



RIS3T Galicia-Região Norte

CROSS-BORDER SMART SPECIALISATION STRATEGY OF
GALICIA- NORTHERN PORTUGAL (**RIS3T**)

Table of contents

| | |
|--|----|
| 1. INTRODUCTION | 9 |
| 2. DESCRIPTION AND CONTENTS OF THE DOCUMENT | 13 |
| 3. METHODOLOGY | 15 |
| 3.1. METHODOLOGICAL AND PLANNING PROPOSAL FOR THE PROCESS | 16 |
| 3.2. METHODOLOGY FOLLOWED FOR DIAGNOSIS OF THE EUROREGION'S INNOVATION SYSTEM | 21 |
| 3.3. METHODOLOGY FOLLOWED TO ESTABLISH GOVERNANCE | 22 |
| 3.4. METHODOLOGY FOLLOWED TO DEFINE THE SHARED VISION AND THE STRATEGIC AREAS FOR ACTION | 23 |
| 3.5. METHODOLOGY FOLLOWED TO ESTABLISH PRIORITY ACTIONS | 24 |
| 3.6. METHODOLOGY FOLLOWED TO DEFINE THE EVALUATION AND FOLLOW-UP SYSTEM | 27 |
| 4. EVOLUTION OF COOPERATION | 29 |
| 5. DIAGNOSIS OF THE R&D SYSTEM OF GALICIA – NORTHERN PORTUGAL | 35 |
| Administrative Organisation | 37 |
| Key data for the territory | 38 |
| 5.1 CHARACTERISATION OF THE R&D SYSTEM IN THE EUROREGION | 42 |
| 5.1.1. Stakeholders in the Innovation System | 42 |
| 5.1.2. Current Situation of R&D in the Euroregio. | 44 |
| 5.1.2.1. Areas of specialisation of the Euroregion Galicia – Northern Portugal | 45 |
| Area of production specialisation | 45 |
| Area of technological specialisation | 48 |
| Area of scientific specialisation: | 51 |
| Conclusiones | 52 |
| Northern Portugal | 52 |
| Area of economic specialisation | 52 |
| Area of scientific specialisation | 54 |
| Area of specialisation in technological production | 55 |
| Conclusions | 56 |
| 5.2. CONCLUSIONS OF THE DIAGNOSIS. SWOT ANALYSIS | 57 |
| 6. SHARED VISION | 61 |

7. STRATEGIC COLLABORATION AREAS

67

| | |
|---|----|
| 7.1 STRATEGIC COLLABORATION AREA: TAKING ADVANTAGE OF ENERGY FROM BIOMASS AND THE SEA | 71 |
| SPECIALISATION FACTORS THAT DEFINE THIS STRATEGIC AREA | 71 |
| TYPES OF PRIORITY ACTIONS IDENTIFIED BY STAKEHOLDERS | 72 |
| 7.2 STRATEGIC COLLABORATION AREA: BOOSTING COMPETITIVENESS OF THE AGRI-FOOD AND BIOTECHNOLOGY INDUSTRIES | 73 |
| SPECIALISATION FACTORS THAT DEFINE THIS STRATEGIC AREA | 73 |
| TYPES OF PRIORITY ACTIONS IDENTIFIED BY AGENTS | 75 |
| 7.3 STRATEGIC COLLABORATION AREA: INDUSTRY 4.0 | 75 |
| SPECIALISATION FACTORS THAT DEFINE THIS STRATEGIC AREA | 75 |
| TYPES OF PRIORITY ACTIONS IDENTIFIED BY STAKEHOLDERS | 77 |
| 7.4 STRATEGIC COLLABORATION AREA: THE COMPETITIVENESS IN MOBILITY INDUSTRIES | 77 |
| SPECIALISATION FACTORS THAT DEFINE THIS STRATEGIC AREA | 77 |
| TYPES OF PRIORITY ACTIONS IDENTIFIED BY STAKEHOLDERS | 79 |
| 7.5 STRATEGIC COLLABORATION AREA: THE MODERNISATION OF THE TOURISM AND CREATIVE INDUSTRIES, ALSO BY MEANS OF ICT. | 79 |
| SPECIALISATION FACTORS THAT DEFINE THIS STRATEGIC AREA | 79 |
| TYPES OF PRIORITY ACTIONS IDENTIFIED BY AGENTS. | 80 |
| 7.6 STRATEGIC COLLABORATION AREA: ADVANCED SOLUTIONS FOR A HEALTHY LIFESTYLE AND ACTIVE AGEING | 81 |
| SPECIALISATION FACTORS THAT DEFINE THIS STRATEGIC AREA | 81 |
| TYPES OF PRIORITY ACTIONS IDENTIFIED BY STAKEHOLDERS | 83 |

8. MANAGEMENT MECHANISMS

85

| | |
|-----------------------------|----|
| 8.1 MANAGEMENT STRUCTURE | 86 |
| 8.1.1 Steering committee | 86 |
| 8.1.2 RIS3T Management Team | 86 |
| 8.1.3 Work Groups | 87 |
| 8.2 MANAGEMENT TOOLS | 87 |
| 8.2.1 RIS3T APP | 88 |
| 8.2.2 RIS3T Forums | 88 |
| 8.2.3 RIS3T Observatory | 88 |

9. EVALUATION SYSTEM

89

| | |
|------------------------------|----|
| 9.1 THE METHODOLOGY PROPOSED | 89 |
| 9.2. ENTITIES RESPONSIBLE | 90 |

ANNEX

91

CHALLENGES AND PRIORITIES FOR THE REGIONAL STRATEGIES OF GALICIA AND NORTHERN PORTUGAL

91

A. SMART SPECIALISATION STRATEGY FOR GALICIA 2014-2020

91

CHALLENGE 1. New model of innovative management of natural and cultural resources based on innovation

91

CHALLENGE 2. New industrial model based on competitiveness and knowledge.

91

CHALLENGE 3. New model of healthy lifestyle founded on active ageing of the population

92

B. SMART SPECIALISATION STRATEGY NORTHERN PORTUGAL 2020

93

INDEX OF FIGURES

| |
|---|
| Figure 1. Methodology for the S3 Platform for the definition of the Smart Specialisation Strategies. |
| Figure 2. Stages in the methodology where the trans-national aspects could be more outstanding. |
| Figure 3. Main points in the Strategy development process |
| Figure 4. Methodology proposed for undertaking the diagnosis. |
| Figure 5. Proposed Governance Structure. |
| Figure 6. Methodology proposed for identification of strategic areas for collaboration. |
| Figure 7. RIS3T website. |
| Figure 8. RIS3T App. |
| Figure 9. Online survey for stakeholders participating in the preparation of the RIS3T. |
| Figure 10. Graph showing participation (responses obtained) from Agents by region. |
| Figure 11. Evolution of Galicia -Northern Portugal cooperation. |
| Figure 12. Map of the location of the Euroregion Galicia – Northern Portugal inside the EU. |
| Figure 13. Map of the Urban– Rural typology of the Spain – Portugal cross-border areas. |
| Figure 14. Map with the location of the major cities in the Euroregion. |
| Figure 15. Gross Domestic Product per NUTS2 over purchasing power standard (PPS), with the average EU percentage. |
| Figure 16. Composition of an Innovation System and existing interrelations |
| Figure 17. Evolution of the production structure in Galicia. |
| Figure 18. Relative Production Specialisation Index for Galicia/Spain. |
| Figure 19. Technological Specialisation of Galicia in the 2007-2010 period. |
| Figure 20. Relative Technological Specialisation Index Galicia/Spain 2007-2010. |
| Figure 21. Scientific Specialisation in Galicia. |
| Figure 22. Production specialisation in Northern Portugal. |
| Figure 23. Scientific specialisation in Northern Portugal. |
| Figure 24. Specialisation in technological production. |
| Figure 25. Interest of stakeholders in cooperation. |
| Figure 26. Priority for collaboration. |
| Figure 27. Programmes of interest for future collaboration. |
| Figure 28. INTERREG Programmes of interest for future collaboration. |
| Figure 29. Principal synergies between the strategies of Galicia – Northern Portugal . |
| Figure 30. Interest in strategic collaboration areas. |
| Figure 31. RIS3T Management Structure. |

INDEX OF TABLES

Table 1. Stable cooperation structures in the Euroregion Galicia – Northern Portugal.

Table 2. General data on the Euroregion Galicia – Northern Portugal.

Table 3. Expenditure on R&D (as a percentage of GDP) in 2010

Table 4. Technological production specialisation index

Table 5. Weaknesses and Strengths of the Euroregion.

Table 6. Threats and Opportunities of the Euroregion.

Table 7. Matrix of synergies between the Galicia – Northern Portugal RIS3 priorities.

Table 8. Types of action prioritised in the area of Marine and Biomass Energy.

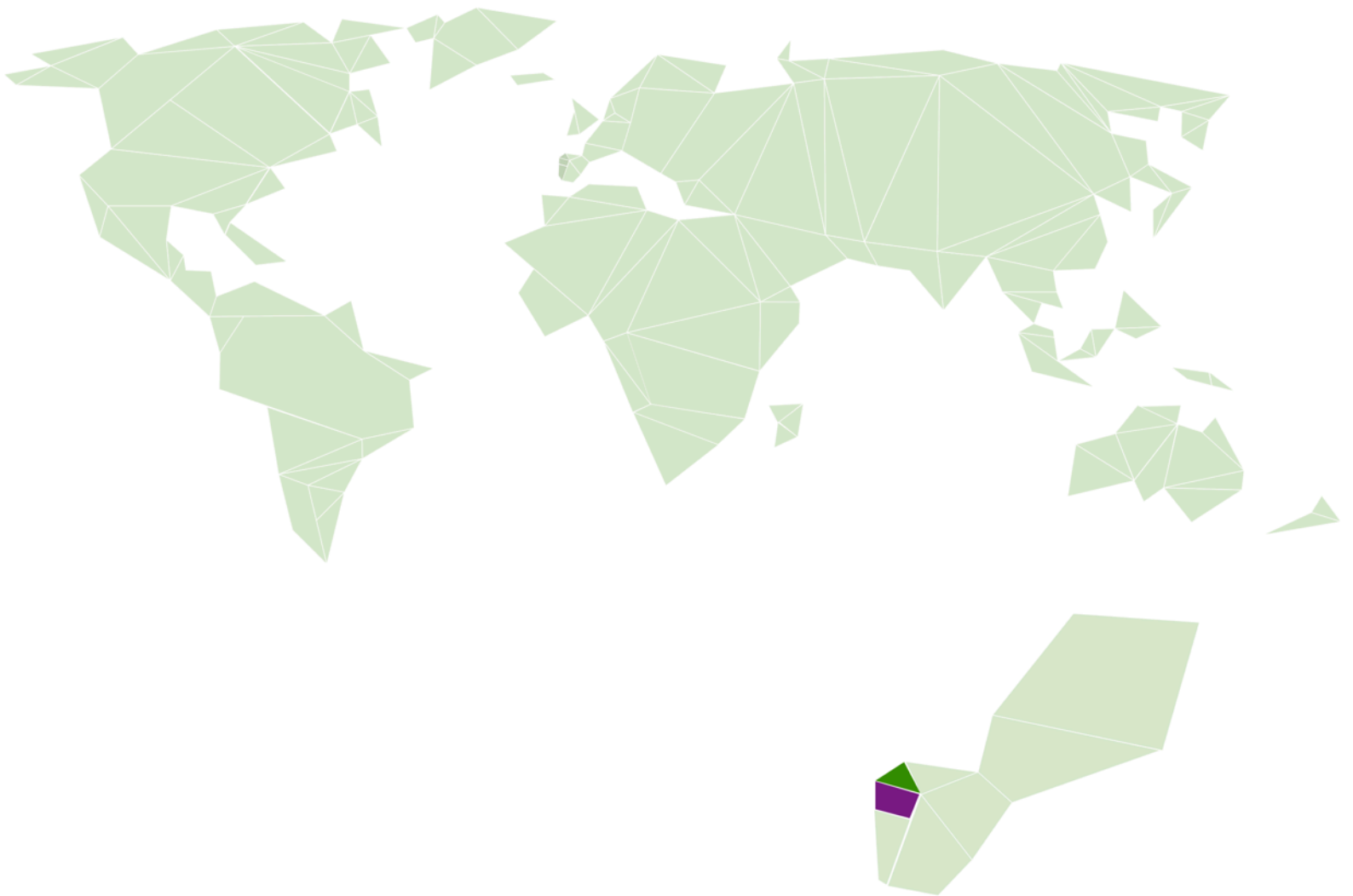
Table 9. Types of action prioritised in the agri-food and biotechnology industries.

Table 10. Types of action prioritised for Industry 4.0.

Table 11. Types of action prioritised for Mobility Industries.

Table 12. Types of action prioritised in the Tourism and Creative Industries

Table 13. Types of action prioritised in the area of Healthy Lifestyle and Active Ageing.



1. INTRODUCTION

The promotion of intelligent, sustainable and integrating growth is considered by the European Union (EU) as a key issue for economic and social advancement of its Member States. Fostering these principals requires an exhaustive strategy for European innovation, as set out in the document “Innovation Union” which seeks the objective of investment in research, innovation and entrepreneurial initiative in all EU Member States and regions, to take full advantage of Europe’s potential.

Innovation is widely recognised as playing a key role in entrepreneurial competitiveness, creation of sustainable jobs and socio-economic development of societies.

On that basis, the European Union placed innovation at the heart of the Europe 2020 Strategy, by means of the emblematic Innovation Union initiative, aimed at structuring an exhaustive strategy for knowledge-based innovation and turning R&I (Research & Innovation) into a priority for all regions, thus recognising its essential role in the achievement of more efficient policies for regional competitiveness and development.

As a consequence, the new 2014-2020 Cohesion Policy bets on Smart Specialisation as a strategic approach to boost economic development by providing more efficient and effective support for research and Innovation. This concept refers to the concentration of available resources within the regional context for the benefit of a limited number of priorities linked to real opportunities within the regional economic context, in order to induce economic specialisation in the regions and global competitiveness.

To that end, the European Commission has requested that national and European authorities prepare Smart Specialisation Strategies (RIS3) for greater effectiveness in the use of Structural Funds and thus facilitate the creation of synergies between the different regional, national and EU policies, as well as private and public investments during the 2014-2020 period.

In order for regions to be globally competitive today they must simultaneously take into account two related trends:

✓The growing density of international relations, not only at the knowledge generation networks level but also at that of global productive and commercial integration.

- ✓ The persistent importance of territorial frameworks for connectivity.

Therefore, effective smart specialisation strategies cannot be established with an approach limited to just the one particular region. The grouping of objectives accentuates the need for creating greater external dynamics by coordinating and making the most of synergies with the policy initiatives, instruments and infrastructures in other regions. To that effect, transregional collaboration is a central aspect and a challenge for smart specialisation, particularly for neighbouring regions with a cross-border dimension. The potential for enrichment of innovation networks is particularly important in cross-border contexts and enables significant leaps in scale, sophistication and scope to obtain synergies and complementarities at the value chain segment level and related greater variety.

The European Commission (2012) considers that smart specialisation in itself warrants the need for strategic cooperation as an essential component and furthermore emphasises on the inclination towards global value chains, the search for synergies with other regions and the creation of transregional collaborations and networks. For its part, the OECD (2013) cites several advantages of such collaboration such as increased economies of scale and scope, maximisation of spillover effects, increased valuation of capacities and resources and of access to specialised services, thus favouring the attainment of a richer innovation ecosystem that increases the opportunities for enterprises, particularly SMEs, and enables better use of talent.

Drawing up Smart Specialisation Strategies has made it possible to identify, both in Galicia and Northern Portugal, the priorities that govern public policy application and their related funding resources. Identifying the priorities and relevant stakeholders in territories facilitates the identification of elements that are fundamental for drawing up a joint strategy.

Likewise, transregional collaboration, and especially a cross-border one, permits greater effectiveness and access to innovation policy tools which can then be implemented by regions within the framework of their RIS3. In this manner, by using a coordinated approach in the Smart Specialisation context, it will be possible to:

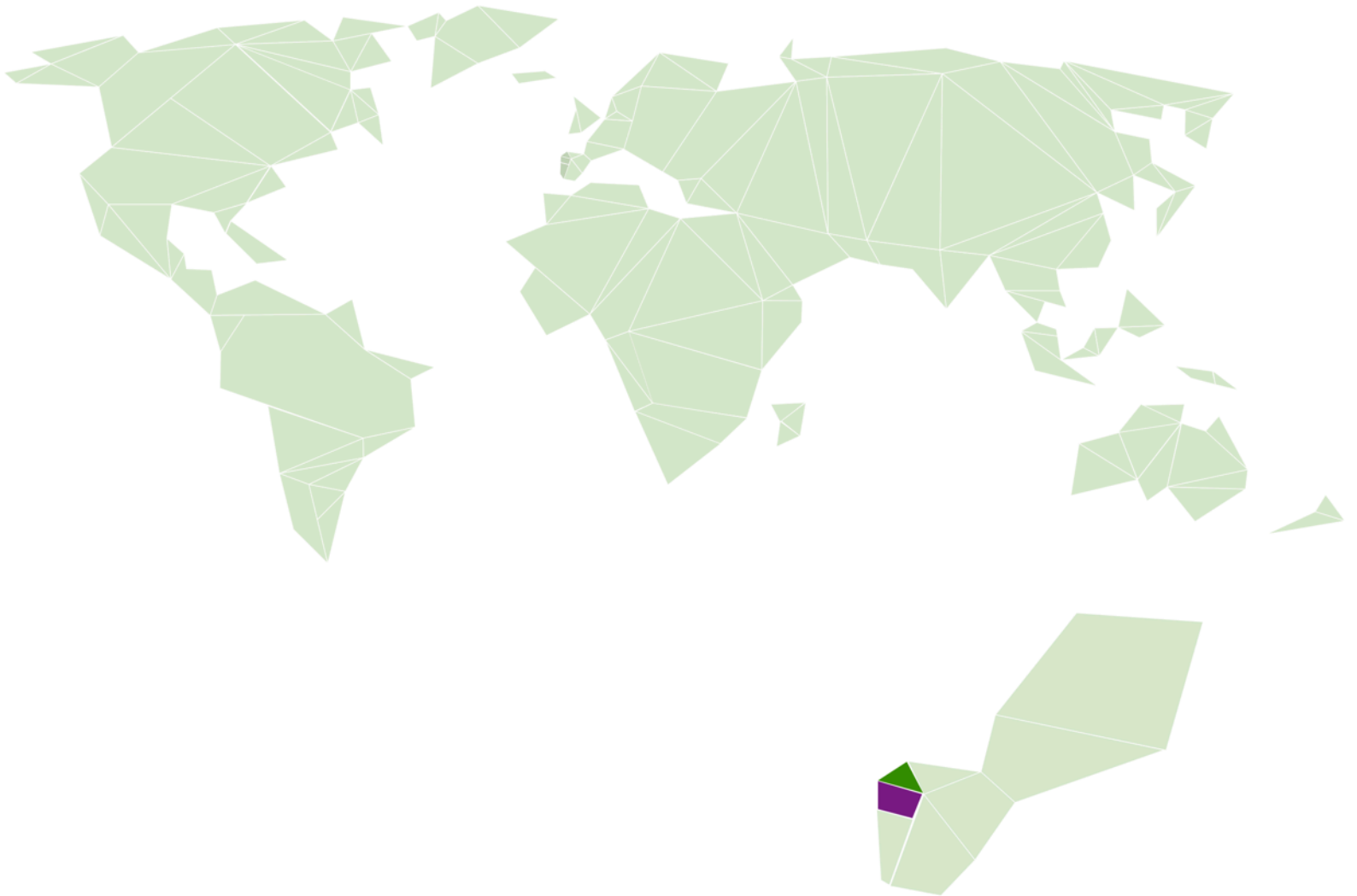
- Make better use of the different funding frameworks and strengthen links (mainly at a level of Regional Operational Programmes), through effective use of the specific funds that exist for transregional and cross-border funding (such as POCTEP [Spain-Portugal Cross-Border Operational Programme]). As a whole, the European Union is to allocate 10,000 million euros for cross-border, transnational and transregional cooperation within the framework of the structural funds.
- Implement coordinated actions to capture funds on the basis of competitive excellence (such as Horizon 2020 or the Era-net Scheme) for the Euroregion. At the same time, this would facilitate the establishment of synergies with the EU's external instruments and would make it possible to maximise the impact of relations with other initiatives at a European level and enable a more efficient contribution to the European political agenda and employment programmes.
- Reach greater levels of critical mass based on innovation synergies and complementarities at the value chain level, given the increasing combination of knowledge and production capabilities needed in innovative processes.

The design of the Strategy, hereinafter called 2015-2020 RIS3T, was coordinated from each side of the border by the following bodies:

- The Galician Innovation Agency (GAIN) created by Decree no. 50/2012 of the Xunta de Galicia, of 12th January, 2012, as an instrumental body of the autonomous administration, whose objective is to support and encourage growth and competitiveness of Galician enterprises and foster and structure innovation policies in public administrations. Furthermore, it is the body that led the definition process for the Galicia 2014-2020 Smart Specialisation Strategy (Galicia 2014-2020 RIS3) and will lead its implementation.
- And the Regional Coordination and Development Commission of the North (CCDRN), a public institution whose objective is the integrated and sustainable development of the north of Portugal, by contributing to competitiveness and cohesion in the territory. It is the body responsible for developing the Smart Specialisation Strategy for the North of Portugal and for management of the 2014-2020 Regional Operational Programme for the North.

In short, the design of a joint Smart Specialisation Strategy for Galicia and Northern Portugal is founded on knowledge-based activities rooted within the territory that have a high potential for competitiveness in the global arena and which endogenously concentrate entrepreneurship discovery dynamics.

Thus, GAIN and CCDRN, as coordinating bodies, have led this strategic planning process by means of a reflection and consensus process among the main interlocutors in the regions. This process, which began with the preparation of a diagnosis of the Euro-region's status quo in the area of R&D&I, enabled the formulation of a shared vision on the potential for joint development, which was later used to establish certain strategic areas for collaboration and a specific set of priority actions. This forms the heart of the resulting strategy and, therefore, the contents of this document.



2. DESCRIPTION AND CONTENTS OF THE DOCUMENT

This document details the work carried out for the definition of the 2015-2020 Smart Specialisation Strategy for the Galicia – Northern Portugal Euroregion structured into nine sections that are described below.

Firstly, in the definition of the Galicia – Northern Portugal RIS3T Strategy, Section 3 deals with the methodology¹ used, following the proposal of the European Smart Specialisation Platform outlined in its corresponding Guidelines² and adapting it for the design of a Cross-border RIS3. After that, the rest of the document deals with the practical application of the chosen methodology.

