohesion in terms of economic dynamics; respect for sustainable development, bearing in mind at the same time the economic, environmental and social aspects; a broad view of the undertaking that considers all initiatives that create activity and employment, no matter what the field of activity or legal structure; gender equality; the search for simplification and efficiency in regional actions; permanent cooperation with other public institutions and private sector representatives to enable better coordination and approval of the scheme.

5.2.2 Translating these priority areas into roadmaps for transformation

The strategy is built upon nine strategic orientations of thematic nature, constituting the strategic priorities of the RIS3 of NA. Two of them are cross-cutting: regional finances and coordination of regional players (orientations 5 and 9). Also, at thematic level orientation 1, concerning digital, energy, ecological and mobility transformation, is cross-cutting. Orientation 2 also corresponds to the vertical and support priorities for specific areas of sector specialisation of the territory. Finally, the others are cross-cutting priorities concerning factors of competitiveness, such as, for example, territorial cohesion, innovation and appeal of the region, etc.

Each priority is deployed in a series of strategic axes that indicate the specific objectives of each priority (see Table 4). The indicators and expected impacts are defined for each objective.

Table 4 Details of priorities of Nouvelle-Aquitaine

Strategic orientations	Strategic axes
1. Anticipate and support regional transitions: digital transformation, ecology, energy, mobility and intelligent transport	<p>Digital transformation:</p> <ul style="list-style-type: none"> Develop a new digital culture Structure and strengthen the offering by digital transformation Stimulate innovation and development of the circular economy Lead support for SMEs Digital transformation at the scale of economic development operators <p>Promote the transition in ecology and energy:</p> <ul style="list-style-type: none"> Speed development of mature companies Encourage development of the circular economy Make NA a territory with new ecology and energy transition models Support supply chains <p>Mobility and intelligent transport:</p> <ul style="list-style-type: none"> Make the region a pilot territory, innovating in mobility solutions Promote international supply chains Stimulate innovation and networks between players (AMI, project calls, etc) Introduce mobility bonuses
2. Continue and strengthen the policy of supporting priority areas	<p>Consolidate and deploy regional priorities (*):</p> <ul style="list-style-type: none"> Organise connection of regional and local ecosystems Augment regional resources and powers. Promote access to markets Strategic associations (contracts) with key players
3. Improve industrial performance of regional companies and implement the Factory of the Future	<p>Raise awareness of companies, detect projects and needs in the 'factory of the future'</p> <ul style="list-style-type: none"> Structure and strengthen the offering, service and experience available for the economic fabric Modernise the production tool to include new technological and organisational knowledge Get the ecosystem moving – the ecosystem of the 'factory of the future'
4. Speed development of territories through innovation	<p>Raise awareness and promote the innovation process with students, creators, leaders of regional economic development projects</p> <ul style="list-style-type: none"> Encourage focuses on collaboration and association between regional innovation players Include the customer/user relationship as a factor of successful innovative projects
5. Strengthen the territorial economy, entrepreneurship and the network of the territory	<ul style="list-style-type: none"> Strengthen the creation/recovery of very small enterprises in the territories Support change and structuring of very small businesses Maintain the activity of very small enterprises, anticipating successions Organise dialogue between players in the territory

6. Long-term anchoring of different forms of social and solidarity economy (SSE) in the regional territory	Support creation of SSE enterprises Boost cooperation among players Sustainable SSE business activity, acquiring adapted financial tools Recognise and encourage social innovation
7. Support the return and resurgence of territories and companies (solidarity among territories)	Identify relevant territories for collective action Build suitable interventions systems Configure a system for regional territorial oversight and economic and prospective intelligence
8. Enhance the internationalisation of companies and ecosystems and the appeal of the territories	Increase the number of regional exporters and develop business volume, reaching international level Make NA an attractive region for companies and talent Strengthen the international opening of sectors and ecosystems Develop economic intelligence Position the region as European leader in R&D
9. Develop the ecosystem of corporate finance	Consolidate and build the first support and assessment on financing questions Strengthen corporate finance Stimulate regional financial activity

(*) See the sectorial priorities in Table 4

Source: SDREII

Each priority sector has an established roadmap that includes the specific affected sectors, business figures and the region's aim in that area.

