



# SMART SPECIALISATION STRATEGY (S3) OF LA RIOJA 2021- 2027

## Executive Summary



## EXECUTIVE SUMMARY OF THE SMART SPECIALISATION STRATEGY (S3) OF LA RIOJA 2021- 2027

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March 2022

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## INDEX

<b>1. INTRODUCTION .....</b>	<b>4</b>
<b>2. SWOT ANALYSIS .....</b>	<b>6</b>
2.1 Weaknesses .....	6
2.2 Strengths.....	8
2.3 Threats.....	11
2.4 Opportunities.....	13
<b>3. VISION AND OBJECTIVES.....</b>	<b>17</b>
3.1 Vision 2027 .....	17
3.2 Cross- cutting objectives.....	17
<b>4. SMART SPECIALISATION PATTERN .....</b>	<b>19</b>
4.1 Specialisation area 1 – Digital and knowledge-based society.....	20
4.2 Specialisation area 2 – Competitive Industry.....	21
4.3 Specialisation area 3 – Sustainable and cohesive ecoregion .....	22
<b>5. MONITORING SYSTEM .....</b>	<b>25</b>
5.1 Monitoring and evaluation indicators .....	25
5.2 Review, update and evaluation system .....	28
<b>6. GOVERNANCE.....</b>	<b>30</b>



# 1

## INTRODUCTION

## 1. INTRODUCTION

Smart Specialisation Strategies are strategic guidelines that bring together the key scientific and technological priorities, challenges and needs of a certain region in order to ensure sustainable development based on knowledge and supported by innovation.

In the case of La Rioja, the Smart Specialisation Strategy (RIS3) 2014-2020 was approved by the Interdepartmental Commission for Research, Technological Development and Innovation on 16 October 2013, and subsequently revised on 7 May 2015 by the same Commission. In 2018, it was decided to submit the strategy to a mid-term evaluation and to review the regional specialisation pattern, updating the areas of specialisation and priorities.

In view of the new European programming period 2021-2027 and in line with Policy Objective 1 of the European Regional Development Fund (“a more competitive and smarter Europe”), the Autonomous Community of La Rioja presents its new Smart Specialisation Strategy for this period, with new priorities and challenges and with the vision of building:

- A green, circular, responsible, and sustainable region.
- A knowledge-based, dynamic, and transformative region. Territory of piloting, innovation and avant-garde.
- An open, inclusive, and attractive region, for people, investments, and projects.
- A cohesive and internally balanced region, internationally interconnected.
- An acknowledged region for the quality of its products and services, leader in its surroundings

Under this perspective, this document pursues the following objectives:

- Provide an updated SWOT diagnosis from which to build the strategy.
- Define a vision and cross-cutting objectives for the period 2021-2027, as well as update the regional smart specialisation pattern, as a result of the exchange and interaction among stakeholders (quadruple helix) and the application of methodologies based on the Entrepreneurial Discovery Process (EDP).
- Establish a monitoring system to measure the impact and results of the S3, as well as the regular evolution of the smart specialisation priorities.
- Define a governance system, establishing procedures and mechanisms to ensure the participation of stakeholders through the Entrepreneurial Discovery Process (EDP) throughout the implementation, monitoring and evaluation of the S3, as well as mechanisms and procedures related to transparency and free access to information.



# 2

## SWOT ANALYSIS

## 2. SWOT ANALYSIS

This SWOT analysis summarises the main variables that affect the development of innovation in La Rioja, according to the regulatory, socio-economic, innovation, technological and environmental analysis performed, in addition to the participatory process carried out together with the science, technology and innovation ecosystem of the region, which also evaluated the previous Strategy.

### 2.1 Weaknesses

Weaknesses	
Economy	PRIORITISATION LEVEL <sup>1</sup>
<ul style="list-style-type: none"> <li>• <b>Business structure composed by small companies:</b> The business community in La Rioja is made up of family-owned and hierarchical SMEs where decisions are made by one or a few decision makers. These companies work with tight margins, with a low innovation culture and significant risk aversion. This structure forces collaboration when it comes to innovation projects. The number of companies per 100 inhabitants has also remained stable over the last few years, catching up with the national average (which was previously lower).</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Low Regional Competitiveness Index:</b> La Rioja is below the national average<sup>2</sup>.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>GDP and growth:</b> During the period 2014-2020, the economic evolution of La Rioja has followed an irregular pattern and has always been below the national average<sup>3</sup></li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Difficulty in retaining and attracting specialised talent:</b> In a situation where more specialised talent is in demand, with neighbouring communities offering higher salaries, there is a risk that the local talent will migrate or work virtually for organisations based in other territories.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Connectivity:</b> Weak rail and airport connections that do not optimise the region's strategic location.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Environmental impact of the activity:</b> The amount of greenhouse gas (GHG) emissions in the region has had an upward trend over the last few years, with an increase of 23.01% from 2014 to 2019, contrary to the decrease seen in Spain<sup>4</sup>.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Territorial imbalance and depopulation:</b> The Ebro's Valley concentrates two thirds of the population, yet it is less than a third of the territory.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Sectoral orientation:</b> Excessive focus of the agri-food sector on the wine industry. There is little progress in the technification and digitalisation of agricultural activity, nor are there sectoral studies that indicate a guideline or roadmap towards digitalisation and innovation in this field.</li> </ul>	Medium

<sup>1</sup> The level of prioritisation is obtained by weighting the degree of incidence of each factor in the interviews with the science, technology and innovation ecosystem (the number of times they are mentioned) and the opinion of internal technical assistance experts on the subject. A weighting of 60% is given to the interviews and 40% to the expert opinion.