The next step was an analysis of previous collaborations between the two regions (Section 4) and a formal analysis of the regional context and the potential for specialisation, in the form of a Diagnosis of the Galicia - Northern Portugal R&D system, which is provided in Section 5 of this document. The Diagnosis ends with a SWOT analysis, from which the guiding principles that serve as the basis for the RIS3T Strategy definition are extracted.

The conclusions from the Diagnosis and the joint strategic reflection exercise gave rise to the definition of a shared and agreed vision for the future of both regions (described in Section 6), on the basis of which the strategic collaboration areas were established for the regions along with the priority actions in each of the 6 areas of collaboration (Section 7), viz.:

- Use of energy from biomass and the sea.
- Strengthening of competitiveness in the agro-food and biotechnology industries.
- Industry 4.0.
- Fostering competitiveness in the mobility industries.
- Modernisation of tourism and creative industries by using ICTs.
- Advanced solutions for healthy living and Active Ageing.

¹ Figures for 197 cooperation programmes which give structure to INTERREG V A,B and C for the entire EU territory.

² European Commission: "Guide to Research and Innovation Strategies for Smart Specialisation (S3); Page 18; May 2012

These actions led to the alignment of all the previous elements: Diagnosis, Vision, Strategic collaboration areas and priority actions.

Finally, Sections 8 and 9, respectively, deal with the structures and management tools proposed for implementation of the RIS3T Strategy, and the evaluation system and indicators to be used to follow up its implementation.

3. METHODOLOGY

This section summarises the process, methodology and techniques implemented to draw up the RIS3T 2015-2020 Strategy; a process that began in the summer of 2014 and ended in September 2015.

Throughout 2013 and 2014, both Galicia and the Northern Portugal region undertook the definition process for their Regional Smart Specialisation Strategies, following the methodology formulated by the S3 platform in its Guidelines for Developing a Smart Specialisation Strategy (RIS3). It consists of 6 steps, which are given below:

Figure 1. Methodology for the S3 Platform for the definition of the Smart Specialisation Strategies



Source: produced in-house

Both Strategies were passed in 2014 at regional and European Union levels.

On the basis of the two regional RIS3s, the Regional Coordination and Development Commission of the North and the Galician Innovation Agency jointly set up a cross-border work group with the objective of defining the methodological basis for the process to draw up a joint RIS3 Smart Specialisation Strategy for the Galicia and Northern Portugal Euroregion.

The objective of the RIS3 for the Euroregion is to define a framework for strategic cooperation in order to provide a coordinated response to shared challenges that, within the framework innovation policies, can be handled more effectively and efficiently in a joint manner, to mobilise new initiatives and projects and to facilitate the raising of funds from specific funding sources.

The Smart Specialisation Strategy of the Euroregion establishes a macro-regional strategy, in accordance with the following principles provided for in the 2014-2020 European regulation:

- Be an integrated framework for one single supra-national geographic area.
- Address the common challenges.
- Examine the benefits of cooperation for economic, social and territorial cohesion

3.1. METHODOLOGICAL AND PLANNING PROPOSAL FOR THE PROCESS

The process of defining the joint Galicia – Northern Portugal Smart Specialisation Strategy followed an adaptation of the methodology proposed by the S3 Platform, mentioned previously, taking into account the new territorial scope (supra-regional) and the presence of Strategies in the two regions. Thus, one of the central elements of the process was the establishment of a participative and integrating entrepreneurship discovery process, which involved agents from the innovation systems of Galicia and the Northern Region, with trans-regional potential and scale. Carrying out a trans-regional entrepreneurship discovery process is a great opportunity to broaden expertise and knowledge of the markets, increase their complexity and discover hidden opportunities.

With regard to the drawing up processes for the respective regional RIS3s, this methodology was simplified, given the presence of approved individual regional strategies³ for both Galicia and the Northern Region, and the use of governance structures that had already been established in the definition process and formulated in the execution process.

Consequently, the process of preparing the RIS3 for the Euroregion was based on the RIS3 of Galicia and of the region of Northern Portugal, through a process of discovering specific entrepreneurship, which confers an important added value to the transregional dimension. The following aspects were also taken into account when defining the process:

³ The Annex contains the challenges and priorities from both Strategies.

- The stakeholders in the Euro-region's innovation systems with capacity or potential to act in transregional knowledge and production networks.
- The fields that can achieve a high level of critical mass based on synergies and on innovation complementarities at the value chain level or in related activities (multi-sector). The shared problems, the shared opportunities. The main innovation-based entrepreneurial activities.
- Connectivity of activities within the scope of the Euroregion (internal and external).
- Opportunities for coordinating innovation policy actions.

Thus, the proposed steps for the definition of a joint strategy were:

1. Analysis: based on an individual diagnosis of the regions: Galicia and Northern Portugal, as well as on the joint area carried out by other prevailing structures such as the Joint Technical Secretariat of the POCTEP Programme and the Galicia - Northern Portugal AECT.
2. Process and Governance: creation of governance to define the joint strategy in line with previously established governances that do not imply the creation of new formal structures but the utilisation of pre-existing structures, as well as the definition of the methodology for use in the cross-border entrepreneurship discovery process.
3. Shared vision: identification of an overall perspective for the future of the Euroregion based on the joint analysis performed at the diagnosis stage.
4. Selection of strategic collaboration areas: selection of the common areas within the framework of the individual strategies and studying them in-depth to identify the actions to be prioritised.
5. Common actions and support measures: identification of common actions that can be carried out jointly by both regions to achieve a future goal, using the different financing sources available at European level such as the European Territorial Cooperation Programmes, Horizon 2020 and other European programmes such as Cosme, Life, etc., and when appropriate, through the coordination of instruments specific to each region's regional operational programmes, within the eligibility framework of operations financed by the IEE Funds for areas outside the programme, established for the 2014-2020 period.
6. Monitoring and Evaluation: Definition of common indicators for follow-up and evaluation of Strategy.

The following figure highlights these trans-national aspects with a view to their being used in the RIS3 methodology for defining this new joint Strategy, for which this is the starting point for development:

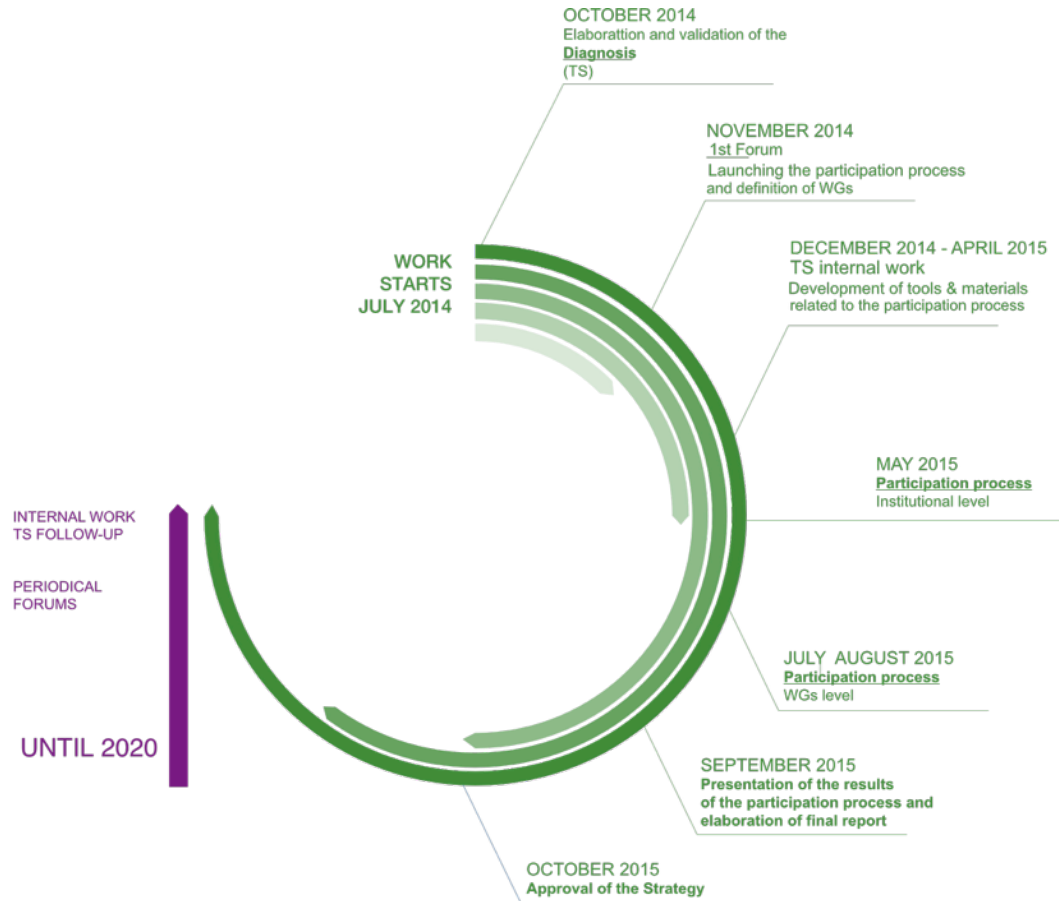
Figure 2. Steps in the methodology where the trans-national aspects could be more outstanding



Source: Interregional collaboration in RIS3

Once both parties had agreed upon the methodology, work began on the definition, the main points of which are shown below:

Figure 3. Main points in the Strategy development process



NOTE:
1.- TS: TECHNICAL SECRETARIAT: Management team made up by CCDR-N and GAIN
2.- WG: WORKING GROUPS

Source: produced in-house

In July 2014 the process was begun with the creation of the cross-border Work Group (Technical Secretariat) made up of representatives from the Galician Innovation Agency (GAIN) and the CCDRN, which was the first step of the process and the launch of the Governance for definition of the Strategy . The Joint Analysis stage was then started, which culminated in the drafting of a joint diagnosis and the identification of the main areas for collaboration in the Euro-region, presented in September 2014.

In October 2014, the Technical Secretariat (CCDRN & GAIN representatives), henceforth TS, on the basis of the previous tasks, worked on the definition of a shared vision and the proposal for joint priorities, as well as the the most suitable actions and support mechanisms for developing competitive advantages derived from the selected priorities, taking into account the various regional and cross-border operational programmes, and other international funding sources, principally Horizon 2020. Likewise, during the same month, the composition of the different work groups (WGs) was defined. These would be the driving force of the process. These first tasks were publicised within the framework of the 1st Forum, held at the beginning of November, 2014 in Baiona, at which over 200 stakeholders from the innovation systems of Galicia and the Northern Portugal region took part. Within the framework of this Forum, the methodology and the objective of the Strategy were presented, the WGs were launched, and the diagnosis carried out in the previous months was validated.

Between the months of November 2014 – June 2015, important internal work was undertaken by the TS, which included the following actions:

- Internal meetings of the Technical Secretariat (in its capacity as the management team for the process and responsible for the different stages of its implementation).
- Creation of a brand image for the Strategy and the tools needed for launching the participation process (such as the design of the Strategy logo, the setting up of the Strategy website, the design and launch of an App for the participation process, etc.).
- Definition of the survey to be used in the participation process.

Likewise, the process was presented within the framework of the Sectoral Commissions for the Galicia – Northern Portugal Working Community at the meeting held in Vigo on 26th May, 2015, and used to launch the participation process at an institutional level in both regions.

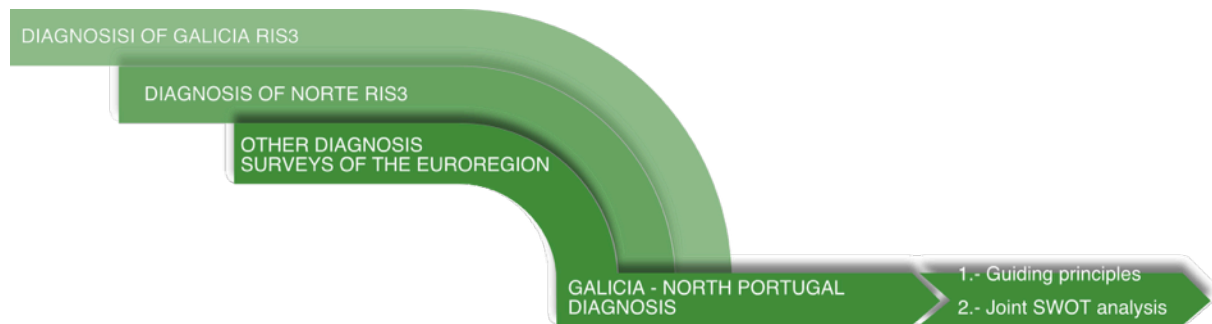
This internal work culminated in July 2015 with the official launch of the tools (website and App) for the Work Group participants and the start of the period for responding to the survey defined jointly by members of the TS. The response period was open to respondents until the end of August, 2015.

In September, 2015, once the participation process was over, members of the TS worked on processing the responses received and writing the conclusions of the process, thus bringing an end to a process that had begun in the summer of 2014.

3.2. METHODOLOGY FOLLOWED FOR DIAGNOSIS OF THE EUROREGION'S INNOVATION SYSTEM

As the first step in the definition of a joint Galicia – Northern Portugal RIS3 Strategy, a joint analysis of the territory in terms of R&D&I was carried out. The methodology formulated to undertake this task was that of using the RIS3 Strategies from both regions and other pre-existing documents and strategies in the Euroregion, as can be seen in the following figure.

Figure 4. Methodology proposed for undertaking the diagnosis



Source: produced in-house

Thus, the diagnosis was mainly based on the following information sources:

A) Secondary information sources:

- Diagnosis of the RIS3s from Galicia and the Northern Region.
- Territorial Diagnosis included in the draft of the 2014-2020 Spain – Portugal OP.
- Territorial Diagnosis included in the Joint Investment Plan (JIP).

B) Primary information sources:

- Contributions from the designated team in each region made at the working meetings.
- Contributions at an institutional level made at the meetings held in diverse venues, such as those within the framework of the Galicia – Northern Portugal Working Community.

- Contributions made by the main stakeholders within the framework of the various Work Groups that had been defined, such as those carried out within the framework of the 1st Forum, held in Baiona.

The final result of this stage was a Galicia – Northern Portugal RIS3 diagnosis, which was construed as the starting-point document for use in later stages of the process, and which contained:

- The principal data characterising the territory and the R&D&I system;
- A map of stakeholders and capacities of the Euroregion;
- The principal common guiding principles from both strategies, their synergies and complementarities;
- A common SWOT analysis of R&D&I in the Euroregion.

3.3. METHODOLOGY FOLLOWED TO ESTABLISH GOVERNANCE

The governance for the definition of the joint strategy was based on structures that had already been defined in the individual RIS3 strategies of both regions, and also took into account the transregional working framework.

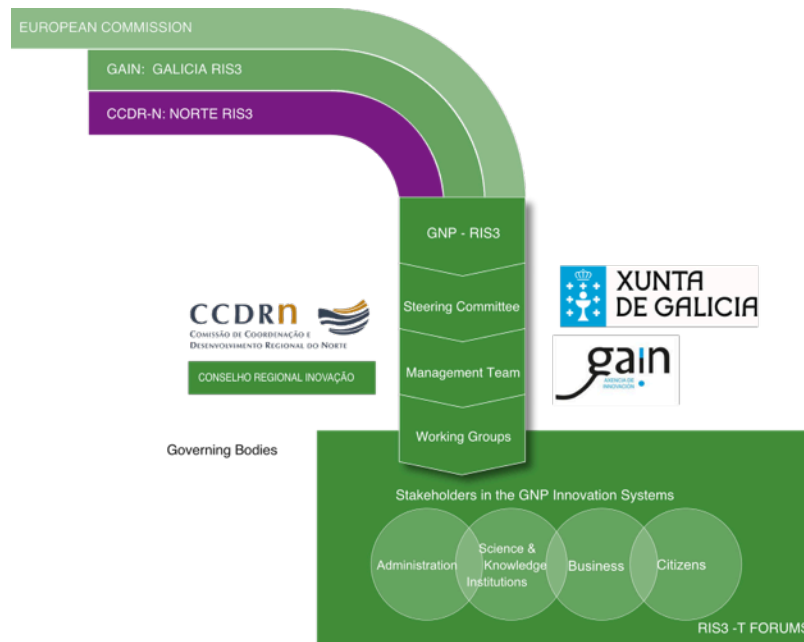
The different administrative structures present in the two regions meant that this issue had to be dealt with by taking into account the distribution of the existing competencies in each region, in order to achieve a key efficient governance process. Therefore, this was the first issue to be addressed in the process of defining the joint strategy, and the following structure was agreed:

- a) **Steering Committee:** The strategic coordination would be carried out by the CCDRN in the Northern Region and by the Xunta de Galicia, through GAIN, in Galicia. This would be the governing body which would be comprised of political representatives from both entities.
- b) **Management team (Technical Secretariat):** At the technical level, the management team would be comprised of personnel appointed by the Galician Innovation Agency (GAIN) to represent Galicia, while those appointed by the CCDRN would represent the Northern Region.
- c) **Work Groups:** These would be coordinated by the management team, which would be comprised of the main stakeholders on both sides of the border, representing the different types of entities that make up the Regional Innovation Systems, and the comprehensive innovation value chain (from knowledge generation to placement of R&D&I in the market).

Finally, and with a view to achieving greater representation of stakeholders from the Euroregion, cross-border forums were proposed: RIS3T Forums to facilitate dissemination and visualisation of the Joint Specialisation Strategy, and to also serve as platforms for open participation and consultation, as well as for engagement, teamwork and networking of the participating stakeholders (for definition and implementation of the strategy).

The figure below shows the governance structure of the process:

Figure 5. Proposed Governance Structure



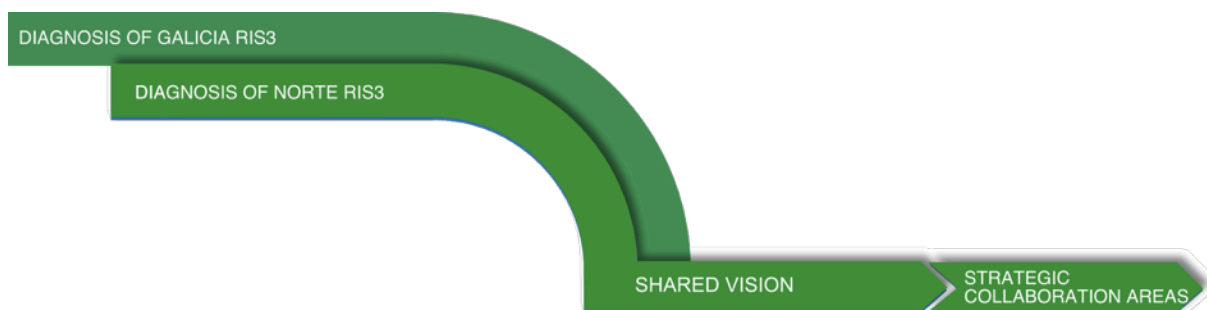
Source: produced in-house

3.4. METHODOLOGY FOLLOWED TO DEFINE THE SHARED VISION AND THE STRATEGIC AREAS FOR ACTION

The management team (comprising CCDRN and GAIN representatives) took into account the existing regional strategies and defined a shared vision that was presented to members of the Strategy Steering Committee for validation. This was later shared with all other participants and stakeholders within the framework of the Work Groups (WGs) and the RIS3T Forums. Within the framework of this

process, 6 strategic collaboration areas were identified from among the common areas for specialisation in the respective regional RIS3s, and these were presented to the main agents within the framework of the 1st RIS3T Forum, held at Baiona. The methodology used can be seen in the following figure:

Figure 6. Methodology proposed for identification of strategic areas for collaboration



Source: produced in-house

Thus, on the basis of this methodology, the members of the Technical Secretariat analysed the confluence between the 10 Galician priorities and the 8 Portuguese areas of specialisation to arrive at the 6 strategic areas for collaboration that were finally selected for inclusion in the Strategy.

3.5. METHODOLOGY FOLLOWED TO ESTABLISH PRIORITY ACTIONS

The establishment of priority actions within the strategic collaboration framework was articulated through the Work groups (WGs), based on the conclusions of the entrepreneur discovery process as well as on prior consultations carried out as part of the process. The management team worked with the principal participants and interlocutors from the Euroregion, taking into account the individual feedback received from the principal interlocutors of the different groups, and by strictly following the agreed methodology.

Hence, a set of tools was created for the launch of the participation process, such as:

- RIS3T Website: website dedicated to the cross-border Strategy and the dissemination of the actions carried out, as well as the collection of participation process surveys.

Figure 7. RIS3T website



Source: produced in-house (GAIN)

- RIS3T APP: Mobile application dedicated to the Strategy, developed for two operating systems and downloadable from the following links.
 - Android OS (Google Play):
<https://play.google.com/store/apps/details?id=com.eventtwo.ris3>
 - iOS (Apple):
<https://itunes.apple.com/es/app/ris3-galicia-norte-portugal/id979267047?mt=8>

The philosophy behind the App is for it to be a meeting point for all stakeholders, not only for those involved in the Strategy definition process but also for those involved in its implementation. Therefore, stakeholders were first provided access to all information on the 1st Forum and then on the Online Participation Forum, which continued the participation process begun at Baiona.

Figure 8. RIS3T App



Source: produced in-house (GAIN)

- Surveys: Stakeholders were invited to respond through these to present their institution's evaluation of a set of priorities linked to the 6 priority areas for collaboration, and also an evaluation of past and future collaboration between agents in both regions. Invitations were sent to around 200 of the main stakeholders in the R&D&I system in an email which informed them of the process and the tasks to be undertaken in each stage of the process.

