CHAIR FOR UNIVERSITY AND KNOWLEDGE REGION

SOUTHERN CATALONIA, KNOWLEDGE REGION

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Feet on the ground and facing the world

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Abstract

The document *Southern Catalonia, Knowledge Region* argues that Catalonia needs to develop its own internal regional policy, which would provide a framework for a decision-making system of regional planning and development. This system would also cover the southern region. The document describes the features that this system should have, taking as its source the European cohesion policy, which focuses on regional development based on smart specialization (RIS3) and allows to identify regions with economic and social knowledge-based activity.

European regional policy, therefore, identifies **Southern Catalonia as a Knowledge Region, and provides an operational definition of the region**. There is, first, a bottom-up need that arises from the concerns and demands repeatedly expressed by the various levels of society whenever a decision with strategic regional scope has had to be taken (on infrastructure, health, tourism, industrial development, etc.). And, as the document shows, there is also a top-down need: European policies need to be implemented more effectively to allow for cohesive growth. The document discusses the desirability of defining the attributes of the NUTS2 region, and analyses the advantages of doing so (and the disadvantages of not doing so), the main strengths and weaknesses of the region and the difficulties that need to be overcome.

With this document, Universitat Rovira i Virgili's Chair for the University and Knowledge Region rises to the challenge of **facilitating and contributing to the organization of a system of governance for Southern Catalonia as a region of knowledge**. The document also describes the action plan that is being put into practice by the URV Chair for the University and Knowledge Region to help define the Southern Catalonia region.

1. INTRODUCTION

In his inaugural speech as president of Tarragona Provincial Council (*Diputació de Tarragona*) nine years ago, Mr. Josep Poblet stressed the importance of knowledge in developing an economic model for the Southern region of Catalonia. This approach began to take shape when the Plenum of the Provincial Council approved the 2007–2011 Strategic Plan, which defined a strategic alliance between the Provincial Council and the Universitat Rovira i Virgili (URV) to develop Tarragona as a Knowledge Region. Both the Council and the URV have expressed their satisfaction with the results that have been achieved under this approach and the joint efforts that have been made to consolidate the knowledge structures in southern Catalonia including the University, the Catalan research institutes affiliated to the University, and the technological centres that have begun their operations in the last eight years. Despite the severity of the recession during this period, the impact of the science conducted in Southern Catalonia has continued to grow both from the scientific perspective (evaluated by the international scientific community) and from the financial perspective through knowledge transfer activities performed in conjunction with companies from this and other regions by all of the agents listed above. These activities are firmly in line with the objective we propose in this project, i.e. to develop Southern Catalonia as a Knowledge Region.

Indeed we could say that both this approach and this alliance were *avant la lettre* because their model is similar if not identical to the proposals of the European Union for the 2014–2020 seven-year period, which promotes smart, sustainable and inclusive growth. These proposals materialised in the RIS3 strategy and the various programmes that derive from this strategy, which in Catalonia are known as RIS3CAT. The European strategy therefore perfectly matches the developments that have taken place recently in our region.

As the Government of Catalonia has pointed out, the European Commission has defined an integrated approach for 2014–2020 for all the cohesion policy funds through a common strategic framework that sets out priorities and specifies results that must be achieved. The Commission also requires smart specialisation to be a prerequisite for investment in research and innovation projects co-financed with European funds. Member states and regions are required to draw up research and innovation strategies for smart specialisation that, in line with the methodology specified by the European Commission, boost the economic and knowledge specialisations that best match their innovation potential based on the assets and capacities of their region.

In short, governments are required to draft a document that captures their regional strategy and the investments and actions they propose to conduct in research, technological development and innovation (both technological and non-technological) for 2014–2020, and specifically those that are to be co-financed from the European Regional Development Fund (ERDF). In this context, after a process lasting over a year, the Government of Catalonia has established its research and innovation strategy for smart specialisation in Catalonia (RIS3CAT) as defined by the framework, via which the Government develops its R&D&I actions and programmes for 2014–2020 and supports the generation and development of innovative research projects.

In the framework of the Europe 2020 strategy and cohesion policy for 2014–2020, the European Commission promotes integrated approaches for regional development that actively involve regional agents in the preparation and application of original and innovative strategies for achieving economic invigoration in accordance with the needs and potential of the region.

From a completely different perspective, frequently citizens and institutions from all over the southern regions of Catalonia have identified common interests to face the challenges and opportunities that affect and have affected the region. The absence of a minimum system for discussion and political decision-making beyond the powers given by current legislation to the Provincial Council, the only body of regional political representation, has become evident. Many initiatives have been launched to alleviate this functional deficit because there is indeed a clear gap in the decision-making process on matters affecting the citizens of the region that, though beyond the competence of local authorities, are not adequately covered by decisions taken centrally by the Government of Catalonia. The last few decades have seen many attempts to create a solid system for at least discussing common interests. These attempts have included discussion forums such as the Salou Discussions (*Converses de Salou*) of the 1970s and the more recent Arena for Reflections on the Region (*Espai de Reflexió sobre el Territori*), organised in 2012 and 2013 by the Tarragona branch of the Catalan Architects Association. Other attempts have been more formal arrangements such as the Socioeconomic Table of the Tarragona Region (*Mesa Socio-econòmica del Camp de Tarragona)* and in particular the former Consortium of the Camp de Tarragona (*Consorci del Camp de Tarragona*), which was created in 2002 but dissolved in 2014 after more than five years of inactivity. The Consortium comprised over a hundred local municipalities and their areas of influence, various supramunicipal administrations (the Provincial Council and the Tarragonès, Alt Camp, Baix Camp, Baix Penedès, Priorat and Conca de Barberà County Councils), the Generalitat de Catalunya (the autonomous government of Catalonia), and non-profit organisations and institutions with significant influence on regional development, including the Rovira i Virgili University, the Tarragona, Reus and Valls Chambers of Commerce, the Business Confederation of the Province of Tarragona (*CEPTA*), and the main trade unions.

Conscious of the need to combine and coordinate efforts to drive projects with a regional impact and to carry out actions beyond their own competences, the local administrations took it upon themselves to create the Consortium of the Camp de Tarragona and its area of influence. This was perhaps the most serious and committed of all these initiatives. The statutes of the Consortium stated:

> "The objectives of the Consortium are to coordinate efforts and resources in order to obtain maximum efficiency in the execution of actions that are the responsibility of other administrations, specifically in the following five areas:
>
> - Road, airport and railroad infrastructures, including TRAMCAMP (Regional Light Tram System).
> - Public safety and the deployment of the *Mossos d'Esquadra* (Catalan police force) at the earliest opportunity.
> - Promoting the mobility in the region, in collaboration with the *Consorci del Transport del Camp* (regional transport consortium), the organism recently created for this purpose.
> - The balance between environment and sustainability and, more specifically, the resolution of issues related to water and waste management.

- Energising and coordinating the productive sectors of the region: industry, commerce, tourism, leisure and services, etc., with special attention given to employment policies."

The key features of every initiative undertaken during this time were: identify a need, i.e. the need to promote and/or take decisions on actions that are in the common interest of society in the southern regions of Catalonia; and report the absence of any formal instruments to satisfy that need. All these initiatives also demonstrated that forums and even formal structures without competences are insufficient in a legal context in which these competences are shared between the local, Spanish and Catalan administrations, the latter of which acts to all effects and purposes as a regional administration. Despite the demographic, economic, social and cultural dimensions of Catalonia resemble those of a state rather than those of a region. Indeed, it is precisely the dimension of Catalonia that distances it from the perspective of regional development and leaves a void that local administrations on their own cannot fill.

In this document we demonstrate why Catalonia needs a truly regional decision-making system and why this system should include a structure for its southern regions. This structure could in fact represent the first phase for the system as a whole. Focusing on the Southern Catalonia project, we also discuss which elements we believe the project should comprise from the following two perspectives: first, bottom-up, i.e. the concerns of society in the southern counties of Catalonia, which perceives the functional necessity of collective decision-making; and second, top-down, i.e. from European regional policy perspective, which has for many years identified cohesion in regional development as a pillar of the development of Europe. This document is drafted precisely because of the opportunity presented by European cohesion policy, which focuses on regional development based on smart specialisation through research and innovation and enables regions to be defined with economic and social activity based on knowledge, i.e. knowledge regions. With this project, the URV Chair for University and Knowledge Region, sponsored by Tarragona Provincial Council (*Diputació de Tarragona*) and *Banco Santander*, undertakes to **facilitate and contribute to the organisation of a system of governance for Southern Catalonia as a Knowledge Region**.

Only in this introduction we have used four different terms to denote this region of Southern Catalonia: Tarragona, which corresponds to the Spanish division of the territory into provinces; the southern counties of Catalonia, which comprise the ten counties (*comarques*) that make up the province of Tarragona; Southern Catalonia, which is an alternative denomination with as-yet-undefined geographical boundaries that are nonetheless assumed to be the same as those of the province of Tarragona; and the Tarragona region (*Camp de Tarragona*), which covers a less extensive geographical area in which more than half the provincial population is concentrated but which also has more than one definition: as one of the eight AFT (*Àmbits Funcionals Territorials or territorial functional scopes*) defined in the general territorial plan of Catalonia, it comprises the counties of Alt Camp, Baix Camp, Conca de Barberà, Priorat and Tarragonès but as a historical region it would include only the counties of Alt Camp, Baix Camp and Tarragonès, which is basically the central area of the province and which has also been proposed as a possible metropolitan area. We should also keep in mind the relatively recent definition of the AFT of the Penedès region, where it was decided that Baix Penedès would no longer be included in the Tarragona region (*Camp de Tarragona*) even though functionally it maintains a close historical, cultural and administrative (education, health,

welfare, etc.) relationship with the other counties in the province of Tarragona. As we can see, the very definition of the region is a further difficulty when it comes to defining a decision-making system. What exactly is the society of the southern counties of Catalonia that would like and needs to develop its own decision-making system?

Because of this complex framework, it is convenient to use the external references provided by European regional policy both to define suitable dimensions for decision-making at the regional level and to set the decision-making agenda, which is strongly influenced these days by the demands of the knowledge-based society. In the following chapters, therefore, we will analyse European regional policy and its relation to the policies on cohesion and productivity; suggest which dimension Catalonia should grant its internal regional policy; and, since this policy can best define Southern Catalonia's specific sphere of influence, propose a checklist of issues for which this region ought to enjoy both an adequate level of competence and an adequate level of decision-making. Finally, we propose an action plan for implementing these measures.

2. THE EUROPEAN UNION AND ITS REGIONS

The current recession, which is global and local, economic and social, has led citizens, associations and political movements to call into question many of our social structures, including the European Union (EU) itself. However, the EU remains a success story with a long and successful tradition and aspirations for a positive future for all its members, none of which would be sure of having the dimensions needed to develop successfully in a competitive, globalised world without the support and protection of the EU. The EU's model of a society based on social justice also represents a beacon of hope for a world that is largely evolving towards a widening of differences, social and environmental unsustainability, and a struggle for resources (Grau, 2015).

One of the greatest pressures the EU has to bear, and which is eased by the political development towards greater integration for its peoples, is caused by its own member states, which are resisting any further concessions on sovereignty. Some states are even tempted to regain their own sovereignty on highly sensitive social issues such as immigration. The clearest example of this is the United Kingdom, which has even gone as far as deciding to leave the EU. The political idea that dominates today is that the EU is an association of states. However, the notion of the EU has always been filled with the concept of European citizenship, a concept that found its main instrument in regional policy, i.e. identifying the considerable differences in the development conditions of the regions of Europe and the need to overcome these differences to achieve better overall development over and above the policies of individual member states.

A brief review of the history of the EU reveals the presence of this regional policy and shows how it has progressively gained in importance to the extent that today it is one of the pillars of the EU concept of a society committed to smart, sustainable and inclusive development.

From the outset, one of the missions of the Treaty of Rome (1957) was to foster the harmonious development of the economic communities of its member countries. In 1968 the Directorate-General

for Regional Policy was created. Then in 1975, after the expansion of 1973, the ERDF (European Regional Development Fund) was set up. In 1981, in preparation for the adhesion of Spain, Portugal and Greece to the Community, the EDRF was incorporated into a framework for political cohesion that was based on several key principles: focus on the poorer and more backward regions, multi-annual planning, strategic direction of investment, and the involvement of regional and local partners. What should be noted in this phase is the idea of the need for social cohesion in Europe and, especially, how the EEC (European Economic Community) -as it was then- conditioned the actions of states via the application of regional policies. In 1993, the Maastricht Treaty introduced three important new features: the Cohesion Fund, the Committee of the Regions, and the principle of subsidiarity. As this principle is especially important for understanding the need for a regional policy in Catalonia, now is a convenient juncture to reflect upon it.

The aim of the **principle of subsidiarity** is to ensure that decisions are taken as closely as possible to the citizen. Except in cases where the EU has exclusive competence, actions on an European level should not be taken unless they are more efficient than those taken at the national, regional or local level. Subsidiarity is strictly linked to the principles of proportionality and need, which means that the actions of the EU should not exceed the limits required to achieve the objectives of the Treaty. The principle of subsidiarity was first incorporated into the Treaty of the European Union (article 5) in 1992. The Treaty of Amsterdam (1997) extended the principle so that, for example, every legislative proposal must be evaluated in accordance with its impact on subsidiarity. The Treaty of Lisbon (2007) further reinforced this principle. Specific changes included a greater degree of consultation on the local and regional levels when drafting legislative proposals, and closer communication with national parliaments during the legislative process. The key questions are: What is the closest authority to the citizen in matters of regional development above that of the local ones? What is the appropriate social dimension for a regional policy? As we will see below, Catalonia lies at one end of the normal distribution of European regions, with a geographical, social, economic and cultural dimension that is more befitting that of a state. Also, extending the principle of subsidiarity to the objectives of regional policies makes it necessary to define a regional scale within Catalonia that makes it possible to introduce policies that are closer to the citizens and that most other European regions are able to implement.

Between 1994 and 1999, the resources invested in the structural and cohesion funds doubled, reaching a third of the total EU budget.

In the year 2000, the Lisbon Strategy turned the attention of European priorities towards growth, employment and innovation, and regional policy had to reflect these priorities. In 2004, the EU faced one of its most ambitious extensions with the admission of ten more countries. This increased the population by 20% but GDP by only 5%.

Between 2007 and 2013, the regional fund's budget increased to 347,000 million euros, 25% of which was devoted to research and innovation and 30% to environmental structures and to combatting climate change.

2.1. Current European regional policy

During the current period of governance (2014 – 2020), regional policy represents the main investment policy of the European Union. It is aimed at every region and city in the European Union and is intended to support the creation of employment, business competitiveness, economic growth, sustainable development and improving the quality of life of all its citizens. To achieve these objectives, and **meet the development needs of the various regions of the EU**, the EU has committed 351,800 million euros, which is almost a third of its entire budget. Regional policy is developed mainly via the ERDF, the Cohesion Fund (CF) and the European Social Fund (ESF). The way the programmes are designed means that regional policy has a strong impact on many fields. Their investments help to meet many European Union objectives, including those in the fields of education, employment, energy, the environment, the Single Market, research and innovation. Specifically, regional policy provides the investment framework necessary for meeting the objectives of the Europe 2020 strategy, for which the European Union has established three mutually reinforcing priorities:

Smart growth, which involves improving the performance of the EU in the following areas:

- Education: encouraging people to learn, study and update their knowledge.
- Research and innovation: creating new products and services that generate growth and employment and help to meet social challenges.
- The digital society: using information and communications technologies.

Sustainable growth: for a greener and more competitive economy that uses its resources efficiently.