<sup>2</sup> European Commission (2019) *European Regional Competitiveness Index*. Available at: [https://ec.europa.eu/regional\\_policy/sources/docgener/work/rci2019\\_scorecards.pdf](https://ec.europa.eu/regional_policy/sources/docgener/work/rci2019_scorecards.pdf)

<sup>3</sup> BBVA Research (2021) *Situación La Rioja 2021*. Available at: <https://www.bbva.com/publicaciones/espana-situacion-la-rioja-2021/>

<sup>4</sup> Ministry for the Ecological Transition and the Demographic challenge (2019) *Emisiones de GEI por Comunidades Autónomas a partir del inventario español*. Available at: <https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/sistema-espanol-de-inventario-sei->

Weaknesses	
Society	PRIORITISATION LEVEL
<ul style="list-style-type: none"> <li>• <b>Inequality:</b> The gap between men and women enrolled in engineering and architecture, health sciences and sciences as a whole remains significant<sup>5</sup>, and there is no consistent trend to ensure that this gap is decreasing.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Entrepreneurship:</b> Low culture of entrepreneurship, given the risks involved; educated people are reluctant to set up their own business.</li> </ul>	High
Innovation and research	PRIORITISATION LEVEL
<ul style="list-style-type: none"> <li>• <b>Excessive administrative and bureaucratic barriers:</b> There are administrative and conceptual barriers to access funding and aid for innovation (support exists but companies do not know whether they can apply for it, access requirements, commitments are complex, etc.). There are arduous administrative processes to get financing that sometimes take years, and make the scope of research and/or innovation processes obsolete.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Low collaboration and low alignment between university-technology centres-business:</b> Technology centres are not able to respond to the basic research needs of business, and basic research at universities is sometimes not aligned with business needs.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Difficulties in diversifying research careers outside academia:</b> The evaluation system for the professional careers of university staff is based on the number of publications and teaching activity, without considering the development of projects in collaboration with companies.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Investment:</b> Downward trend in R&amp;D&amp;I expenditure in La Rioja, from both the public and private sides.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Research results:</b> Declining trend in the number of patents applied for from La Rioja</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>International collaboration:</b> Especially at institutional level, there is low collaboration with other European regions for the implementation of good practices.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Lack of qualified talent:</b> The demand is difficult to cover both in universities and companies, especially multidisciplinary profiles with an ICT component.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Weak productive and research infrastructure:</b> The region has no technological parks, infrastructures are obsolete in some cases, and there is a lack of formal channels of communication and network collaboration.</li> </ul>	Low

<sup>5</sup> Instituto de Estadística de La Rioja (2021) *Estudiantes de Grado matriculados en la Universidad de La Rioja por rama de enseñanza y sexo*. Available at: <https://ias1.larioja.org/jaxiweb/tabla.do?type=pcaxis&L=0&path=/3/310/31005/10/&file=30106001.px&pag=1&pathL=/3/310/31005/>

Weaknesses	
Digitalisation and digital transformation	PRIORITISATION LEVEL
<ul style="list-style-type: none"> <li>• <b>Digital gap</b> (particularly in rural areas): Few public initiatives for the digitalisation of the agricultural sector.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Employment:</b> Decrease in the percentage of jobs in technology and knowledge intensive sectors.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Education:</b> Increase in the population with tertiary education employed in science and technology, and still below the Spanish average (between 2014 and 2019).</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Incorporation of technologies:</b> The use of big data in Riojan companies remains below the national average</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Education:</b> Some university courses offer training in new digital technologies, but they have a very low rate of enrolment.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Entrepreneurship:</b> There is no link between training in technology, promotion of entrepreneurship and creation of technology-based companies.</li> </ul>	Medium

## 2.2 Strengths

Strengths	
Economy	PRIORITISATION LEVEL
<ul style="list-style-type: none"> <li>• <b>Business structure:</b> Consolidated, nationally outstanding companies in different sectors, which generate a wide and diverse productive activity.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Foreign trade:</b> The percentage of exporting companies in La Rioja is significantly higher than the Spanish average. The economic value of imports and exports has been increasing in La Rioja in the period 2014-2020, with the trade balance being positive and stable every year.<sup>6</sup></li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Cohesion:</b> As a small autonomous community, there is a close relationship between actors through well-established clusters and partnerships, that can lead to collaboration. This small size also makes it possible to maintain a stable situation in crisis contexts.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Unemployment:</b> The unemployment rate, at 2020 levels, was 5% below the national average.<sup>7</sup></li> </ul>	High

<sup>6</sup> Government of La Rioja (2021) *Estadística anual del Sector Exterior de La Rioja*. Available at: <https://ias1.larioja.org/jaxiweb/menu.do?path=/2/207/20702/&file=pcaxis&type=pcaxis>

<sup>7</sup> INE (2021) *Parados por grupos de edad, sexo y comunidad autónoma*. Available at: <https://www.ine.es/jaxiT3/Tabla.htm?t=4964&L=0>

Strengths	
Economy	PRIORITISATION LEVEL
<ul style="list-style-type: none"> <li>• <b>Public debt:</b> La Rioja has one of the lowest percentages of indebtedness in the country with respect to its Gross Domestic Product, well below the national average.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Sustainable development:</b> There are some initiatives to incorporate sustainability mechanisms, especially in the agricultural sector. These initiatives arise from consumer demands and from new regulations. La Rioja has shown a higher percentage of expenditure on total environmental protection over GDP than Spain during the entire period 2014-2019, with an overall increase of 21.4%<sup>8</sup> <sup>9</sup>.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Reference projects:</b> La Rioja is implementing strategic projects in certain niches such as sustainability (packaging), viticulture (“Enorregión” – wine region), the enhancement of the Spanish language as a business sector, etc.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Energy:</b> Although during the years 2014-2017, the share of renewable energy halved, since 2017 the trend has been on the rise again<sup>10</sup>. La Rioja has a surplus of energy: the region has been producing approximately 150% of what it consumes, and the aim is to maintain this proportion.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Digitalisation:</b> Some organisations, especially in the wine and food sectors, are placing emphasis on the digitalisation and automation of their production processes, although digitalisation has not yet permeated the entire business community.</li> </ul>	Low
Society	PRIORITISATION LEVEL
<ul style="list-style-type: none"> <li>• <b>Quality of life:</b> La Rioja offers a very good quality of life and social stability, which can serve as a mechanism for attracting talent.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Income:</b> The wage gap between men and women in La Rioja has narrowed in the period 2014-2019<sup>11</sup>. The average income per household in La Rioja has increased progressively over the last few years to reach levels which are higher than those prior to the 2008 economic crisis.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Digital connectivity:</b> Increase in the number of households with broadband access, reaching almost the entire population of La Rioja at present.</li> </ul>	Medium

<sup>8</sup> INE (2019) *Contabilidad regional de España*. Available at:

[https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica\\_C&cid=1254736167628&menu=resultados&idp=1254735576581#!tabs-1254736195584](https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736167628&menu=resultados&idp=1254735576581#!tabs-1254736195584)

<sup>9</sup> INE (2019) *Gasto en protección ambiental por periodo, sector de actividad económica, tipo de gasto y comunidad autónoma*. Available at

<https://www.ine.es/jaxi/Tabla.htm?path=/t26/p070/p01/serie/I0/&file=02001.px&L=0>