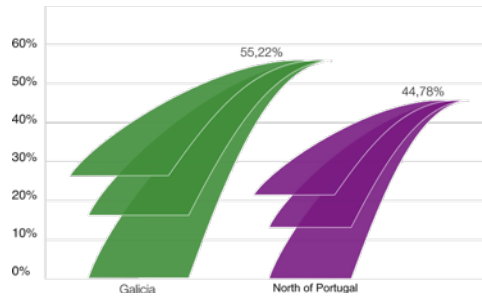
Figure 9. Online survey for stakeholders participating in the preparation of the RIS3T



Source: produced in-house (GAIN-CCDRN)

It should be noted that within the framework of the participation process, 70 responses were obtained from the main stakeholders in the Galicia – Northern Portugal Euroregion R&D&I system; 55% from Galician stakeholders and the remaining 46% from Portuguese stakeholders, as can be seen in the following graph:

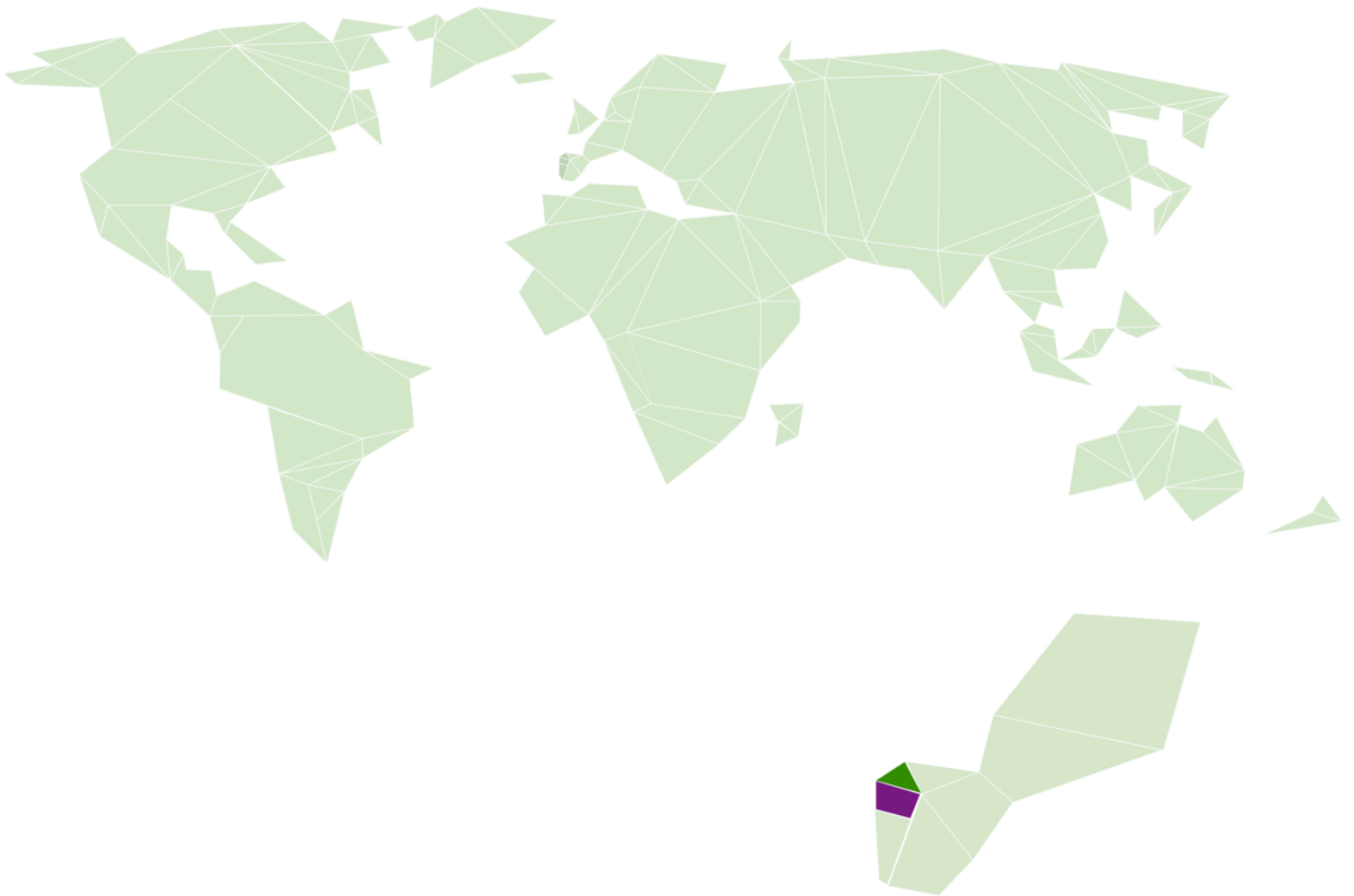
Figure 10. Graph showing participation (responses obtained) from Agents by region



Source: produced in-house from data from the participation process

3.6. METHODOLOGY FOLLOWED TO DEFINE THE EVALUATION AND FOLLOW-UP SYSTEM

Finally, to round off the process, the management team defined a Galicia – Northern Portugal RIS3 Strategy Follow-up Plan.



4. EVOLUTION OF COOPERATION

The Galicia-Northern Portugal Euroregion has a long tradition of institutional cooperation that goes back to 1983, even before the first Delors Package was implemented in 1989. This Cross-border RIS3 thus continues a pathway of joint collaboration that places the Euroregion at the front line of the European Union in Territorial Cooperation, with the third oldest EGTC of those existing in EU territory.

The first meetings between the CCDR-N⁴ and the Xunta de Galicia took place in 1983 to address issues of mutual interest. In fact, April of 1986 saw the signature in Oporto of the working document Projects susceptible of joint consideration on behalf of Galicia and Northern Portugal. On the 31st of October of 1991 the first Working Community of the border was established in Oporto, after the Spanish and Portuguese governments ratified the Madrid Outline Convention of the Council of Europe on cross-border cooperation between local authorities. This Working Community had no legal status.

At the same time, also in Oporto, on the 1st of April of 1992, the thirteen most important cities in the Euroregion established the Association of Municipalities of the North-Western Peninsula Atlantic Axis, an association with legal personality right from the beginning, becoming the most veteran of all such associations. This entailed reproducing the rivalry between local and regional powers that also existed elsewhere in the EU. However, since 2000, both cooperation structures signed a collaboration protocol by means of which the Axis (Eixo Atlántico) joined the Working Community as a special committee.

The Working Community fostered the birth of the Territorial Cooperation Communities (TCC), which did not have legal status. The first TCC was established in 1999 at Val do Lima but it is inactive today. The second one was established at Val do Miño in 2005 and became Uniminho in 2005, an entity with legal status. This was the first structure established according to the Valencia Treaty on cross-border cooperation between Spain and Portugal. The TCC of Val do Tâmega was established in 2000 and eventually became an EGTC with legal status. Finally, the Val do Cávado TCC was established in 2002 but it is currently inactive.

⁴ European Grouping of Territorial Cooperation .

On the 22nd of September of 2008, the Working Community adopted an instrument with legal personality by establishing the GNP⁵ EGTC. This was possible after the adoption of Regulation (EC) No. 1082/2006 that established the European Groupings of Territorial Cooperation (EGTC). The Euroregion of Galicia – Northern Portugal was a pioneer in this structural model of territorial cooperation, as it was the third of the EGTCs to be established in Europe. The GNP EGTC is in charge of managing cooperation at the cross-border level in the areas of competitiveness, employment, environment, cultural heritage, and risk management.

In parallel, the Eixo Atlántico became consolidated as a reference Association for the urban system, growing from the original 13 founding cities to the 34 that it currently comprises. The Eixo Atlántico contributed to further development of bilateral relations at the urban level by fostering the incorporation of Eurocities. In 2007, the Eurocity Chaves – Verín was established, which has legal personality since 2013 as a new EGTC. In 2012, the Eurocity Tui – Valença was established.

The Eixo Atlántico is also noteworthy for its leadership presence at the European level, since it has become a part of structures such as EUROMOT,⁶ RIET⁷ and CECICN⁸.

At the moment Working Community currently hosts all the cooperation structures linked to the public administrations of the Euroregion.

It is also worth highlighting that connections among the regions extend beyond the scope of public administrations, through the establishment of links between Universities and Business Confederations. In 2002, the Fundación Centro de Estudios Eurorrexionais (FCEER) was established, comprising the six universities in the Euroregion. And in 2003, starting from a project funded by the programme INTERREG IIIA, the business associations Confederación de Empresarios de Pontevedra (CEP) and Asociación Industrial de Minho (AIMinho) formed the first business cooperation structure with legal personality: CECOTRAN⁹.

Under the umbrella of a POCTEP project, the first cross-border cluster of the Euroregion was born: EUROclusTEX, a textile/fashion cluster in the Galicia-Northern Portugal Euroregion. This cluster is made up of COINTEGA¹⁰ and CITEVE¹¹.

⁵ Galicia - Northern Portugal.

⁶ European Association of Internal Combustion Engine Manufacturers.

⁷ Iberian Network of Cross-border Entities. www.rietiberica.eu/

⁸ Conference of European Cross-border and Interregional City Networks. <http://cecicn.eu/>

⁹ Cross-border Cooperation Centre. <http://www.cecotran.com/>

¹⁰ Confederation of Textile Industries of Galicia.

¹¹ Technological Centre for the Textile and Clothing Industries of Portugal.

Recently, in 2014, the Joint Investment Plan (JIP) of the Euroregion Galicia – Northern Portugal was presented under the framework of the existing RIS3 Strategies, which already included a reference to drafting a joint Smart Specialisation Strategy (RIS3T) within the framework of its Priority Axis 1: An innovative Euroregion advocating innovation and transfer. The Joint Investment Plan for the Euroregion was established to meet four shared demands and to launch a challenge:

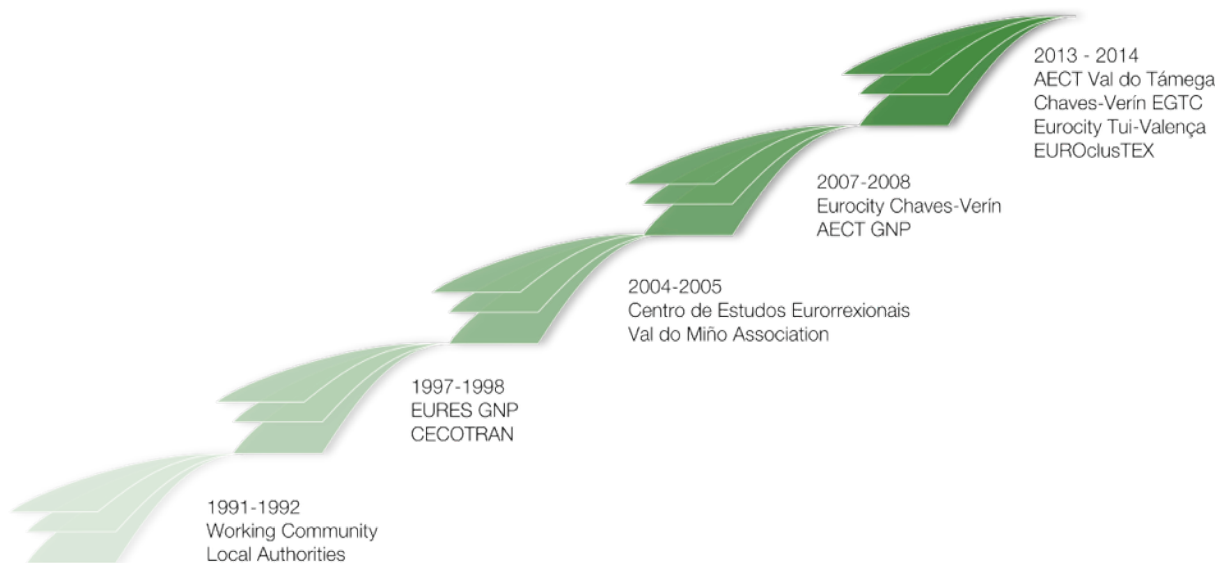
1. A win-win situation with cooperation. Prioritising expenditure, avoiding unnecessary duplications; coordinating investments in favour of citizens; involving civil society by generating a climate of mutual trust to stimulate business and joint work. Efficient cross-border cooperation founded on respect towards the national singularities of the respective participating countries, wherein singularities must be known and taken on board by everyone.
2. Sharing resources. Basing collaboration between our human capital to foster our R&D and capacity for transfer; in an agreed strategy for overseas marketing; in joint use of public social infrastructures at the border; in joint planning of the uses and conservation of natural and cultural resources of the Euroregion's historical legacy.
3. Advocating for intelligence, work, effort and inclusion. If the Euroregion believes in this premise, it will not fear funding through loans as it will be responsible for managing public monies, and capable of consolidating a sustainable economy.
4. Trusting our own capabilities. Believing in the people and the means of the Euroregion and conveying a political message to drive forward the strength of the citizens of Galicia and Portugal.

And finally, the challenge. In 2020, the Euroregion will converge with the most developed regions in the EU thanks to the progress in R&D and its transfer to the production sector.

In short, the key aspects of cooperation in the Euroregion, as may be inferred from the above and as worded in the POCTEP 2014-2020, are:

- The Spanish – Portuguese cross-border area is one of the most consolidated ones at the European level.
- Progressive institutionalisation of the Spanish – Portuguese cooperation by means of establishing Working Communities, EGTCs, Communities of Municipalities, research centres, Eurocities and the first cross-border clusters.
- Institutional complexity with several organisms operating at the same territorial level.

Figure 11. Evolution of Galicia -Northern Portugal cooperation



Source: produced in-house

In sum, the stable cooperation structures and initiatives today are those included in the following table:

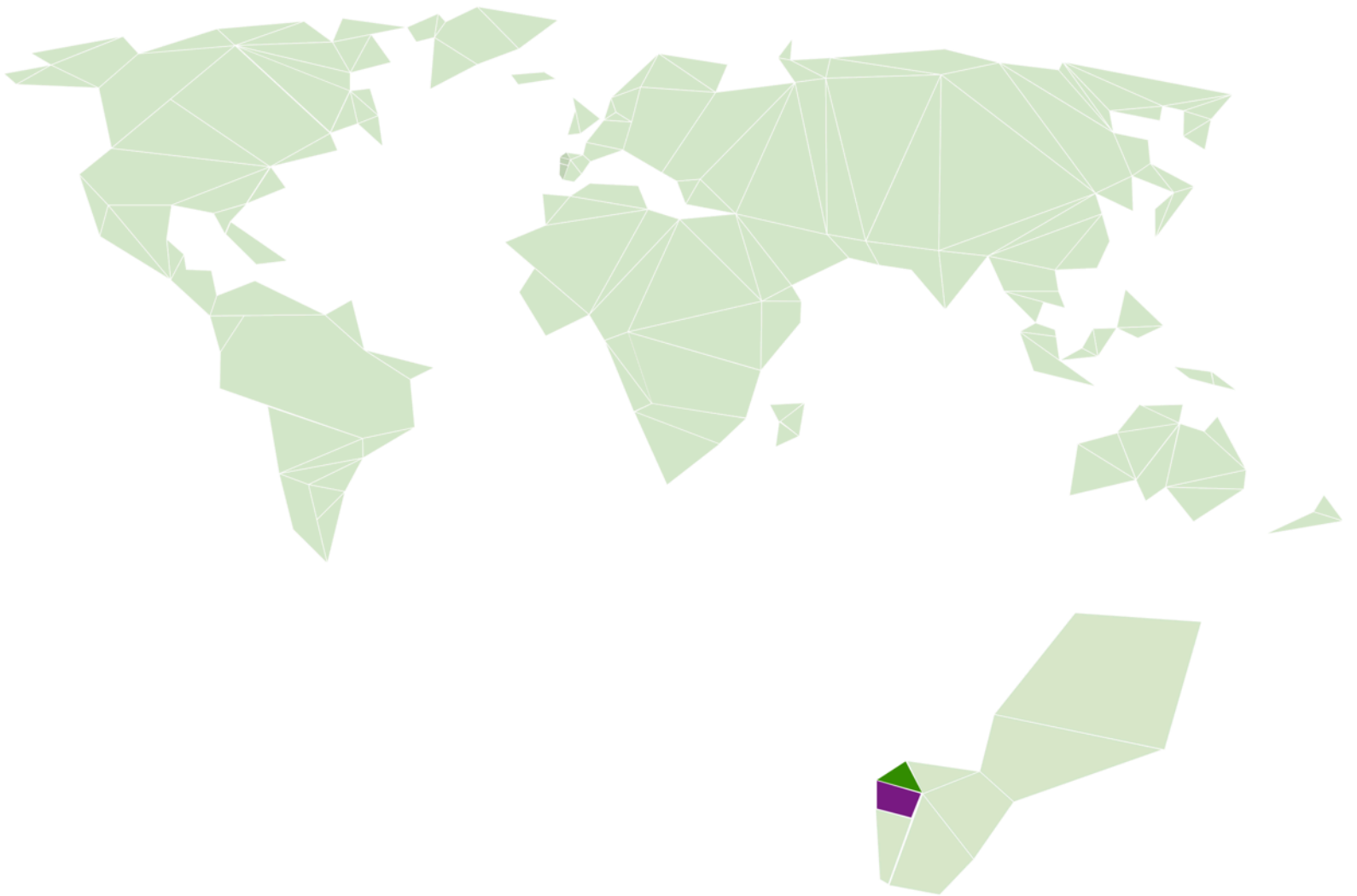
Table 1. Stable cooperation structures in the Euroregion Galicia – Northern Portugal

| Entity | Territorial Level | Nature | Year of Foundation |
|--|-------------------|-------------------------------|--------------------|
| Working Community Galicia – Northern Portugal | Regional | Working Community | 1991 |
| North-West Peninsular Atlantic Axis (Eixo Atlântico) | Local | Association of Municipalities | 1992 |

| Entity | Territorial Level | Nature | Year of Foundation |
|---|-------------------|-------------------------------|--------------------|
| Cross-border EURES Galicia – Northern Portugal | Regional | EURES | 1997 |
| CECOTRAN | Regional | Employers' Association | 1998 |
| Centre for Euroregional Studies | Regional | Foundation | 2004 |
| Association of Cross-border Valley of the river Miño | Local | Association of Local Entities | 2005 |
| Eurocity Verín – Chaves | Local | Eurocity | 2007 |
| EGTC Galicia – Northern Portugal (EGTC GNP) | Regional | EGTC | 2008 |
| European Grouping of Territorial Cooperation of Val do Tâmega | Local | EGTC | 2013 |
| Eurocity Tui – Valença | Local | Eurocity | 2013 |
| EGTCI Chaves – Verín | Local | EGTC | 2013 |
| EUROclusTEX | Regional | Cluster | 2014 |

Source: produced in-house from JIP and POCTEP Diagnosis

Continuing with the current and future relationship, it must be highlighted that, as seen throughout the document, there is a large degree of convergence between the RIS3 of the regions of Northern Portugal and Galicia. Both strategies for smart specialisation share the scope for potential joint action in areas such as providing value to marine resources, modernisation of the agricultural sector, modernisation of the tourist industry through ICTs, and Health. Such convergence will facilitate the drafting of the Cross-border RIS3 in order to provide continuity and depth to the relationship between these two historically connected regions that are Galicia and Northern Portugal.



5. DIAGNOSIS OF THE R&D SYSTEM OF GALICIA – NORTHERN PORTUGAL

This section presents a highlight of the information of the work of “Diagnosis of the context to define a joint smart specialisation strategy for the Euroregion Galicia – Northern Portugal” (hereinafter 'Diagnosis'). To this purpose, a characterisation of the socio-economic context and of the Innovation System is provided, together with the trends in specialisation for the production, technological and scientific dimensions of the Euroregion Galicia – Northern Portugal.

The Euroregion Galicia – Northern Portugal is situated in the north-west of the Iberian Peninsula, in the periphery of the European Union, as is shown in the following figure:

Figure 12. Map of the location of the Euroregion Galicia – Northern Portugal inside the EU



The Euroregion is divided into 12 NUTs III¹², 4 in Galicia and 8¹³ in Portugal, listed as follows:

- In Galicia: A Coruña, Lugo, Ourense and Pontevedra.
- In Northern Portugal: Alto – Minho, Ave, Cávado, Oporto Metropolitan Area, Alto Tâmega, Tâmega e Sousa, Douro, and Terras de Trás – os – Montes.

Administrative Organisation

Galicia and Northern Portugal have different administrative configurations. Spain is divided into Autonomous Communities to which several competencies have been transferred and Portugal has a more centralised structure.

CCDR-N¹⁴ is a decentralised body of the Portuguese Central Administration whose mission is to foster conditions for the integrated and sustainable development of Northern Portugal, as well as to contribute to the cohesion of the Portuguese territory. It has been vested with administrative and financial autonomy and its remit is to coordinate and promote, in the Region of Northern Portugal, the policies for Regional Planning and Development, Environment, Land Planning, Inter-regional and Cross-border Cooperation, and support to Local Administrations and Inter-municipal Associationism. It is also responsible for managing regional operational programmes issuing from Community funds to support Portugal, as well as other instruments for regional funding and development.

Likewise, the Xunta de Galicia has exclusive competences in: land and coastal planning, urban planning and housing, actions regarding the institutions subject to Galician civil law, procedural rules and administrative procedures under Galician law, the organisation of public powers, public works, railways, roads and transport; ports, airports and heliports; handicrafts, artistic heritage, libraries, museums, music conservatories and fine arts services; promotion of culture and research; promotion of the teaching of Galician language, tourism and sports, among others; as well as competences for tax regulations and for drafting and adoption of the budget for Galicia.

At the local level, Portugal is organised into municipalities and parishes, whereas Galicia has Provincial Councils and municipalities at the local level.

¹² In Galicia they are called provinces.

¹³ NUTS III (2013): After the revision of the Common Nomenclature of Territorial Units for Statistics (NUTS) instituted by Regulation 868/2014 of the European Commission, of August 2014, the North Region comprises, as from January of 2015, the following sub-regions (NUTS III): Alto Minho, Ave, Cávado, Oporto Metropolitan Area, Alto Tâmega, Tâmega e Sousa, Douro, and Terras de Trás-os-Montes.

¹⁴ Regional Coordination and Development Commission of the North.

Key data for the territory

The following table includes key data for the Euroregion at the geographical and demographic levels, as well as information on the state of the labour market and of the economy.