The following table summarises some of that information:

Table 5 Vertical priorities of Nouvelle-Aquitaine, areas of excellence and roadmaps

Vertical priorities of NA	Areas of excellence/sectors	Specific support plan/Strategy Committee leader
Aeronautics, space and defence sector	Helicopter turbines, landing gear, high-end commercial aircraft, aircraft batteries and high-performance composite materials. Propellers, aerial systems and radars, military aircraft, dissuasive weapon systems, atmospheric re-entry technologies, remote sensing and Earth observation. Drones, aircraft maintenance and interior design.	Plan Bastié 2022
Material chemistry	The chemical industry. The sector of plastics, elastomers and composite materials. The sector of paper, cardboard and wooden panels. The sector of ceramic materials.	Not available Aquitaine Chimie Durable
Health	Development of health areas and fight against medical deterioration. Challenges of medicine and technologies of tomorrow.	Roadmap for Health, 2018

	Innovation and competitiveness of health enterprises. Environmental health and prevention.	
Silver Economy	Health and medical/social sector; autonomy and at-home support; housing and urban development; prevention, good ageing and health tourism; adapted mobility and transportation.	Regional roadmap for the silver economy
Energy, storage and batteries	Energy storage cluster	Not available
Sustainable construction	Sustainable construction corresponds to the double challenge of the energy and ecology transition via very specific questions: water network, pre-landscaping and biodiversity, waste management, residents' wellbeing, transportation networks, etc.	Strategic roadmap for sustainable construction (in line with the Néo Terra roadmap for transition in energy, ecology and agriculture)
Forests, wood, paper	Forest, wood and paper sector: <ul style="list-style-type: none"> - Forestry and cutting - Sawmills and carpentry - Paper and cardboard industry - Carpentry work 	Not available
Sector of leather, luxury goods, textiles and handicrafts	Handicrafts and living heritage The leather/footwear sector The textile/clothing sector Ceramics and ornamental tableware	Roadmap for textiles and luxury leather handicrafts 2020-2022
Blue growth	Marine fishing and aquaculture; shipbuilding and nautical industries; surfing sector; coastal tourism; ports and port infrastructure; coastal vigilance and protection; renewable marine energies (RME); marine biological resources; marine biotechnologies; exploration of deep waters and multipurpose marine platforms.	Blue growth in Nouvelle-Aquitaine
Photonics, electronics and laser, microwaves	Development of laser sources, power lasers, new generation fibre optics, very clear microwave components (electromechanical microsystems, power amplifiers, antennas, filters) as well as complete systems (radars, radio-navigation).	Not available
Agriculture, food industry and fisheries	-	Neo Terra
Digital sector	Cross-cuts all areas of the economy, but with focus on videogames, education, electronic health, smart mobility, free software, artificial intelligence and robotics, cybersecurity, collaborative economy and connected commerce.	Digital roadmap
Tourism	Wine tourism, cuisine, know-how tourism Wellbeing (hydrotherapy) Mountain areas in all seasons River cruises Prehistory	Sustainable tourism roadmap
Creative and cultural industries	Books, modern music, cinema and audiovisual sectors	Not available

Source: *Entreprises Nouvelle Aquitaine*

Blue growth is a focus (not a sector) which makes the ocean an asset for the development of Nouvelle-Aquitaine.

Many of the priorities are supported by collaborative institutions such as professional associations or clusters. Some of those institutions play a prominent role in the regional strategy committees for each priority. The function of those committees is to set the entrepreneurial discovery process in motion by galvanising meeting spaces for all socioeconomic players in that area, carrying out strategic oversight and observatory work, as well as supporting innovation activities with innovation resources such as, for example, the incubation of innovative industrial projects.

5.2.3 Implementing the transformation activities in action plans

Innovation is mainly addressed in the support for strategic sectors and to boost development of the territories. The public action is focused in accordance with the SRDEII analysis carried out by the Regional Innovation Monitor Plus of the European Commission:

- Enhance companies' innovation capacities;
- Dominate key technologies;
- Encourage non-technological innovation (use, design, process, management, etc);
- Increase technology transfers;
- Augment skills;
- Encourage a culture of science, technology and business spirit;
- Develop an offering of financing tools adapted to the needs of innovative companies;
- Coordinate a clearer innovation ecosystem.

The plan includes a reflection on cooperation between public authorities, which is needed for the plan to be implemented. It includes the distribution of powers of local authorities regarding assistance for companies, distinguishing between regional, departmental, municipal and metropolitan area levels. It also includes cross-border cooperation as a lever for economic development, along with all interregional cooperation.