<sup>10</sup> Red Eléctrica de España (2021) *Evolución de la generación renovable y no renovable (%)*. Available at: <https://www.ree.es/es/datos/generacion/evolucion-renovable-no-renovable>

<sup>11</sup> INE (2019) *Distribución salarial. Medias y percentiles por sexo y CCAA*. Available at: <https://www.ine.es/jaxi3/Tabla.htm?i=28191>

Strengths	
Society	PRIORITISATION LEVEL
<ul style="list-style-type: none"> <li>• <b>Training:</b> Predisposition of La Rioja's human capital to train in relation to the new skills demanded by the market. In addition to the academic content, local universities and vocational training entities promote inclusion and share the vision of the social impact of economic activity to their students.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Low poverty rate:</b> Regional poverty rate is well below the Spanish average<sup>12</sup>.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Equality:</b> The Gender Equality Index<sup>13</sup> of La Rioja is slightly higher than the national rate, showing 71.05 points in the region compared to 70.1 in Spain.</li> </ul>	Medium
Innovation and research	PRIORITISATION LEVEL
<ul style="list-style-type: none"> <li>• <b>Stable and consolidated strategic sectors:</b> La Rioja is a reference in R&amp;D&amp;I activity linked to sectors such as wine and footwear.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>R&amp;D&amp;I:</b> Positive evolution in regional research and innovation indicators in recent years (measured through the <i>Regional Innovation Scoreboard</i><sup>14</sup>)</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Consolidated academic structure:</b> La Rioja is home to universities with a solid track record and a highly diversified academic offer. There are prestigious research groups, although with little international projection. The University of La Rioja also launched Dialnet, one of the most important bibliographic search engines in the Spanish-speaking world.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Sectoral entrepreneurship:</b> Some sectors, such as food, are working to boost the creation of startups and new projects linked to cellular meat and new protein sources. However, this entrepreneurship trend does not permeate all strategic sectors.</li> </ul>	Low
Digitalisation and digital transformation	PRIORITISATION LEVEL
<ul style="list-style-type: none"> <li>• <b>Training:</b> Academic training, both university and professional training, is aligned with the main needs towards digitalisation, related to managing and harnessing data (data science and artificial intelligence). There is a clear push for dual training in this regard.</li> </ul>	Medium

<sup>12</sup> INE (2021) *Riesgo de pobreza o exclusión social y de sus componentes por comunidades autónomas*. Available at <https://www.ine.es/jaxiT3/Datos.htm?t=10011>

<sup>13</sup> The European Gender Equality Index measures the situation of equality between women and men in six basic areas of social life: employment, money, knowledge, time, power and health, on a scale of 1 to 100.

<sup>14</sup> European Commission (2021). *Regional Innovation Scoreboard*. Available at: [https://ec.europa.eu/growth/industry/policy/innovation/regional\\_en](https://ec.europa.eu/growth/industry/policy/innovation/regional_en)

## 2.3 Threats

Threats	
Economy	PRIORITISATION LEVEL
<ul style="list-style-type: none"> <li>• <b>Regional competition:</b> Proximity to other Spanish autonomous communities that offer better tax conditions, causing SMEs in all sectors to lose competitiveness with respect to their peers in Navarre and the Basque Country, as well as making it difficult to retain and attract talent.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Productive dependence:</b> Dependence on a few traditional sectors (such as wine and footwear), without investing on new technologies and solutions.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Convulsive global outlook:</b> Rising raw material and energy costs (a major threat in the short term that may lead industries to relocate their infrastructures in the medium and long term). Increases in logistics costs worldwide from the post-pandemic recovery and rising fuel prices.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Climate change:</b> Climate change is endangering local wine production and other activities that depend on natural resources in the long term, so it is necessary to work to protect the soil, water, and the environment.</li> </ul>	Low
Society	PRIORITISATION LEVEL
<ul style="list-style-type: none"> <li>• <b>Depopulation and ageing:</b> High ageing rate and declining projections of population in the coming years.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Migration of human capital:</b> Lack of talent and outflow of local talent to other territories. One of the main causes of the emigration is the low salaries in the region.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Globalisation:</b> Riojan companies are not only competing with businesses from neighbouring autonomous communities, but they also compete with companies from other countries that offer possibilities to telework from La Rioja, offering better salaries than local enterprises.</li> </ul>	Low
<ul style="list-style-type: none"> <li>• <b>Youth participation:</b> Low involvement of youth in solving societal challenges and in the decision-making of policies and initiatives.</li> </ul>	Low

Threats	
<b>Innovation and research</b>	<b>PRIORITISATION LEVEL</b>
<ul style="list-style-type: none"> <li>• <b>Legal framework:</b> obsolete to manage the next steps in innovation and development.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Innovation culture:</b> Difficulties in convincing the entrepreneurs to invest capital in innovation projects and, in general, to promote innovation in companies, especially in the wine sector.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Fragmentation of agents.</b> Disconnection of research activities amongst agents, missing synergies, and collaboration options.</li> </ul>	High
<b>Digitalisation and digital transformation</b>	<b>PRIORITISATION LEVEL</b>
<ul style="list-style-type: none"> <li>• <b>Managing the digital transition:</b> Poorly managed, the digitalisation process can increase the digital and social gap, leading to territorial and economic imbalances.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Lack of training:</b> Need for digital literacy of human capital prior to the incorporation of technologies such as IoT, virtual reality, etc.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Digital infrastructures:</b> The introduction of cutting-edge technologies such as IoT will not materialise without progress on key infrastructures related to connectivity.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Sectoral scope:</b> Some improvements and developments, such as biotechnology, have been applied only in the wine sector, leaving aside other sectors.</li> </ul>	Low

## 2.4 Opportunities

Opportunities	
Economy	PRIORITISATION LEVEL
<ul style="list-style-type: none"> <li>• <b>Access to funding for the development of strategic projects:</b> Conceptualisation, definition and consensus on strategic projects to transform the region through NextGenerationEU funds.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Sustainability:</b> Opportunity in the introduction of sustainable solutions to address markets where such initiatives are valued, ensuring the preservation of local resources. However, it must be ensured that regulations related to sustainable development do not get ahead of companies (they would become barriers or threats). The ideas and concepts put forward at the strategic level in the field of sustainability or the circular economy need to be translated into concrete initiatives.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Diversification</b> of business models (taking into account changes in consumer habits): this is something that already exists and is reflected in the Gross Value Added of La Rioja to the national economy, which has a greater weight in the agricultural and industrial spheres than in the rest of the country. Likewise, progress can be made beyond the traditional sectors through the servitisation of the productive sectors with the lever of new technologies</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Territorial attractiveness:</b> conceptualisation of a territorial attractiveness strategy encompassing investments (capital or greenfield in strategic value chains), visitors (tourists) and talent (students, researchers, skilled workers) in key sectors.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Energy:</b> Incorporation of energy efficiency improvements in industrial processes.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Automation:</b> Automating tasks in the agri-food sector, incorporating technology.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Development of industry and auxiliary services linked to the wine sector:</b> Advancing in the development of local engineering services related to the wine sector; wine is produced locally but industrial equipment is imported; local industrial engineering is focused only on the automotive sector.</li> </ul>	Medium