Inclusive growth: an economy with a high level of employment that **fosters economic, social and territorial cohesion.**

To measure progress towards achieving the objectives of Europe 2020, the following five principal objectives have been set for the EU as a whole:

1. Employment: an employment rate of 75% for citizens aged between 20 and 64.
2. R&D: investment in R&D at 3% of the European Union's GDP.
3. Climate change and sustainable energy: a reduction of 20% in greenhouse gas emissions (or 30% if conditions are favourable) compared to 1990 levels; a 20% consumption level for renewable energies; a 20% increase in energy efficiency.
4. Education: an early school dropout rate below 10%; at least 40% of citizens aged between 30 and 34 should complete the tertiary level of education.
5. Actions against poverty and social exclusion: a reduction of at least 20 million in the number of people in or at risk of poverty or social exclusion.

Topic	Headline indicator	2008	2011	2012	2013	2014	2015	Target
Employment	**Employment rate age group 20-64, total**							
	(% of population)	70.3	68.6	68.4	68.4	69.2	70.1	75.0
	Employment rate age group 20-64, females							
	(% of population)	62.8	62.2	62.4	62.6	63.5	64.3	-
	Employment rate age group 20-64, males							
	(% of population)	77.8	75.0	74.6	74.3	75.0	75.9	-
R&D	**Gross domestic expenditure on R&D**							
	(% of GDP)	1.85	1.97	2.01	2.03	2.03	-	3.00
Climate change and energy	**Greenhouse gas emissions**							
	(Index1990=100)	90.3	83.0	81.8	80.2	77.0	-	80.0
	Share of renewable energy in gross final energy consumption							
	(%)	11.0	13.1	14.3	15.0	16.0	-	20.0
	Primary energy consumption							
	(Million tonnes of oil equivalent)	1,693	1,593	1,584	1,569	1,507	-	1,483
	Final energy consumption							
	(Million tonnes of oil equivalent)	1,180	1,105	1,105	1,106	1,061	-	1,086
Education	**Early leavers from education and training, total**							
	(% of population aged 18-24)	14.7	13.4	12.7	11.9	11.2	11.0	< 10.0
	Early leavers from education and training, females							
	(% of population aged 18-24)	12.7	11.5	10.9	10.2	9.6	9.5	-
	Early leavers from education and training, males							
	(% of population aged 18-24)	16.6	15.3	14.5	13.6	12.8	12.4	-
	Tertiary educational attainment, total							
	(% of population aged 30-34)	31.1	34.8	36.0	37.1	37.9	38.7	≥40
	Tertiary educational attainment, females							
	(% of population aged 30-34)	34.3	38.6	40.2	41.4	42.3	43.4	-
	Tertiary educational attainment, males							
	(% of population aged 30-34)	28.0	31.0	31.8	32.8	33.6	34.0	-
Poverty and social exclusion	**People at risk of poverty or social exclusion, EU-27**							
	(Million people)	116,2	119,6	122,5	121,6	120,9	-	96,2
	People at risk of poverty or social exclusion, EU-28							
	(Million people)	-	121,0	123,8	122,9	122,2	-	-
	People at risk of poverty or social exclusion, EU-28							
	(% of population)	23.7	24.3	24.7	24.6	24.4	-	-
	People living in households with very low work intensity, EU-28							
	(% of population aged 0-59)	9.2	10.4	10.5	10.9	11.2	-	-
	People at risk of poverty after social transfers, EU-28							
	(% of population)	16.5	16.8	16.8	16.7	17.2	-	-
	Severely materially deprived people, EU-28							
	(% of population)	8.5	8.9	9.9	9.6	8.9	-	-

Table 1. Main indicators of progress towards meeting the objectives of Europe 2020.

Table 1 shows the nine headline indicators adopted by the EU for monitoring progress towards meeting the Europe 2020 strategy objectives. They are also useful for conducting a quantitative analysis of the level of convergence achieved by the application of the previous European regional policies and thereby understanding the new direction introduced during the current seven-year plan by the RIS3 strategies. Most of the finances obtained from the cohesion policy are still concentrated in the least developed countries and regions of the European Union in order to bring them up to date and reduce the economic, social and territorial inequalities that still exist in the EU.

2.2. Catalonia and Tarragona in European regional organisation

Measurements are needed to monitor any policy. When the scale involved is socioeconomic, and especially when one of the main aims is to achieve greater territorial cohesion, the measure requires a geographical base.

The EU has Eurostat, a detailed and extensive statistical database of states and regions (http://ec.europa.eu/eurostat). According to the Eurostat website:

> "Eurostat is the statistical office of the European Union situated in Luxembourg. Its mission is to provide high quality statistics for Europe. Providing the European Union with statistics at European level that enable comparisons between countries and regions is a key task. Democratic societies do not function properly without a solid basis of reliable and objective statistics. On one hand, decision-makers at EU level, in Member States, in local government and in business need statistics to make those decisions. On the other hand,

> the public and media need statistics for an accurate picture of contemporary society and to evaluate the performance of politicians and others.
>
> The EU Member States are often compared with each other, but in reality it is very difficult to compare a small Member State like Malta, which has around 420,000 inhabitants, or Luxembourg, which has around 540,000 inhabitants, with Germany, the most populous EU Member State at close to 81 million inhabitants. Comparing regional data that are as detailed as possible is often more meaningful and this also highlights the disparities — or similarities — within EU Member States themselves.
>
> The European Union places considerable emphasis on cohesion policy, with the objective of bringing Europe's regions and cities closer together in economic, social and environmental spheres. Cohesion policy is established on the basis of seven-year programming periods; the programming period that is currently in force covers 2014–20. Cohesion policy funding for the period 2014–20 is foreseen to be almost EUR 352 billion — equivalent to almost one third (32.5 %) of the EU's total budget during this period.
>
> At the heart of regional statistics is the NUTS classification — the classification of territorial units for statistics. This is a regional classification for the EU Member States providing a harmonised hierarchy of regions: the NUTS classification subdivides each Member State into regions at three different levels, covering NUTS 1, 2 and 3 from larger to smaller areas. Regions have also been defined and agreed with the EFTA (European Free Trade Association) and candidate countries on a bilateral basis; these are called statistical regions and follow exactly the same rules as the NUTS regions in the EU, although they have no legal basis.
>
> Regional statistics are employed when allocating funds. The NUTS classification is used to define regional boundaries and determine geographic eligibility for structural and investment funds. Regional eligibility for the European Regional Development Fund (ERDF) and the European Social Fund (ESF) during the programming period 2014 – 2020 was calculated on the basis of regional GDP per inhabitant (in PPS and averaged over the period 2007–09). NUTS 2 regions were ranked and split into three groups:
>
> - less developed regions (where GDP per inhabitant was less than 75 % of the EU-27 average);
> - transition regions (where GDP per inhabitant was between 75 % and 90 % of the EU-27 average); and
> - more developed regions (where GDP per inhabitant was more than 90 % of the EU-27 average)."

The information contained in the above paragraphs is freely available on the Eurostat website and is reproduced here in order to be faithful to the original and to underline from source the importance attached by the Europe Union to the regional statistics on which the application of the cohesion funds is based.

The NUTS classification is applicable to every state and the decisions taken by these states in matters of regional organisation greatly affect the application of European regional policies. As with many other fields, the resulting situation reflects the richness of European diversity but also has important implications for the application of these policies since decisions on regional boundaries and extensions affect both the distribution of resources and, in particular, the applicability of these resources to the specific reality of a given region. The 2015 Eurostat publication *Regions in the European Union. Nomenclature of Territorial Units for Statistics NUTS 2013/EU-28* describes in detail the NUTS classification for every country in the EU and provides statistical data (mean, maximums and minimums) on their areas and populations.

 **EAST**	ES5	Catalonia	ES51	Barcelona	ES511
				Gerona	ES512
				Lleida	ES513
				Tarragona	ES514
		Valencian Community	ES52	Alicante	ES521
				Castellón / Castelló	ES522
				Valencia	ES523
		Balearic Islands	ES53	Ibiza and Formentera	ES531
				Mallorca	ES532
				Menorca	ES533
	NUTS1		**NUTS2**		**NUTS3**

Table 2. Regional organisation for the levels corresponding to Catalonia and Tarragona.

Table 2 shows the NUTS classification for the level in which Catalonia is located (NUTS2): the East region (NUTS1) in Spain (NUTS0). Within Catalonia the four NUTS3 regions are identified by their Spanish provinces. However, not all NUTS3 Spanish regions correspond to provinces, as is demonstrated by the classification of the Islands (probably because of their insular nature).

The diversity of European regions is also apparent if we look at their dimensions. As we saw earlier, the basic criterion for allocating resources from the funds assigned to European regional policy is GDP per capita. In European regional policy, therefore, GDP and the size of the population are the two parameters that define the region and its relative wealth.

Classified at the NUTS2 level are 276 European regions. Table 3 shows the first and last ten of these regions ordered by population and GDP (Eurostat, 2014).

POSITION	NUTS2 REGIONS	POPULATION	POSITION	NUTS2 REGIONS	GDP (M€)
1	FR10 - Île de France	12.014.814	1	FR10 - Île de France	649.101
2	ITC4 - Lombardia	9.973.397	2	ITC4 - Lombardia	348.615
3	ES61 - Andalucía	8.388.875	3	DE21 - Oberbayern	229.930
4	ES51 - Catalonia	7.416.237	4	FR71 - Rhône-Alpes	207.243
5	FR71 - Rhône-Alpes	6.454.372	5	ES51 - Catalonia	197.004
6	ES30 - Comunidad de Madrid	6.378.297	6	DEA1 - Düsseldorf	196.222
7	ITI4 - Lazio	5.870.451	7	ES30 - Comunidad de Madrid	196.118
8	ITF3 - Campania	5.869.965	8	UKI3 - Inner London - West	193.762
9	PL12 - Mazowieckie	5.292.567	9	ITI4 - Lazio	185.737
10	ITG1 - Sicilia	5.094.937	10	DE11 - Stuttgart	184.808
267	PT30 - Região Autónoma da Madeira (PT)	261.313	267	EL54 - Ipeiros	3.904
268	FRA3 - Guyane	249.282	268	PT20 - Região Autónoma dos Açores (PT)	3.731
269	PT20 - Região Autónoma dos Açores (PT)	247.440	269	BG32 - Severen tsentralen	3.558
270	EL62 - Ionia Nisia	207.664	270	EL62 - Ionia Nisia	3.137
271	EL41 - Voreio Aigaio	198.581	271	BG31 - Severozapaden	3.033
272	ITC2 - Valle d'Aosta/Vallée d'Aoste	128.591	272	EL41 - Voreio Aigaio	2.545
273	ES63 - Ciudad Autónoma de Ceuta (ES)	84.674	273	FRA5 - Mayotte	2.101
274	ES64 - Ciudad Autónoma de Melilla (ES)	83.870	274	ES63 - Ciudad Autónoma de Ceuta (ES)	1.580
275	FI20 - Åland	28.666	275	ES64 - Ciudad Autónoma de Melilla (ES)	1.406
276	FRA5 - Mayotte		276	FI20 - Åland	1.354

Table 3. European NUTS2 regions ordered by population and GDP.

Table 3 shows that Catalonia is clearly one of the largest European regions in terms of both population and wealth. The ratio between the dimension of Catalonia and the average region is 4 for both population and GDP. On the other hand, the ratio between the dimension of Catalonia and that of the smallest region, with which Catalonia shares all the European regional policy instruments, is 250 for population and 150 for GDP.

The NUTS Regulation lays down the following minimum and maximum thresholds for the population size of the regions.

The average size of the regions in the respective level shall lie within the following thresholds.

Level	Minimum	Maximum
NUTS1	3 million	7 million
NUTS2	800 000	3 million
NUTS3	150 000	800 000

For non-administrative units, deviations exist for particular geographical, socio-economic, historical, cultural or environmental circumstances, especially for islands and outermost regions.

Figure 1. Demographic limits for NUTS regions.

In this context, it is important to bear in mind the NUTS regulations on classification criteria based on geographical dimensions. The aforementioned 2015 Eurostat publication states what is reproduced in Figure 1.

This shows that the population of Catalonia is 150% larger than the maximum recommended for the national average for NUTS2 regions, and the population of Tarragona is around the maximum for the national average for NUTS3 regions and around the minimum for the national average for NUTS2 regions.

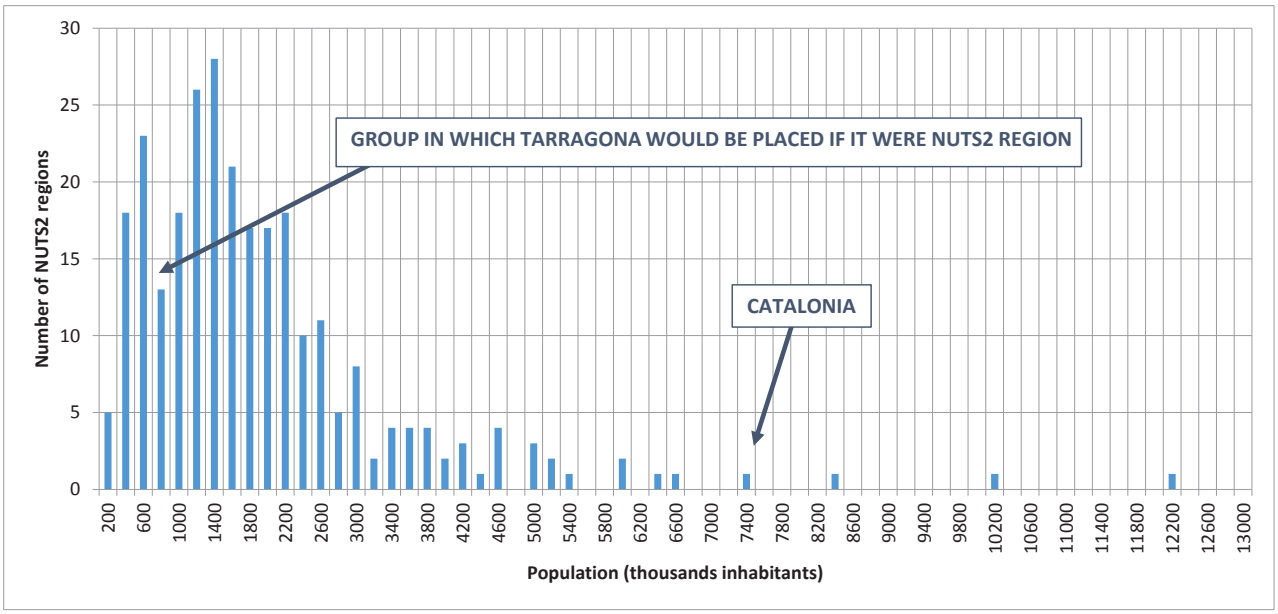


Figure 2a. Distribution of European NUTS2 regions by population.