Table 2. General data on the Euroregion Galicia – Northern Portugal

| | Galicia | Northern Portugal | Euroregion |
|---|------------------|------------------------|---------------|
| Total area (Km2) | 29.574,40 | 21.285,88 | 50.860,28 |
| Currency | Euro | Euro | Euro |
| Time zone | GMT+1 | GMT | NA |
| Population | 2.778.913 | 3.689.682 | 6.468.595 |
| Official languages | Galician/Spanish | Portuguese / Mirandese | NA |
| Population density (people/Km2) | 95 | 173 | 127 |
| Mean age (2011) | 45,1 anos | 41,0 anos | 43 anos |
| Life expectancy at birth (2011) | 82,4 anos | 80,0 anos | 81,54 anos |
| Unemployment rate (2012) | 20,13 % | 16,0 % | 17,83 % |
| Activity rate (2012) | 55,40 % | 61,2 % | 59,23 % |
| Youth unemployment rate (2012) | 45,40 % | 33,0 % | 38,21 % |
| Early school drop-out rate (2012) | 23,1 % | 20,8 % | 22,1 % |
| % individuals aged 30-34 with higher education (2012) | 42,40 % | 28,8 % | |
| % Micro-enterprises (less than 10 employees) | 95,03 % | 95,3 % | |
| GDP 2012 | 56.313.345 € | 47.429.700 € | 103.743.045 € |
| Imports (Million €) 2011 | 14.355 € | 12.813 € | 27.168 € |
| Exports (Million €) 2011 | 17.150 € | 16.022 € | 33.172 € |
| Trade Balance (Million €) 2011 | 2.795 € | 3.209 € | 6.004 € |
| % of homes with access to broadband (2012) | 62,00 % | 56,00 % | |

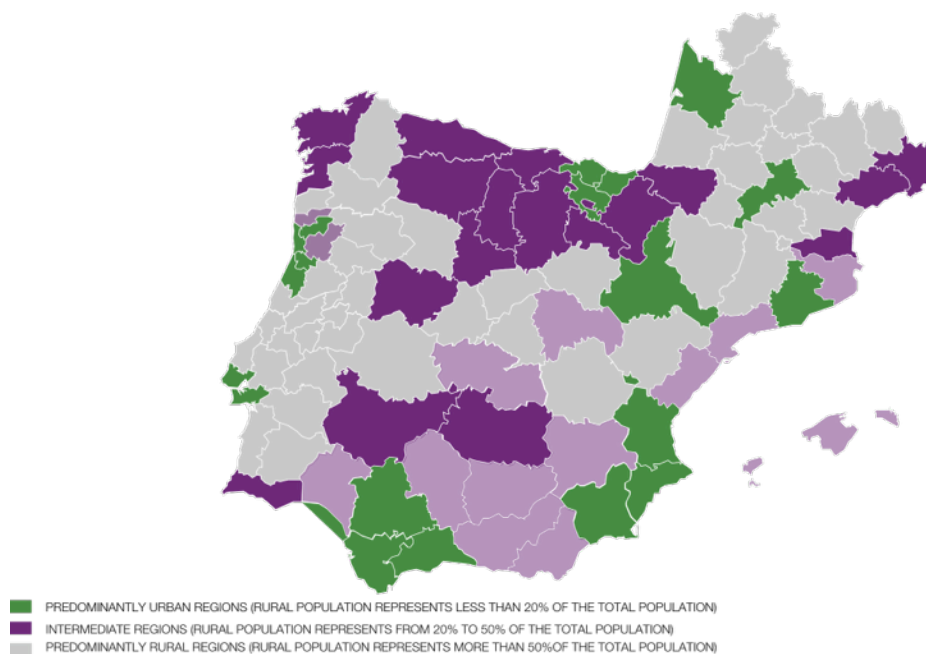
Source: produced in-house from data of the IGE¹⁵, INE¹⁶, Eurostat and RIS3 of Galicia

¹⁵ Galician Institute of Statistics.

¹⁶ National Institute of Statistics.

In the Galicia-Northern Portugal Euroregion, there are predominantly rural areas¹⁷ (Lugo and Ourense provinces in Galicia, Minho-Lima, Douro and Alto-Trás-os-Montes, in Northern Portugal, predominantly urban areas¹⁸ only in the Portuguese area in NUTS III ¹⁹(Ave, Grande Porto e Entre Douro and Vouga) and intermediate areas (A Coruña and Pontevedra provinces, in Galicia, and NUTS III Cávado and Tâmega e Sousa, in Portugal).

Figure 13. Map of the Urban– Rural typology of the Spain – Portugal cross-border areas



Source: POCTEP diagnosis

Insofar the urban fabric is concentrated along the main cities of the Atlantic Axis, as shown on the following map:

¹⁷ Rural population accounts for over 50% of the total.

¹⁸ Rural population amounts to 20-50% of the total population.

¹⁹ NUTS III (2002), defined by Law-Decree No. 244/2002, of 5th November, 2012.

Figure 14. Map with the location of the major cities in the Euroregion



Source: basic atlas of the Atlantic Axis and Euroregion Galicia – Northern Portugal

With regard to population, the density in the Region of Northern Portugal is higher than in Galicia, with the largest concentration located in the sub-region of Greater Oporto in the former and in the provinces of Pontevedra and A Coruña in the latter. The ageing population is one of the major challenges in both regions, life expectancy at birth being > 80 years, even though the population in Northern Portugal is on average younger than that of Galicia. In terms of the business structure, there are two clearly distinguishing elements for the industry in the Euroregion. On the one hand, most of the Euroregion's business structure is made up of SMEs (0-249 employees) and on the other hand, most such SMEs are micro-enterprises (less than 10 employees).

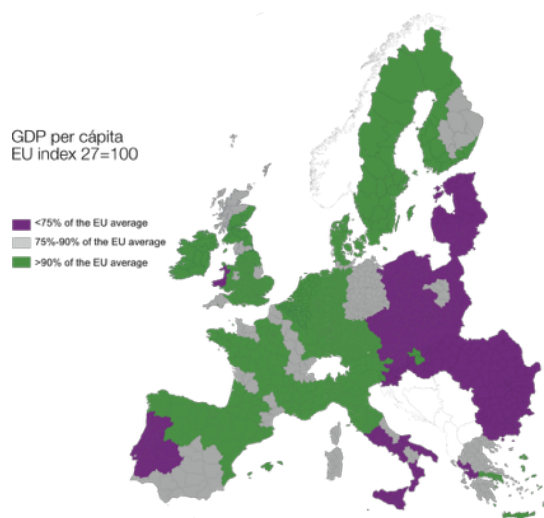
The labour market shows high levels of unemployment, especially in Galicia, with a high incidence of youth unemployment. The percentage of school drop-outs is more than 10% above the goal set in the Europe 2020 Strategy, and the majority of the population is employed in low-skilled jobs. The number of adults with higher education aged between 30 and 34 years is on the rise, especially in Galicia. It is also worth mentioning that as a consequence of the economic crisis, there has been a decrease in cross-border labour mobility, especially of Portuguese workers in Spain.

The index of social exclusion is slightly higher than the average for the EU, and the rate of severe deficiency among the population is increasing significantly due to the economic crisis and the discontinuation of payment of social benefits.

On the subject of gender issues, the female population has greater difficulties to enter the labour market. Due to the economic crisis, a decrease is observed in the traditional gender gaps in unemployment and employment.

The following figure shows the GDP, which is above 90% of the EU average GDP in the Galicia provinces, whereas the GDP is below 75% of the EU average for the 7 NUTS II (2002) that make up the Northern Portugal region.

Figure 15. Gross Domestic Product per NUTS2 over purchasing power standard (PPS), with the average EU percentage



Source: POCTEP diagnosis

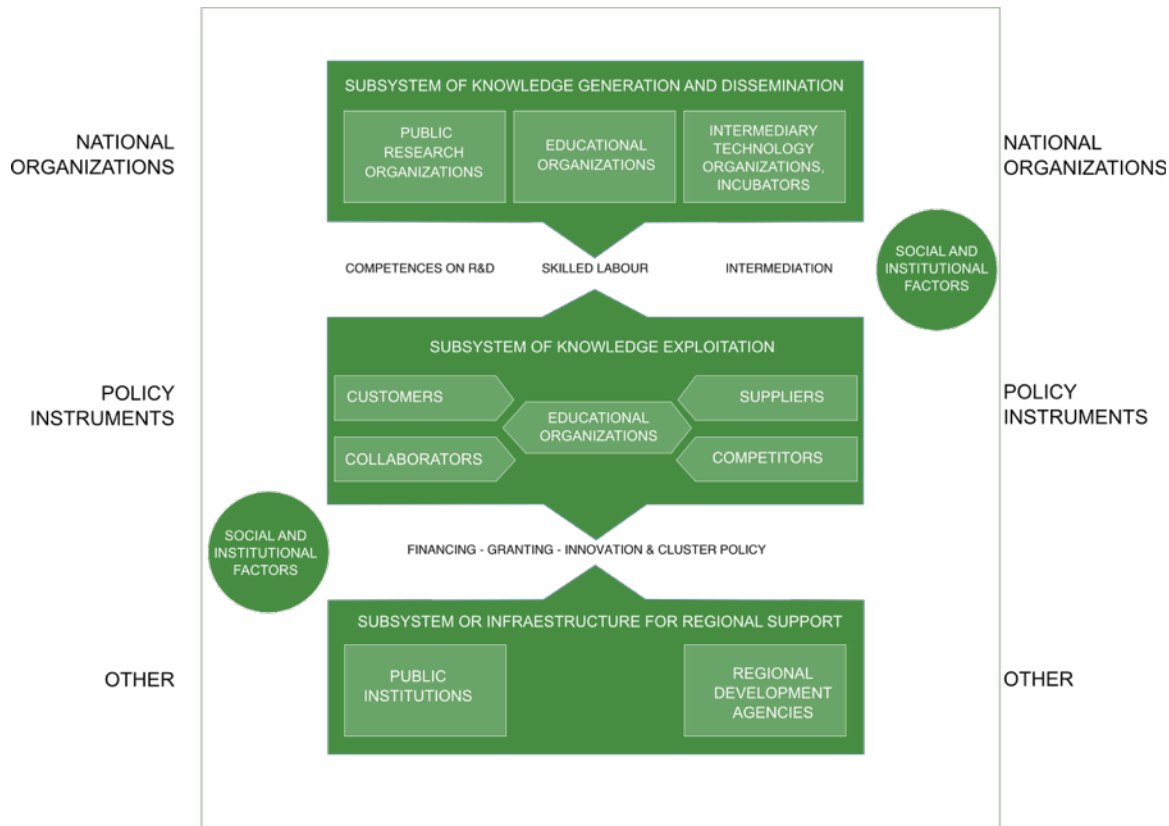
5.1 CHARACTERISATION OF THE R&D SYSTEM IN THE EUROREGION

The Innovation system in the Euroregion shows a variety and richness of components both at the level of knowledge generation and dissemination as well as of exploitation and regulation, comprising an open structure in which all stakeholders in the system and the necessary resources for its operation are integrated .

5.1.1. Stakeholders in the Innovation System

The innovation systems are configured by their components and the relationships between them. Together they determine the system, with the characteristic of possessing limits that facilitate their differentiation in comparison to other systems. Therefore, besides knowing the set of public and private stakeholders present in a given area that comprise the system and their essential characteristics, it is especially relevant to understand the interrelations existing between the aforesaid stakeholders and the way in which they may bring about a multiplier effect.

Figure 16. Composition of an Innovation System and existing interrelations



Source: Todling, F. e Trippi, M. (2005²⁰)

This Figure shows the composition of a Regional Innovation System comprised of three subsystems of stakeholders involved in interactive learning:

²⁰ Mikel Navarro Arancegui; 1st four months of 2009; "Os sistemas rexionais de innovación. Unha revisión crítica." Ekonomiaz N.º 70.

- Subsystem of knowledge generation and dissemination, comprised of Universities, Public Research Organisations (PROs or Public Research Centres, and Research Groups connected to Hospital Centres), and Intermediary Technology Organisations, such as Technological Centres, Technological Parks, Business Incubators and Associations, including Platforms and Clusters.
- Subsystem of knowledge exploitation or regional production structure comprised mainly of businesses, especially such as those with systemic characteristics.
- Subsystem or infrastructure for regional support, in which governmental organisations and regional development agencies would be actively involved.

There is a singularity in Galicia with the Servizo Galego de Saúde (Galician Health Service, known by its acronym - SERGAS), as it is transversal to the three subsystems described.

5.1.2. Current Situation of R&D in the Euroregion.

With regard to the situation of innovation in the Euroregion, in 2010 the expenditure on R&D in Northern Portugal was 1.5 % of the GDP, while in Galicia it was 0.94 % of the GDP. At the national level the situation of R&D expenditure in Portugal is 1.59% of the GDP, which is slightly above the figure for the North Region. The R&D expenditure in Spain was 1.39% of the GDP, which is higher than the 0.94 % figure for Galicia. The R&D investment objective established in the Europe 2020 Strategy is that of 3% of the GDP, and therefore both these regions, as well as Spain and Portugal, fall short of such goal.

Table 3. Expenditure on R&D (as a percentage of GDP) in 2010

| Country/Region | Total | Enterprise | Public Sector | Universities | Non-profit Private Organisation |
|-------------------|-------|------------|---------------|--------------|---------------------------------|
| UE | 2,00 | 1,24 | 0,26 | 0,49 | 0,02 |
| Spain | 1,39 | 0,72 | 0,28 | 0,39 | 0 |
| Galicia | 0,94 | 0,42 | 0,15 | 0,37 | 0 |
| Portugal | 1,59 | 0,73 | 0,11 | 0,58 | 0,16 |
| Northern Portugal | 1,5 | 0,69 | 0,1 | 0,58 | 0,13 |

Source: produced in-house

Upon analysing the above data, one can conclude that the stakeholders that most spend on R&D are enterprises, both in Galicia and in Northern Portugal, and they are followed by the universities. It must be highlighted that the percentage of total investment spent on R&D by enterprises and universities is similar in both regions (enterprises account for 44.7% of the total in Galicia and 46% in Northern Portugal, while universities account for 39.4% in Galicia and 38.7% in Northern Portugal). The weight of the public sector is greater in Galicia, and expenditure by private, non-profit organisations is greater in Portugal.

There are important R&D&I infrastructures in the Euroregion: technological centres, universities, research centres with qualified human capital, which must continue along this line in order to converge with the European averages. This situation is not reflected in the number of patents applied for, which continues to be low; nor in the creation of jobs in knowledge-intensive activities, which also remains low.

In conclusion, the Euroregion's behaviour regarding innovation is moderate and far from the objective set in the Europe 2020 Strategy of spending 3% of the GDP on R&D.

5.1.2.1. Areas of specialisation of the Euroregion Galicia – Northern Portugal

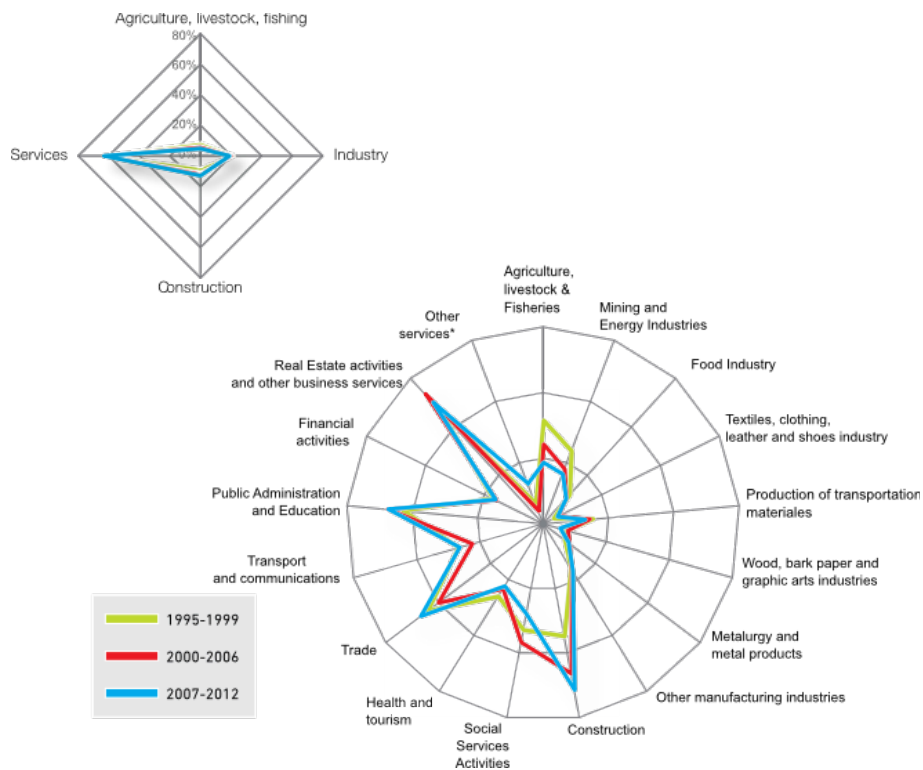
Here are the areas of specialisation of Galicia according to the RIS3 diagnosis performed based on the following variables:

- Production specialisation.
- Technological specialisation and presence of knowledge-based entrepreneurship discovery activities with a potential for international competitiveness.
- Scientific specialisation and proven capacity for generating internationally competitive knowledge.
- And the unique peculiarities of the Galician territory.

Area of production specialisation

The RIS3 takes into account Gross Added Value (GAV), one of the main internationally used economic indicators in accounting models, to analyse the evolution (from 1995 to 2012) in the region, in accordance with the activities included in the CNAE code (National Classification of Economic Activities), with a view to characterisation of the production structure by sectors in the region.

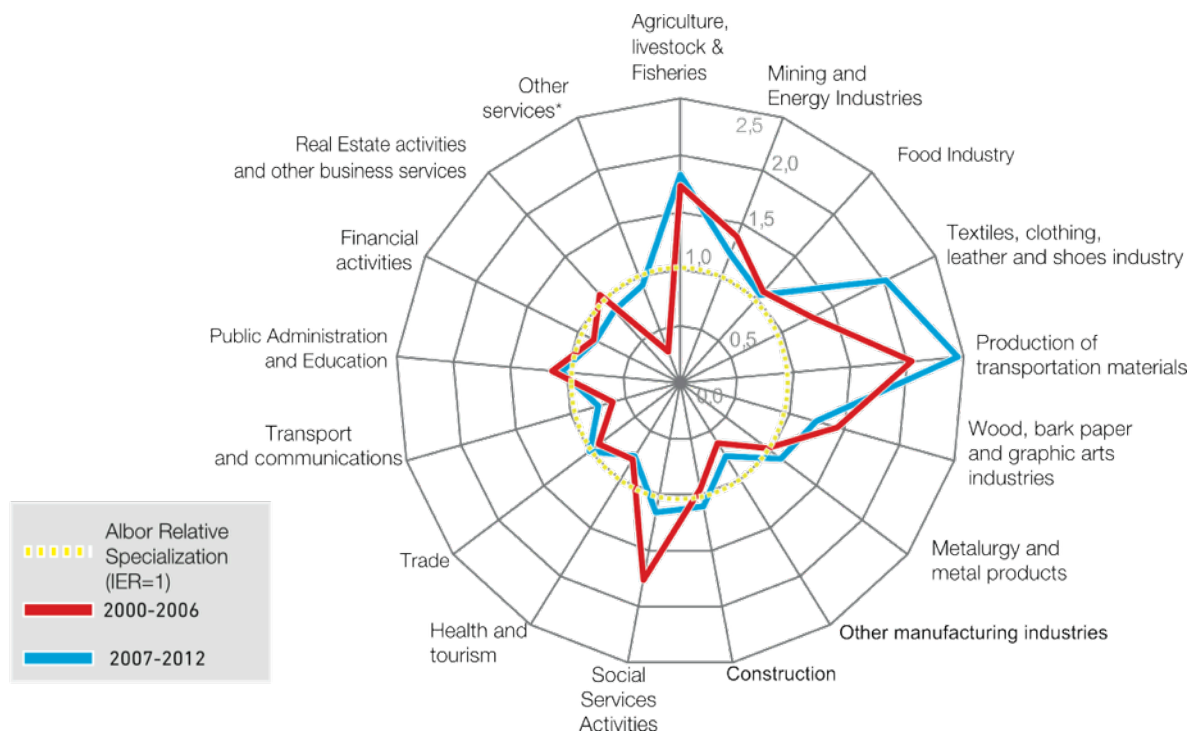
Figura 17. Evolution of the production structure in Galicia



(*) Other services: artistic, recreational and entertainment activities; household appliance repairs and other services. Households with domestic staff

Source. RIS3 Galicia

The graph shows the importance of the services sector, which is especially outstanding in low-technology activities. A slight decrease is also observed in activities related to the exploitation of Galicia's natural resources (agriculture, livestock farming, fishing (including forestry) and energy).

Figure 18. Relative Production Specialisation Index for Galicia/Spain²¹

(*) Other services: artistic, recreational and entertainment activities; household appliance repairs and other services. Households with domestic staff

Source: RIS3 Galicia

The above figure shows that the areas of production specialisation in Galicia are:

²¹Based on data of Gross Added Value by activity in the CNAE for Spain and Galicia, during the 2000-2012 period.

- Primary sectors: agriculture, livestock farming, forestry, wood sector, and fishing; among which the fishing sector stands out in terms of relative specialisation.
- Extractive industries.
- Energy sector.
- Natural stone.
- Transport material manufacturing sectors, including the Automotive and Shipbuilding industries.
- Textile and Clothing Industry.
- Health and Social Services and other activities related to quality of life and well-being.

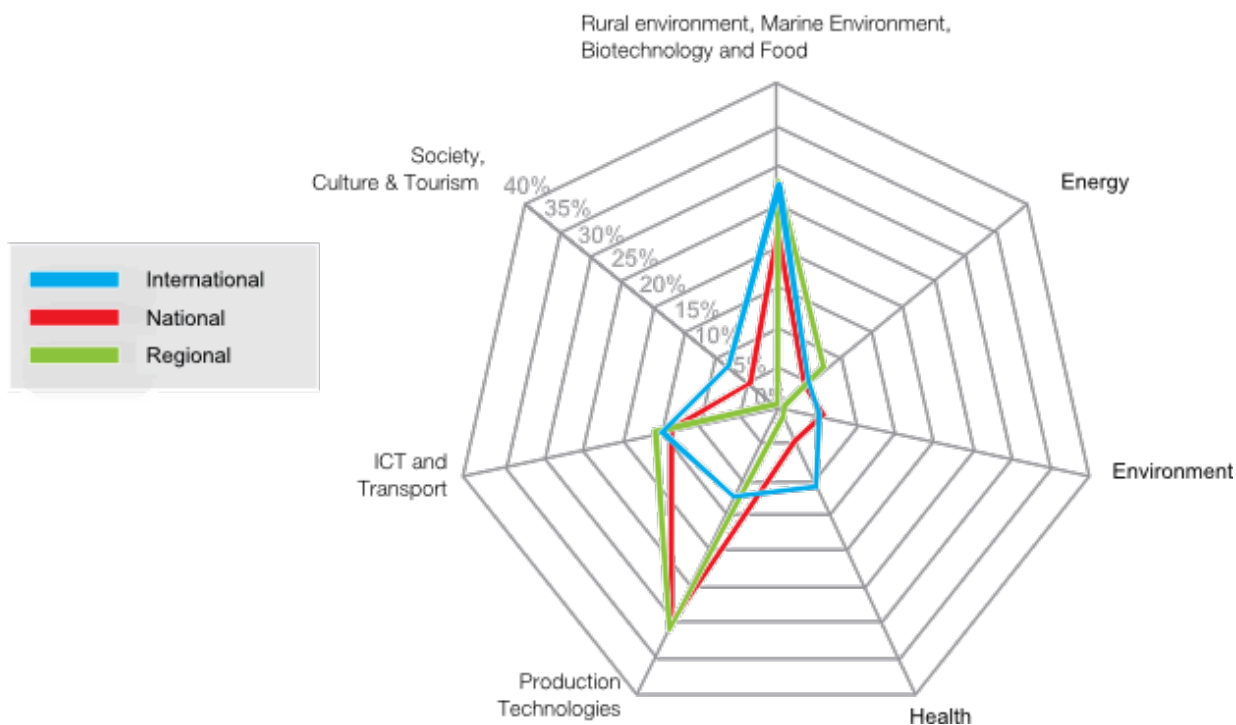
Area of technological specialisation

RIS3 Galicia presents the technological specialisation of the Region based on data obtained from the Innovation Observatory of Galicia. More specifically, the projects funded by the Sectoral Programmes of the Xunta de Galicia were taken into account at the regional level; those funded by R&D grants from the Technological Development Centre (CDTI) were taken into account at the national level and those funded by Galicia's participation in the Seventh Framework Programme at the international level.