5.3 RIS3 governance

The governance system sets out the terms for collaboration among the different administrative levels in the region and the economic players. At the level of administrations, each public authority, both at municipality and department level, and following the indicated procedure, can decide on the implementation of regional actions; they can also be assigned the delegation of certain measures agreed on with the region's services. The region is not obliged to respond favourably to such applications. But when it does, the document also establishes the procedure to follow.

At the level of economic players, collaboration with the clusters, competitiveness poles, large groups and groups of companies and professional associations is envisaged, as is collaboration with the chambers and the Agency for Development and Innovation of Nouvelle-Aquitaine (ADI NA).

To manage the SRDEII, the plan identifies the main bodies involved and stresses the complementary nature of their functions. For overall management of the plan, the following bodies have been established:

- The Conference for the Economy (*La conférence de l'économie*), gathering all players in the territory's economy to inform about the deployment and results of the SRDEII;
- The Territorial Conference on Public Action (*La Conférence Territoriale de l'Action Publique – CTAP*). Meets annually for an annual review of information about the SRDEII's deployment and results. The CTAP provides its opinion about the assigned orientations, pursued by the SRDEII;
- The Plenary Assembly of the Region (*l'assemblée plénière de la Région*), which assures its function of orienting the SRDEII, based on the comments.

To address monitoring and evaluation, the following bodies have been established:

- The Strategy Committee chaired by the region meetings twice a year. It is composed of the vice-president of the region in charge of economic development, the sub-directors-general of the poles covered by the SRDEII, the designated manager per 'orientation', representatives of other regional (SRADDET/SRESRI), European (OP ERDF) and national (CPER) schemes/programmes, the metropolitan representative for the economy and a conurbation representative. Its role is to endorse re-orientations proposed by the operative committees to orient the scheme or following the evaluations;

- The Operative Committees determined for each SRDEII priority to follow and galvanise the plan, comprising the ecosystem players linked to the orientation.

5.4 Monitoring system and evaluation mechanisms

The evaluation and monitoring system establishes the legal obligations with respect to the management and evaluation of the SRDEII and the proposals made by the region.

It is the region that assumes leadership and establishes the commitment to extensively involve the interested parties in the economic action, with a view to transparency and rendering of accounts.

6 RIS3 IN THE BASQUE COUNTRY

6.1 Background

The Basque Country has a dense public administration structure comprising three political and administrative levels (regional, provincial and municipal). The Basque government has particularly promoted the creation, development and consolidation of the regional innovation ecosystem. One important aspect is the fact that the Basque region has a tax authority (Cooke, 1998). This particularity has enabled its government to develop regional structures that support regional innovation policies. Besides being able to use public spending outlays, the tax system can also be used to gather additional funds, when necessary. This has enabled the financing of programmes meant to develop the supply, i.e. support for the Research and Technology Centres that play a role in transferring technology in key areas for the Basque region, as well as support for a set of programmes meant to finance innovation in companies.

Since the early years of its autonomous management, the Basque government has made significant progress in the area of innovation, supporting companies that were facing a great deal of hardship due to the negative impact of the economic crisis (Gómez Uranga and Etxebarria, 2000). This high degree of autonomy has enabled the Basque government to work on promoting the innovation ecosystem through technological development. Along the way, the policies for science, technology and innovation have been supported by the orientation of programmes and financing to generate a complex lead network. It is generally possible to identify four major stages in development of the Basque innovation ecosystem:

- Creation of capacity (1980-1996): due to restructuring of the industry and the aim to achieve higher levels of competitiveness, the Basque government's first steps were determined based on: a technological offering based on infrastructure creation and the promotion of research and technological development in companies;
- Combination of supply and demand (1995-2005): the policy integrated the scientific and technological system and the Basque Technology Network was created, which held that universities were among the main agents for the development of the scientific policy. The overall goal was to position the Basque Country at the top of the European ranking for matters involving science, technology and innovation. The first strategy objective was to boost specialisation of the technology centres in different technological areas deemed important for the Basque Country's competitiveness;
- Diversification and orientation to results (2005-2012): this period focused institutional actions on diversification of companies and social competitiveness with a view to creating value. The common denominator of this period is science and technology policy being more oriented toward obtaining results; the concept of innovation was also expanded, with emphasis on technological as well as non-technological innovation and on the areas of commercialisation, organisation and human capital etc;
- Smart specialisation (2013-2020): the smart specialisation stage is oriented toward research convergence stimulated by demand from clients with the push or diversification of technology, centring on research driven by progress in science and technology. One of the differentiating features of this stage is the focus of the science, technology and innovation system on areas of economic and strategic importance for the country.