Opportunities	
Society	PRIORITISATION LEVEL
<ul style="list-style-type: none"> <li>• <b>Connecting business-talent-research:</b> Promoting the development of industrial doctorates and dual training, with the involvement of local companies, as well as expanding the training offer in relation to mathematics, physics, and bioinformatics. There are ICT companies that want to recruit but are not able to do it, due to the shortage of specialised talent. Disseminating opportunities linked to companies' demand for talent can encourage training in strategic areas (e.g., organic farming, data management, etc.).</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Generational change:</b> as an opportunity for transformation (giving way to a new generation that is more trained and skilled, digitally literate, etc.).</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Silver economy:</b> population ageing enables the development of an industry geared towards the well-being of the elderly.</li> </ul>	Baja
Innovation and research	PRIORITISATION LEVEL
<ul style="list-style-type: none"> <li>• <b>Business paradigm shift:</b> from a traditional, hierarchical industry culture towards dynamic companies, incorporating scientific-technological personnel.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Open innovation:</b> as a source of entrepreneurship and collaboration between companies, universities, and institutions.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Social innovation:</b> as a driver of innovation dynamics through collaboration between society, universities, companies, and institutions, in addition to its importance in resolving social challenges (territorial imbalances, digital gap, etc.).</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>International cooperation.</b> Use of European networks, partnerships with other regions in sectors of common interest and participation forums to promote the exchange of good practices and the emergence of joint projects.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Clusters as driving agents:</b> as a vehicle to catalyse and act as a bridge between companies and existing aid or financing mechanisms.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Pilot hub:</b> The size of La Rioja allows it to be a pilot territory for disruptive innovations (its GDP is similar to the European average, it has a very unpopulated area and an important industrial area, etc.).</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Boosting the sector of new materials:</b> as an area for generating knowledge, new business projects and a sustainable solution to many environmental challenges (such as the use of plastics).</li> </ul>	High

Opportunities	
Innovation and research	PRIORITISATION LEVEL
<ul style="list-style-type: none"> <li>• <b>Technology transfer:</b> To achieve proximity between the university and business in the ICT field. To orientate the PhD, research and professional training towards the needs of industry.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Cross-sectoral collaboration:</b> integration in strategic networks to promote international exchange and collaboration between academic, institutional, and business agents, as well as access to European funding projects.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Generational change in the administration:</b> the generational changeover of regional administrative staff provides an opportunity to move towards a more virtual, more flexible, and less bureaucratic administration.</li> </ul>	Medium
<ul style="list-style-type: none"> <li>• <b>Energy:</b> promotion of self-consumption of energy by businesses and households.</li> </ul>	Low
Digitalisation and digital transformation	PRIORITISATION LEVEL
<ul style="list-style-type: none"> <li>• <b>Technological implementation and hybridisation:</b> bringing key development technologies to companies, showing their practical side, and avoiding theoretical or conceptual approaches. Likewise, progress must be made in the hybridisation of technologies and disciplines, as well as the development of technologies that are transversal to various sectors.</li> </ul>	High
<ul style="list-style-type: none"> <li>• <b>Cooperation:</b> Pooling the digital capacities and needs of companies, academia, and institutions to identify development projects that have an impact on digital transformation.</li> </ul>	High



# 3

## **VISION AND OBJECTIVES**

### 3. VISION AND OBJECTIVES

#### 3.1 Vision 2027

Looking ahead to 2027, agents from the business, social, academic, and institutional spheres set out the following common vision for the future of La Rioja, as a:

- **Green, circular, responsible, and sustainable** region.
- **Knowledge-based, dynamic, and transformative** region. Territory of **piloting, innovation** and **avant-garde**.
- **Open, inclusive, and attractive** region, for **people, investments, and projects**.
- **Cohesive** and internally **balanced** region, internationally **interconnected**.
- **Acknowledged** region for the **quality** of its products and services, **leader** in its surroundings.

#### 3.2 Cross- cutting objectives

To achieve the vision, and as horizontal measures that will complement the specialisation priorities, a general objective supported by four specific objectives is set out:

##### GENERAL OBJECTIVE

To generate and consolidate **knowledge, added value** and **specific competences** in order to develop **competitive advantages** that promote progress towards a **knowledge-based society**, that increase **competitiveness in industry** and that make La Rioja a **more sustainable and cohesive eco-region**.

##### SPECIFIC OBJECTIVES



1. Promote the **culture of innovation** and **digitalisation** in society, institutions, business, and academia, towards a more **digital** and **knowledge-based** society.



2. Generate **collaborative and open environments** and develop **infrastructures** that encourage **cooperation amongst agents** in the science, technology, and innovation ecosystem, improving **knowledge transfer**, optimising funding opportunities, and contributing to the **competitiveness of industry**.



3. Promote the adoption of measures related to **sustainability, circularity, and inclusion** in the Riojan ecosystem of science, technology, and innovation



4. Increase **regional attractiveness** for the retention and attraction of **talent, investment** projects and **entrepreneurship** in the integrity of the territory, contributing to **cohesion and rural-urban balance**.

# 4

## SMART SPECIALISATION PATTERN

## 4. SMART SPECIALISATION PATTERN

As a result of the regional diagnostic and analysis, the participatory process carried out with the agents of the quadruple helix and based on the lessons learned from the previous S3, the following specialisation pattern is established. It prioritises the areas in which the region already or potentially has sustainable competitive advantages with respect to its environment (capacities, strengths, opportunities), and which will contribute to economic development and the resolution of social challenges during the period 2021-2027.