The above figure indicates that the areas with the highest weight are:

- Rural Environment.
- Marine Environment.
- Food.
- Biotechnology, which stands out transversally.

Figure 19. Technological Specialisation of Galicia in the 2007-2010 period²²

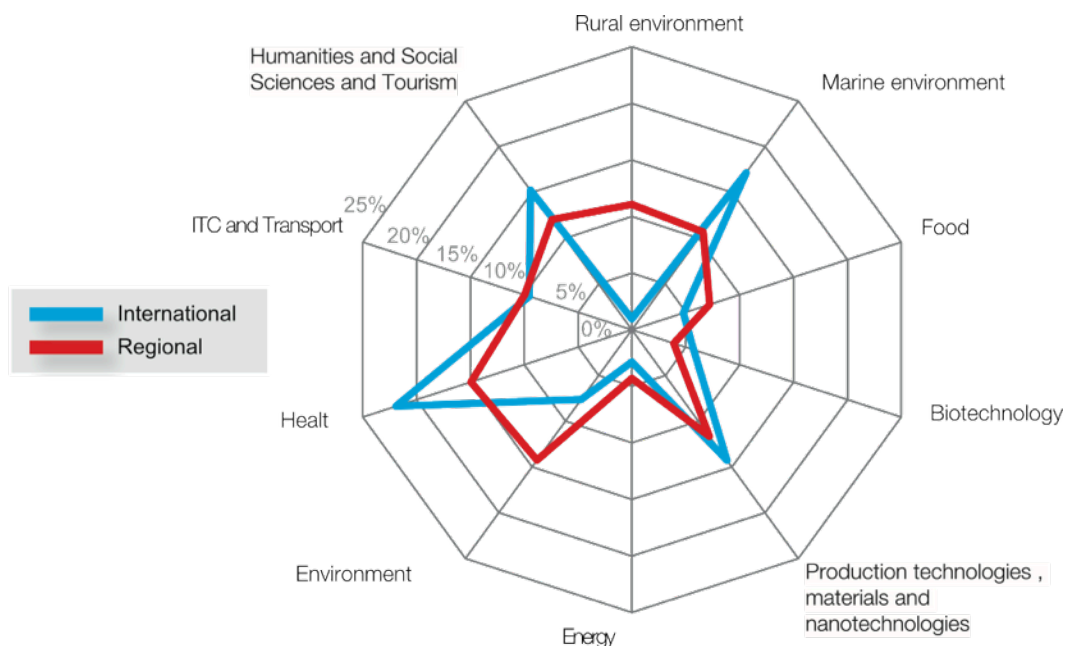


Source: RIS3 Galicia

²² Only data for 2007-2009 are included at the national level because at the time of drawing this graph, only data from the CDTI were available until 2009 at the Innovation Observatory of Galicia

The Rural and Marine Environments stand out as they account for around 20% of R&D projects funded under the different plans: regional, national and international. The above figure also highlights production technologies, technologies linked to the production chain from the process itself to the elements that appear there. Such a disparity is the reason for them to prevail in the previous graph. This disparity may be better assessed based on the technological specialisation index of Galicia with respect to Spain. This index was estimated in the Galician RIS3 based on the projects approved under the Seventh Framework Programme of the European Union, in which the four above mentioned sectors stand out (rural environment, marine environment, food and biotechnology), whereas production technologies do not.

Figure 20. Relative Technological Specialisation Index Galicia/Spain 2007-2010

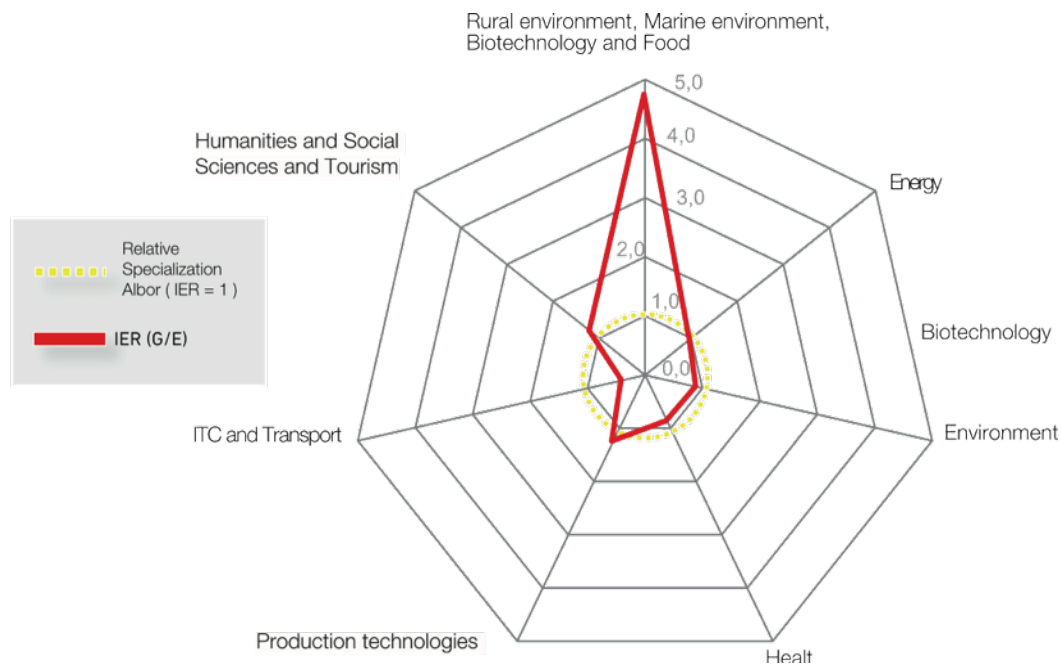


Source: RIS3 Galicia

Area of scientific specialisation:

In order to present the area of scientific specialisation, the RIS3 analyses the data on the participation in competitive calls at the regional, national and international levels.

Figure 21. Scientific Specialisation in Galicia



Source: produced in-house from data from the Innovation Observatory of Galicia

The above figure shows that the two most competitive sectors in Galicia are:

- Marine Environment.
- Health.

Areas connected to the two International Excellence campuses present in Galicia, the Campus do Mar (Campus of the Sea)²³ and the Campus Vida (Life Campus)²⁴.

Conclusiones

According to the analysis presented in the sections above, it can be concluded that there are two areas in Galicia that stand out above the others:

- Fishing and marine activities.
- Health and life sciences.

There is a third area ranked in importance:

- Green biotechnology, which would include activities mainly related to the Rural Environment and to the Environment itself.

Moreover, there are also competitive activities in:

- Major emerging technologies such as ICTs, Biotechnology and Nanotechnology, which also appear linked to the abovementioned vectors, as well as the cross-cutting importance of Production Technologies with an outstanding production importance in certain sectors of the Galician economy, mainly in the industrial sectors.

Northern Portugal

The areas of specialisation of the Region of Northern Portugal based on the data included in the Northern Portugal 2020 RIS3 and the POCTEP diagnosis are shown below:

- Area of economic specialisation.
- Area of scientific specialisation.
- Area of specialisation in technological production.

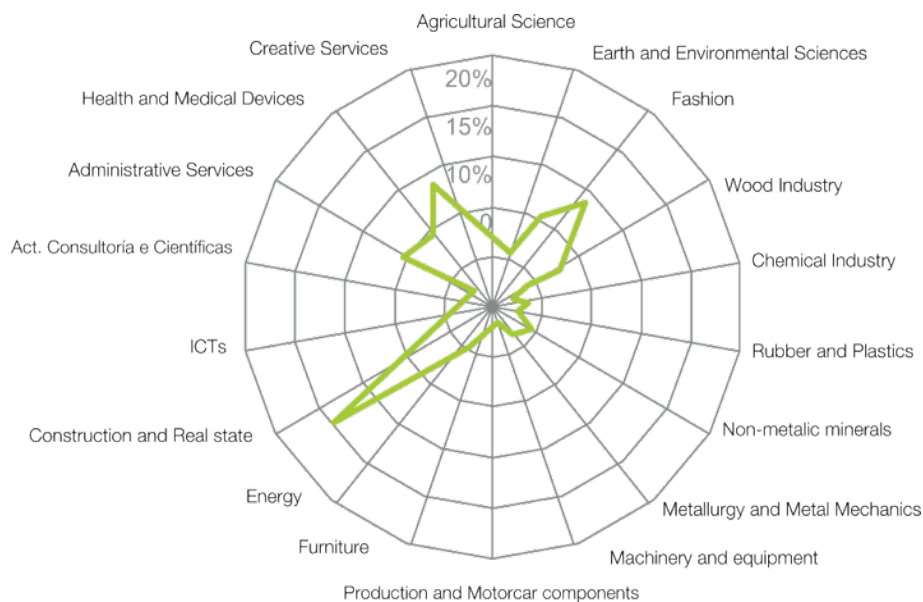
Area of economic specialisation

As stated in the Northern Portugal 2020 RIS3 , the region's economic specialisation is present in two fields: on the one hand there is the specialisation in the industrial sector, and, on the other hand, in the services sector, whose breakdown is as follows:

²³<http://campusdomar.es>

²⁴ <http://www.galego.campusvida.info/>

Figure 22. Production specialisation in Northern Portugal



Source: produced in-house from data included in the Northern Portugal RIS3

As seen in the above graph, the business areas with the greatest economic density in Northern Portugal are:

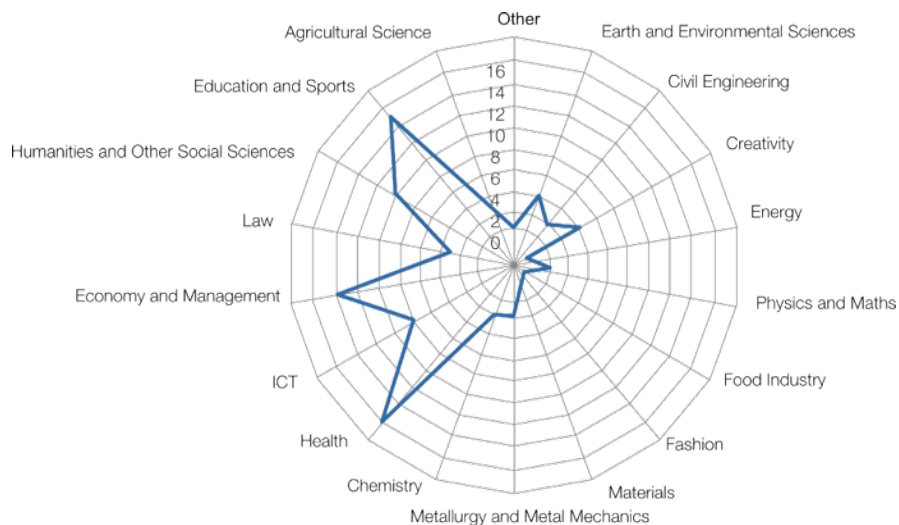
- Construction.
- Fashion.
- Health and medical devices.
- ICTs.
- Metal mechanics and metallurgy.

- Machinery and equipment.
- Agri-food industries.
- Energy.

Area of scientific specialisation

From the information collected in the Northern Portugal RIS3 it may be concluded that the region's scientific specialisation is as shown below:

Figure 23. Scientific specialisation in Northern Portugal



Source. produced in-house from information contained in the Northern Portugal RIS3

In the light of the above, the cumulative production of human capital per scientific area most present in Northern Portugal is as follows:

- Health.

- Education and Sports.
- Economy and Management.
- Arts and other Social Sciences.
- ICTs.
- Earth, Life and Environmental Sciences.
- Ciências da Terra, da Vida e Ambiente.

Area of specialisation in technological production

The POCTEP diagnosis includes the technological production specialisation index in comparison to other OECD countries for the years 2007-2010. In particular, the data included for Northern Portugal are as follows:

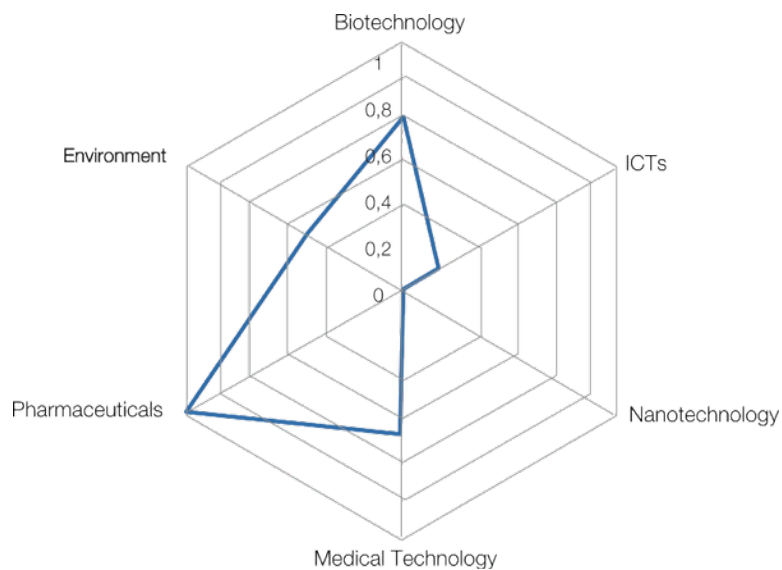
Table4. Technological production²⁵ specialisation index

| Area | Index |
|--------------------|-------|
| Biotechnology | 1,53 |
| ICTs | 0,33 |
| Nanotechnology | 0 |
| Medical Technology | 1,24 |
| Pharmaceuticals | 2,6 |
| The Environment | 1,3 |

Source: POCTEP diagnosis

²⁵ Based on the number of patent applications submitted to EPO.

Figure 24. Specialisation in technological production



Source: POCTEP Diagnosis

This graph shows that that the centres for specialisation in technological production in Northern Portugal are:

- Pharmaceuticals and Health.
- The Environment.
- Biotechnology.

Conclusions

After analysis of the regional economic structure and of the volume of human capital trained in the different scientific areas of Northern Portugal, the following areas with a relevant critical mass have been identified in a decreasing order of importance:

- In the dimension of human capital, Health, ICTs, Production Technologies, Biotechnology and the Environment, Architecture and Design, Agricultural and Life Sciences.
- in the economic dimension, Construction, Fashion, Health and Medical Devices, ICT and Knowledge-intensive Scientific Services, Metal mechanics and metallurgy, Machinery and Equipment, Production and Motor Car Components, Agro-food Industries, and Energy.

Cross-referencing these dimensions has enabled the identification of domains with presence of a relevant critical mass for building a regional smart specialisation strategy. Beyond such domains, and depending on more recent investments, it would be more appropriate to pursue more proactive endeavours, such as aeronautics and nanotechnology.

This exercise resulted in the definition of 8 smart specialisation domains for Northern Portugal (mainstream and emerging):

- Life and Health Sciences.
- Culture, Creation and Fashion.
- Marine Resources and Economy.
- Human Capital and Specialised Services.
- Mobility and Environmental Industries.
- Advanced Production Systems.
- Agri-environmental and Agri-food Systems.
- Symbolic Capital, Technologies and Tourism Services.

5.2. CONCLUSIONS OF THE DIAGNOSIS. SWOT ANALYSIS

As a conclusion the diagnosis presents a SWOT analysis of the R&D&I issues relevant to the Euroregion.

Table 5. Weaknesses and Strengths of the Euroregion

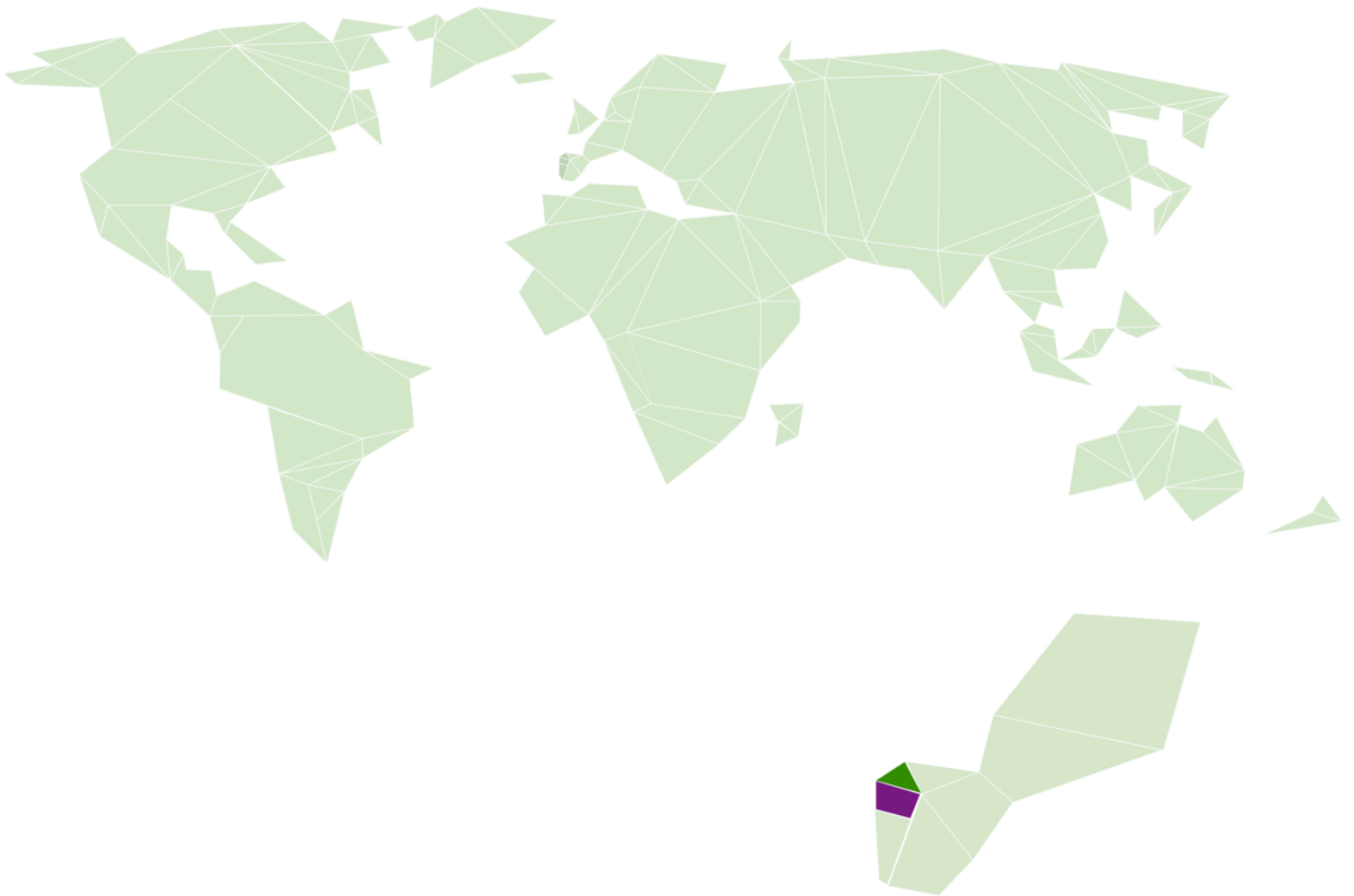
| WEAKNESSES | STRENGTHS |
|---|---|
| Distance from the Europe 2020 R&D&I objectives. | Positive evolution of European convergence indicators and local technological effort, leading to the creation of a relevant critical mass in several domains. |
| Weak focus of Euroregional stakeholders on R&D&I at the transnational and European levels. | Institutional awareness of the importance of research, innovation and internationalisation of production activities. |
| Low number of patents. | Existence of an institutional and financial basis for cooperation within the scope of R&D in the Galicia – Northern Portugal Euroregion |
| Weak interaction between Academia and Business. R&D transfer problems between public and private sectors. | Good level of participation in R&D&I cooperation projects. Especially positive evolution of the participation in the Horizon 2020 programme. |
| Absence of a systemic, transparent and specialised relationship of financial instruments to support innovation, internationalisation and entrepreneurship. | Existence of the GNP EGTC as a platform to manage cooperation at the cross-border level. |
| Lack of alignment of R&D with the economy due to the gap between the R&D Scientific and Technological System and the business world. | Existence of the Campus of Excellence: Life Campus and Campus of the Sea. |
| Low industrial productivity. | Capacity and quality of further education. |
| Concentration of employment in traditional sectors (primary sector and manufacturing industries). | Increased investment in the private sector. Structure of the economy with a strong industrial and entrepreneurial component and vocation towards exports. |
| Entrepreneurial fragmentation characterised by relative specialisation in medium-low technological intensity sectors; as well as limited capacity to absorb entrepreneurial R&D, due to the small size of businesses. | Positive trade balance. |
| Low level of utilisation of new technologies to protect the Natural Environment, especially regarding risk management. | Rising trends at all ICT levels |
| High energy intensity. | Presence of Clusters with converging themes and great entrepreneurial drive. |
| Regarding transport, there is a low accessibility index, low level of multi-modal integration, and lack of coordination in airport policy. | Relevance of micro-enterprises to create employment and self-employment |
| | Great richness of intangible heritage, oral tradition as well as historic – cultural, architectural, natural and landscape heritage. |

Source: Galician RIS3, Northern Portugal RIS3, JIP GNP Euroregion, POCTEP Diagnosis

Table 6. Threats and Opportunities of the Euroregion

| THREATS | OPPORTUNITIES |
|--|--|
| Dependence on public funding to develop R&D&I. | Programming of European funds at the regional level for 2014-2020. |
| Diminishing European and national aid for innovation. | Online interaction with public management using ICTs. |
| Budgetary constraints to public institutions due to new, more restrictive funding scenarios, also in the field of R&D&I. | Strategic planning defined and consolidated for priorities in cooperation, especially in the field of R&D&I |
| Concentration of R&D human resources in the universities. | Recent creation of the Iberian Network of Cross-border Entities, (RIET), public-private border lobby working to make the most of cross-border opportunities between Spain and Portugal, also in the field of R&D&I |
| Difficulties to market and transfer technology. | Implementation of a regional RIS3 to concentrate efforts in strategic major impact sectors. |
| Vulnerability to the effects of the economic crisis. | Quality of the universities in the Euroregion. |
| Risk of social exclusion for the youth and the elderly. | Development of Vocational Training for professional recycling and search for new opportunities. |
| Over-qualification and talent retention | Presence of supporting R&D&I infrastructures. |
| Lack of support from the financial sector to R&D&I activities, and difficult access of businesses to funding during start-up stages. | Potential for R&D&I in the marine, nanotechnology, biotechnology, textile and health sectors. |
| Youth unemployment. | Universities and Technological Parks with a long history. |
| Lack of connection to the labour market. | Industrial potential and a large network of sectoral clusters |
| Ageing population. | Potential for exports in specialised sectors such as the automotive, fishing and textile. |
| Dependence on fossil fuels. | Availability of industrial land at competitive prices |
| Loss of biodiversity (forest fires, drought). | Booming global market for business acceleration based on ICTs, fostering the creation of a technological market. |
| Coast-inland imbalance. | Development of new products and services adapted to agriculture, viticulture and tourism (agri-tourism and nature tourism) |
| Existence of poorly connected areas. | Growth potential for international tourism in the next few years, according to UNWTO. |
| | Rich natural and cultural heritage. Quality surface water. |
| | Advantageous situation regarding the global millennium challenges (importance of the Green Economy). Abundance of forestry, fauna and flora, marine and energy resources. |
| | New European policies to provide value to marine resources, the coast and port activity. Potential for maritime transportation. |
| | Introduction of environmental, food and safety regulations offering opportunities to develop new products and processes. |

Source: Galician RIS3, Northern Portugal RIS3, JIP GNP Euroregion, POCTEP Diagnosis.