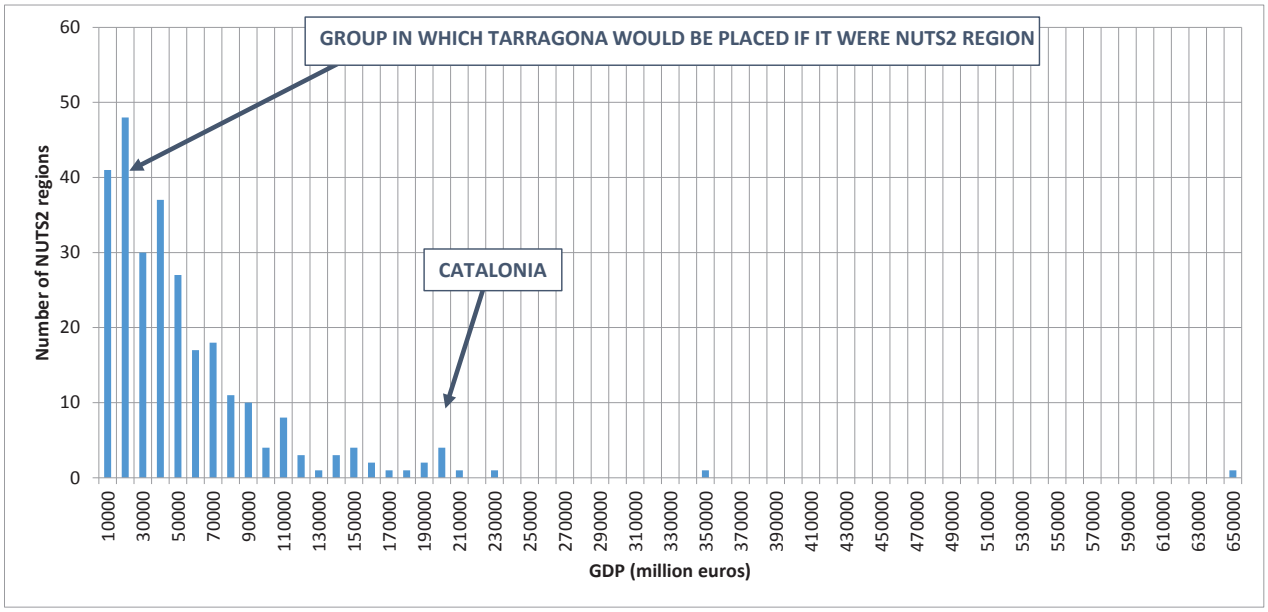


Figure 2b. Distribution of European NUTS2 regions by GDP.

Figure 2 illustrates more graphically how the European NUTS2 regions are distributed by population (2a) and GDP (2b). In terms of both population and GDP, the majority groups are much smaller than Catalonia since over half the regions have a population of less than 1.5 million and a GDP of less than 36,000 M€ euros. The dimensions of Catalonia are therefore far removed from both the average and the vast majority of regions, with a population that is 50% higher and a GDP that is 17% higher than the average plus two standard deviations, which statistically is a long way from the distribution expected. As Figures 2a and 2b show, this also makes the region of Tarragona –classified, as we have seen, as a NUTS3 region – seem less out of place as a NUTS2 region than Catalonia does in the over all standings. In fact, Tarragona falls within the defined range for the average less one standard deviation.

From a socio-economic perspective, therefore, the dimensions of Catalonia are clearly more comparable to those of European states than to its regional counterparts. This is shown in Table 4, which directly compares the dimensions of Catalonia, Tarragona, and the countries of the European Union. Here we can see that Catalonia lies roughly in the middle of the table for both population and GDP. Naturally, Tarragona appears small in this context; nevertheless, there are two countries with a lower population than Tarragona and three countries with a lower GDP.

POSITION	COUNTRY	POPULATION 2014	POSITION	COUNTRY	GDP 2014 (M€)
1	Germany	80,767,463	1	Germany	2,915,650
2	France	65,889,148	2	United Kindgom	2,254,297
3	United Kingdom	64,351,155	3	France	2,132,449
4	Italy	60,782,668	4	Italy	1,613,859
5	Spain	46,512,199	5	Spain	1,041,160
6	Poland	38,017,856	6	Netherlands	662,770
7	Romania	19,947,311	7	Sweden	430,642
8	Netherlands	16,829,289	8	Poland	410,845
9	Belgium	11,203,992	9	Belgium	400,643
10	Greece	10,926,807	10	Austria	329,296
11	Czech Republic	10,512,419	11	Denmark	260,582
12	Portugal	10,427,301	12	Finland	205,268
13	Hungary	9,877,365	13	Catalunya	197,004
14	Sweden	9,644,864	14	Ireland	189,046
15	Austria	8,506,889	15	Greece	177,559
16	Catalunya	7,416,237	16	Portugal	173,446
17	Bulgaria	7,245,677	17	Czech Republic	154,739
18	Denmark	5,627,235	18	Romania	150,230
19	Finland	5,451,270	19	Hungary	104,239
20	Slovakia	5,415,949	20	Slovakia	75,561
21	Ireland	4,605,501	21	Luxembourg	48,898
22	Croatia	4,246,809	22	Croatia	43,020
23	Lithuania	2,943,472	23	Bulgaria	42,751
24	Slovenia	2,061,085	24	Slovenia	37,303
25	Latvia	2,001,468	25	Lithuana	36,444
26	Estonia	1,315,819	26	Latvia	23,581
27	Cyprus	858,000	27	Tarragona	20,674
28	Tarragona	795,328	28	Estonia	19,963
29	Luxembourg	549,680	29	Cyprus	17,394
30	Malta	425,384	30	Malta	8,106

Table 4. Countries of the EU listed by population and GDP. The populations of Catalonia and Tarragona are included for the purposes of comparison.

As can be expected, in the classification of the NUTS3 regions, this diversity is even greater. Eurostat contains data on 1,466 NUTS3 regions. Some of these regions are repeated, however, basically due to the changes in local boundaries that have been introduced in recent years in some countries to streamline the administration. If we remove these duplications, there are currently 1,342 NUTS3 regions. These include Tarragona province in 113th position by population and 123rd position by GDP. As we saw with Catalonia with regard to NUTS2, Tarragona province is one of the largest NUTS3 regions (in fact, as we have seen, the province has dimensions that are more characteristic of NUTS2 regions).

Table 5 shows a selection of these NUTS3 regions listed in order of GDP in 2012, the year in which the Eurostat data are the most complete. Listed in the table are the ten largest and the ten smallest NUTS3 regions, plus the ten regions next largest after Tarragona and the ten regions next smallest before Tarragona. This is to provide a more complete idea of the diversity of the NUTS3 regions and illustrate which regions have the most similar dimensions to those of Tarragona. Briefly, more than half the European NUTS3 regions have a GDP of less than 5,600 M€ euros and a population of

less than 260,000. These figures are between three and four times lower than those for Tarragona province, which are more than double the overall average figures.

Once again we can use a figure for the distribution of European NUTS3 regions by GDP and population to visualise the position of the Tarragona region among these regions (see figure 3).

		GDP (M€)		POPULATION	
POSITION	NUTS3 REGIONS	2012	2013	2014	2015
1	FR101 - Paris	200,708	206,012	2,223,758	2,218,536
2	ES300 - Madrid	197,061	193,834	6,378,297	6,385,298
3	ITC4C - Milano	156,085	156,121	3,176,180	3,196,825
4	ITI43 - Roma	150,102	149,034	4,321,244	4,342,046
5	FR105 - Hauts-de-Seine	148,565	152,113	1,597,213	1,603,379
6	ES511 - Barcelona	143,942	142,490	5,445,616	5,432,802
7	SE110 - Stockholms län	131,475	135,684	2,163,042	2,198,044
8	DE300 - Berlin	109,667	112,789	3,421,829	3,469,849
9	DE600 - Hamburg	97,753	99,869	1,746,342	1,762,791
10	DE212 - München, Kreisfreie Stadt	90,054	94,687	1,407,836	1,429,584
113	UKM25 - Edinburgh, City of	23,034	22,510	489,869	494,986
114	BE234 - Arr. Gent	21,627	22,365	542,673	545,961
115	UKC22 - Tyneside	22,791	22,243	838,257	842,935
116	UKI33 - Kensington and Chelsea & Hammersmith and Fulham	23,064	20,887	334,951	335,693
117	UKH12 - Cambridgeshire CC	22,375	21,804	635,634	642,960
118	UKK12 - Bath and North East Somerset, North Somerset and South Gloucestershire	21,675	21,995	657,568	664,084
119	ES120 - Asturias	21,413	20,719	1,058,975	1,049,875
120	FR718 - Haute-Savoie	21,404	22,023	780,387	791,094
121	ES532 - Mallorca	21,333		869,111	875,781
122	ES212 - Gipuzkoa	21,276	20,875	706,986	707,316
123	ES514 - Tarragona	20,914	20,674	795,328	793,155
124	UKI74 - Harrow & Hillingdon	20,885	21,281	534,876	543,577
125	ITH10 - Bolzano-Bozen	20,499	20,775	515,714	518,518
126	FR246 - Loiret	20,426	20,667	668,357	670,906
127	FR512 - Maine-et-Loire	20,407	20,799	804,810	809,505
128	DEA22 - Bonn, Kreisfreie Stadt	20,363	20,506	311,287	313,958
129	FR222 - Oise	20,259	20,108	819,048	822,858
130	ES612 - Cádiz	20,174	19,722	1,247,552	1,248,584
131	UKD33 - Manchester	20,055	20,615	516,401	522,154
132	DE115 - Ludwigsburg	19,842	20,488	521,633	526,377
1,333	BG415 - Kyustendil	416	417	130,301	127,969
1,334	BG414 - Pernik	399	380	128,696	127,048
1,335	ES706 - La Gomera	389		21,168	21,206
1,336	HR032 - Licko-senjska zupanija	387	386	48,976	48,150
1,337	MT002 - Gozo and Comino / Ghawdex u Kemmuna	361	379	31,446	31,592
1,338	BG325 - Silistra	322	333	116,038	114,670
1,339	EL624 - Lefkada	314	303	24,003	23,996
1,340	BG311 - Vidin	280	290	95,467	93,361
1,341	EL643 - Evrytania	212	197	19,917	19,714
1,342	ES703 - El Hierro	169		10,603	10,612
	Average	9,970		380,577	

Table 5. European NUTS3 regions ordered by GDP and population.

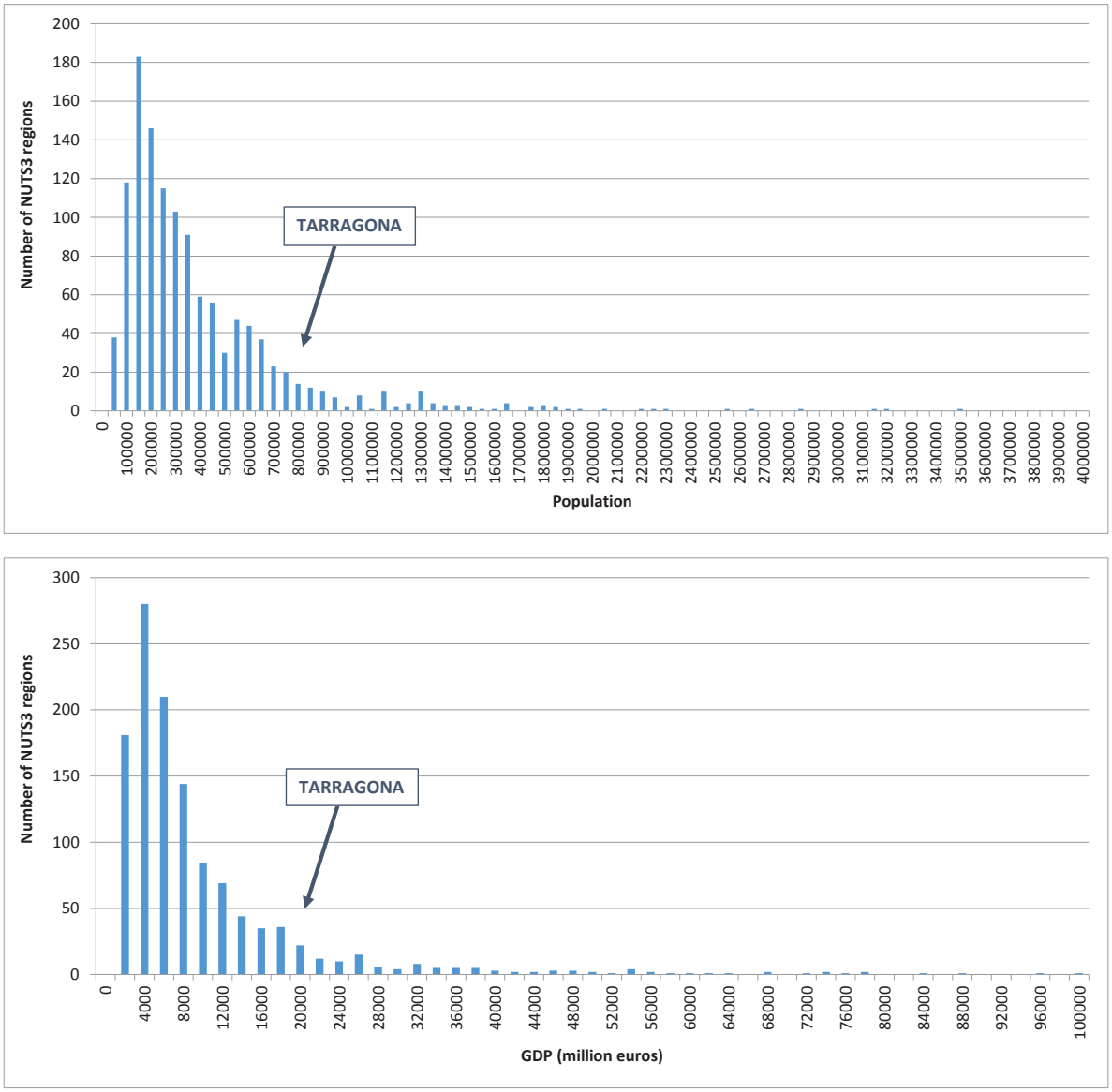


Figure 3. Distribution of European NUTS3 regions by population (upper figure) and GDP (lower figure).

As we have seen, the NUTS2 regional classification level is fundamental to the development of European policies on cohesion and regional development. It is also the classification level that is most often used to compile data and statistics and, therefore, to compare the regions. The NUTS1 classification level is not used in practice and it is therefore the responsibility of the NUTS2 regions to develop all these policies. In this way, a country's definition of a region illustrates the extent to which the principle of subsidiarity is applied. The average dimension and the number of NUTS2 regions gives an idea of the level of decentralisation and thus illustrates that Catalonia is by far one of the least decentralised regions. We also thought it would be interesting to compare Catalonia directly with the regions of countries that are socially and demographically similar to Catalonia. To do so, we considered five western European countries that are similar in size to Catalonia, i.e. whose populations are between 30% higher or 30% lower than the population of Catalonia: Sweden, Austria, Denmark, Finland and Ireland.