6.2 RIS3 in the Basque Country: PCTI 2020

The Basque Country has lengthy experience in designing and implementing scientific/technological policies that follow the policy frameworks and strategies determined in Europe. RIS3 development in Euskadi was thus coordinated through the Science, Technology and Innovation Plan 2020 (PCTI – *Plan de Ciencia Tecnología e Innovación 2020*), thereby responding to the promotion and demands of the EU for the regions to begin their new periods of policy design regarding smart specialisation.

The first phase of the Basque RIS3 concentrated on designing this new strategy and took place during the year 2014. It analysed and identified the priorities to include, leading to generation of the 2020 Science and Technology Plan. The second so-called implementation phase was carried out in 2015, establishing new governance mechanisms, basic rules for the strategy and committees for the entrepreneurial discovery process.

In 2016 an Orkestra study analysed the first implementation phase of the new specialisation strategy of Basque industrial strategy, focusing on its main novel features, principally the governance mechanisms and the setting in

motion of processes to facilitate entrepreneurial discovery in three strategic priority areas and four niches of opportunity (Aranguren, Morgan, Wilson, 2016).

The implementation and evolution phase encompasses the 2016-2019 period. The main aspects were the evaluation of the management committees and redefinition of priorities; cross-cutting problems were also identified and evaluation mechanisms set in motion.

During the first half of 2019 (Aranguren, M. J., Magro, E., Morgan, K., and Wilson, J., 2019), another analysis was done; its aim was to explore what had happened since then with a view to understanding how the EDPs that began between 2014 and 2016 had evolved in the three previous years. The analysis, based on interviews with 28 key players in the RIS3 process and on the examination of different documentary sources, therefore centred on the 2016-2019 period and positioned the Basque RIS3 with respect to the main challenges of these strategies at European level. Indeed, an exercise of reflection on the desirable changes to ensure the strategy's future success raises an important question, not just for the Basque Country but also for European and international debate about the implementation of smart specialisation strategies.

Likewise, in 2019 the underpinnings of the approach for the 2030 Smart Specialisation Strategy were put in place, although the strategic bases have yet to be made public. However, it has been indicated that there will be strong linkage to the SDGs, and that an evaluation of priorities will be carried out and that it will count strategic initiatives linked to transitions (Aranguren et al 2019).

6.2.1 Identification of thematic priority areas

The nature of the live strategy of the Basque RIS3 opens the possibility of a change in configurations of the priorities. Aranguren et al. (2019) thus indicate that the current dichotomy between strategic priorities and niches of opportunity might be moving toward distinction between priorities based on existing capacities grounded in engineering (advanced manufacturing and energy, with the circular economy as a cross-cutting element), emergent priorities grounded in emergent capacities and certain shared knowledge bases (biosciences/health and diet), and strategic priorities grounded in urban ecosystems and symbolic knowledge bases (urban habitat and creative and cultural industries).

The strategy lines of the RIS3 are: to enhance the smart specialisation strategy by means of science, technology and innovation to meet the social challenges of Euskadi; to strengthen industrial leadership through public/private collaboration; to boost the excellence of the Science, Technology and Innovation System and guarantee the development of human capital in science, technology and innovation. They are complemented by two cross-cutting axes: opening and internationalisation of the Science, Technology and Innovation System; and an innovative and connected system. The Basque RIS3 also counts gender equality as a horizontal element.