6. SHARED VISION

Thanks to the adoption of the regional strategies for Galicia and Northern Portugal, and the support of the European Commission for cross-border cooperation within the framework of Smart Specialisation Strategies, both regions now share a vision for establishing a collaboration framework to meet the common challenges, to mobilise new initiatives and projects, and to open up new joint funding sources for such initiatives.

In order to achieve economic and social progress, Northern Portugal and Galicia have adopted a key principle, namely; the promotion of smart, sustainable and integrated growth, based mainly on research, innovation and entrepreneurial initiative in order to achieve more efficient regional policies for growth and development, with a view to generating entrepreneurial competitiveness, quality sustainable jobs, and the socio-economic development of their societies.

Within the framework of the Working Community, the Euroregion in turn has formally adopted the challenge of **converging with the most developed regions of the EU in 2020, through progress in R&D and its transfer to the production sector**, by formulating four common challenges:

1. Win-win through cooperation.
2. Sharing resources.
3. Investing in intelligence, work, effort, and inclusion.
4. Trusting in ourselves.

Both regions share a strategic approach with the European Commission, based on Smart Specialisation as the most efficient and effective way to support research and innovation and boost economic growth. The concept of smart specialisation refers to the concentration of available resources within a regional context, for the benefit of a limited number of priorities linked to real opportunities within the regional economic context, in order to induce an economic specialisation of the regions and global competitiveness.

Based on the RIS3 of both regions, Galicia and Northern Portugal now consider the opportunity of adopting a joint Smart Specialisation Strategy in the Euroregion as a framework to leap forward in scale, sophistication and reach, and thus greater impact and efficacy, through cooperation and joint initiatives focused in areas of common interest. The concentration of goals accentuates

the need for creating greater external dynamics, by coordinating and making the most of the synergies with political initiatives, instruments and infrastructures in other regions.

Likewise, this new cross-border collaboration framework, through open cross-border innovation dynamics, enables the generation of greater capacities and enhanced efficacy in the utilisation and articulation of Structural and Cohesion Funds and European R&D&I Funding Programmes, thereby facilitating synergies between the different national, regional and EU policies, and greater capacities and opportunities for attracting finance for initiatives in the Euroregion.

In this context, and within the scope of a longstanding collaboration tradition, Galicia and Northern Portugal agreed to start the participation process to draft (in the words of the S3 Platform from Seville) the first RIS3 cross-border strategy in the EU, that implied a twofold opportunity: the development of concrete projects for the production sectors on the one hand, and the capacity to access Community funding under programmes such as Horizon 2020 and European Territorial Cooperation programmes on the other hand. Therefore, this is an innovative initiative which intends to further cross-border collaboration in the field of R&D&I.

Stakeholders from the innovation systems of both territories participated in this task, as was the case with the individual RIS3s of Galicia and Northern Portugal, to produce a strategy 'of all and for all'.

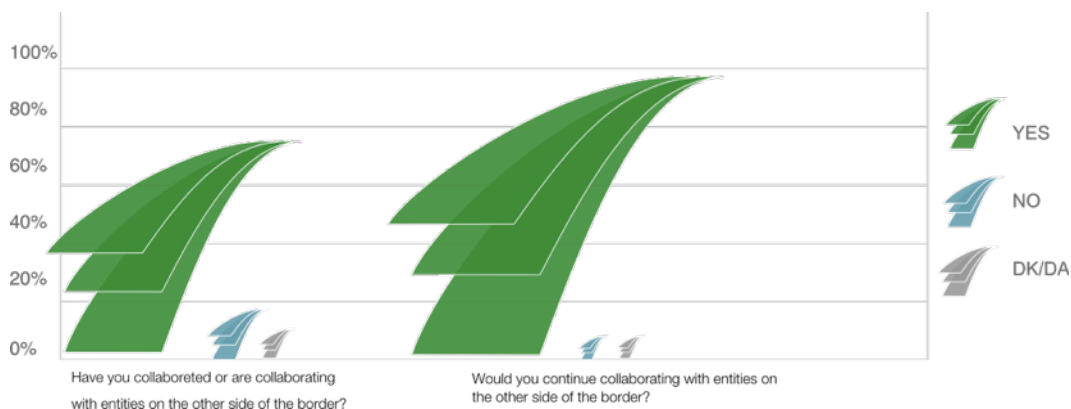
The deployment of this RIS3T will be based on the strategies that each region has already drafted individually, and they share many common items. Therefore, the Euroregion's Smart Specialisation Strategy will enable Galicia and Northern Portugal to carry out joint projects in areas involving pooling of state-of-the-art scientific-technological capacities, since they require a critical mass and synergies of enterprises and researchers, which are easier to achieve jointly for overall competitiveness.

The goal of this cross-border RIS3 is to define a collaboration framework to provide a coordinated response to the common challenges, to mobilise new initiatives and projects, and to open twofold funding based on smart specialisation; for obtaining territorial cooperation funds whilst also competing for additional funding from the Horizon 2020 research and innovation programme destined for regions that cooperate (more than €10 billion).

During the last European budgetary cycle (2007-2013), both regions jointly started more than 70 projects that add to the collaboration projects milestones (through involvement of the Central Governments of both countries), such as the International Iberian Nanotechnology Laboratory in Braga.

This collaboration continues to be a priority for the stakeholders in the Euroregion, as is reflected in their response to past, present and future collaboration schemes, as seen in the following figures which shows that there is a strong interest in cooperation among the stakeholders of the innovation systems on both sides of the border.

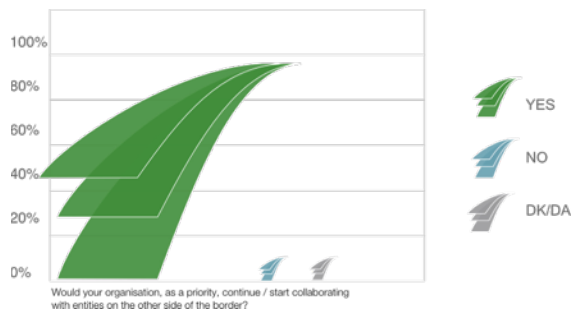
Figure 25. Interest of stakeholders in cooperation



Source: produced in-house from replies by the stakeholders

97% of stakeholders manifested that their organisation would as a priority continue/start collaborating with entities on the other side of the border. Those who did not state collaboration as a priority mentioned that even though they considered it to be interesting and very positive, the availability of resources inclined the balance towards other priorities.

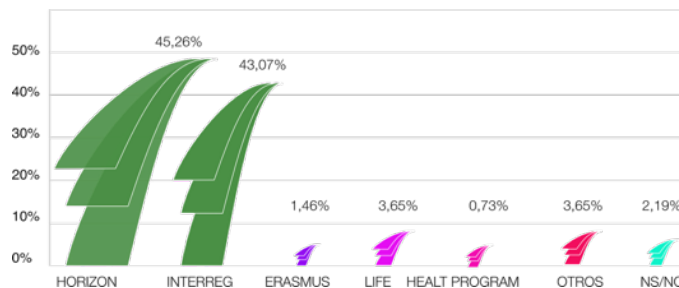
Figure 26. Priority for collaboration



Source: produced in-house from stakeholders responses

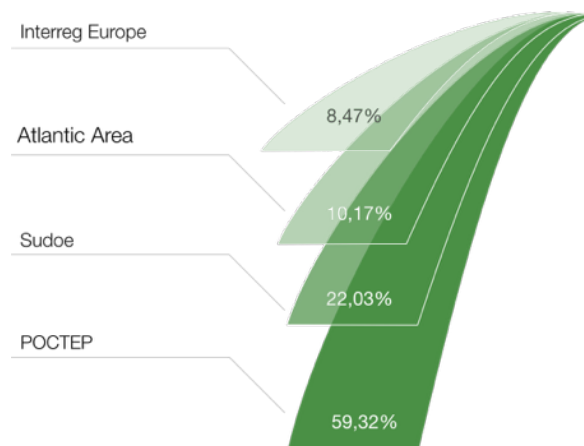
With regard to funding programmes, as shown in figure 27, the Horizon 2020 programme is the one that most stakeholders identify as a priority for their collaboration (45.26%). The INTERREG programmes (43%) ranked second in priority for the stakeholders, and the Cross-border Spain – Portugal (POCTEP) Cooperation Programme was the one chosen for this collaboration by the majority of stakeholders (Figure 28).

Figure 27. Programmes of interest for future collaboration



Source: produced in-house from the data obtained in the questionnaires

Figure 28. INTERREG Programmes of interest for future collaboration



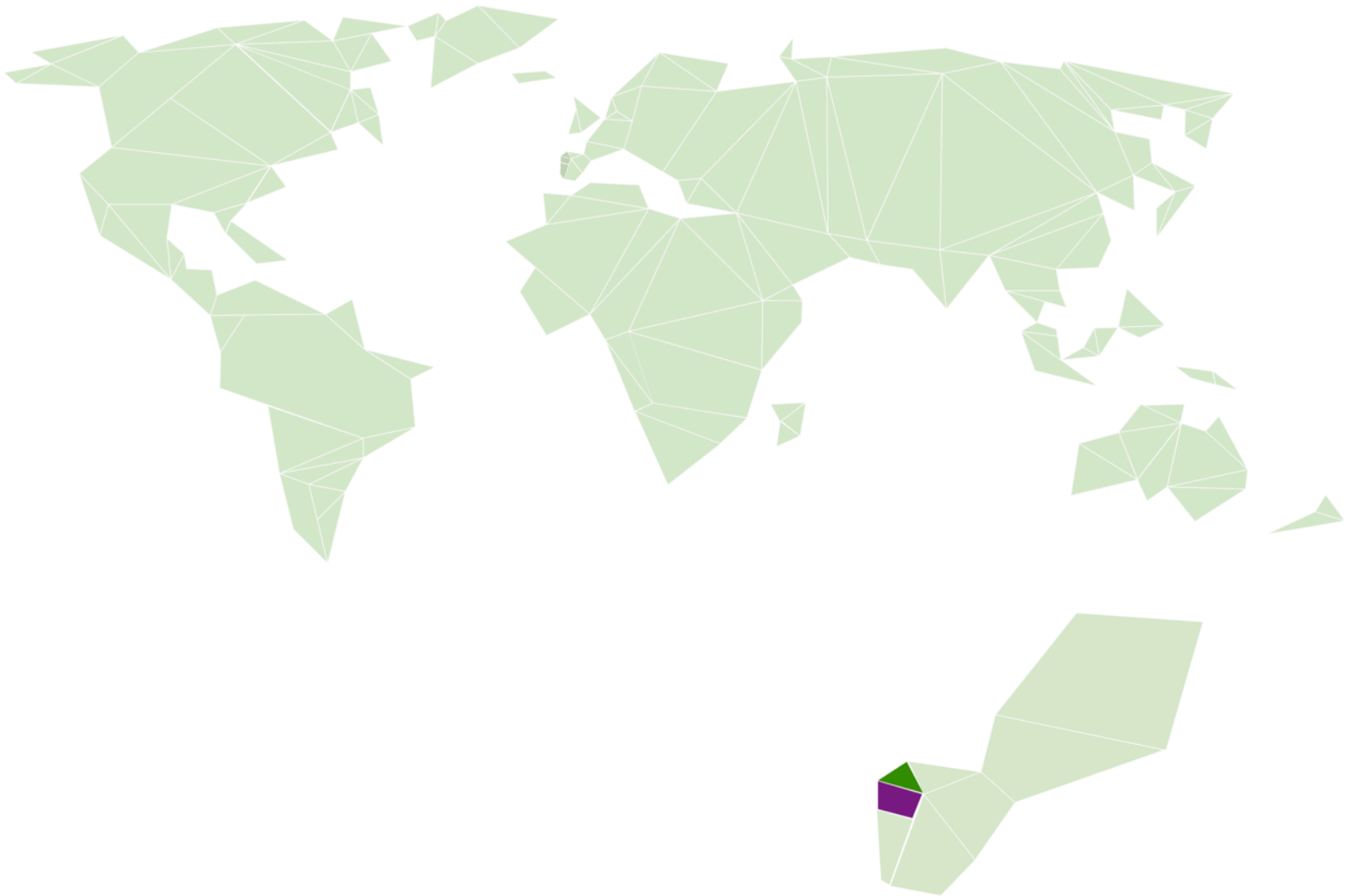
Source: produced in-house from survey data

It is no wonder that the POCTEP programme has been chosen as the most interesting one for the stakeholders to engage in collaboration, as this programme for the period 2014-2020, which submitted the definitive version of the OP in January of 2015, prior to launching the relevant calls, will involve a total budget of close to 400 million Euros, of which almost 300 million are to be funded by the EU through ERDF.

Likewise, it is worth the while mentioning that during the period 2014-2020, the programme will revolve around 4 priority axes, very much aligned with the interests of the stakeholders in the Euroregion:

- Smart growth through cross-border cooperation in order to boost innovation.
- Inclusive growth through cross-border cooperation in favour of business competitiveness.
- Sustainable growth through cross-border cooperation towards risk prevention and improved management of natural resources.
- Improved institutional capacity and efficiency of public administrations through cross-border cooperation.

The goals of the programme are in line with the goals of the Europe 2020 Strategy, whereby the participation of the regions of Galicia and Northern Portugal in POCTEP ought to contribute to the convergence of the Euroregion towards the goals under the Europe 2020 Strategy.



7. STRATEGIC COLLABORATION AREAS

As a result of the analysis of the priorities included in the RIS3 Strategies for Northern Portugal and Galicia, a series of common points were identified, which after an analysis and reflection process converged into 6 strategic areas for collaboration, listed in this section.

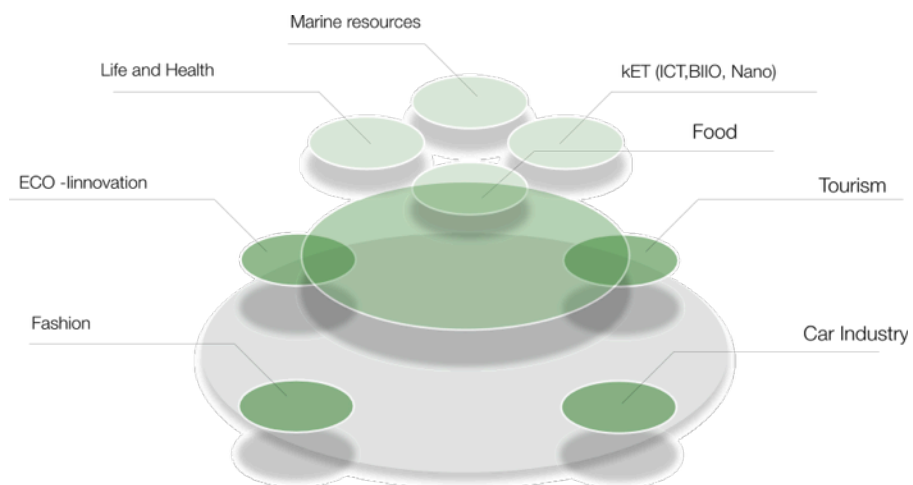
The establishment of regional smart specialisation strategies enabled the identification of the priorities that should guide the implementation of public policies and the allocation of financial resources within the framework of R&D&I in both Galicia and Northern Portugal. This identification of priorities, together with stakeholders, provides the opportunity to jointly prepare a strategy to establish common priorities and promote implementation.

Hence the Cross-border RIS3 meets a threefold objective, namely that of:

- Increasing the efficiency and efficacy of public policies and of the regional/inter-regional system.
- Exploring evident synergies in the fields of innovation and internationalisation in R&D&I, increasing critical mass and taking advantage of existing complementarities between stakeholders in both regions. This will enable the Euroregion to take on opportunities for European financing (Horizon 2020, IEE/ESIF, other R&D&I programmes, etc.) in a joint and structured way.
- Reaching higher levels of critical mass based on synergies and complementarities in innovation at the value chain level, given the growing combination of knowledge and productive capacities required in innovative processes.

Great coincidences were thus observed in the priorities, especially in the field of maritime resources, life sciences and health and food, together with other fields that can be seen in the following figure:

Figure 29. Principal synergies between the strategies of Galicia – Northern Portugal



Source: produced in-house

Below are the details of the content of each one, in order to determine the fields of greatest intensity in the synergy observed, giving rise to a matrix of synergies reflected in the following table:

Table 7. Matrix of synergies between the Galicia – Northern Portugal RIS3 priorities

| PRIORITY GALICIA | | | PRIORITY NORTE DE PORTUGAL | | | | | | | |
|---|-----|--|----------------------------|------------------------------|-------------------------------|-----------------------------|---------------------------------------|--|--|--|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | | | Life and Health Sciences | Marine Resources and Economy | Culture, Creation and Fashion | Advanced Production Systems | Mobility and Environmental Industries | Agri-environmental and Agri-food Systems | Symbolic Capital Technologies and Tourism Services | Human Capital and Specialised Services |
| CHALLENGE1: New model for innovative management of natural and cultural resources based on innovation | 1.1 | Valorization | LOW | LOW | NOT SIGNIFICANT | NOT SIGNIFICANT | LOW | NOT SIGNIFICANT | NOT SIGNIFICANT | |
| | 1.2 | Aquaculture | NOT SIGNIFICANT | LOW | NOT SIGNIFICANT | NOT SIGNIFICANT | NOT SIGNIFICANT | NOT SIGNIFICANT | NOT SIGNIFICANT | |
| | 1.3 | Biomass and Marine Energies | NOT SIGNIFICANT | LOW | NOT SIGNIFICANT | NOT SIGNIFICANT | MEDIUM | NOT SIGNIFICANT | NOT SIGNIFICANT | |
| | 1.4 | Primary Sectors Modernisation | NOT SIGNIFICANT | NOT SIGNIFICANT | NOT SIGNIFICANT | NOT SIGNIFICANT | NOT SIGNIFICANT | NOT SIGNIFICANT | NOT SIGNIFICANT | |
| | 1.5 | TIC- Tourism | NOT SIGNIFICANT | NOT SIGNIFICANT | NOT SIGNIFICANT | NOT SIGNIFICANT | NOT SIGNIFICANT | NOT SIGNIFICANT | MEDIUM | |
| CHALLENGE2: New industrial model based on competitiveness and knowledge | 2.1 | Diversification of driving sectors | NOT SIGNIFICANT | MEDIUM | MEDIUM | NOT SIGNIFICANT | MEDIUM | NOT SIGNIFICANT | NOT SIGNIFICANT | |
| | 2.2 | Competitiveness in the industrial sector | NOT SIGNIFICANT | NOT SIGNIFICANT | NOT SIGNIFICANT | MEDIUM | NOT SIGNIFICANT | NOT SIGNIFICANT | NOT SIGNIFICANT | |
| | 2.3 | Knowledge Economy | NOT SIGNIFICANT | LOW | MEDIUM | NOT SIGNIFICANT | LOW | NOT SIGNIFICANT | NOT SIGNIFICANT | |
| CHALLENGE3: New healthy lifestyle model based on active ageing of population | 3.1 | Active Ageing | MEDIUM | NOT SIGNIFICANT | NOT SIGNIFICANT | NOT SIGNIFICANT | NOT SIGNIFICANT | NOT SIGNIFICANT | NOT SIGNIFICANT | |
| | 3.2 | Food and nutrition | NOT SIGNIFICANT | NOT SIGNIFICANT | NOT SIGNIFICANT | NOT SIGNIFICANT | NOT SIGNIFICANT | MEDIUM | NOT SIGNIFICANT | |

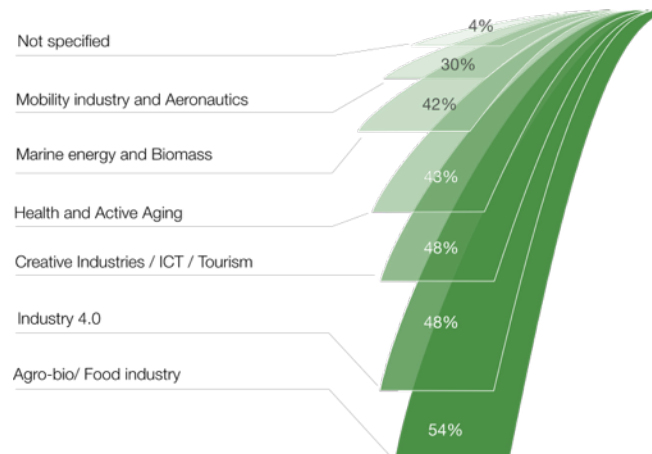
CAPTION HIGH  MEDIUM  LOW  NOT SIGNIFICANT 

By analysing this table, and paying attention to the areas of the greatest synergy, we can extract 6 strategic collaboration areas for Galicia and Northern Portugal:

1. Marine and biomass energies .
2. Agri - bio, food industry.
3. Processing industry (manufacturing).
4. Industry of mobility – aeronautics.
5. Creative industries, ICT and Touris.
6. Health – active ageing

These strategic collaboration areas were presented by the Technical Secretariat at the 1st Baiona Forum and endorsed by the stakeholders taking part therein, and then ratified by them in the replies obtained in surveys, where they pointed out the areas of greatest interest for cooperation, as shown in the following figure:

Figure 30. Interest in strategic collaboration areas



Source: produced in-house

Joint work in these fields is something new in the shared history of Galicia and Northern Portugal. The purpose is to make SMEs more competitive, obtain greater innovative investment from larger companies, more opportunities to boost talent in knowledge centres that cater to the production sector and hence higher growth and more and better employment.