NUTS0	GDP 2014 (M€)	POP. 2014	NUTS2	GDP 2014 (M€)	POP. 2014	NUTS3	GDP 2013* (M€)	POP.2014
Sweden	430.642	9.644.864	SE11 - Stockholm	135.631	2.163.042			
			SE12 - Östra Mellansverige	61.623	1.605.347	SE121 - Uppsala län	15.080	345.481
						SE122 - Södermanlands län	9.531	277.569
						SE123 - Östergötlands län	17.505	437.848
						SE124 - Örebro län	11.277	285.395
						SE125 - Västmanlands län	9.939	259.054
			SE21 - Småland med öarna	30.898	819.426	SE211 - Jönköpings län	13.434	341.235
						SE212 - Kronobergs län	7.803	187.156
						SE213 - Kalmar län	8.397	233.874
						SE214 - Gotlands län	2.027	57.161
			SE22 - Sydsverige	54.404	1.426.826	SE221 - Blekinge län	5.615	152.757
						SE224 - Skåne län	49.079	1.274.069
			SE23 - Västsverige	82.765	1.921.924	SE231 - Hallands län	11.228	306.840
						SE232 - Västra Götalands län	71.922	1.615.084
			SE31 - Norra Mellansverige	29.832	829.134	SE311 - Värmlands län	9.821	273.815
						SE312 - Dalarnas län	10.631	277.349
						SE313 - Gävleborgs län	10.105	277.970
			SE32 - Mellersta Norrland	14.314	368.617	SE321 - Västernorrlands län	9.871	242.156
						SE322 - Jämtlands län	4.749	126.461
			SE33 - Övre Norrland	21.067	510.548	SE331 - Västerbottens län	10.165	261.112
						SE332 - Norrbottens län	11.775	249.436
NUTS0	GDP 2014 (M€)	POP. 2014	NUTS2	GDP 2014 (M€)	POP. 2014	NUTS3	GDP 2013* (M€)	POP.2014
Austria	329.296	8.506.889	AT11 - Burgenland (AT)	7.638	287.318	AT111 - Mittelburgenland	819	37.546
						AT112 - Nordburgenland	4.408	152.482
						AT113 - Südburgenland	2.257	97.290
			AT12 - Niederösterreich	51.180	1.626.262	AT121 - Mostviertel-Eisenwurzen	7.046	241.754
						AT122 - Niederösterreich-Süd	7.035	254.011
						AT123 - Sankt Pölten	5.931	149.621
						AT124 - Waldviertel	5.738	218.266
						AT125 - Weinviertel	2.454	123.186
						AT126 - Wiener Umland/Nordteil	8.614	313.363
						AT127 - Wiener Umland/Südteil	13.732	326.061
			AT13 - Wien	84.211	1.765.575	AT130 - Wien	82.904	1.765.575
			AT21 - Kärnten	17.937	555.743	AT211 - Klagenfurt-Villach	10.393	279.209
						AT212 - Oberkärnten	3.213	125.595
						AT213 - Unterkärnten	4.119	150.939
			AT22 - Steiermark	42.279	1.214.927	AT221 - Graz	18.228	415.265
						AT222 - Liezen	2.582	78.892
						AT223 - Östliche Obersteiermark	5.523	162.632
						AT224 - Oststeiermark	7.035	266.469
						AT225 - West- und Südsteiermark	4.943	189.878
						AT226 - Westliche Obersteiermark	2.842	101.791
			AT31 - Oberösterreich	56.170	1.425.982	AT311 - Innviertel	8.948	276.897
						AT312 - Linz-Wels	27.202	560.896
						AT313 - Mühlviertel	4.960	204.693
						AT314 - Steyr-Kirchdorf	6.185	152.352
						AT315 - Traunviertel	7.871	231.144
			AT32 - Salzburg	24.256	534.185	AT321 - Lungau	630	20.451
						AT322 - Pinzgau-Pongau	6.210	163.575
						AT323 - Salzburg und Umgebung	16.957	350.159
			AT33 - Tirol	29.893	721.574	AT331 - Außerfern	1.347	31.652
						AT332 - Innsbruck	12.099	294.209
						AT333 - Osttirol	1.433	48.988
						AT334 - Tiroler Oberland	4.049	100.968
						AT335 - Tiroler Unterland	10.021	245.757
			AT34 - Vorarlberg	15.642	375.323	AT341 - Bludenz-Bregenzer Wald	3.931	87.948
						AT342 - Rheintal-Bodenseegebiet	11.135	287.375

NUTS0	GDP 2014 (M€)	POP. 2014	NUTS2	GDP 2014 (M€)	POP. 2014	NUTS3	GDP 2013* (M€)	POP.2014
			Catalonia	197.004	7.416.237	ES511 - Barcelona	142.490	5.445.616
						ES512 - Girona	19.313	743.124
						ES513 - Lleida	11.790	432.169
						ES514 - Tarragona	20.674	795.328
NUTS0	GDP 2014 (M€)	POP. 2014	NUTS2	GDP 2014 (M€)	POP. 2014	NUTS3	GDP 2013* (M€)	POP.2014
Denmark	260.582	5.627.235	DK01 - Hovedstaden	102.153	1.749.405	DK011 - Byen København	46.093	728.243
						DK012 - Københavns omegn	35.096	530.612
						DK013 - Nordsjælland	16.024	450.245
						DK014 - Bornholm	1.323	40.305
			DK02 - Sjælland	25.875	816.726	DK021 - Østsjælland	7.469	239.016
						DK022 - Vest- og Sydsjælland	17.744	577.710
			DK03 - Syddanmark	49.785	1.202.509	DK031 - Fyn	17.023	486.709
						DK032 - Sydjylland	31.892	715.800
			DK04 - Midtjylland	52.923	1.277.538	DK041 - Vestjylland	18.922	425.769
						DK042 - Østjylland	33.244	851.769
			DK05 - Nordjylland	23.028	581.057	DK050 - Nordjylland	22.596	581.057
NUTS0	GDP 2014 (M€)	POP. 2014	NUTS2	GDP 2014 (M€)	POP. 2014	NUTS3	GDP 2013* (M€)	POP.2014
Finland	205.268	5.451.270	FI19 - Länsi-Suomi	46.476	1.374.403	FI193 - Keski-Suomi	8.210	275.320
						FI194 - Etelä-Pohjanmaa	5.865	193.977
						FI195 - Pohjanmaa	6.830	180.384
						FI196 - Satakunta	7.700	224.556
						FI197 - Pirkanmaa	17.435	500.166
			FI1B - Helsinki-Uusimaa	78.461	1.585.473	FI1B1 - Helsinki-Uusimaa	77.724	1.585.473
			FI1C - Etelä-Suomi	38.496	1.161.882	FI1C1 - Varsinais-Suomi	15.947	470.880
						FI1C2 - Kanta-Häme	5.575	175.481
						FI1C3 - Päijät-Häme	6.075	202.424
						FI1C4 - Kymenlaakso	5.835	180.845
						FI1C5 - Etelä-Karjala	4.702	132.252
			FI1D - Pohjois- ja Itä-Suomi	40.414	1.300.846	FI1D1 - Etelä-Savo	4.340	152.518
						FI1D2 - Pohjois-Savo	7.584	248.430
						FI1D3 - Pohjois-Karjala	4.789	165.445
						FI1D4 - Kainuu	2.075	79.975
						FI1D5 - Keski-Pohjanmaa	2.258	68.677
						FI1D6 - Pohjois-Pohjanmaa	12.910	403.287
						FI1D7 - Lappi	6.077	182.514
			FI20 - Åland	1.354	28.666	FI200 - Åland	1.342	28.666
NUTS0	GDP 2014 (M€)	POP. 2014	NUTS2	GDP 2014 (M€)	POP. 2014	NUTS3	GDP 2013* (M€)	POP.2014
Ireland	189.046	4.605.501	IE01 - Border, Midland and Western	33.186	1.232.783	IE011 - Border	12.367	505.335
						IE012 - Midland	5.959	290.143
						IE013 - West	13.534	437.305
			IE02 - Southern and Eastern	155.860	3.372.718	IE021 - Dublin	77.714	1.271.557
						IE022 - Mid-East	14.105	545.415
						IE023 - Mid-West	12.317	378.182
						IE024 - South-East (IE)	13.759	504.901
						IE025 - South-West (IE)	29.693	672.663

Table 6. Regional division of countries with similar populations to Catalonia's.

Table 6 shows the extent to which in Catalonia the application of European regional policies is concentrated, and how little detailed it is, in comparison with regions of demographically similar European countries: eight regions in Sweden, nine in Austria, five in Finland and two in Ireland are subject to the same level of application of European regional policy and the same level of statistical analysis, and, like Catalonia, can develop their own smart specialisation strategies based on research and innovation. Eleven of the twenty-nine regions in these countries have a population that is equal to or less than the population of Tarragona province. These countries also have a different way of considering their regional policies. For example, it is significant that the Finnish regional councils, which are regulated by law and make their own decisions on, for example, RIS3 strategies, are configured at the NUTS3 level, while the NUTS2 level is deactivated.

MAIN CONCLUSIONS FROM SECTION 2

1. European cohesion policy has been implemented since the start of the European Union project and has always been based on regions. In accordance with the **principle of subsidiarity** and inter-regional comparisons, differences have been identified and policies aimed at boosting development have been applied.
2. Regional policy provides the framework for investment that is required to accomplish the objectives of the Europe 2020 strategy, which have three mutually reinforcing properties: smart, sustainable and inclusive growth (to boost **economic, social and territorial cohesion**).
3. Regional organisation corresponds to member states but it has been harmonised by the EU through the adoption of the Nomenclature of Territorial Units for Statistics (**NUTS**), which was initially introduced for statistical purposes. These Units are defined by the European Office of Statistics (Eurostat) and are used, among other things, for the regional redistribution of EU structural funds.
4. The basic territorial unit for defining policies and regional priorities is **NUTS2**. In the 2014 – 2020 seven-year period, it is also the unit responsible for the development of the Smart Specialisation Strategy based on Research and Innovation (**RIS3**).
5. The EU has 276 NUTS2 regions. Catalonia is the fourth and fifth largest of these regions in terms of the size of its population and economy, respectively. It is far removed from the average as well as from the vast majority of regions (with a population that is 50% higher and a GDP that is 17% higher than the average plus two standard deviations). In fact, Catalonia has a larger economy than the majority of states in the European Union.
6. The EU has 1,342 NUTS3 regions. Tarragona, which is one of the largest 10% of these regions from both the demographic and economic perspectives, is therefore larger than the vast majority of its counterparts. In fact, the figures for Tarragona province make it suitable to be included in the NUTS2 category.
7. In comparison with other countries, these **larger-than-normal dimensions for Catalonia and Tarragona** limit the application of the principle of subsidiarity. This makes European regional policy in Catalonia less effective and/or less efficient:
   a. The decision-making level in Catalonia is equivalent to countries such as Sweden, Denmark, Finland and Ireland not having NUTS2 regions to develop their regional policies.
   b. The sufficient size and specific capacities of the Tarragona region (and other regions of Catalonia) are not utilised when it comes to developing regional policies and priorities).

3. THE EUROPEAN REGIONS AND THE RIS3 STRATEGY

The EU has always made social and territorial cohesion one of the pillars of its so-called European social model, making it a model for the world. At the same time, the great concern that inspires the strategy is global competitiveness in the face of leading economies such as the American, the Japanese, the Southeast Asian, and the strongly emergent Chinese.

The European Commission document *National/Regional Innovation Strategies for Smart Specialisation (RIS3) - COHESION POLICY 2014-2020* (2014), clearly states the reasons for adopting the strategy for the current seven-year plan:

> What is the issue? Europe 2020 is the EU's growth strategy for the coming decade. In a changing world, we want the EU to become a smart, sustainable and inclusive economy. These three mutually reinforcing priorities should help the EU and the Member States deliver high levels of employment, productivity and social cohesion. Concretely, the Union has set five ambitious objectives –on employment, innovation, education, social inclusion and climate/energy– to be reached by 2020. Each Member State has adopted its own national targets in each of these areas. Concrete actions at EU and national levels underpin the strategy. National and regional authorities across Europe shall design smart specialisation strategies in entrepreneurial discovery process, so that the European Structural Investment Funds (ESIF) can be used more efficiently and synergies between different EU, national and regional policies, as well as public and private investments can be increased.

Also clearly stated is the strategy's main objective:

> What is the aim? The RIS3 policy rationale: **To make innovation a priority for all regions**. «Europe 2020» requires policy makers to consider how the different aspects of smart, sustainable and inclusive growth are interrelated. Integrated smart specialisation strategies respond to complex development challenges by adapting the policy to the regional context. RIS3 supports the creation of knowledge-based jobs and growth not only in leading research and innovation (R&I) hubs but also in less developed and rural regions. **RIS3 is a key part of the proposed EU Cohesion Policy** reform supporting thematic concentration and reinforcing strategic programming and performance orientation.

These two paragraphs have been reproduced in their entirety because they describe the direct relationship between the strategic growth of the EU, RIS3 and cohesion policy. With RIS3, the EU finally provides a highly specific shape for the idea of cohesion: development can be smart and sustainable only if it takes place harmoniously, i.e. if all European regions develop. And today, with an economy that is competitive globally if it is knowledge-based, this means that every region, even the rural ones, must be able to develop with a strategy based on research and innovation.

This change represents a strong and innovative commitment by the EU. The dynamics of competitiveness based on innovation tend to lead to concentrations of knowledge with talent flows between countries (a brain drain) and inside countries, with the creation of increasingly large knowledge platforms based around the large built-up urban and economic areas, which are normally the capitals. Within Europe itself, since 2009 the economic recession has intensified the brain drain phenomenon. As Nedeljkovic (2014) explains:

> Migrations rates in the EU have been continuously rising since the creation of the Union. With each enlargement the human capital available within the Union increases and highly-skilled migration numbers grow. In 2012 intra-European migration increased by 12% compared to 2011, registering a double-digit increase for a second year in a row. Meanwhile immigration from outside the EU, has been declining by 4 % per year in the period 2007-2011, and in 2012 the number of non-EU migrants dropped by 12%. A total of 925,000 Europeans moved to another EU country and more than 300,000 of those immigrated to Germany alone. In absolute terms, the

> increase in intra-EU migrants in 2012 was 100,000... There is a visible trend in migration form Eastern and Southern Europe to the Western parts of the Union and particularly Germany. Emigration from Europe's regions most affected by the recent crisis, namely the Southern EU Member States has risen drastically after 2009. The German Federal Statistical Office reports that the inflow of Spanish migrants to Germany increased by 37% in 2012 compared to 2011; the respective rates for Portugal and Greece were 41% and 53%.
>
> Migration of highly-skilled professionals towards the Western parts of the Union has also increased in recent years. This trend is resulting in a brain drain from the sending countries and a brain gain in the receiving countries. Although intra-EU movement of scientists does not affect the level of highly-skilled human capital in the Union as a whole it can lead to **imbalance between EU regions**.

Clearly, this trend can only be offset by express political action such as RIS3 applied to every European region.

Was this new policy necessary? The Eurostat database enables us to view the trends for convergence between the European regions, as well as between countries, as a result of the application of past cohesion policies. The next set of figures shows the current situation and the evolution over time of the European NUTS2 regions with regard to the main parameters used to monitor the objectives of the European Union in accordance with the indicators described in table 1. These figures have been obtained from "Regional Policies and Europe 2020", which is available from Eurostat as part of the "Eurostat Regional Yearbook" (2015), an annual Eurostat publication.