Table 6 Priorities and niches of the RIS3 of the Basque Country

Priorities	Areas of excellence/sectors	Specific support plan/Strategy Committee leader
Advanced manufacturing	<p><u>Working lines</u>: MATERIALS: materials and their transformation processes. PROCESSES: Manufacturing processes. MEANS: Products and production tools. SYSTEMS: TEIc tools to support the entire value chain.</p> <p><u>Facilitative technologies</u>: Advanced processes and materials; flexible, smart and effective manufacturing systems; digitally connected factories; energy efficiency.</p>	Basque Industry 4.0/ Basque Digital Innovation Hub
Energy	<p><u>Working lines</u>: Electric mobility; energy efficiency in industry; electric grids; thermoelectric solar; wind power; wave energy; oil and gas.</p> <p><u>Facilitative technologies</u>: storage, power electronics.</p>	Energibasque/Steering group coordinated by the Energy Cluster

	<u>New value chains</u> : offshore energy; smart grids; resource-efficient manufacturing.	
Biosciences/health	<u>Working lines</u> : neurosciences; personalised medicine; rare diseases; digital health/medical devices. And as cross-cutting actions for those four lines: business models and training.	Innosasun (BIOEF); Baliosasun (BIOEF), CPI (Basque health system), EIP/AHA (Dept. of Health of the Basque Government)
Niches of opportunity	Areas of excellence/sectors	Specific support plan/Strategy Committee leader
Ecosystems	<u>Working lines</u> : Eco-design; re-manufacturing and advance repair; boosting capacities for durability; key targets – reducing waste; plastics, rubber and composites.	Circular Economy Strategy of Euskadi 2030/IHOBE
Diet	<u>Working lines</u> : healthy eating habits – personalised diet; new food production systems; new culinary developments for the especially sensitive population – children and seniors; safe and quality food; new detection and preservation technologies; inclusion of ICTs in production processes, logistics and marketing; food with new usability features adjusted to new consumption trends.	Euskadi 2020 Strategy Plan for Cuisine and Diet/Basque Government
Urban habitat	<p><u>Social working lines</u>: social cohesion and integration (immigration, universal access, etc); dependence and care (assistance services, health, active ageing, etc); gender, culture (art, heritage, Basque language, etc); citizen participation and communication; services (new amenities, changed uses, temporary or combined uses).</p> <p><u>Economic working lines</u>: employment (stimulation, business creation opportunities, employment of people from the neighbourhood, etc, in different branches – assistance, construction, urban maintenance, etc); education and training (branches – assistance, construction, urban maintenance, etc); smart cities (digitisation, new opportunities for companies, etc); local economy (study of opportunities, circular economy, trade and local activities, waste management, etc), innovative financing sources (contracting and sustainable, green and innovative purchasing).</p> <p><u>Environmental working lines</u>: sustainable construction (energy efficiency); smart cities (collective renewable energies; green infrastructures, renaturalisation, adjustment to climate change, minimising impacts on grey infrastructures; mobility (noise, mobility in educational environments; public transport, intermodal transport, bicycles, establishment of super-blocks, fleet electrification); landscape (planning and enhancing value of the natural and built environment).</p>	Urban Agenda of Euskadi – Bultzatu 2050/Basque Government
Creative and Cultural Industries	<p><u>Linked sectors</u>: stage arts; music; cultural heritage; language industries; visual arts; handicrafts; publishing and print media; audiovisual; videogames; digital content; design; architecture; fashion; high cuisine; advertising and marketing.</p> <p><u>Work axes</u>: Creadis3 project – smart creative districts; definition and perimeters of CCI in Euskadi; assistance programmes; networking.</p>	Department of Culture and Language Policy of the Basque Government.

Source: RIS3 Euskadi

These possible new configurations are understood to result from entrepreneurial discovery, their own internal dynamics and external factors.

Common to the RIS3 strategy and to the steering groups⁹ of the Basque Country, a growing horizontality has been identified in aspects associated to training, skills, internationalisation, new business models and entrepreneurship. The Advanced Manufacturing steering group has pioneered work on that horizontality, and other groups are working on it. Progress in the horizontal areas is considered to create more favourable conditions for advancing with the vertical priorities in which each priority or niche of opportunity is found to be focused (Aranguren et al., 2019).

6.2.2 Translating these priority areas into roadmaps for transformation

During the 2016-2019 period a change in the steering groups' dynamics was seen, due to migration from fixed plans toward a live strategy. Different speeds and extent of reach in the steering group dynamics were also identified, along with a lack of connection between them. Another aspect to work on is the need of financing for far-reaching, integrated and multiannual projects.

Yet it can be seen that in this implementation and evolution phase work was done on projects with higher technological readiness levels (TRLs), while at the same time more recognition and importance was extended to non-technological innovation, mainly in emerging areas.

During this period the Basque RIS3 was able to count a strong position in Europe by participating in various projects and initiatives that play different roles.