The details of these strategic collaboration areas are given below:

7.1 STRATEGIC COLLABORATION AREA: TAKING ADVANTAGE OF ENERGY FROM BIOMASS AND THE SEA

SPECIALISATION FACTORS THAT DEFINE THIS STRATEGIC AREA

The natural resources available in the Euroregion undoubtedly have a great potential for the generation of renewable energy wherein we can highlight marine and biomass energy as an endogenous resource.

As far as the biomass sector is concerned, there are clear synergies between the RIS3 Strategies of Galicia and Northern Portugal in relation to the sources of energy generation from wastes and by-products, essentially in the agricultural and forestry sector.

As for marine energy there is convergence in terms of the specific use of resources related to the sea, Blue Growth, and more specifically to the potential for generating energy from waves and wind, without forgetting other sources such as algae.

In the case of Galicia, priority 1.3 of the RIS3 Strategy for Galicia identifies the need to diversify the Galician energy sector to obtain significant efficiency improvement in the use of natural resources in Galicia, by giving priority to biomass and marine energy. The natural resources of Galicia are a good base for the development of the energy sector, according to the IDAE (Institute for the Diversification and Saving of Energy). The Galician coastline has great potential for making the most of wave energy with an average wave power of 40 KW/m, only surpassed by Scotland and England in all Europe (according to data from Norvento) and a significant capacity for industrial development in the production of offshore wind farms. The energy system in Galicia comes close to a GDP of 8%, and in particular renewable energies account for 0.61% of the national GDP. Galicia has 883 companies in the field of energy (almost all of them are SMEs). In the specific field of biomass and marine energy, there are very few companies. Forest Biomass is one of the few fields taken advantage of, while in the case of marine energy there are several large companies in the country as a whole such as Norvento and Galicia Mar Renovables, and a huge potential for diversification in this sector for companies working in other sectors like the naval and automotive industries.

As for Northern Portugal, the framework of the specialisation area in marine resources and the economy in the Northern Portugal 2020 RIS3 Strategy points to the need for promoting economic activities related to the sea, including the production of energy from waves, wind and algae, mostly offshore. The Portuguese coastline is characterised by bathymetries ranging from 25 to 200m and gradual slope (< 3%), facilitating the development of wind farms and other support structures. A good example of the importance of this specialised domain in Northern Portugal is that there are significant business stakeholders related to the manufacturing of engines and generators;

there are 43 companies employing 2,314 people and whose turnover amounts to 930 million Euros, generating a gross added value of 122 million Euros.

Likewise, within the specialised area of mobility and environmental industries, the Northern Portugal 2020 RIS3 Strategy identifies the enormous potential of the region in agricultural and forestry biomass production.

Bearing in mind these synergies identified by the Strategies of both areas, it is logical that stakeholders consider that biomass and marine energies should become a focal point for economic development within the Euroregion and a specific target for RIS3T. In the field of energy from biomass and the sea, 42% of the stakeholders who responded to the survey were interested in collaborating in the development of joint cross-border projects.

TYPES OF PRIORITY ACTIONS IDENTIFIED BY STAKEHOLDERS

Within this area of strategic collaboration, activities for the development of technologies and systems to make the most of energy from biomass and the sea were identified as priorities. In particular, the following kinds of action were prioritised:

Table 8. Types of action prioritised in the area of Marine and Biomass Energy

| TYPES OF ACTIONS PRIORITISED IN THE FIELD OF ENERGY EXTRACTION FROM BIOMASS AND THE SEA |
|--|
| <ul style="list-style-type: none"> • Actions that economically appraise marine resources and assets. • Actions related to culture of algae and use of wastes and sub-products for production of biofuels. • Actions that value the potential of biomass from agricultural and forest production. • Actions that develop and demonstrate technologies to make the most of marine energy (waves and wind) and develop the fundamental constructive blocks for marine systems. • Any other initiative that contributes to the development of a "green" economic sector, for example by promoting the use of autochthonous energy resources based on marine and biomass energy. |

Source: produced in-house

7.2 STRATEGIC COLLABORATION AREA: BOOSTING COMPETITIVENESS OF THE AGRI-FOOD AND BIOTECHNOLOGY INDUSTRIES

SPECIALISATION FACTORS THAT DEFINE THIS STRATEGIC AREA

The primary sectors of agriculture, fishing, livestock farming and forestry have a high significance in the Euroregion. There are specific synergies within two primary sectors for both RIS strategies:

- Fishing and maritime technology, as long as they are understood as specifically linked to the fishing sector (the "Maritime Resources and the Economy" domain).
- Agriculture and livestock farming, specifically in the use of biotechnology for the modernisation thereof (the "Advanced Production Systems" and "Agri-Environmental Systems and the Food Business" domains).
- The use of ICT for the processing industries (the "Advanced Production Systems" domain), due to its transversality. Synergies can be found in the value chain with primary sectors, mainly agriculture, livestock farming and fishing, as mentioned above, although more generic in the RIS3 for Galicia.

The primary sectors (agriculture, fishing, livestock farming and forestry) have a specific priority in the RIS3 Strategy for Galicia (Priority 1.4) aimed at the modernisation thereof, mainly based on Key Enabling Technologies (KET) and ICT, covering the entire value chain, with no specific definition of the subsectors these actions should be aimed at, fundamentally understood in a generic sense (primary sectors in general). Given the use of ICT and KET there is a clear transversality.

As far as the region of Galicia is concerned, the primary sector accounts for roughly 3.2% of the Gross Added Value (GAV) and employs over 8% of the workers in the region – 90,500 people. Among the main subsectors in Galicia, we could highlight the importance of the fishing sector, which accounts for 52% of employment in the sector in Spain, 10% in the EU and in terms of GAV, 15% of the EU.

Likewise, we could highlight the forestry sector, whose economic potential, including forests, timber and the related industries, accounts for roughly 3% of the GDP in Galicia, the first region in Spain in this sector. Galicia is also first in Spain in beef and dairy cattle.

Within the agricultural sector, in the Northern Region's 2020 Strategy, subsectors such as wine, oil and chestnuts are specifically prioritised; in the RIS3 Strategy for Galicia they are not specifically related, but the use of ICT and KET to modernise these sectors is also worthy of mention.

The Northern Portugal region has a wide variety of natural resources that give rise to agricultural products with great potential, such as wine, oil, milk and others. Thanks to its edaphoclimatic characteristics, the region enjoys the Douro Designation of Origin, which supports the potential for products with an internationally acknowledged quality brand.

Bearing in mind the volume of business, the wine industry deserves special mention in the region, at almost 800 million Euros, as do viticulture at 120 million Euros and the cork industry for bottling that accounts for over 415 million Euros. The milk and dairy industry is also significant in the region, with a turnover of more than 720 million Euros, and dairy cattle farming at 52 million Euros. Meat and flour production are also major economic activities in the region, at over 550 million Euros each.

The primary sectors also contribute a significant number of jobs in the Northern Region. Among these we could highlight the manufacturing of flour-based products, with almost 17,000 jobs, followed at a distance by viticulture, the wine industry and corks for bottling with 11,972 jobs and then the meat sector with 5,557 jobs, and the dairy industries and dairy cattle breeding with 3,081 jobs. A lower number but also important can be found in fishing, where 3,137 people are employed.

For all these reasons, 54% of the agents who responded to the survey showed interest in collaborating in the field of competitiveness in the agri-food and biotechnology industries, and identified collaborating with entities on the other side of the border as one of the priorities of their organisation.

TYPES OF PRIORITY ACTIONS IDENTIFIED BY AGENTS

Activities related to the use of new technologies along the entire productive chain in agriculture, fishing, livestock farming and forestry were identified as priorities in the specialised field of bioeconomy. The objective being that of improving and managing resources in an efficient and innovative way (including waste and by-products from the processing thereof), together with the creation of cooperation networks and platforms to transfer information and good practices, developing new products and finally, holding activities related to user safety. The following kinds of action were identified in particular as priorities:

Table 9. Types of action prioritised in the agri-food and biotechnology industries

| TYPES OF ACTION PRIORITISED FOR BOOSTING COMPETITIVENESS IN THE AGRI-FOOD AND BIOTECHNOLOGY INDUSTRIES |
|--|
| <ul style="list-style-type: none"> • Actions linked to aquaculture both to improve technical facilities and to increase biodiversity. • Actions to improve production processes in agriculture, fishing, livestock farming and forestry. • Actions that employ biotechnology as an enabling technology for application in agri-environmental systems and in the food industry. • Actions that provide value to Agri-food activities in association with those linked to tourism and health, including Spas. • Actions that reinforce the international position of the Euroregion as a supplier of safe and healthy food. • Any other initiative that contributes to the generation of new market niches and stable and quality employment in this field that is so relevant for the Euroregion. |

Source: produced in-house

7.3 STRATEGIC COLLABORATION AREA: INDUSTRY 4.0

SPECIALISATION FACTORS THAT DEFINE THIS STRATEGIC AREA

The purpose of this Strategic Area is to reinforce the industrial sector in the Euroregion, fundamentally by promoting transversal aspects such as machinery, equipment, the environment and ICT.

Even though the processing industry is approached differently in the strategies of the two regions, there are specific synergies for sectors such as food, the automobile industry, shipbuilding, iron and steel and fashion. In both cases the idea would be to promote sectors that transversally reinforce innovation in certain industries provided that the ICT and KET are applied to innovation in processing technologies (Factory of the Future) and clean technology (Eco – innovation).

The idea in the RIS3 Strategy for Galicia under Priority 2.2 is to reinforce the industrial sector in Galicia, mainly by means of transversal aspects in sectors such as machinery, equipment, the environment and ICT, promoting innovation in processing technologies (Factory of the Future) and clean technology (Eco – innovation). The concepts of “Factory of the Future” and “Eco-innovation” cover the use of ICT and KET for modernisation and optimisation of processes and the promotion of competitiveness.

The industrial sector in Galicia, which includes the manufacturing and extraction industries, contributes 19.35% to the region's GDP²⁶, in second position in terms of Gross Added Value after the services sector. Among the industrial sectors we could highlight the automotive sector, which accounts for 12% of Galicia's GDP, with a turnover of 6,100 million Euros and which employs over 19,000 people, approximately 11% of industrial employment in Galicia²⁷. Another significant indicator of deeply-rooted industrial activity areas in Galicia is precisely Clusters, which group together companies and businesses related to the industrial sector. Another of the major sectors is shipbuilding, as 52% of the shipbuilding industry in Spain is in Galicia; the figure is 7% in the EU. We should finally mention the iron and steel industry, textile fashion and natural stone. In the manufacturing sector in Galicia there are important internationally acknowledged driver enterprises such as PSA Peugeot-Citroën and those belonging to the INDITEX group.

In the Northern Region's 2020 Strategy there is a transversal priority in the field of Advanced Manufacturing, promoting innovation in diverse sectors of the processing industry in the Northern Portugal Region.

The industrial sector in Northern Portugal has a high proportion in the regional economy, contributing 32% to the regional GAV. As a whole, the machinery, textile and garment, automobile, shoemaking, iron and steel, plastic and rubber sectors account for 67.4% of exports from Northern Portugal. The business base related to production technologies includes a diverse set of economic activities, suppliers of specialised technological solutions for the processing industry, importing significant earnings in production flexibility, productivity and control. Globally, the business volume of production technologies in 2011 in Northern Portugal amounted to 6,857 million Euros, employing over 70,000 people. We could in particular highlight the manufacturing of plastic goods, engines, electrical generators and transformers and metal building elements. Likewise, consulting and computer programming are relevant, a business that underlies the automation and control of production processes in the processing industry.

This is why 48% of the stakeholders who answered the survey are interested in collaborating in the field of Industry 4.0. They point out that the future of competitiveness in the Euroregion lies in the hybridisation of sectors and technologies and in the inter-reaction of technologists, engineers and scientists from different disciplines with creators and designers.

²⁶ Source: INE, 2012

²⁷ Source: CEAGA 2013

TYPES OF PRIORITY ACTIONS IDENTIFIED BY STAKEHOLDERS

In this strategic collaboration area stakeholders highlight the importance of promoting the value of the processing industry as the driving force for the generation of employment. They lay special emphasis on the importance of carrying out projects related to innovation in process technology and clean technology. In this strategic collaboration area the following kinds of action were identified as priorities:

Table 10. Types of action prioritised for Industry 4.0

| TYPES OF ACTION PRIORITISED FOR INDUSTRY 4.0 |
|---|
| <ul style="list-style-type: none"> • Actions that promote the use of Key Enabling Technologies (KET) in economic activities with a significant presence in the Euroregion. • Actions that develop new products with a technological edge from the application of KET, mainly nanotechnology, material technology and ICT. • Actions that promote innovation in process technologies (Factory of the Future) and clean technologies (Eco - innovation). • Actions to promote innovation in production models of the principal industrial sectors. • Any other initiative that contributes to transformation of industry towards Industry 4.0. |

Source: produced in-house

7.4 STRATEGIC COLLABORATION AREA: THE COMPETITIVENESS IN MOBILITY INDUSTRIES

SPECIALISATION FACTORS THAT DEFINE THIS STRATEGIC AREA

The strategic area of mobility is included in the Smart Specialisation Strategies of both regions; there is a clear synergy between the two in relation to the importance of the use of KET and ICT as the focal point for developing this sector in order to improve its sustainability. Likewise, within two different sectors related to mobility, the field which is specifically mentioned in the clearest way in both Strategies is diversification into the aeronautics and space sectors.

In RIS3 Galicia the mobility sector is a complementary and transversal area for other strategic sectors linked to the new industrial model based on competitiveness and knowledge of Challenge 2. More specifically there is mention of the trend towards the transformation of sectors, such as automotive and shipbuilding, with a medium or medium-low level of technology, modernisation by means of eco – innovation, the application of emerging production technologies, KET and ICT and the diversification thereof, to hightech sectors like aeronautics. Likewise, priority 2.1 of RIS3 Galicia points out the importance of the diversification of the major driver sectors in Galicia towards new markets based on the hybridisation of knowledge and technology, such as aeronautics and the space industry. Finally, smart, eco - efficient, sustainable and recyclable vehicles are identified in the Strategy as a challenge for the future.

In the framework of the Region of Galicia, the aeronautics and future transport industries are a driving force for other industries such as nanotechnology, production materials and technologies, and the iron and steel sector. A good example of the importance of this sector in Galicia is that the transport material manufacturing industry employs around 38,200 people and boasts a gross added value of 1,848 million Euros.

Likewise, the iron and steel sector, an ancillary of the automotive and shipbuilding sectors, has already started a diversification process towards aeronautics and the space industry. 8 companies have obtained certification as suppliers of companies such as Airbus and Boeing. We could also highlight the Air Transport Research Centre in Rozas as a R&D pole with capacity for attraction and generation of an especially innovative related industry.

In the Northern Portugal's 2020 Strategy there is express mention of mobility industries related to the environment as a specialist domain, in search of solutions to reduce environmental impact and to improve in terms of sophistication. In terms of the need for research and innovation the trend towards electrical mobility is pointed out, as is the need to improve the cost/efficiency ratio and the durability of recharging cycles. Likewise, mention is made of the need to increase the availability of charging infrastructures for electric vehicles and smart networks. In terms of energy efficiency the Northern Portugal's 2020 Strategy is committed to improvement by using light materials and new applications of nanomaterials, and to reducing consumption by obtaining lower aerodynamic coefficients. Finally, we could highlight the crossover trend between mobility industries with electronics and ICT, promoting Vehicle - to - Vehicle (V2V), Infrastructure - to - Vehicle (I2V) and Infrastructure - to - Infrastructure (I2I) communication, while in the field of aeronautics more environmentally responsible solutions are called for, normally by means of using ecological fuels.

In Northern Portugal the industrial base includes medium-technology activities, related to the specialised reinforcement of the automotive industry, such as the manufacturing of moulds and plastic injection, the manufacturing of electronic components and equipment and the development of polymers, compounds and other advanced materials such as technical textiles. The supply contracts with Embraer are beyond doubt the driving force for the modernisation of the mobility industry, in order to provide the most demanding clients with the technical specifications they require, in particular in the field of aeronautics. The region has good conditions for internal infrastructures for transport and companies to guarantee mobility by means of airlines, public transport operators, car rental and river and maritime operators; we could highlight the increased offer in low-cost airlines and the growth of the cruiseliner industry.

These factors determine that in the field of competitiveness in the mobility industries, 20% of the agents would be interested in collaborating, mainly in fields such as diversification into the aeronautics and space sectors, the reduction of environmental impact and the use of KET and ICT.

TYPES OF PRIORITY ACTIONS IDENTIFIED BY STAKEHOLDERS

In this strategic collaboration area stakeholders identified the need to consolidate and boost innovative potential of the cross-border value chain in mobility and search for consortiums and larger structures in the Atlantic area to generate sources of joint knowledge. Likewise, we could highlight the importance of the application of ICT and KET for the development of products with a technological edge.

In this strategic collaboration area the following kinds of action were identified as priorities:

Table 11. Types of action prioritised for Mobility Industries

TYPES OF ACTION PRIORITISED FOR BOOSTING COMPETITIVENESS IN THE MOBILITY INDUSTRIES.

- Actions to promote synergies between the automobile industry and other related sectors such as ICT.
- Actions for the diversification of automotive related industries into new niches such as the aeronautics and space sector.
- Actions to develop new products with a technological edge by applying KET.
- Any other initiative that permits creation of a cross-border mobility industry pole for generation of joint knowledge sources and international promotion of the Euroregion as a privileged space for R&D&I investment.

Source: produced in house

7.5 STRATEGIC COLLABORATION AREA: THE MODERNISATION OF THE TOURISM AND CREATIVE INDUSTRIES, ALSO BY MEANS OF ICT.

SPECIALISATION FACTORS THAT DEFINE THIS STRATEGIC AREA

Galicia and Northern Portugal share a series of endogenous resources, such as their cultural and natural heritage, which includes their mineral waters and spas, the foundation of this strategic area for both regions. The creative industries, ICT and tourism are clearly mentioned in both regional strategies in relation to these sectors, due to their importance. In the Galician RIS3, the tourism sector has a specific priority and we could conclude that the domain in Northern Portugal's 2020 Strategy that could lead to most synergies with this priority in the RIS3 for Galicia would be "Symbolic Capital, Tourism Services and Technologies", which aims to make use, among others, of the links between the tourism sector with ICT and the creative industries.

In RIS3 Galicia the tourism sector and the creative industries have their own priority (1.5), linked directly to the use of ICT for modernisation. There is also a clear alignment of tourism with another related sector, in the case of Galicia – cultural industries and those related to the area's artistic and cultural heritage. Likewise, RIS3 Galicia mentions improvement in all phases of the production chain based on three areas of action: innovative content, new tourism products and new economic activities, and the increase of sales channels.

The importance of this strategic area in Galicia is determined by the importance of the regional tourism sector, which accounted for 10.6% of the total GDP in Galicia in 2010 (6,138 million Euros) and generated 135,718 jobs. 10% of Galician companies (20,447) belong to the tourism sector, 98% of which are micro-SMEs. 2,148 companies or services have the Tourism Quality Approach Model. Galicia also has a strong and highly professionalised ICT sector. The sector's added value in 2010 was more than 1,221 million Euros, which accounted for 2.14% of Galicia's GDP, and it employed 15,484 people in 2012. Galicia has significant endogenous resources in tourism, among which we could highlight the Pilgrims' Way to Santiago (cultural tourism), spas (health tourism), wine and food tourism, nature tourism and sailing tourism; together with factors such as quality, sustainability and non-seasonality.

In the Northern Portugal 2020 Strategy the tourism sector is mentioned in other domains although it also forms part of "Symbolic Capital, Tourism Services and Technologies", which aims to make use, among others, of the links between the tourism sector with ICT and the creative industries. The Northern Portugal Strategy highlights tourism activities and health-related services, namely spas and thalassotherapy, the great potential for enhancement in food and agricultural activities such as wine tourism, nature and rural tourism, nautical sports (rivers and maritime) and congresses. No less important is the fact that the region boasts World Heritage sites, and is therefore an excellent destination in historical and cultural terms.

Northern Portugal boasts unique tourism resources (4 of which are on the UNESCO World Heritage list) and significant infrastructures such as an international airport, a cruiseliner terminal, hotels capable of growing on the international market and good accessibility and mobility conditions.

For these reasons, 48% of the stakeholders would be interested in collaborating in the field of modernising the tourism and creative industries with ICT.

TYPES OF PRIORITY ACTIONS IDENTIFIED BY AGENTS.

The stakeholders in general highlighted everything related to the application of ICT to tourism, with special emphasis on the importance of collaborating in projects related to the enhancement of the sea and nautical tourism as opposed to other kinds of tourism they were asked about, such as health tourism.