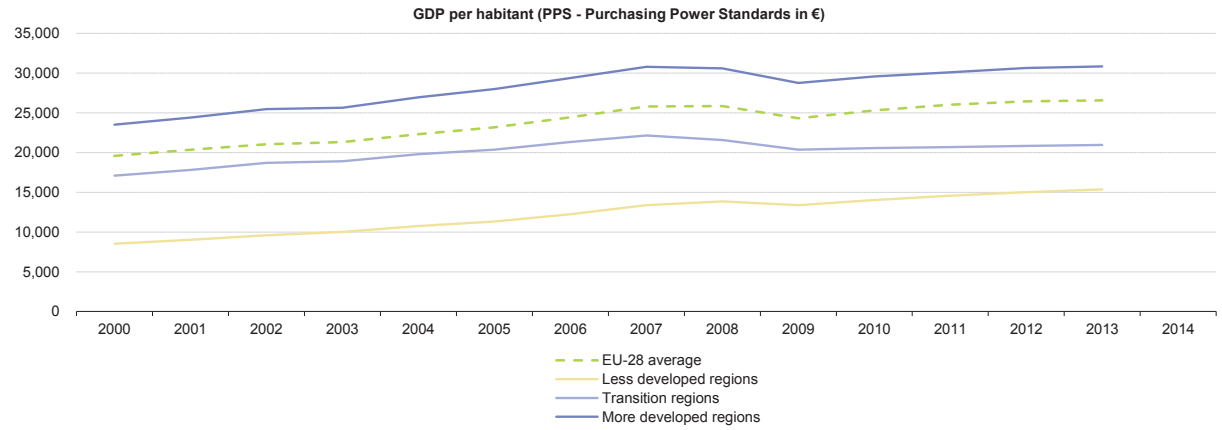
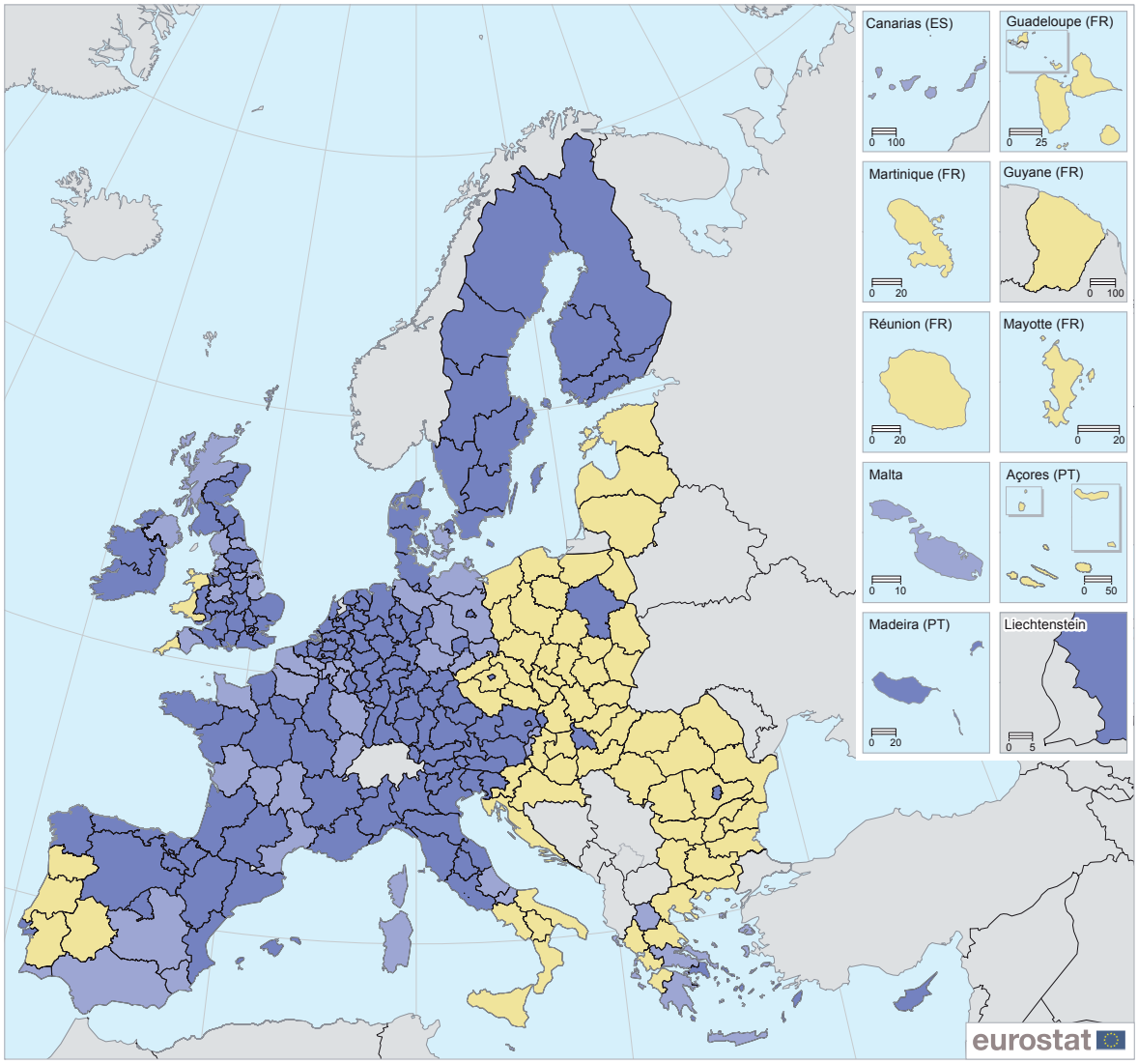


Figure 4a. Evolution of GDP per capita in the EU and in the various categories of European regions.

Regional eligibility for structural funds, by NUTS 2 regions, 2014-20 (1) (% of EU-27 average)



Administrative boundaries: ©EuroGeographics © UN-FAO ©Turkstat
Cartography Eurostat: Eurostat - GISCO, 06/2015

(% of EU-27 average)
- Less developed regions (GDP per inhabitant, < 75)
- Transition regions (GDP per inhabitant, ≥ 75 - < 90)
- More developed regions (GDP per inhabitant, < 90)

0 200 400 600 800 km

(1) GDP per inhabitant over the period 2007-09 was used as the basis for the allocation of structural funds for 2014-20; as such, calculations relating to regional eligibility were based on the NUTS 2006 classification. EU-28 regions in this publication are delineated on the basis of the NUTS 2010 classification and as a result there are two regions where regional eligibility does not follow the new NUTS boundaries: Chemnitz (DED4) and Merseyside (UKD7). Both regions are partly eligible as transition regions and partly as more developed regions.

Source: European Commission, Directorate General for regional and Urban Policy.

Figure 4b. NUTS2 European regions by category for eligibility for structural funds.

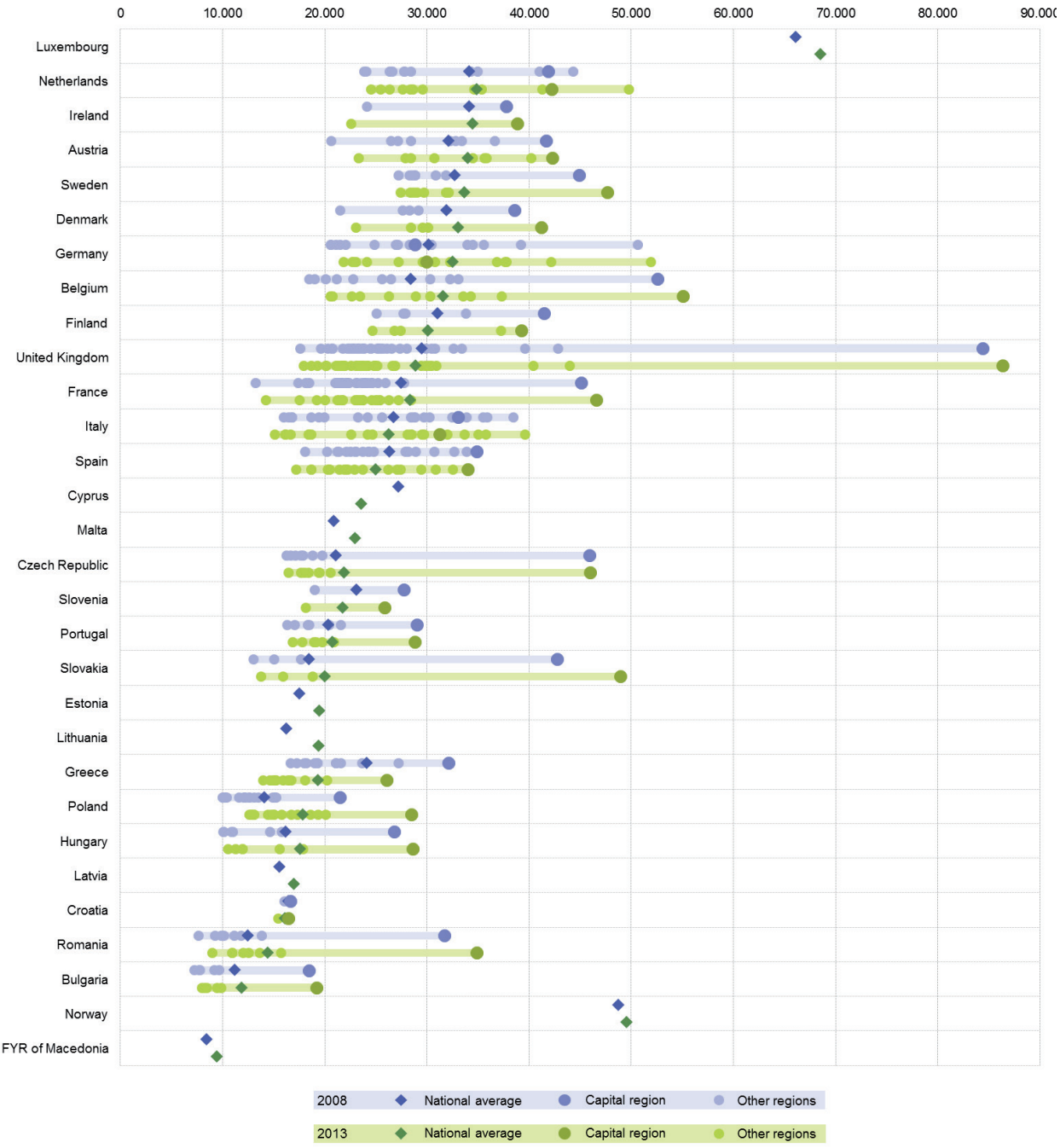


Figure 4c. Regional disparities in GDP per capita.

Figure 4 shows the regional evolution (4a), regional eligibility for cohesion funds (4b), and regional disparities for each country (4c) in GDP per capita. Figure 4b shows how the disadvantaged regions are located mainly on the southern and eastern periphery of Europe. Also contained in this category, however, is the west of such a highly developed country as the United Kingdom, which also has the richest region of Europe (London). This illustrates the effect that the concentration of capital (and talent) in some regions rather than others can have on a particular country. For our analysis, the information contained in Figure 4a may be more interesting: the evolution of GDP per capita over the last 15 years shows no sign of convergence; on the contrary, as we can see, the lines corresponding to the less developed, average, and more developed EU regions are essentially parallel. Since the start of the recession, the line corresponding to the transition regions even seems to have moved away from that of the more developed regions towards that of the less developed ones.

Figure 4c is even more explicit. This figure illustrates the wide dispersion that exists in each EU country and how this dispersion seems not to have diminished anywhere between 2008 and 2014. We can see the national average for each country, the value for the capital region in each country, and the value for all regions of each country. Except in isolated cases such as the Netherlands, Germany and Italy, the capital regions are the ones with the highest levels of GDP per capita. And, except in the unusual case of the United Kingdom, it is normal that differences between the GDP per capita in the regions of a country are around 100% with respect to the poorest region. Such differences have only increased since the beginning of the recession. Therefore, despite all the efforts aimed at achieving cohesion made by Europe in the past, the distances between regions are not diminishing. We cannot say that the policy has been ineffective since data from the World Bank indicate that the world's economies are behaving in a way that tends towards concentration rather than convergence. It is also possible that without the cohesion policies, the differences between the regions would be even greater. However, if true convergence is the aim, new elements should be added to the policy. This seems to be the purpose behind the development of the RIS3 strategies.

The following figures, which summarise the main Europe 2020 indicators from Table 1, also demonstrate the levels of convergence between countries and regions.

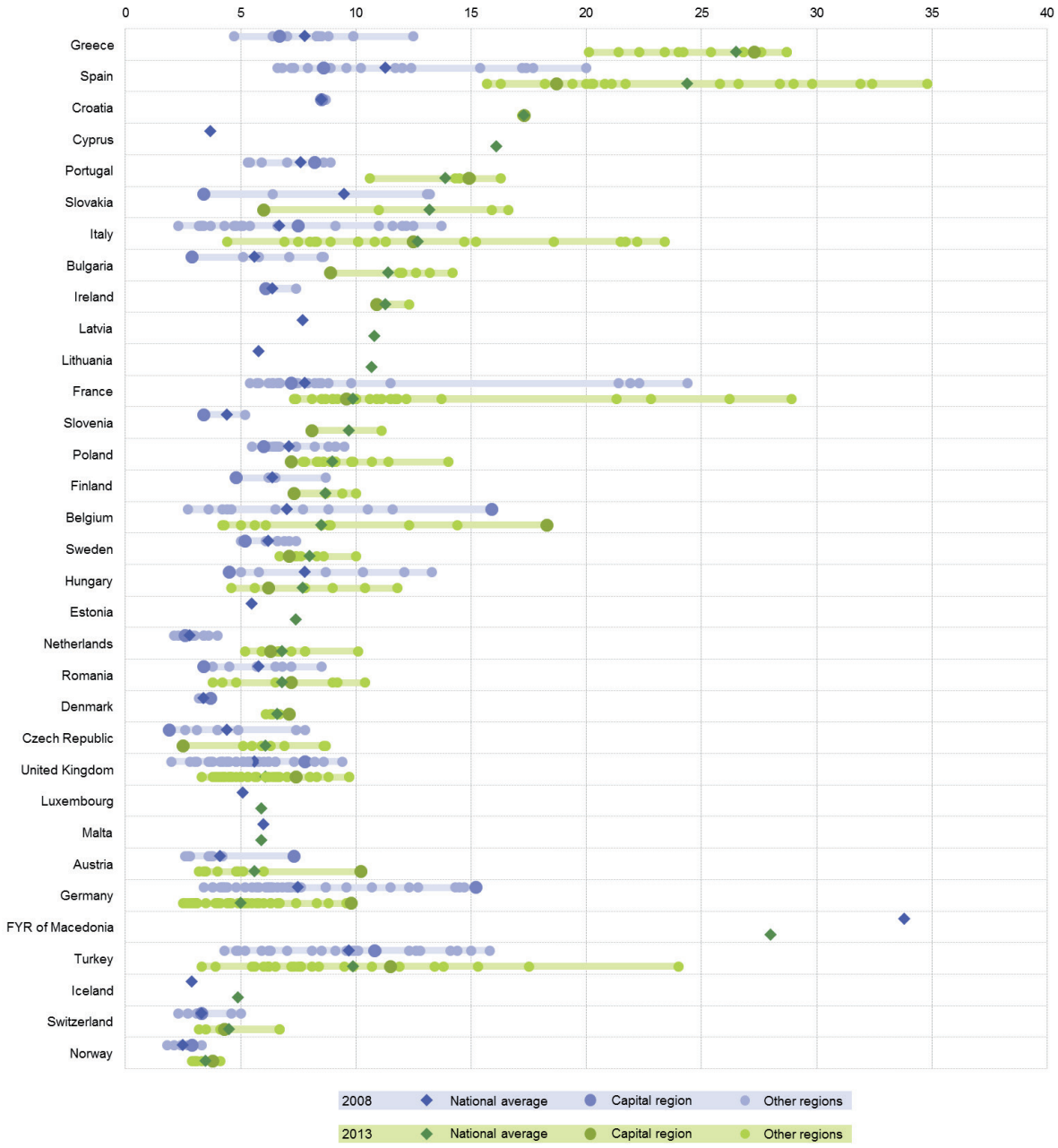


Figure 5. Regional disparities in unemployment levels.

As we can see in figure 5, the countries of southern Europe are at the top of this list, with large increases due to the recession. There are also further increases in the regional differences between countries and between regions of the same country.

As a complement to figure 5, Figure 6 shows the disparities in levels of employment, for which Europe 2020 has set a target of 75%. These disparities, which are lower when a country's employment level is higher, have increased significantly in countries where the employment level has dropped the furthest due to the recession, and have actually dropped in countries where the employment level is highest (and where the level of EU internal migration is also highest).