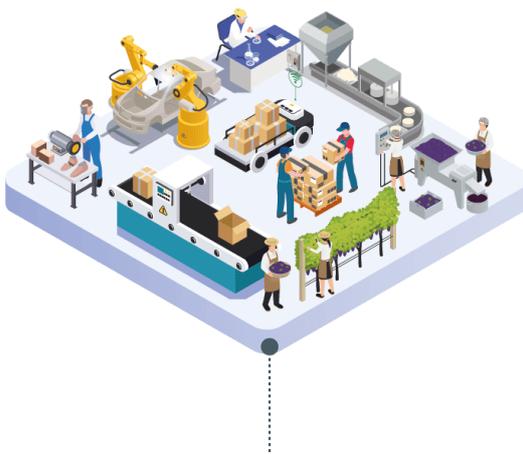
**SPECIALISATION AREA 1.**  
DIGITAL AND  
KNOWLEDGE-BASED SOCIETY



**SPECIALISATION PRIORITY 1.1:**  
Technologies for competitive  
and business intelligence



**SPECIALISATION PRIORITY 1.2:**  
"Valle de la Lengua"  
(Spanish Language Valley)



**SPECIALISATION AREA 2.**  
COMPETITIVE INDUSTRY



**SPECIALISATION PRIORITY 2.1:**  
Agrifood value chain



**SPECIALISATION PRIORITY 2.2:**  
"Enorregion" (Wine Region)



**SPECIALISATION PRIORITY 2.3:**  
Sustainable packaging



**SPECIALISATION PRIORITY 2.4:**  
Advanced manufacturing  
and logistics



**SPECIALISATION AREA 3.**  
SUSTAINABLE AND COHESIVE  
ECOREGION



**SPECIALISATION PRIORITY 3.1:**  
Eco-efficient business



**SPECIALISATION PRIORITY 3.2:**  
Circular economy



**SPECIALISATION PRIORITY 3.3:**  
Smart services for well- being  
and territorial cohesion

## 4.1 Specialisation area 1 – Digital and knowledge-based society



This specialisation area pursues the social and economic development of La Rioja through the promotion of digital-based new technologies, with knowledge as a fundamental element of progress.

Specialisation in the development of technologies for competitive and business intelligence, with data as the central input of knowledge and added value, and the development of the potential of the Spanish language based on digitalisation and innovation, will constitute the two pillars of deployment of this

area. This will promote the consolidation and creation of competitive advantages and will strengthen the national and international positioning of La Rioja in these fields.

### 4.1.1 Specialisation priority 1.1 – Technologies for competitive and business intelligence



Development of technologies that boost the competitive intelligence of the business community through the capture, transmission, storage, interaction, analysis and protection of data, understood as inputs of knowledge and added value for the science, technology and innovation ecosystem.

The development of data spaces and infrastructures in strategic sectors such as the wine industry will be addressed, as well as the application of advanced digitalisation solutions to contribute to the competitiveness of the agricultural and industrial sectors. Technologies and solutions included in this priority are IoT (capture), 5G and 6G (transmission), cloud computing (storage), artificial intelligence, big data analytics, augmented analytics and machine learning (interaction and analysis), cybersecurity-related technologies, deep learning and blockchain (protection), etc.

### 4.1.2 Specialisation priority 1.2 – “Valle de la Lengua” (Spanish Language Valley)



San Millán de la Cogolla is located in La Rioja, where the monasteries of Yuso and Suso, declared World Heritage Sites by UNESCO, house the first written vestiges of the Spanish language. La Rioja is therefore the origin of the 11th century Spanish and must become the place from which the Spanish language of the 21st century is promoted.

This specialisation priority takes advantage of these capacities to contribute to the deployment of the potential of the Spanish language as a tool for territorial development in a scenario characterised by digitalisation and globalisation.

To this end, initiatives will be promoted in the fields of learning and training, culture, tourism, science, entrepreneurship and intra-entrepreneurship, forming an environment for the generation, analysis and development of contents and proposals in Spanish around San Millán de la Cogolla and the main heritage sites of the region. The intensive use of key enabling technologies, particularly artificial intelligence, and specialised talent will contribute to the generation of added value and knowledge based on the heritage and business capabilities related to the Spanish language, from a multi-sectoral approach in areas such as education, tourism, research, creative content generation, telecommunications or business.

## 4.2 Specialisation area 2 – Competitive Industry



This specialisation area pursues the evolution and transformation of the regional production model to achieve an industry with better and greater capacities, differentiation and innovation intensity, in an increasingly competitive and global environment.

In order to advance in this purpose, there will be initiatives oriented to boost competitiveness, productivity, internationalisation and innovation of the agri-food value chain, to the sustainable and digital transformation of the

wine sector, to the generation of capacities and smart acceleration of the packaging sector and to the promotion of the use of innovative technologies and methodologies for the improvement of the manufacturing and logistics sector.

### 4.2.1 Specialisation priority 2.1 Agrifood value chain



Promotion of all the areas that integrate the value chain of the agri-food industry as the main regional production sector: from production to processing, packaging, distribution and marketing, as well as auxiliary economic activities that support the chain (auxiliary industry, technology and research centres, services on quality certification and food safety, genetics, development of new functional foods, agro-tourism, gastronomy, etc.).

This priority includes the development of precision agriculture in the region, as well as the incorporation of new technologies (artificial intelligence, big data analysis, etc.) throughout the agri-food value chain (Smart Agro, Agriculture 4.0 and Food Industry 4.0), to advance towards more sustainable and efficient agri-food management and production, greater consumer integration in innovation processes and the development of collaborative networks to reduce inefficiencies, cost savings and greater traceability control in the value chain.

### 4.2.2 Specialisation priority 2.2 “Enorregión” (Wine Region)



Sustainable and digital transformation of the entire value chain of a strategic sector for La Rioja, such as the wine industry, to turn the region into an example for the rest of the world's wine-producing territories and to become a global reference in research, innovation, trends creation, differentiated training and wine tourism. It also focuses on the recovery of the wine heritage as part of a worldwide-renowned wine tourism offer.

The great concentration and variety of wine resources in the territory makes it possible to act on the entire sector, which together with the geographical and sectoral dimensions of the region, provide an excellent context for the development of pilot projects of supra-regional nature.

### 4.2.3 Specialisation priority 2.3 Sustainable packaging



Transforming the packaging sector in line with the objectives of the European Green Deal and promoting the acceleration of the digitalisation of the industry as a lever for competitiveness and innovation, in a mature sector with strong roots in the region and impacting the entire value chain. This will be performed from a sustainable and circular approach: wood and cork packaging, metal packaging, cardboard and paper packaging, printing and label manufacturing and plastic packaging. In this context, the development of scientific and technical infrastructures, that respond to the needs raised by companies, will be addressed.