More participation by companies through working groups was discerned, as well as projects associated to the RIS3. In particular, a higher concentration was detected regarding the importance of participation among SMEs; the adoption of measures to facilitate their integration is being worked on. However, work must still be done regarding the inclusion of entrepreneurs in the process.

The involvement of SMEs is one of the challenges present in all the European RIS3s. In the case of the Basque Country, as the strategy has been implemented companies have joined the steering groups, although work must still be done to bring in the SMEs as well as entrepreneurs.

In this scenario it is necessary to explore the role driver companies play in attracting SMEs, as well as that of intermediate agents such as development agencies and the network of vocational training centres.

During the 2016-2019 period more diffusion was achieved through the link between Innobasque and intermediate agents, such as, for example, the development agencies. Also standing out was the proactive participation of different Basque universities via working groups, as well as the alignment of their university strategies with the framework set out by the Basque RIS3.

At present, the Basque RIS3 is likewise not associated to social challenges, which continue to be a pending challenge. However, the 2030 Agenda may be an opportunity to reflect on the social aspect, bearing in mind that the Basque government already has a Basque agenda concerning the 17 SDGs.

It is necessary to work on balancing the remaining social, economic and environmental areas in terms of the Basque RIS3, while working to achieve real inclusion of civil society in the process.

6.2.3 Implementing the transformation activities in action plans

The evaluation done in 2016 indicated that changes had been made in other policies, such as those of clusters and of technology and innovation, to design a policy mix able to respond to the Basque RIS3.

Regarding the 2016-2019 period, the need to structure far-reaching projects was mentioned above. The policy mix should consequently be revised to adjust to those needs, which will imply the development of new programmes and financing mechanisms, such as, for example, innovative purchasing. This policy mix should also count a multilevel perspective that takes into account existing skills and capacities.

⁹ Driving groups to push deployment of strategic priorities. Each of them counts the participation of all agents in the innovation helix: public administration, companies, cluster associations, social agents and scientific and technological agents from the Basque Science, Technology and Innovation Network.

6.3 RIS3 governance

The evaluation done in 2016 indicated that even though mechanisms had been set in motion to work on multi-governance of the strategy, they were not taken advantage of or used. It was also considered that progress on the interdepartmental aspect needed for the RIS3 to get started was partially successful. Critical voices against the work of the advisory group were also identified, considering that it overly influences the day-to-day work.

The evaluation done in 2019 showed that there were significant changes in the governance of strategic areas and niches of opportunity, implying an advance from implementation toward a live strategy (Aranguren et al., 2019), based on experimenting with what works and consequently adjusting the steering groups, and also modifying how the strategic governance process is sustained. It was discerned that even though the government continues to lead the niches of opportunity, in the case of strategic priorities there is distributed governance (Aranguren, Navarro and Wilson, 2017).

This experimentalist feature of the Basque RIS3 is one of the main features of the specialisation strategies, although in the Basque case no radical change resulted in the organisation and structure.

6.4 Monitoring system and evaluation mechanisms

In this last phase, 2016-2019, significant progress has been made, contrary to what happened in the previous phases, and there is a combination of internal and external evaluation inputs. A systematic process has been set in motion to annually evaluate the overall strategy, owing to the design of a control panel of indicators.

The steering groups have also been engaged in various processes, experimenting with a view to evaluation, although the need to integrate focuses has been identified, to assess the contribution of different priorities.

7 CONCLUSIONS

The analysis presented in this document provides us a first approach to understanding where the convergences and innovation challenges shared by the three regions are found, thereby contributing to the challenge of economic growth based on cross-border cooperation as a key factor of territorial competitiveness. This will enable a reframing of the need to give the regions a voice in European policies and dynamics with the ultimate aim of facilitating cooperation among regions and encouraging cross-border value chains.

Smart specialisation strategies are live strategies, meaning that different territories can have different implementation speeds or have different scopes in similar strategic areas. The RIS3s are currently facing three challenges: the difficulty of developing bottom-up strategies (entrepreneurial discovery process); the necessary existence of capacities and learning mechanisms linked to their implementation; and the new governance models. These challenges have implications in different RIS3 phases: phase for identification of thematic priority areas; phase for translating those priority areas into roadmaps for transformation; and phase for implementing the transformation activities in action plans.

What are the main conclusions and challenges identified in the Euroregion?

The strategic priorities are maintained, enabling the identification of niches for cross-border business action.