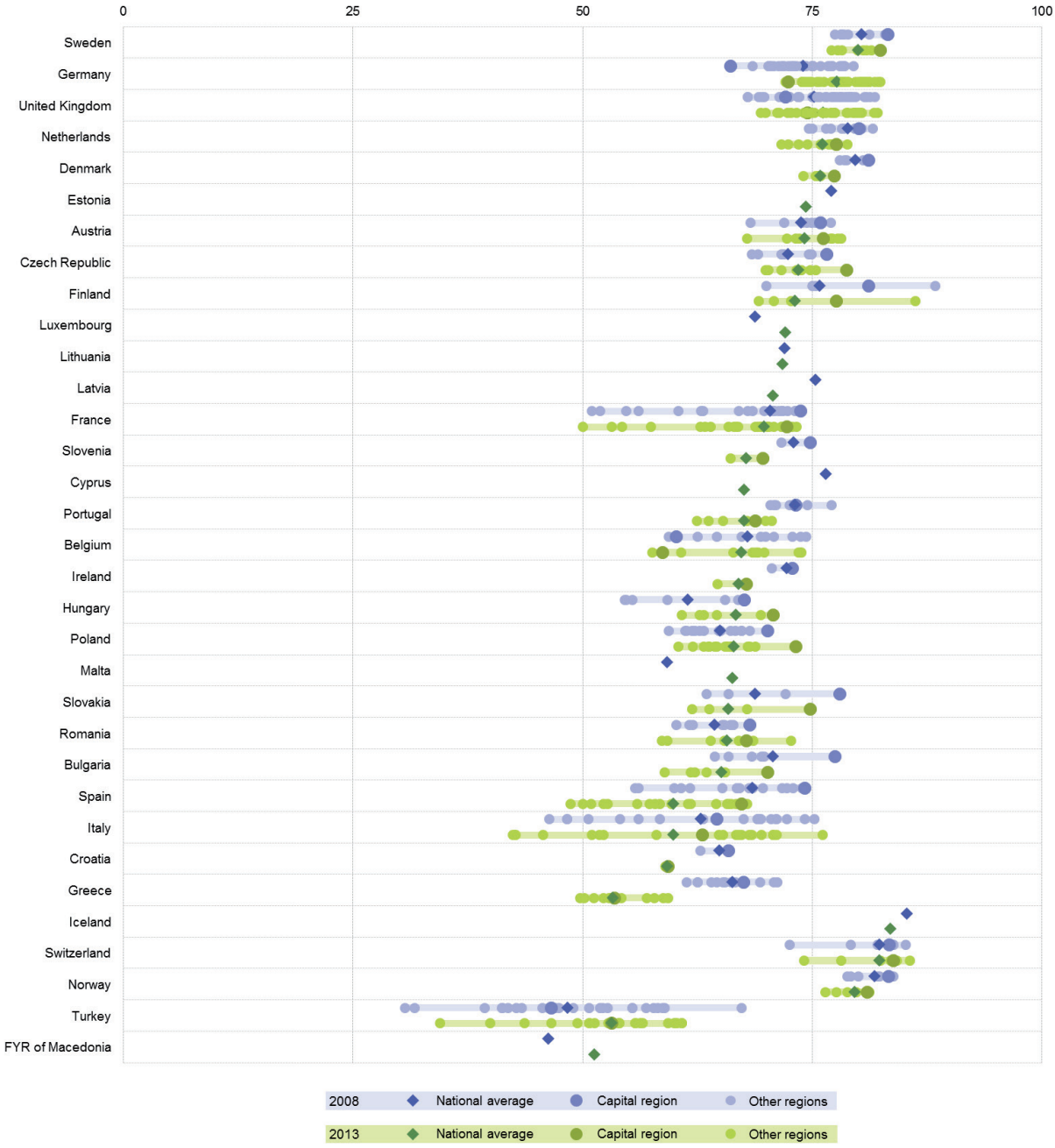


Figure 6. Regional disparities in employment levels.

Figure 7 provides information about one of the education-related indicators: the percentage dropout rate from education and training programmes among the population aged 18 to 24. For this indicator, Europe 2020 has set a target of 10%. The graph shows how Spain has the highest rate in Europe (with an average of over 20%), although, in line with the general trend, it declined between 2008 and 2014. Once again, the inter-regional disparities in a country are greatest when the average is highest. In Spain, the rate in the Basque Country is roughly 9.4% while in the Balearic Islands, probably due to the intense tourism activity in that region, it is 32.1%. The rate for Catalonia (22.2%) is also high and a long way from the 10% target that has been set.

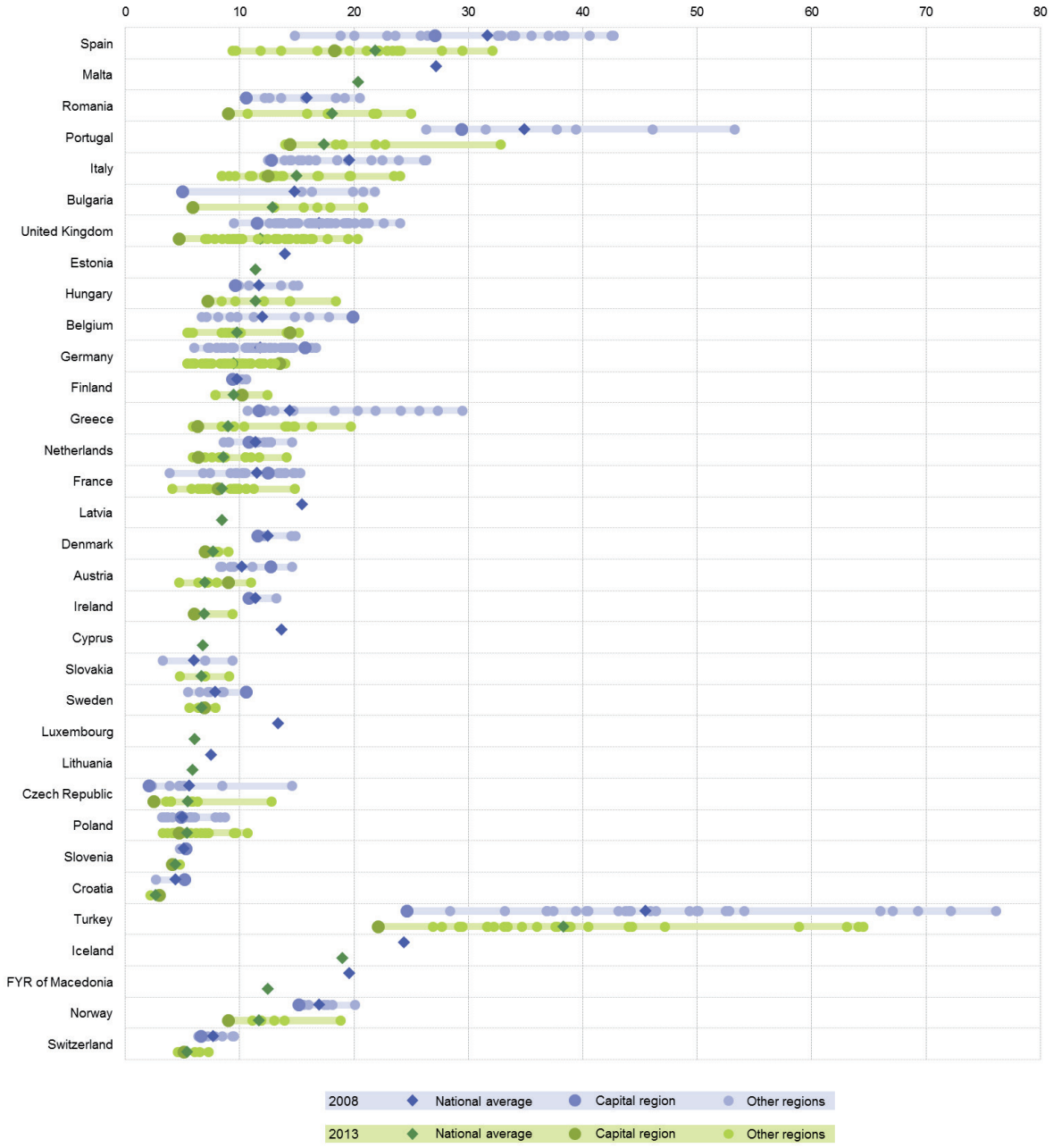


Figure 7. Regional disparities in education and training dropout rates (% of the population aged between 18 and 24).

Also in the field of education, figure 8 shows the regional disparities in the percentage of tertiary education graduates (in Spain, this means those graduating from advanced vocational training and university courses), for which Europe 2020 has set a target of 40%. As we can see, in 2013 Spain had already passed this target with a rate of 42.3%. However, there were considerable disparities that have significantly widened since the start of the recession, with rates ranging from 61.3% in the Basque Country to 29.3% in the region of Murcia. Catalonia, with a figure of 46.2%, is also well above the target set.

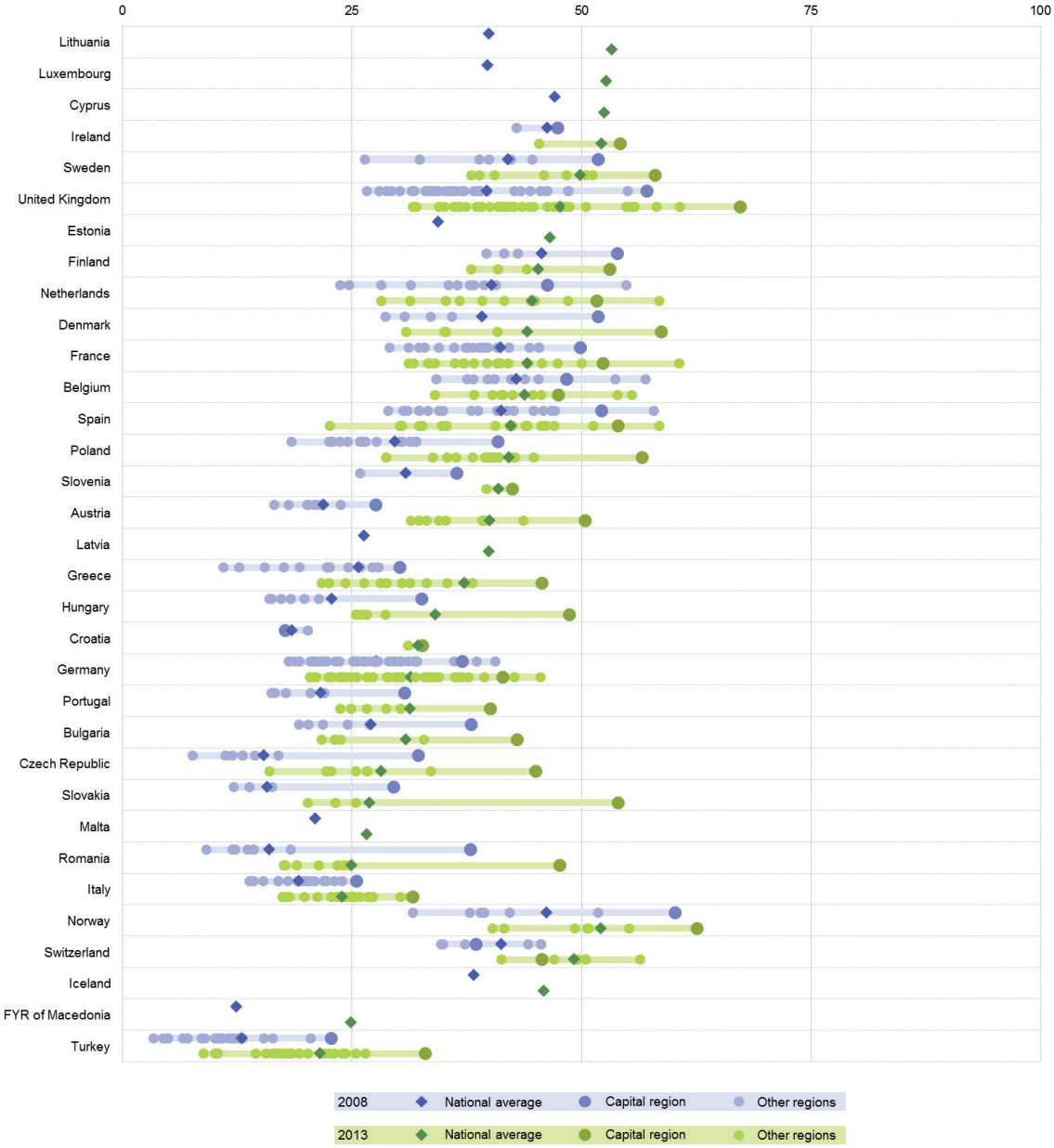


Figure 8. Regional disparities in the percentage of tertiary education graduates (% of the population aged between 30 and 34).

However, the main indicator of knowledge in a knowledge economy is the percentage of gross domestic expenditure on research and development relative to a country's GDP. This is the percentage used to correlate every indicator of competitiveness and innovation. Europe 2020 has fixed a target of 3% of each country's GDP, which is the same target that has been set since the signing of the Treaty of Lisbon 15 years ago. The most competitive economies, such as the American, Japanese, Chinese and Korean, have for a long time invested more than 3% of their GDP. Figure 9 shows that in the EU only two countries (Finland and Sweden) clearly invest more than 3%, while Denmark invests almost that amount. There is also considerable regional disparity (even more than with other indicators), which demonstrates the wide diversity among regions regarding research and innovation. As many as 30 European regions exceed 3% of expenditure on R&D relative to their regional GDP. Spain, with an

expenditure on R&D of 1.27% of its GDP, is a long way from achieving this objective. The lowest level (not including Ceuta and Melilla) is 0.32% for the Canary Islands and the highest level is 2.23% for the Basque Country. The level for Catalonia (1.51%) is above the national average but is still a long way from the levels for the Basque Country, Navarre (1.95%) and Madrid (1.73%). Once again, this indicator has been affected by the recession and these effects have been uneven. Some countries and regions have noticeably increased their expenditure on R&D while others have reduced it. For most, however, including Spain, the internal differences between regions have increased.

Figure 9. Regional disparities in the percentage of R&D expenditure relative to GDP.

The above graphs clearly illustrate the vast differences that exist between regions – even between regions of the same country – in such important matters as the development objectives of European countries. They also serve to compare two years: 2008 (before the global economic crisis was made official) and 2013 or 2014 (the last years for which consolidated data are available). These data are

sufficient to observe that the crisis has greatly affected cohesion. However, a longer observation is required to determine the extent to which convergence has taken place between the various countries of the EU.

The graphs in figure 10 below show the evolution over time of four indicators: employment rate, expenditure on R&D, and two indicators for which analogous information to that contained in the previous figures (by region) is not available – one of which is related to energy while the other is related to cohesion –.

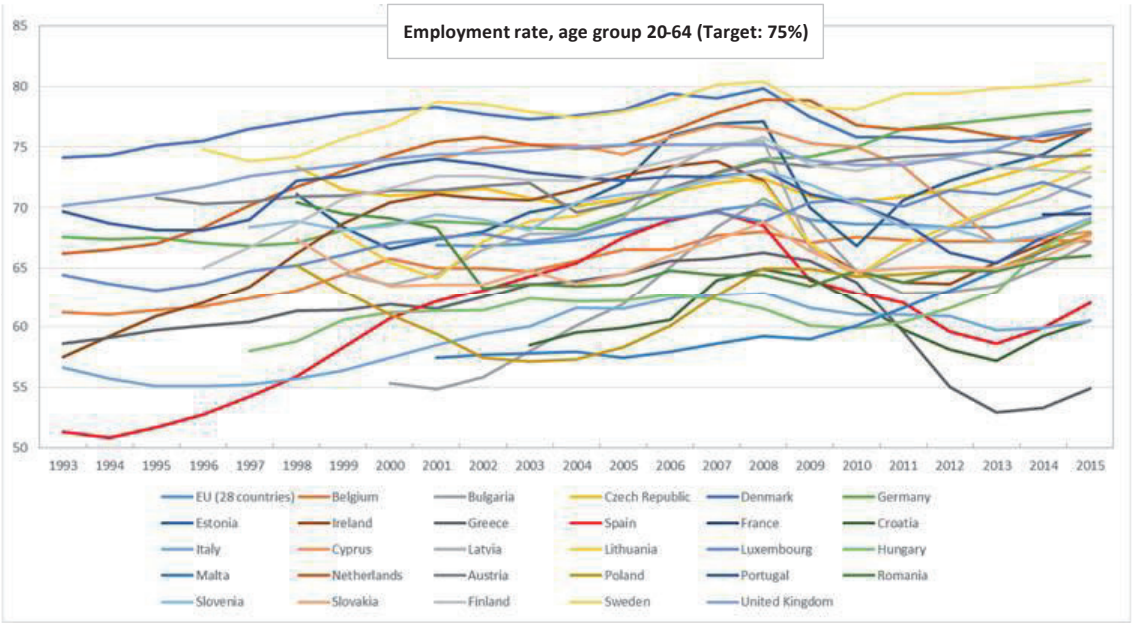


Figure 10a. Evolution of employment rate.