#### 4.2.4 Specialisation priority 2.4 Advanced manufacturing and logistics



Implementation and development of new materials, products and processes based on innovation and digitalisation in industrial value chains, especially in sectors with a long tradition in La Rioja such as footwear or the automotive and aeronautical component manufacturing sector, in order to generate new business opportunities, improve internal efficiency and advance, under the Industry 4.0 approach, towards the so-called "factory of the future".

This priority also includes the implementation of logistics services and logistics management models that enable companies to maintain their quality, improve their efficiency and competitiveness and promote international trade through sustainable and efficient solutions.

### 4.3 Specialisation area 3 – Sustainable and cohesive ecoregion



This specialisation area pursues a sustainable and balanced growth in La Rioja, through the decarbonisation of the economy, the intelligent and efficient use of energy and natural resources, the promotion of responsible consumption and better territorial cohesion, taking advantage of the levers of digitalisation and servitisation.

In order to advance towards this goal, initiatives will be established oriented to the reduction of the environmental impact of the business sector through eco-efficient solutions, the promotion of the circular economy, and the

implementation of smart services based on digitalisation and knowledge to increase well-being and internal cohesion between the territories and their inhabitants.

#### 4.3.1 Specialisation priority 3.1 Eco- efficient business



Conceptualisation, development and commercialisation of solutions linked to the integral sustainability of the business community (energy, water, environmental, social), which allow economic benefits to be achieved while improving environmental performance. In other words, products and services that help to satisfy customer needs while reducing environmental impact and the need to use resources.

These are mechanisms and solutions for savings and eco-efficient production in all business processes (R&D&i, purchasing, operations and logistics, sales, etc.) including innovative technological solutions that have an impact on the environmental, economic and social sustainability of the territory.

#### 4.3.2 Specialisation priority 3.2 Circular economy



Implementation of solutions, mechanisms and production models that involve reusing, renewing and recycling existing materials and products to create added value and extend their life cycle in the industrial, business and social spheres.

This priority includes the circular bioeconomy, for the production, reuse and conservation of biological resources for longer time in the production chain.

#### 4.3.3 Prioridad de especialización 3.3 Smart services for well-being and territorial cohesion



The size and geographical and demographic characteristics of La Rioja allow the implementation of smart, digital, sustainable and knowledge-intensive solutions that guarantee inclusive access and equal opportunities for all citizens, both rural and urban, through services related to wellbeing, personalised medicine, sustainable and smart mobility and care. Health, both environmental and human, and the development of biomedical services are of vital importance to ensure a balanced and sustainable development of society in La Rioja.

These solutions involve the deployment of technological infrastructures that enable interaction between virtuality and presence so that all citizens, regardless of their place of residence, have access to services that affect all the pillars of the Welfare State. La Rioja, due to its socio-economic, geographical and environmental characteristics, is emerging as a pilot territory and experimental laboratory for the promotion, in Spain and Europe, of this type of disruptive, innovative and cutting-edge services related to the concepts of smart cities and smart rural territories.



# 5

## **MONITORING SYSTEM**

## 5. MONITORING SYSTEM

### 5.1 Monitoring and evaluation indicators

Monitoring indicators allow a regular check of the impact and results of S3 implementation and serve as a basis for the planned mid-term and final evaluations. They provide data on the evolution of the defined smart specialisation priorities, in order to detect deviations and new challenges in the strategic deployment.

The proposed indicators are classified as:

- **Impact indicators (evaluation)**, which allow to evaluate the effects of the strategy in the medium and long term and are related to the general objective of S3.
- **Outcome indicators**, which allow to evaluate the effects of the strategy in the short and medium term and are related to the specific objectives of the S3.
- **Indicators of the evolution of specialisation areas**, which provide information on the status of the smart specialisation priorities defined in the S3 specialisation pattern.

#### 5.1.1 Impact indicators

The scoreboard of impact indicators allows to evaluate the degree of achievement of the overall objective of the Strategy in the medium and long term, as a consequence and effect of the implementation and deployment of the Strategy.

Table 1. Scoreboard of impact indicators

Indicator no.	Indicator name	Source	Year of last regional figure	Last regional figure	Year of last national figure	Last national figure	Objective 2024	Objective 2027
I.1	GDP per capita	IDER/ Eurostat	2019	28.200	2019	26.426	30.500	32.000
I.2	Variation rate of GDP	INE	2019	1,44%	2019	1,95%	2%	2,5%
I.3	Balance of trade (Exports- Imports)	IDER	2019	464.088	2019	-31.544.084	500.000	600.000
I.4	Total labour productivity (GVA/employees)	INE	2019	57.200	2019	57.080	60.000	62.500
I.5	Unemployment rate	INE/ Eurostat	2019	9,96%	2019	14,1%	9%	7,5%
I.6	Regional Innovation Index	Comisión Europea	2019	93,964	2019	92,51	97	100
I.7	% of R&D expenditure over GDP	INE/ Eurostat	2019	0,77%	2019	1,25%	0,89%	1%
I.8	% of business sector R&D expenditure over total R&D expenditure	INE/ Eurostat	2019	47,679%	2019	56,13%	50%	52,5%
I.9	% of Public Administration sector R&D expenditure over total R&D expenditure	INE/ Eurostat	2019	24,09%	2019	17%	25%	26%
I.10	Innovation intensity	INE	2019	0,9%	2019	1,06%	1%	1,15%
I.11	Percentage of researchers over total employment	INE/ Eurostat	2019	0,57%	2019	0,728%	0,65%	0,75%
I.12	Percentage of jobs in high-tech and knowledge-intensive sectors over total employment.	Eurostat	2019	1,2%	2019	3,7%	1,6%	2%

## 5.1.2 Outcome indicators

Outcome indicators measure the direct or immediate effects of the actions carried out. They make it possible to evaluate the results of the Strategy in the short and medium term in relation to its specific objectives and as an effect and result of the implementation of the Science, Technology and Innovation Plan.