Both Navarre and Nouvelle-Aquitaine have recently undertaken to update their RIS3s, maintaining the respective strategic areas. The Basque Country plans to review its strategy in the near future; although no major change in the areas is foreseen, a distinction of priorities based on capacities is envisaged.

It is thus possible to identify convergence areas for the four strategy areas identified in the COMPET PLUS project: mobility, energy, agro-food and creative and cultural industries (CCIs) in the cross-border entrepreneurial space. In the COMPETITIV'eko project, a seminal COMPET PLUS project, following the same methodological process it was decided to place emphasis on 4.0 industry, health and artificial intelligence.

Table 7 Orientation of four strategy areas of the RIS3 of NA, Euskadi and Navarre

REGION	MOBILITY	ENERGY	AGRO	CCI
Euskadi	<p>ELECTRIC MOBILITY (energy priority). <u>Strategic guidelines</u>: increased use of electric vehicles (cars and bicycles); more recharging infrastructure; electrification of public transport. <u>Cross-cutting guidelines</u>: technological and industrial development; legislative, statutory and regulatory development; awareness-raising and communication; training. <u>Roadmap</u>: Integral Plan for Electric Mobility in the Autonomous Community of the Basque Country, Basque Government, 2018.</p>	<p><u>Working lines</u>: electric mobility, energy efficiency in industry, electric networks, thermoelectric solar, wind power, wave energy, oil and gas. <u>Facilitative technologies</u>: storage, power electronics. <u>New value chains</u>: Offshore energy, smart grids, resource-efficient manufacturing <u>Roadmap</u>: EnergiBasque Strategy</p>	<p><u>Working lines</u>: healthy eating habits – personalised diet; new food production systems; new culinary developments for the especially sensitive population – children and seniors; safe and quality diet; new detection and preservation technologies; inclusion of ICTs in processes; diet with new usability features. <u>Roadmap</u>: Strategy Plan for Cuisine and Diet 2020</p>	<p><u>Linked sectors</u>: stage arts, music, cultural heritage, language industries, visual arts, handicrafts, publishing and print media, audiovisual, videogames, digital content, design, architecture, fashion, high cuisine, advertising and marketing. <u>Work axes</u>: Creadis3 – smart creative districts; definition and perimeters of CCIs in Euskadi; assistance programmes, networking.</p>
Navarre	<p>Promotion of electric, autonomous and connected vehicles (Mechatronic Automotive P.). <u>Driver areas</u>: automotive and mechatronics. <u>Sectorial challenges</u>: to promote electric, autonomous and connected vehicles and respective components, both products and processes, and to encourage the development and introduction in Navarre of new mobility services and industries. <u>Cross-cutting facilitative technologies</u>: materials, biotechnology, microelectronics, photonics and advanced manufacturing technologies. <u>Roadmap</u>: S3 Navarre</p>	<p><u>Driver areas</u>: energy management (photovoltaic, wind power, hydric, biomass, geothermal, etc) and equipment manufacturing (wind turbines and auxiliary). <u>Sectorial challenges</u>: less use of fossil fuels and stronger wind-power sector. <u>Cross-cutting facilitative technologies</u>: materials, biotechnology, microelectronics, advanced manufacturing technologies. <u>Roadmap</u>: S3 Navarre</p>	<p><u>Driver areas</u>: primary sector (agriculture and livestock) and agro-food industry (especially poultry and vegetable processing). <u>Sectorial challenges</u>: structure the food chain and emphasise healthy diet. <u>Cross-cutting facilitative technologies</u>: biotechnology, materials, nanotechnology, microelectronics, advanced manufacturing technologies. <u>Roadmap</u>: S3 Navarre</p>	<p>DEVELOPMENT OF THE AUDIOVISUAL AND ANIMATION INDUSTRY (within CCI) <u>Driver areas</u>: audiovisual and animation sector <u>Sectorial challenges</u>: development of the audiovisual and animation industry <u>Roadmap</u>: S3 Navarre</p>
Nouvelle-Aquitaine	<p>MOBILITY AND INTELLIGENT TRANSPORTATION <u>Strategic axes</u>: to make the region a pilot territory, innovating in mobility solutions; to promote international supply chains; to stimulate innovation and networks among players (AMI, project calls,</p>	<p>ENERGY AND BATTERY STORAGE <u>Strategic axes</u>: new ecological transition models <u>Challenges</u>: assistance for companies and respective vision for</p>	<p>AGRO-FOOD INDUSTRY More information is not available at present</p>	<p><u>Priorities</u>: sector of leather, luxury articles and handicrafts and CCI (visual arts, music, live performances, cinema, TV, radio, videogames, books, media,</p>