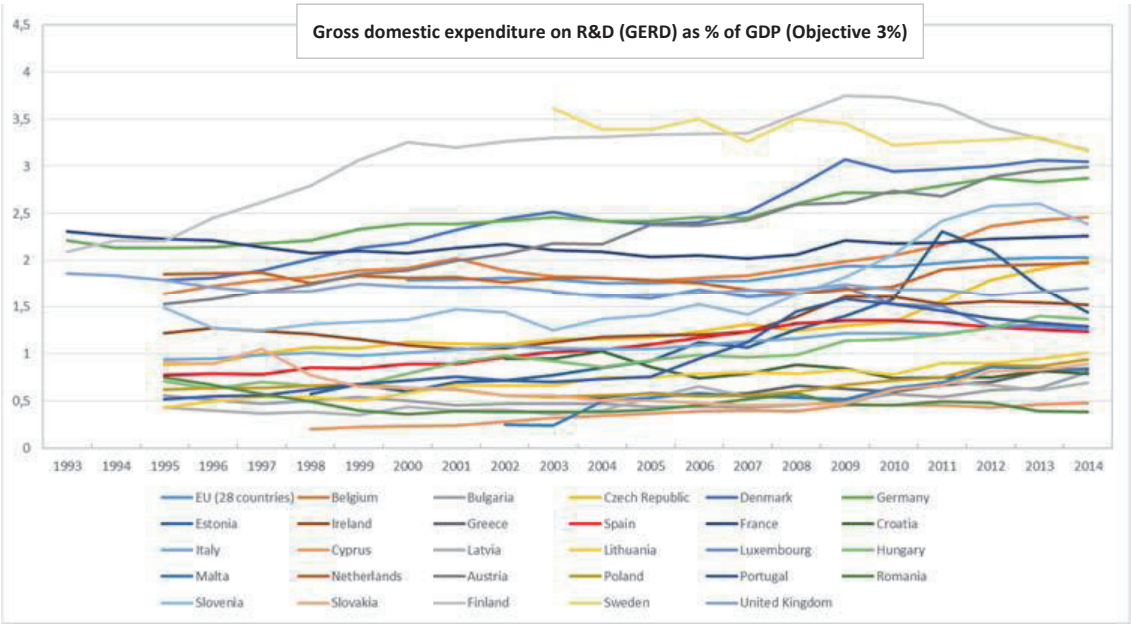


Figure 10b. Evolution of expenditure on R&D.

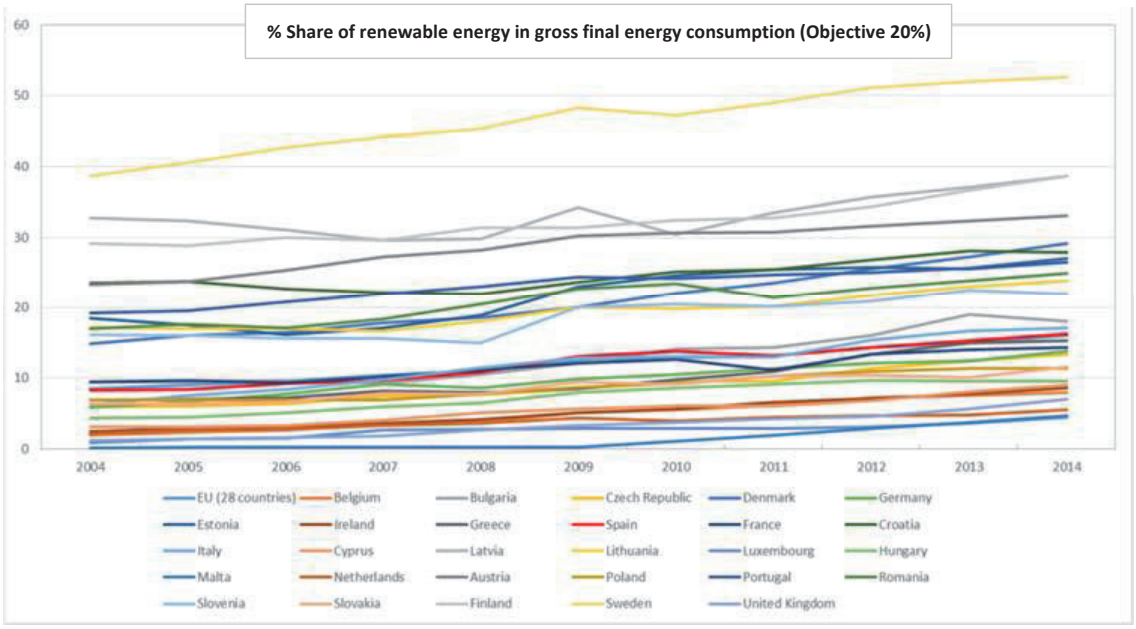


Figure 10c. Evolution of share of renewable energy.

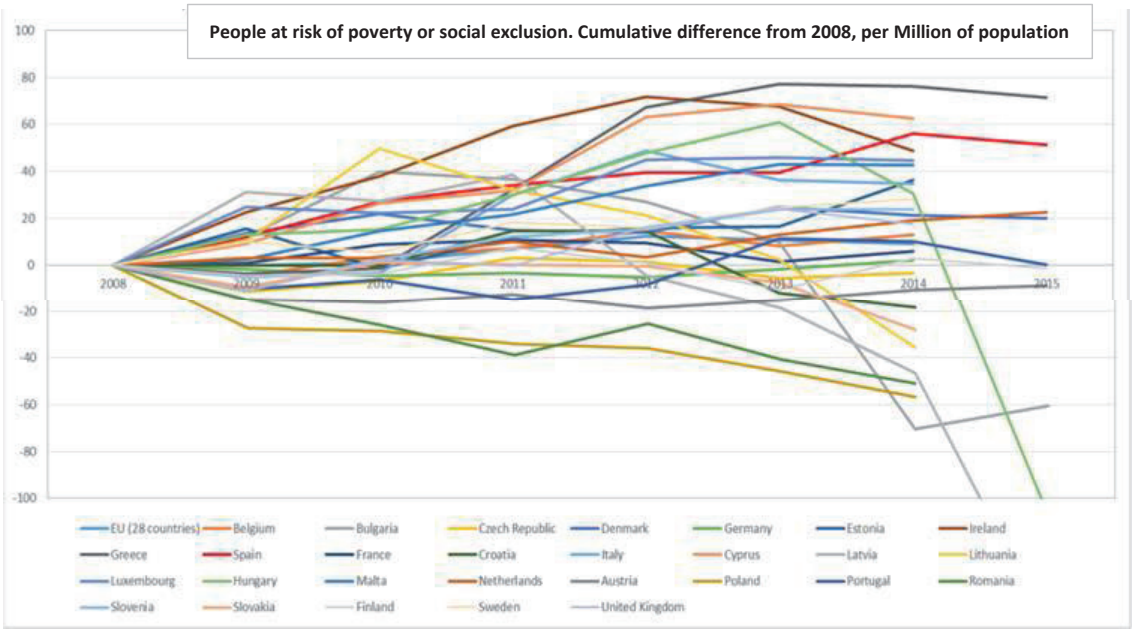


Figure 10d. Evolution of population at risk of exclusion.

As we can see, over a period of more than ten years, well before a period of crisis such as the world is currently experiencing was detected, the indicators of fundamental objectives for the construction and development of the EU showed no sign of convergence. Though the evolution may be positive in all countries, as occurs with the share of renewable energy, the distances between countries have basically been maintained. The final graph, which indicates the people at risk of exclusion, is perhaps the most alarming: the recession has increased this risk in the majority of countries (19) when it should have decreased throughout the EU. Spain, Cyprus and Greece have the highest values for risk of exclusion (over 50%). Eurostat provides no data on this for NUTS2 regions.

In summary, figures 4 to 10, which correspond to basic indicators selected to monitor the accomplishment of several objectives of the Europe 2020 Strategy, show fundamentally that despite the positive overall evolution in some areas, the countries and regions of Europe are not converging. In line with a worldwide dynamic of wealth concentration and increased differences, the years of recession have led to an increase in differences among European regions, including differences among the regions of the same country. Not detached from this dynamic – quite the reverse, in fact – is the phenomenon of EU internal migration. This is associated with the differential effects of the recession on the less developed regions and countries, e.g. more jobs lost and fewer professional opportunities for the better-trained members of the population, with the result that the wealthiest regions have acquired more human capital while the most disadvantaged regions have lost it.

In conclusion, the RIS3 rationale, that every NUTS2 region of Europe must develop its own specialisation strategy based on research and innovation in order to gain access to cohesion funds, introduces a highly significant novelty in promoting the knowledge economy to the whole of Europe, which creates and provides opportunities to develop programmes that consolidate or attract talent to every region. In this context, the conclusions of the previous chapter on the dimensions of Catalonia and its NUTS3 regions, including Tarragona province, are particularly relevant since, rather paradoxically, the application of a RIS3 policy in Catalonia that does not have a significant strategic NUTS3 component could encourage the concentration of talent and economic activity in those parts of the country in which they are already concentrated – which is contrary to what the majority of European regions will do when applying current regional policy. It is necessary, therefore, that Catalonia develops its own vision of regional policy that overcomes the limitations caused by the Spanish administrative system and enables RIS3 programmes to be implemented at the NUTS3 regional level (as countries such as Finland have already done). To make this possible, strategic decision-making bodies at the NUTS3 level also need to be created since currently they do not exist.

MAIN CONCLUSIONS FROM SECTION 3

8. Between 2008 and 2014 the disparity in GDP per capita (the main indicator for gaining access to EU cohesion funds) among European regions and regions of the same country increased. The recession has affected each European country differently and the southern European countries have been the most badly affected.
9. Differences among regions regarding other basic indicators, such as those for monitoring the accomplishment of the Europe 2020 strategy objectives, have increased. Spain's position, and Catalonia's along with it, has worsened in such significant areas as R&D expenditure, employment level, and risk of exclusion.
10. Analysis of the evolution of these indicators over a longer period of time (15 years) shows that, in general, convergence is not taking place between European Union countries despite the continued application of cohesion policies. Basically, the existing differences are being maintained – if they have not widened due to the recession.
11. The recession has intensified the phenomenon of EU internal migration. This has led to a brain drain from the less developed countries to the wealthier ones, which only serves to further diminish the likelihood of convergence.
12. The RIS3 programme, which obliges all NUTS2 European regions to draw up their own specialisation strategy based on research and innovation in order to gain access to EU cohesion funds, promotes the knowledge economy across Europe and creates and provides opportunities for developing programmes to retain or attract talent to all the regions.
13. The application of a RIS3 policy in Catalonia that does not have a significant strategic NUTS3 component could encourage the concentration of talent, and economic activity, in those parts of the country in which they are already concentrated – which is contrary to what the majority of European regions will do when applying current regional policy-.
14. Catalonia must develop its own vision of regional policy that overcomes the limitations caused by the Spanish administrative system and enables RIS3 programmes to be implemented at the NUTS3 regional level. To make this possible, strategic decision-making bodies at the NUTS3 level also need to be created since currently they do not exist.

4. CATALONIA AND TARRAGONA IN EUROSTAT AND OTHER EU DATABASES

"You can't improve what you can't measure". This has already become a common place, but it is intrinsically true. The idea has been stated in many different ways, probably most completely by H. James Harrington: "Measurement is the first step that leads to control and eventually to improvement. If you can't measure something, you can't understand it. If you can't understand it, you can't control it. If you can't control it, you can't improve it". Clearly, any project that is intended to improve a system, region or country requires measurement and monitoring systems, systems for selecting representative statistics, and stable and coherent data. For this reason, the work conducted by Europe via Eurostat is so important since it provides regions and countries with a **broad, coherent, stable and complete database** with which to monitor their position and perhaps compare themselves to homologous entities. Comparison is not always odious and here it is essential because there are absolute bases for hardly anything. Only by comparing equals can one gauge one's relative accomplishment in a particular field of activity.

Annex 1 lists the 275 indicators by which Eurostat provides information about NUTS2 regions. Specifically, these include most of the important ones for monitoring the Europe 2020 objectives. Of these indicators, only 53 provide information about NUTS3 regions and this information is concentrated in several fields: the agro-environment, demography, economy, patents, company demography, transportation, disparity in employment rates, tourist establishments, and crime. They do not provide information about NUTS3 regions on such significant fields for society and the knowledge economy as education, R&D expenditure, employment (particularly employment in the high-technology sectors), human resources in science and technology, health, business structure, information and communications technologies, energy and the environment, agricultural holdings, or tourist activity. As we can see, the information on NUTS3 that is available from Eurostat is scant and incomplete and therefore insufficient for making any diagnosis or monitoring the development of a region by any parameters that define a society or knowledge economy.

The operational existence of a Knowledge Region can be defined when there exists, firstly, the capacity at regional level to design, agree and implement plans of action for developing a social and economic structure that is (more) based on knowledge and, secondly, the capacity to monitor and reformulate those plans. There is no doubt that this capacity exists in Catalonia as it does in the European NUTS2 regions. However, comparatively speaking, it is a huge waste of the potential of Catalonia and its regions that this capacity is limited to Catalonia as a whole when statistically (and culturally) Catalonia ought to develop the strategy of a country, just as countries of a similar or smaller size can (most EU countries, in fact).

In any case, no canonical definition of a Knowledge Region exists. Many initiatives around the world, and especially in Europe, have promoted instruments for enabling or boosting the development of these knowledge-based societies and economies. In the last few years both around the world and in Europe, additional elements of a social nature have been incorporated into the definition of this development and specifically into the definition of the innovation tools that make this development possible, with emerging concepts such as RRI (Responsible Research and Innovation) and Social Innovation. Indeed the Europe 2020 framework programme promotes RRI through, for example: RRI

Tools (http://www.rri-tools.eu/), run by La Caixa; Irresistible (http://www.irresistible-project.eu/); Great (http://www.great-project.eu/), which focuses on questions of governance; and the recently initiated HEIRRI (Higher Education Institutions and Responsible Research and Innovation), led by the UPF (Universitat Pompeu Fabra) and involving the participation of the rest of the Catalan public universities via GUNI-ACUP (The Global University Network for Innovation – Associació Catalana d'Universitats Públiques). With regard to social innovation, it is worth mentioning the Basque initiative RESINDEX (Regional Social Innovation Index), which is an index for measuring social innovation, and the publication *A Blueprint for Social Innovation Metrics* by Tepsie, another European project. In a wider context, also significant are the efforts made towards a quantitative definition of broader progress that covers social as well as economic aspects, such as Social Progress Imperative (http://www.socialprogressimperative.org/social-progress-indexes/?lang=es), a social progress index based on a range of social and environmental outcome indicators organised in three dimensions of social progress: Basic Human Needs, Foundations of Wellbeing, and Opportunity. As we can see, this is a vital element of development as a society, which finds its space for implementation in the regions.

The closest approximation today to a set of indicators for the knowledge society is the European Innovation Scoreboard (http://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards). This annual report on innovation in the EU provides a set of indicators for the comparative evaluation of the performance in research and innovation of the EU member states as well as of the strengths and weaknesses of their research and innovation systems. The aim is to help member states evaluate areas they need to concentrate on in order to improve their performance in innovation, which is considered to be the foundation of the knowledge society.