Table 2. Scoreboard of outcome indicators

Indicator no.	Indicator name	S3 objective	Source	Year of last regional figure	Last regional figure	Year of last national figure	Last national figure	Objective 2024	Objective 2027
R.1	Information Society Index	Specific 1	IDER	2019	47,05	2019	50,37	57	65
R.2	Score on the dimension "International scientific co - publications" in the Regional Innovation Index	Specific 1	European Commission	2019	104,47	2019	108,17	110	115
R.3	Patent applications per million inhabitants	Specific 1	OEPM	2019	28	2019	27	45	60
R.4	Score on the dimension "Innovative SMEs collaborating with others" in the Regional Innovation Index	Specific 2	European Commission	2019	108,39	2019	68,97	115	125
R.5	Percentage of environmental protection expenditure by manufacture industry over GVA of the manufacture sector.	Specific 3	INE	2019	1,34%	2019	1,755%	1,75%	2,25%
R.6	Percentage of women over total number of researchers.	Specific 3	INE	2019	47,24%	2019	39,85%	48,5%	50%
R.7	Percentage of women over total managerial positions.	Specific 3	IDER	2019	33,39%	2019	33,23%	37%	40%
R.8	Score for the dimension "Employment in innovative SMEs" in the Regional Innovation Index	Specific 4	European Commission	2019	95,98	2019	56,03	100	105
R.9	Foreign direct investment	Specific 4	DataInvEx	2019	242.018 <sup>15</sup>	2019	107.998.751	175.000	175.000
R.10	Number of new companies set up	Specific 4	INE	2019	1.256 <sup>16</sup>	2019	283.442	1500	1500

<sup>15</sup>In this case the data and objectives will be represented by 3-year groupings, as this is a very volatile indicator. Baseline (2017-2019), Objective 2024 (2022- 2024). Objective 2027 (2025- 2027).

<sup>16</sup>In this case the data and objectives will be represented by 3-year groupings, as this is a very volatile indicator. Baseline (2017- 2019), Objective 2024 (2022- 2024). Objective 2027 (2025- 2027).

### 5.1.3 Indicators of the evolution of specialisation areas

Indicators of the evolution of specialisation areas measure the state of progress and advancement of each of the smart specialisation priorities defined in the S3.

#### Specialisation area 1- Digital and knowledge society

Table 3. Scoreboard of indicators of the evolution of specialisation area 1

Nº indicador	Nombre del indicador	Specialisation area	Source	Year of last regional figure	Last regional figure	Year of last national figure	Last national figure	Objective 2024	Objective 2027
E1.1	Score on the "connectivity" dimension in the Information Society Index	1	IDER	2019	45,92	2019	46,78	55	65
E1.2	Score on the "human capital" dimension in the Information Society Index	1	IDER	2019	50,72	2019	57,46	60	67
E1.3	Score on the "use of the Internet" dimension in the Information Society Index	1	IDER	2019	44	2019	48,2	60	65
E1.4	Score on the "integration of digital technology" dimension in the Information Society Index	1	IDER	2019	39,49	2019	43,27	50	57
E1.5	Score on the "digital public services" dimension in the Information Society Index	1	IDER	2019	55,98	2019	56,2	75	85
E1.6	Percentage of companies that perform Big Data analysis	1	INE	2019	5,76%	2019	6,43%	7,5%	10%
E1.7	Percentage of companies with an ICT security test	1	INE	2019	36,96%	2019	42,98%	45%	60%
E1.8	Percentage of enterprises employing ICT specialists.	1	INE	2019	17,18%	2019	18,4%	21%	25%
E1.9	Percentage of companies with AI technology for written language analysis	1	INE	2020	20,13%	2020	29,75%	25%	30%

#### Specialisation area 2- Competitive industry

Table 4. Scoreboard of indicators of the evolution of specialisation area 2.

Indicator no.	Indicator name	Specialisation area	Source	Year of last regional figure	Last regional figure	Year of last national figure	Last national figure	Objective 2024	Objective 2027
E2.1	% contribution of the food industry to industrial GVA	2	IDER	2019	12,49%	- <sup>17</sup>	-	13,75%	15%
E2.2	% contribution of beverage manufacturing to industrial GVA	2	IDER	2019	11,18%	- <sup>18</sup>	-	12,5%	13,75%
E2.3	Percentage of wine exports over total exports	2	Datacomex	2019	16,872%	2019	0,95%	20%	20%
E2.4	Percentage of domestic R&D expenditure in the industrial sector over GDP	2	IDER/INE	2019	0,795%	2019	2,23%	1%	1,2%
E2.5	Percentage of the industrial sector over GVA	2	IDER	2019	26,07%	2019	16,15%	27%	28%

<sup>17</sup> No nationally disaggregated data available.

<sup>18</sup> No nationally disaggregated data available.

### Specialisation area 3- Sustainable and cohesive ecoregion

Table 5. Scoreboard of indicators of the evolution of specialisation area 3.

Indicator no.	Indicator name	Specialisation area	Source	Year of last regional figure	Last regional figure	Year of last national figure	Last national figure	Objective 2024	Objective 2027
E3.1	Tonnes recycled of plastics, metals, paper and cardboard or wood per person	3	ECOEMBES	2019	30,835	2019	31,912	38	45
E3.2	% of population in areas with less than 2,000 inhabitants.	3	INE	2019	11,84%	2019	5,739%	11,5%	11,25%
E3.3	Parity index between residents of municipalities with 10,000 inhabitants or less and residents of municipalities with more than 10,000 inhabitants municipalities with more than 10,000 inhabitants	3	IDER	2019	62,83	2019	86	69	75

## 5.2 Review, update and evaluation system

A system of review, updating and evaluation of the S3 is established with the aim to evaluate the intermediate and final results and impacts of the Strategy, allowing to implement corrective measures in the event of deviations and in response to new challenges that arise in the territory. This system will be supported by the following elements:

- **Monitoring platform**, which will integrate the Strategy's monitoring indicators and will allow the different levels of governance to be regularly updated about the Strategy's impact and results, as well as the evolution of the defined specialisation areas.
- **Annual monitoring reports**, which will include the initiatives developed within the framework of the Strategy (annual report), as well as the evolution of the indicators of impact, results, and evolution of the specialisation areas, making it possible to identify deviations and adopt corrective and contingency measures if necessary.
- **Mid-term evaluation and review**. Scheduled to take place in 2024, the mid-term evaluation will allow to measure the efficiency of the Strategy's implementation, its results, effectiveness and impact, the degree of progress of the indicators defined in terms of the established goals and the relevance and pertinence of the initial vision, objectives, and specialisation pattern. In this sense, the mid-term evaluation will be accompanied by a comprehensive review of the Strategy, adapting and readapting it to the deviations detected and to the emerging challenges in the new regional context. It will involve the participation of the agents of the quadruple helix through the implementation of methodologies based on the Entrepreneurial Discovery Process (EDP).
- **Final evaluation**. Scheduled for 2028, it will identify the benefits obtained, the impact and the general and specific results of the implementation of the S3 during the period 2021-2027. It will also make it possible to estimate the degree of achievement of the vision and objectives set and the level of evolution of the smart specialisation priorities defined, as a diagnosis for the next strategic period.