In this strategic collaboration area the following kinds of action were identified as priorities:

Table 12. Types of action prioritised in the Tourism and Creative Industries

| TYPES OF ACTIONS PRIORITISED IN THE MODERNISATION OF THE TOURISM AND CREATIVE INDUSTRIES, ALSO BY MEANS OF ICT. | |
|---|---|
| • | Actions that improve all stages of the production chain focused on three action areas: innovative content, new tourism products and new economic activities in creative industries and tourism. |
| • | Actions that apply ICT for tourism and the cultural industry. |
| • | Actions that provide value for marine resources and nautical tourism. |
| • | Actions that promote health and welfare tourism supported by tourism and cultural infrastructures such as spas and Thalassotherapy. |
| • | Any other initiative that provides value to endogenous tourism resources (natural and cultural) in the Euroregion and creates new business models through the application of ICT. |

Source: produced in-house

7.6 STRATEGIC COLLABORATION AREA: ADVANCED SOLUTIONS FOR A HEALTHY LIFESTYLE AND ACTIVE AGEING

SPECIALISATION FACTORS THAT DEFINE THIS STRATEGIC AREA

Given the very similar demographic and socioeconomic characteristics of the two regions, with an ageing population but at the same time sectors related to a healthy lifestyle, namely food, from the point of view of nutrition and the health sector, there are interconnected synergies in diverse domains between Northern Portugal 2020 and the RIS3 Strategy for Galicia. To be specific:

- Active ageing linked to health and welfare tourism, mainly in the field of spas, in the “Life and Health Sciences” domain.
- The use of ICT to modernise products and services linked to health and welfare tourism, which is expressly mentioned as a key sector for innovation in both the tourism (which the Northern Portugal Strategy 2020 specifically defines as “senior tourism”) and health sectors.
- The enhancement and diversification of the food and agriculture and nutrition sectors.

The RIS3 for Galicia establishes two priorities that are related to health. Priority 3.1 revolves around the 3 main related fields: ageing, a healthy lifestyle and the health sector, placing special emphasis on the application of new technologies as an element that contributes to the development thereof. In Galicia, over 23% of the population is over 65 and the proportion of “Health activities and social services” in the GDP of Galicia is 6.53%. The presence of the SERGAS (Galician Health Service) as the main driving agent, with the capacity to generate and make use of knowledge in university hospital complexes, health research foundations and research institutes are identificó

as the most relevant agents in this field in Galicia. Galicia also has spas as a natural resource; there are 20 spas (17.07% of all spas in Spain) and 5 thalassotherapy centres, used annually by over 100,000 people²⁸.

Furthermore, Priority 3.2 of the RIS3 for Galicia aims at reinforcing the international position of Galicia as a supplier of safe and healthy food in the competitive and innovative industrial food sector with high added value (functional, safe and better quality). “Agriculture, livestock farming and fishing” account for 3.9% of the Galician GDP and 7.87% of jobs in Galicia.

The “Food and drink industry” accounts for 2% of the region’s GDP and 2.5% of employment. In terms of turnover, income for the Galician food industry amounted to 7,068,468 million Euros in 2011. Three of the ten largest companies in Galicia in terms of turnover belong to the food and agriculture sector (Pescanova, Gadis and Vego Supermarkets).

In the Northern Portugal 2020 Strategy there is no domain as such linked directly to all these areas of knowledge. The Health and Life Sciences domain in the Strategy aims at consolidating dynamics for articulation between regional research and companies in the health industries and services in a broad sense, thereby including the food sector. Health and welfare tourism is also promoted, namely spas and thalassotherapy, with the support of tourism and cultural infrastructures, linked to other transversal sectors such as ICT, and a strong potential for enhancement in food and agricultural activities in association with activities related to tourism and health, based on mineral and thermal spa water. Northern Portugal has relevant technological assets in scientific areas directly related to Life and Health Sciences. The region’s turnover from health activities amounts to 3,224 million Euros and the sector employs 73,405 people. The sale of pharmaceutical products produces a turnover of 2,795 million Euros. We could also highlight the manufacturing of pharmaceutical and medical and surgery products, whose respective turnovers were 159 and 75 million Euros in 2011, and both together, gave work to 2,418 people in the same year.

This is why 43% of the agents who responded to the survey would be interested in collaborating in the field of advanced solutions for a healthy lifestyle based on active ageing.

²⁸ Source: Observatorio Nacional do Termalismo e Desenvolvimento Rural (<http://www.observatoriotermalismo.org/cifras.php>)

TYPES OF PRIORITY ACTIONS IDENTIFIED BY STAKEHOLDERS

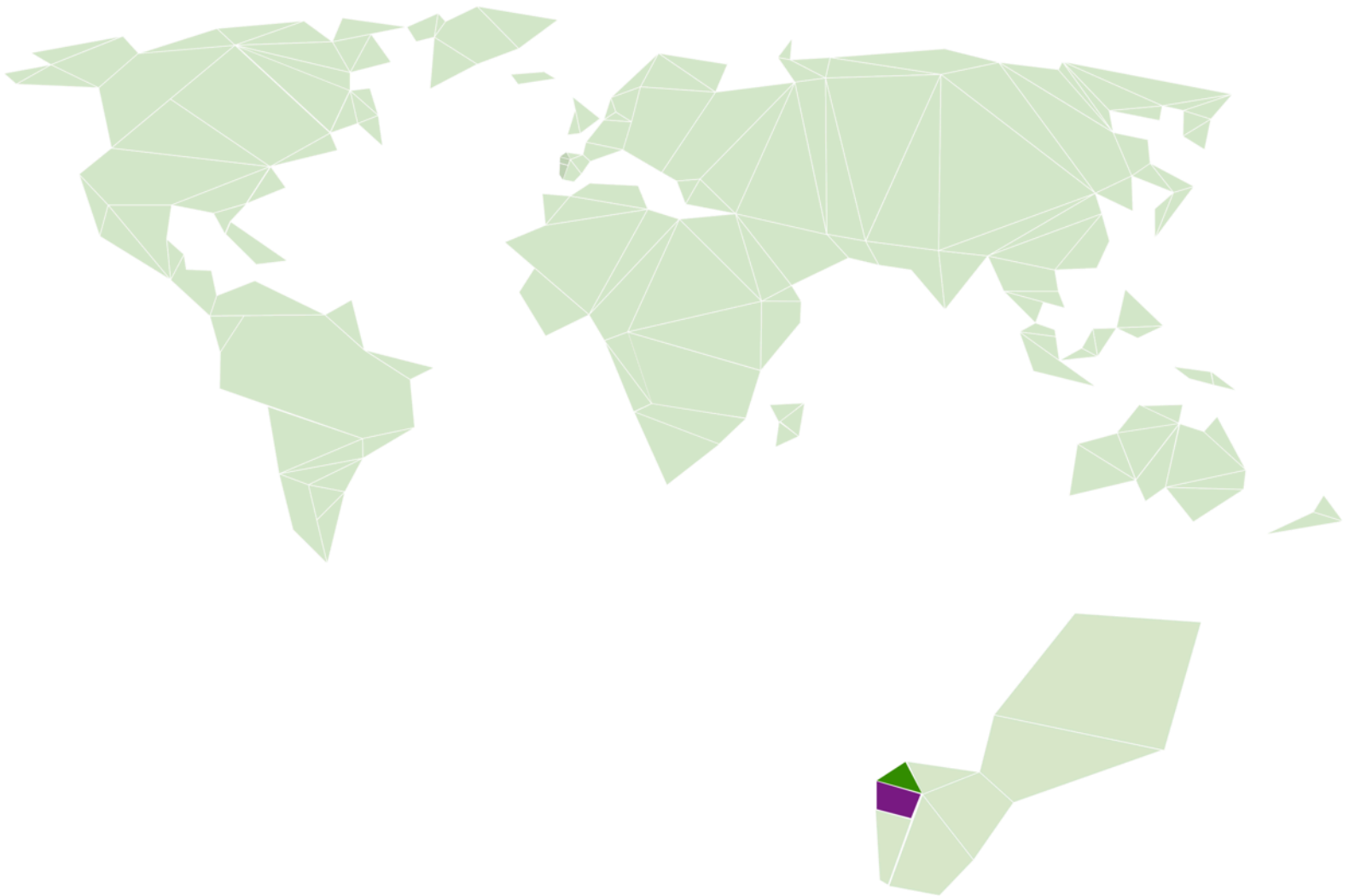
In this strategic collaboration area the stakeholders highlighted the importance of developing actions to improve people's quality of life, especially the elderly and children by using ICT. They also identified the need to create a Cross-border Health Ecosystem.

In this strategic collaboration area the following kinds of action were identified as priorities:

Table 13. Types of action prioritised in the area of Healthy Lifestyle and Active Ageing

| TYPES OF ACTION PRIORITISED IN THE AREA OF ADVANCED SOLUTIONS FOR A HEALTHY LIFESTYLE AND ACTIVE AGEING |
|--|
| <ul style="list-style-type: none"> • Actions that support development and launch into the market of new high added value biotechnological products and services, especially aimed at the pharmaceutical and biotechnology industries. • Actions that support development and launch into the market of new products and services based on the application of nanotechnology in health and active ageing. • Actions that consolidate the development and marketing of new products and services based on ICT linked to active ageing and a healthy lifestyle. • Actions that provide value to waste from fishery by-products and discards through new pharmacological applications. • Actions that create a favourable environment for new business initiatives based on technology to address the technological demand for home care and remote monitoring of the sick and elderly. • Pioneering actions in the field of Innovative Public Procurement. • Any other initiative that contributes to the generation of new market niches and stable employment associated with economic activities included in this strategic collaboration area through the intensive use of knowledge and technology. |

Source: produced in-house



8. MANAGEMENT MECHANISMS

This section describes how the RIS3T for the Euroregion of Galicia – Northern Portugal 2015-2020 will be implemented by the Galician Innovation Agency (GAIN) and the Regional Coordination and Development Commission of Northern Portugal (CCDRN), as happened during the definition phase of each region involved in the cross-border strategy.

Based on the work experience gained during the months of the RIS3T definition by all stakeholders making up the innovation ecosystem in both regions, this section proposes a structure that will be articulated for correct implementation and the tools to be used by the management team or Technical Secretariat.

The proposed RIS3T management structure is shown in the illustration below:

Figure 31. RIS3T Management Structure



8.1 MANAGEMENT STRUCTURE

8.1.1 Steering committee

The Steering Committee is made up of political representatives from both regions, by means of which members of the entities that play a similar role in the two regions would be represented, albeit indirectly:

- The Steering Committee of GAIN – this entity is responsible for the global performance of the application of the RIS3 Strategy in Galicia, transversally representing the regional government of Galicia, thereby ensuring the transversal and coordinated orientation of regional innovation policies.
- The Regional Innovation Council, chaired by the CCDRN, consists of companies, technology producers, scientific and technological system entities, universities, business associations, and planning and R&I policy management entities.

The director of GAIN would be the representative for Galicia and the Vice-Chairman of the CCDRN for Portugal at Steering Committee meetings.

The main functions of the RIS3T Steering Committee would be:

- The establishment of objectives and control of activities.
- Overall performance of the implementation of the Strategy.
- Political and institutional support.
- Appointment of members of the management team and supervision of the same.
- Reviewing fulfilment of senior level objectives.

8.1.2 RIS3T Management Team

At a technical level, the process management team will be made up of personnel appointed by the Steering Committee of the Galician Innovation Agency (GAIN) on behalf of Galicia and by the Regional Innovation Council, chaired by the CCDRN, on behalf of Northern Portugal.

The Management Team will be responsible for the operational implementation of the Strategy in day to day work, and its main functions are as follows:

- Follow-up of action plan, supervision of fulfilment of objectives, monitoring of activities and degree of fulfilment.
- Drawing up progress reports and presenting them to the Steering Committee.

- Presenting the RIS3T Steering Committee with proposals for the modification and revision of the Strategy based on the results of assessment.
- Coordination of Work Groups.
- Obtain inter-regional consensus for the Strategy.
- Coordination of the assessment of tasks in the Strategy.

8.1.3 Work Groups

At the next level of the Management Structure, coming towards the foundation of the system and much closer to the public and innovation system members, are the Work Groups. These groups, coordinated by the Management Team, consist of the main stakeholders on each side of the border, contemplating the different kinds of entities making up the Regional Innovation Systems and the value chain of innovation in a global way (from the generation of knowledge to the market launch of R&D&I).

Their functions are to serve as a channel for participation, coordination and reaching the remaining stakeholders of the R&D&I system by providing support to the Management Team during the entire Strategy definition process.

While drawing up the RIS3T Strategy for Galicia – Northern Portugal, six Work Groups were set up, in accordance with the 6 strategic areas of action defined, and it is proposed that they keep on taking part in the execution thereof. The work groups would therefore be as follows:

- 1) Energy from biomass and the sea.
- 2) The agri-food and biotechnology industries.
- 3) Industry 4.0.
- 4) Mobility Industries.
- 5) Tourism and creative industries.
- 6) Healthy lifestyle and active ageing.

8.2 MANAGEMENT TOOLS

Maintaining the structures used during the development of the RIS3T Strategy, the management team will have tools such as the APP and RIS3T Forums, as well as other new ones such as the Observatory, described below.

8.2.1 RIS3T APP

A mobile application developed during the implementation of RIS3T to boost participation of stakeholders from the Euroregion's R&D&I ecosystem. It will remain active to facilitate contact among stakeholders and also between stakeholders and the management team (Technical Secretariat).

8.2.2 RIS3T Forums

In order to make room for a broader representation of stakeholders from the Euroregion, cross-border RIS3T Forums were initiated during the development of the Strategy in order to facilitate the dissemination and visualisation thereof, also serving as a platform for open participation, consultation and networking among stakeholders in development to generate joint initiatives and projects.

Once the above-mentioned Strategy is defined, implementation and follow-up will take place in regular Forums, which will be held until 2020 and will be a meeting point for stakeholders to share all the content developed and allow for a better follow-up of implementation.

These forums, just as when the Strategy was being defined, can take place either in person or online. The idea is to hold at least one personal RIS3T Annual Forum.

8.2.3 RIS3T Observatory

Furthermore, the implementation of the RIS3T Strategy also relies on the information compiled through the Observatory and permits the collection of relevant data for monitoring the R&D&I ecosystem of the Euroregion and the results of strategy implementation. The said observatory still needs setting up and will be in operation in the coming months.

9. EVALUATION SYSTEM

This section describes the evaluation system to measure the progressive degree in which the targets fixed in the 2015-2020 RIS3T Strategy for the Euroregion of Galicia – Northern Portugal are reached, establishing a Strategy Follow-up Plan that will be monitored by an Observatory set up for this purpose, as the entity responsible for analysing the impact on Galicia and Northern Portugal of public innovation policies at two main times: Intermediate (2018) and Final (2020) Evaluation.

The success of the 2015-2020 RIS3T Strategy for the Euroregion of Galicia – Northern Portugal will, just like any other innovation promotion policy, depend on the interaction of public and private organisations, including large and small companies, universities, public bodies, financial intermediaries and the population in general, to which we should add the inter-regional aspect.

The RIS3T Strategy will attempt to motivate all these players, the way they interact and the means of collaboration they employ to take on socioeconomic challenges, by means of a broad combination of innovation measures to be implemented at an inter-regional level.

In this context, in order to be really effective the RIS3T strategy should essentially and beyond doubt be focused on the achievement of results. This objective requires the establishment of a methodology to measure progress made in achieving objectives, with a view to making adjustments in line with the evolution of the same.

9.1 THE METHODOLOGY PROPOSED

Monitoring and evaluation of results is essential for obtaining a useful learning of the impact of a policy, just like implementing a systematic comparison with regard to other regions as far as the implementation of their own RIS3 Strategies is concerned.

With this purpose in mind an Observatory will be set up to analyse and diagnose the impact of innovation policies in the Euroregion and to dynamically monitor the evolution of the system made up of stakeholders on either side of the border, acting as a data repository for the Euroregion.

With all this follow-up data for the RIS3T, conclusions can be obtained and presented in:

- A general annual report on Innovation Systems in Galicia and Northern Portugal

and the RIS3T Strategy.

- Various sectoral reports, related to advances in each of the fields prioritised in the Strategy.

Likewise, regular analyses of the implementation of the Strategy will be made and presented in:

- An intermediate report (2018), which will analyse the implementation of the Strategy at an intermediate stage, results to date and possible deviations identified.
- A final report (2021), which will analyse the results and impact of the Strategy once its life has come to an end.

9.2. ENTITIES RESPONSIBLE

Before the entities responsible for the evaluation of the RIS3T Strategy are identified, the double nature inherent in all evaluation procedures should be discussed.

- On the one hand are follow-up and monitoring tasks whose purpose is to verify that strategy activities are being implemented as planned, funds are being used correctly and the implementation indicators are evolving in the right direction.
- On the other hand is the actual evaluation, whose purpose is to evaluate the effects of the actions carried out (i.e. their contribution to the changes observed) and the actual implementation of the Strategy.

Both processes – follow-up and evaluation – are complementary.

In the 'Management Mechanisms' section, the different entities involved in strategy management, the coordination of the different activities and the implementation thereof are defined. Both follow-up and evaluation will be based on the formal management structure defined.

Follow-up will be carried out directly by the RIS3T Management Team, as its participation is evidently necessary for following up on the action plan, supervision of the degree of fulfilment of the targets, monitoring activities and the degree of implementation, whose results will be presented to the Steering Committee in order to propose corrective measures should non-fulfilment or deviations be detected in the planned landmarks and results.

Evaluation will be carried out externally from the established structures, with the support of external experts who will intervene in the intermediate and final steps of Strategy implementation and will draw up evaluation reports.

ANNEX

CHALLENGES AND PRIORITIES FOR THE REGIONAL STRATEGIES OF GALICIA AND NORTHERN PORTUGAL

A. SMART SPECIALISATION STRATEGY FOR GALICIA 2014-2020

CHALLENGE 1. New model of innovative management of natural and cultural resources based on innovation

The modernisation of traditional Galician sectors by introducing innovations to improve efficiency and performance in the use of endogenous resources and reorientation to other uses with greater added value in energy, aquaculture, pharmaceutical, cosmetic, food and culture-related activities.

| PRIORITIES OF CHALLENGE 1 | |
|---------------------------|---|
| 1.1 | The enhancement of by-products and wastes generated by production chains linked to the sea by using them as components in cosmetic products, food additives, pharmaceutical applications, in order to achieve a significant reduction in waste generated and reach a position in innovative product markets with high added value [Enhancement-Sea] |
| 1.2 | The development of the Galician aquaculture sector in order to make the region an international benchmark in new technology-based products and services applied to aquaculture [Aquaculture] |
| 1.3 | The diversification of the Galician energy sector in order to achieve a significant improvement in the efficiency of making use of natural resources, giving priority to biomass and marine energy [Biomass and Marine Energy] |
| 1.4 | The modernisation of the primary sectors in Galicia (agriculture, fishing, livestock farming and forestry) for the sustainable improvement of efficiency and performance indicators of the operation and generation of innovative products and services [Modernisation of Primary Sectors] |
| 1.5 | The modernisation of the tourism sector and cultural industries in Galicia through the intensive use of ICT to obtain a competitive tourism sector in Europe based on cultural tourism and natural resources [ICT-Tourism] |

CHALLENGE 2. New industrial model based on competitiveness and knowledge.

Increase the technological intensity of the industrial structure in Galicia through hybridisation and Key Enabling Technologies.

| PRIORITIES OF CHALLENGE 2 | |
|---------------------------|--|
| 2.1 | Diversification in driving sectors in Galicia and the auxiliary sectors through an intensive use of Enabling Technologies (KETs), in order to supply new high added value processes and products enabling entry into new markets based on hybridisation, knowledge and technology [Diversification of Driving Sectors] |
| 2.2 | To boost the competitiveness of the Galician industrial sector by optimising production processes under the concept of "Factory of the Future" and by means of Eco-innovation to improve efficiency and environmental conduct in the industry [Competitiveness in the Industrial Sector] |

PRIORITIES OF CHALLENGE 2

| | |
|-----|--|
| 2.3 | To promote ICT as a driving force of the Knowledge Economy in Galicia, together with other key enabling technologies [Promote the Knowledge Economy] |
|-----|--|

CHALLENGE 3. New model of healthy lifestyle founded on active ageing of the population

To place Galicia in 2020 as the leading region in Southern Europe in the supply of knowledge-intensive services and products related to a healthy lifestyle: active ageing, the therapeutical application of water and marine resources and functional nutrition.

PRIORITIES OF CHALLENGE 3

| | |
|-----|--|
| 3.1 | Galicia as the leading region in Southern Europe in the application of new technologies in the field of active ageing and healthy lifestyles and in the promotion of personal autonomy [Active Ageing] |
| 3.2 | The diversification of the Galician food sector to make it an international benchmark based on innovation in nutrition as a key element in a healthy lifestyle [Food and Nutrition] |

B. SMART SPECIALISATION STRATEGY NORTHERN PORTUGAL 2020

| PRIORITY DOMAINS | |
|---|--|
| Maritime Resources and the Economy | Establishing relations between applied engineering companies (civil, mechanical, naval, robotic, energy, biosciences and information technology, materials), maritime resources (wind, waves, algae, beaches, etc) and economic activities that enhance them (shipbuilding, offshore platform construction, nautical tourism, biofuels, food and offshore aquaculture, etc). |
| Human Capital and Specialised Services | Promotion of competences accumulated in the area of ICT (in particular, in the development of multimedia applications and the programming of systems engineering), for the development of solutions for e-government, the dematerialisation of processes, and in relation to the reconversion of human capital, making the most of trends for Specialised Services for locations involving closeness (engineering, shared services and contact centres). |
| Culture, Design and Fashion | Taking advantage of the potential of the creative industries (especially in the areas of design and architecture), new materials and technologies in innovative production, the creation of new competitive advantages in sectors linked to the production of consumer goods with a strong inclination to design, namely textiles and clothing, footwear, accessories, furniture, jewellery, etc. |
| Mobility and Environmental Industries | Taking advantage of scientific competence in the technological areas of material production, reinforced by supply contracts with Airbus and Embraer, to promote the updating of automotive components and mould industries, to supply the most demanding clients in technical specifications, namely in the field of aeronautics. |
| Agri-environmental and Food Systems | Articulating the regional agricultural potential in high added value products (wine, oil, chestnuts, etc) with scientific and technological competence (enology, engineering, biology, biotechnology, etc) and business competence (milk and derivatives, vine and viticulture, etc) to develop related products, local gastronomy and products for more dynamic supply segments. |
| Life and Health Sciences | Consolidation of the dynamics of articulation between regional research (namely in fabric engineering, cancer, neurosciences and the development of surgery techniques) and companies in health industries and services in the broadest sense (pharmaceutical, medical devices, providing health services, health and welfare tourism and cosmetics). |
| Symbolic Capital, Technologies and Tourism Services | Evaluation of cultural and intensive territorial resources, making the most of scientific and technological capacities, namely in the areas of management, marketing and ICT, and the relevant tourism offer, promoting routes and itineraries as a way of taking advantage of the main infrastructures for visitors. |
| Advanced production systems | Development of threads linked to Long-term Technologies, namely Advanced Production Systems, Nanotechnologies, Materials and Business ICT, blending the existence of scientific and technological capacities and infrastructures, and relevant user sectors by means of reinforcing the existing business fabric (in the case of production technologies and Business ICT) or creating new companies (above all in the field of nanotechnology and the production of new materials). |