REGION	MOBILITY	ENERGY	AGRO	CCI
	<p>etc); to introduce mobility bonuses. <u>Technologies</u>: raw materials economy (ecological design skills, composite materials and recycling); electrified power trains (skills in chemistry, electronics and electrical engineering); on-board informatics and electronics (need for electronic and digital skills). <u>Roadmap</u>: SDREII and comprehensive strategy to support the sector in Poitou-Charentes.</p>	<p>territorial economic development. <u>Roadmap</u>: SDREII</p>		<p>communication and advertising). <u>Challenges</u>: regarding the CCIs – creation, development, production, reproduction, promotion, dissemination or marketing of goods and services, and activities with cultural, artistic and/or heritage content. <u>Roadmap</u>: roadmap for textiles and luxury leather articles 2020-2022.</p>

Source: Own production, based on S3 Navarre, Cap Metiers Nouvelle Aquitaine, and Science, Technology and Innovation Plan 2020 (PCTi).

Regarding the challenges for the phase of translating these priority areas into roadmaps for transformation, the following challenges were detected.

Opening the entrepreneurial discovery processes to the local and cross-border ambit.

Although the regions do have mechanisms (challenge teams in Navarre, strategy committees in Nouvelle-Aquitaine and steering groups in the Basque Country) for each of the strategy areas, this does not ensure that there is a flow of diverse information and ideas that fosters the generation of groundbreaking ideas that contribute to the regional transformation agenda and convergence, not just local but also cross-border.

As previously mentioned, the RIS3 is by definition a live strategy in which the convergence of responsibilities among different strategic though also geographic areas should be worked on.

Foster the participation of companies, SMEs and entrepreneurs in entrepreneurial discovery processes.

In the three regions such processes are supported by collaborative institutions such as the cluster associations or professional associations. But the need to work on and strengthen the affiliation of companies and entrepreneurs in the RIS3 process has been detected, to enable their dynamic contribution to regional specialisation strategies and to facilitate the search for local and cross-border synergies, seeking real business opportunities.

There is often not a clear definition of the commitments expected from entities taking part in these processes: contribution that is personal, representing an institution or involving tasks and obligations, etc. To achieve that active entrepreneurial participation it will also be necessary to make clear the roles and assign leadership for the actions and initiatives that will be proposed by the private sphere.

Regarding the challenges for implementing the transformation activities in action plans:

Policy mix to respond to regional RIS3s. But what about the cross-border aspect?

The three regions have different strategies and roadmaps that unfold into a series of programmes, a policy mix that responds to the RIS3 needs and counts enterprises as the main group of beneficiaries. However, only Nouvelle-Aquitaine considers cross-border cooperation within its policy mix. Hence, Navarre and the Basque Country could strengthen their already robust portfolio of programmes to promote innovative business collaboration in strategic areas of cross-border interest.

Cross-border monitoring of innovative projects carried out in the RIS3 framework.

Companies may already be participating on a regional or cross-border basis in projects associated to the strategic areas of the RIS3s. It is nevertheless possible that the company's innovative project is not put forward in the calls issued by regional government programmes, because its size surpasses the field they are addressed to (and the company prefers to present it to a national or European call), or because it does not fit the conditions required by the regional R&D&I programme (which may require inter-business cooperation to admit it, and the company wants to carry it out alone) or simply because the company has the habit of starting its projects with its own resources.

The three territories share the need to generate mechanisms able to systematically detect and monitor the generation of innovations and innovative new projects in the region, and to ascertain their economic and social impact, enabling galvanised progress, the identification of cross-border value chains and enhanced visibility of the need for strategic policy intelligence.

Governance of smart specialisation strategies in the cross-border ambit

To conclude, and with respect to the governance of smart specialisation strategies, the need to continue making progress in multidepartmental and multilevel governance in regional though also cross-border ambits is discerned. It is hard to break the habit of working in silos amid political inertia. However, territorial strategies combined with new institutional mechanisms can advance toward adaptive and jointly reflected policies. Furthermore, another

challenge identified is that of introducing agents such as companies and society, by means of tertiary sector entities, for example.

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