# 6

## GOVERNANCE

## 6. GOVERNANCE

Strong governance ensures the effective implementation of the Smart Specialisation Strategy through vertical and horizontal coordination mechanisms, as well as by fostering collaboration between the agents of the quadruple helix (business, research organisations, public administration, and representatives of civil society).

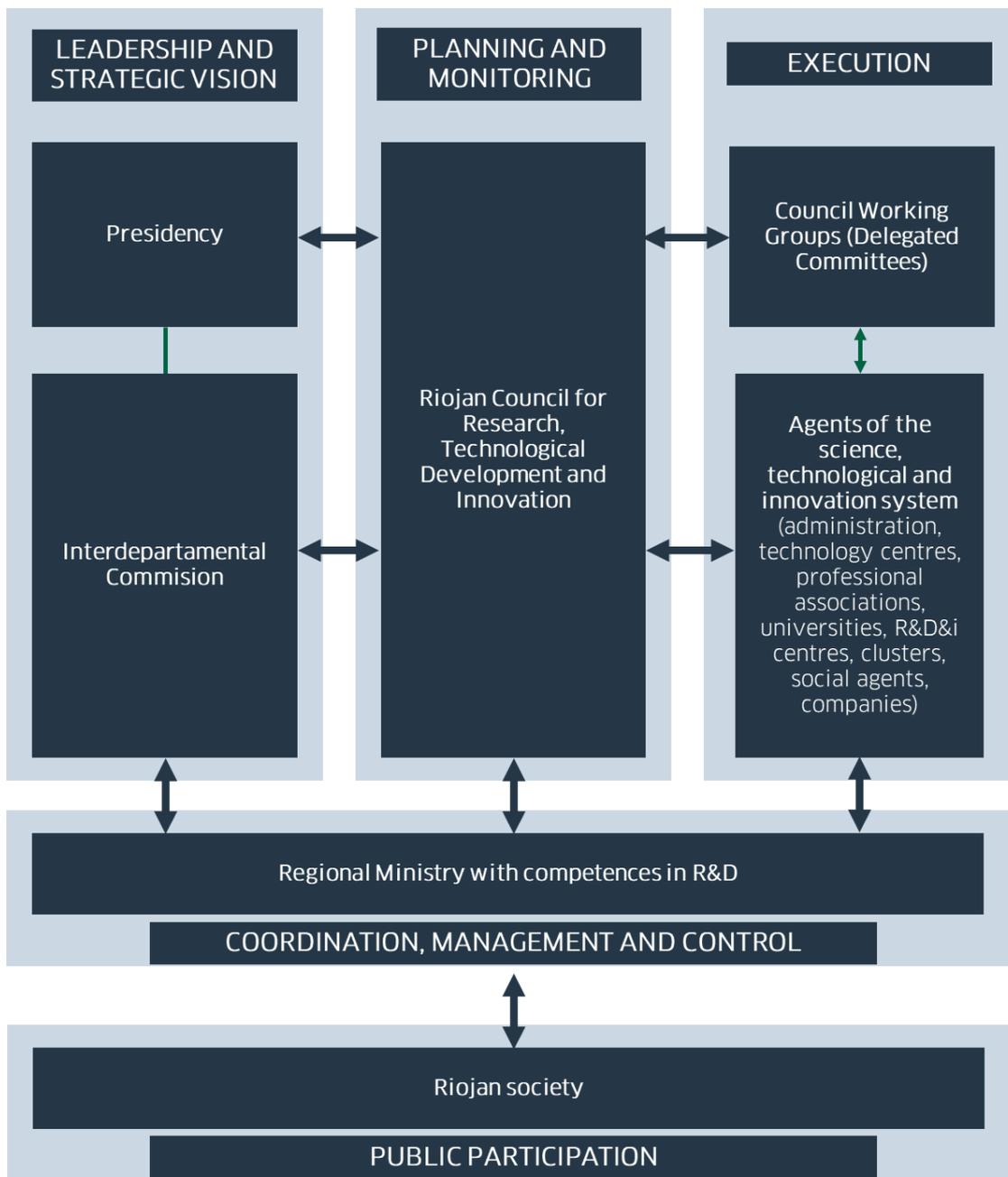
The Governance Model of the Specialisation Strategy of La Rioja takes as reference:

- Law 03/2009, of 23 June, on Science, Technology and Innovation (La Rioja).
- Regional Decree 12/2017, of 31 March, which regulates the Interdepartmental Commission for Research, Technological Development and Innovation of La Rioja, the Riojan Council for Research, Technological Development and Innovation, the Registers and Catalogues of the Register of Agents of the Riojan Innovation System, its organisation and operation.
- Regional Decree 37/2021, of 2 June, amending Decree 12/2017, of 31 March, regulating the Interdepartmental Commission for Research, Technological Development and Innovation of La Rioja, the Research, Technological Development and Innovation Council of La Rioja, and the Register and Catalogues of the Register of Agents of the Innovation System of La Rioja, its organisation and operation, in execution of the legislative mandate established in Law 3/2009, of 23 June, on Science, Technology and Innovation of the Autonomous Community of La Rioja.
- The Monitoring and Evaluation System defined in the Review and Update of the Regional Smart Specialisation Strategy of La Rioja carried out in 2019.

On this background, a new Governance Model is formulated on the following pillars:

- **Simplification:** clarity of functions, optimisation of synergies and reduction of overlaps to increase agility in decision-making and project development.
- **Transversality:** smart specialisation transcends the fields of research and science and incorporates concepts such as sustainability, digitalisation, energy transition or inclusion, which is why a broader and more heterogeneous active participation in the Governance System is particularly relevant.
- **Operationalisation:** it boosts the role of the public administration as a facilitator and catalyst to drive the transformation of the science, technology, and innovation system through an interactive and inclusive process that puts together the market forces and the private sector (Entrepreneurial Discovery). Obtaining regular feedback from the ecosystem through agile and flexible working groups helps to bring the agents together (academy-market knowledge transfer and market-academia needs transfer, public-private collaboration) and reduce unnecessary overlaps.
- **Participation and transparency:** implementation of clear mechanisms and information flows through formal and pre-established channels, taking advantage of the benefits of digital platforms in terms of facilitating contacts and information dissemination as well. These measures ensure the effective participation of the quadruple helix of innovation: companies, research organisations, public administration, and civil society.

Illustration 1. Governance Model of the Smart Specialisation Strategy of La Rioja 2021-2027



Source: Government of La Rioja