The report is accompanied by a regional version, the Regional Innovation Scoreboard (https://ec.europa.eu/growth/industry/innovation/facts-figures/regional_en), whose fourth edition of Regional Innovation Indicators (2016) provides a comparative evaluation of the innovation results of 214 regions from 22 EU countries plus Norway (due to their size, Estonia, Cyprus, Latvia, Lithuania, Luxembourg and Malta are only included at the national level). Catalonia is, of course, one of these regions. One of the main points raised in the report is that every leader of regional innovation in the EU (36 regions) is located in just six countries: Germany, Denmark, Finland, France, the Netherlands, Sweden and the United Kingdom. This indicates that excellence in innovation today is concentrated in relatively few areas of Europe. The RIS3 projects must be able to extend innovative economic activity to other parts of Europe, including Catalonia. To do so more effectively and analogously to these leading countries, the strategy must be extended to the various Catalan regions which, like Tarragona, have sufficient potential as well as the means to do so.

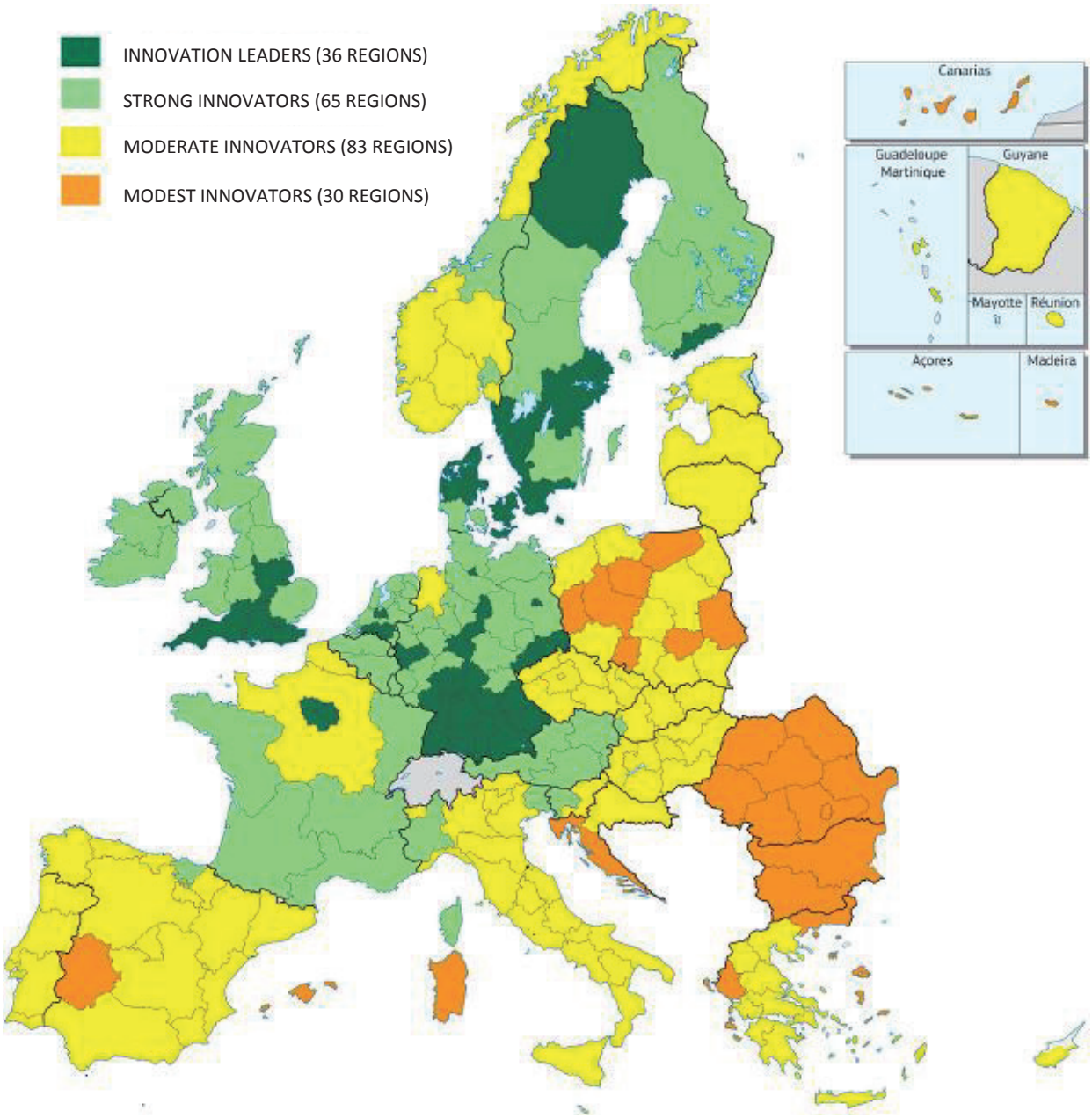


Figure 11. Regions by performance in innovation (Regional innovation Scoreboard, 2016).

Figure 11 shows the distribution of the regions according to their performance as measured by innovation indicators. Clearly, the modest innovators and moderate innovators are concentrated in southern and eastern Europe. Of all the countries in southern Europe, the Basque Country is the only region classed as having a strong performance in innovation. Innovation leaders are located in the more competitive EU countries. In this context, Catalonia appears to have lost ground in the last few years. No data are available for NUTS3 regions.

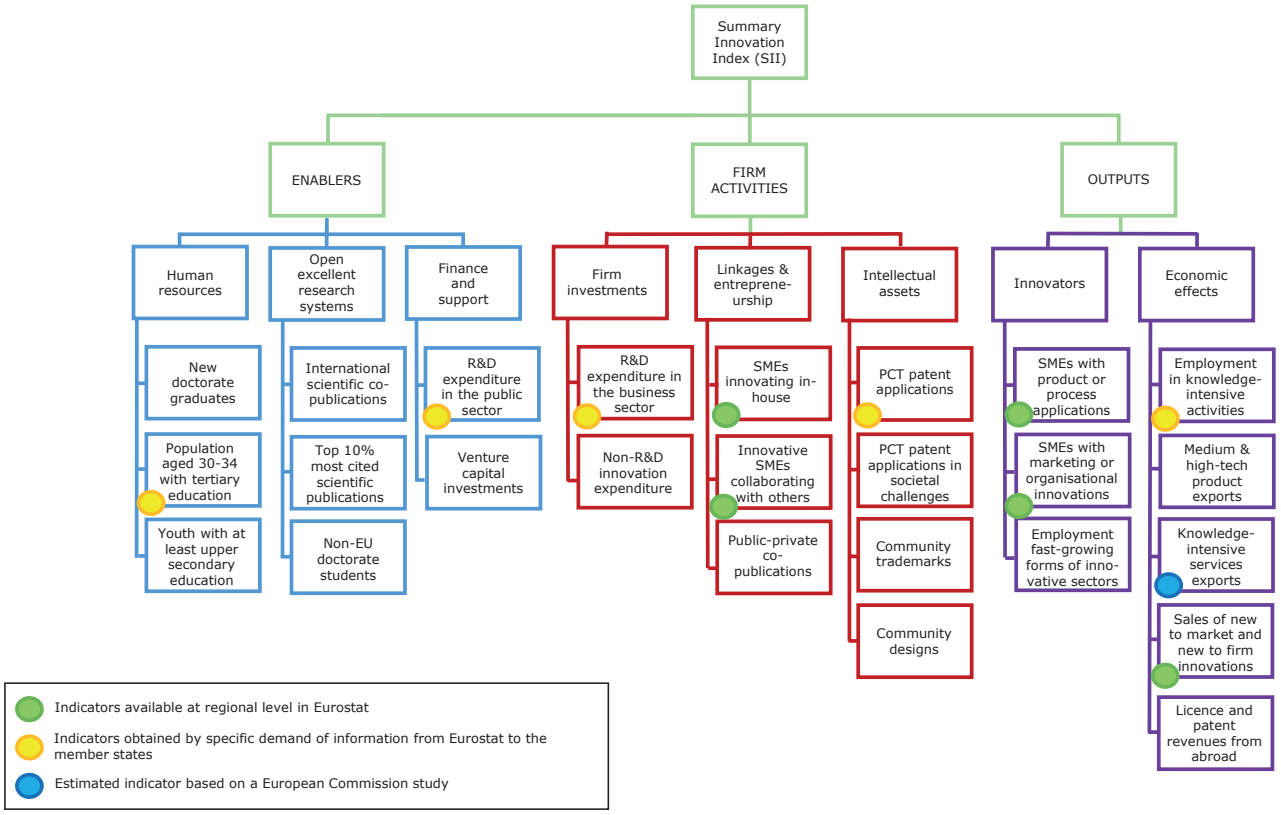


Figure 12. The 25 innovation indicators of the European Innovation Scoreboard. The 12 indicators highlighted with a coloured circle are those used by the Regional Innovation Scoreboard.

Figure 12 shows the 25 indicators used by the European Innovation Scoreboard for all countries of the European Union. Those highlighted with a coloured circle are the 12 indicators also available for regional evaluation. The yellow circles point to indicators that are directly available at the regional level from Eurostat. These are: population aged 30 – 34 with tertiary education; R&D expenditure in the public sector; R&D expenditure in the business sector; PCT patent applications (worldwide); and employment in knowledge – intensive activities. The blue circle points to an indicator for knowledge – intensive services exports, which is estimated from a European Commission study. Information for the remaining 6 indicators was obtained by way of a specific request for information from member states by Eurostat. These 12 indicators therefore represent the core of those that can be used to monitor the development of a region as a knowledge region and are only available at the NUTS2 classification level. It is hoped that Eurostat will continue compiling data in the future since the first four editions have helped to increase the volume of information.

The Regional Innovation Scoreboard 2016 report is accompanied by an annex for each country and an evaluation of the indicators for each region. It is interesting to discover what it says about Catalonia:

> "Catalonia is a Moderate Innovator. Innovation performance has declined (-7%) compared to two years ago. The radar graph shows that relative strengths compared to the EU-28 are in Tertiary education attainment, Employment in knowledge-intensive industries, and Exports of medium and high tech products. ...Relative weaknesses are in Non-R&D innovation expenditures, Innovative SMEs collaborating with others, and SMEs with marketing or organizational innovations".

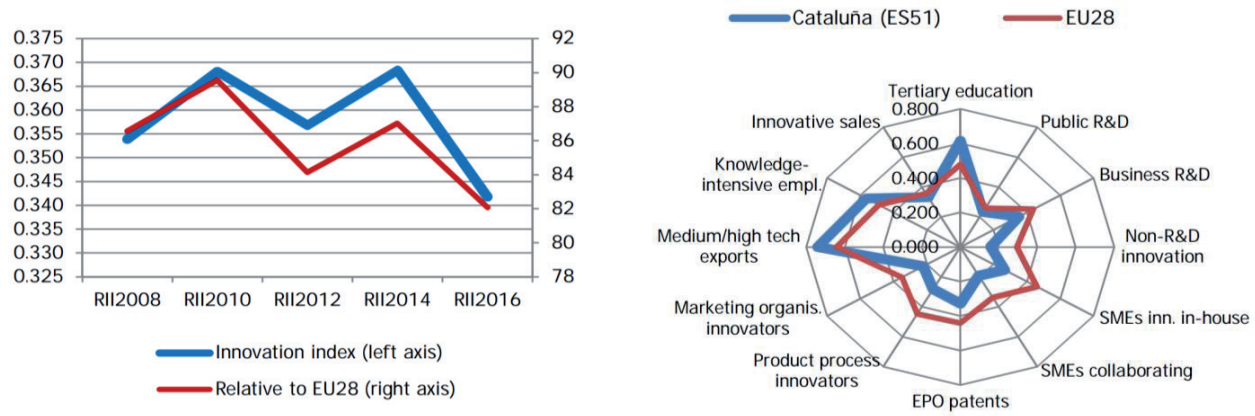


Figure 13. Evolution of the Innovation Index (left) for Catalonia and position of the indicators, according to the Regional Innovation Scoreboard (2016).

Figure 13 has been obtained directly from the above-mentioned annex. It shows the evolution of the global innovation index for Catalonia, which clearly indicates that Catalonia has lost ground compared to Europe as a whole. The figure also shows the set of 12 indicators analysed in a radar graph for easy visualisation of Catalonia's relative position to the EU as a whole in each of these indicators.

Any project aimed at developing the Tarragona region as a knowledge region in the operational sense described earlier, i.e. **developing at the Southern Catalonia regional level, firstly the capacity to design, agree and implement plans of action for developing a social and economic structure that is (more) based on knowledge and, secondly, the capacity to monitor and reformulate those plans,** will require obtaining data with the same level of quality and comparability as those provided by Eurostat and those used for the Regional Innovation Scoreboard. Ideally, other indicators with a social component should now be added, such as those proposed by RESINDEX (Regional Social Innovation Index) or the Social Progress Imperative. To analyse and monitor the position of the Tarragona region, however, the determining factor would be the ability to construct a graph like the one in Figure 13, just as the region of Tampere (Pirkanmaa, Finland) with a GDP of 17,435 million euros and 500,000 inhabitants has done, thus enabling them to set out their objectives graphically (see Figure 14).

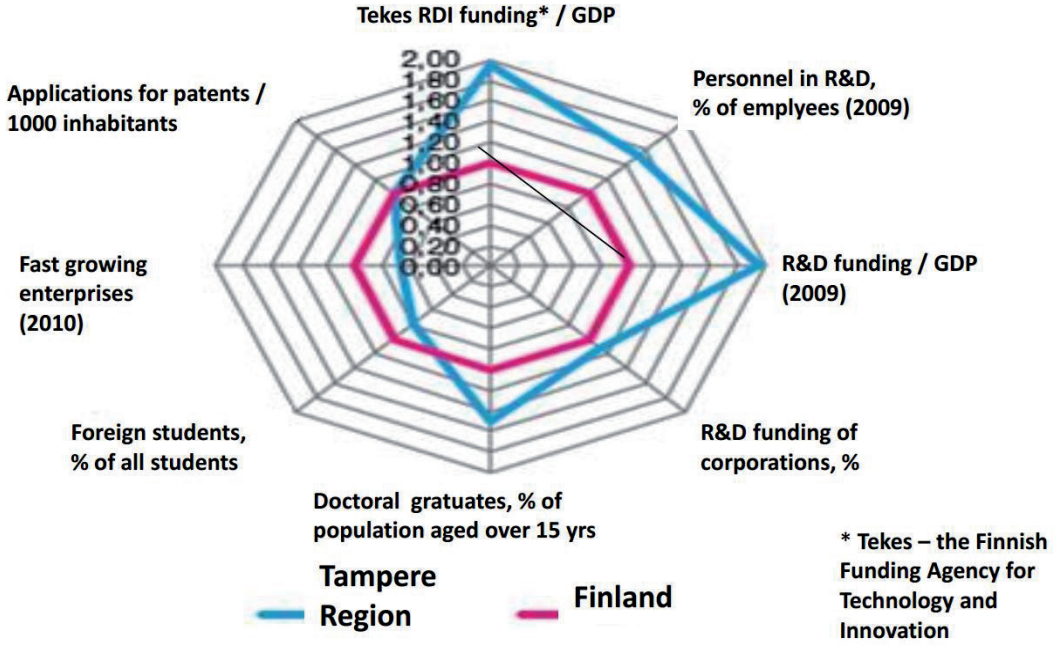


Figure 14. Positioning and objectives of the region of Tampere by indicators of development and innovation. Tampere is a model for the Tarragona region.

Without reflecting on the current political framework, in which Catalonia is a Spanish autonomous community, there are several ways in which Southern Catalonia could achieve the status of a region. What may be considered the preferable route, and which would afford Southern Catalonia the status of a NUTS2 region – thus opening up opportunities and levels of information that are currently restricted to Catalonia – would be to modify the map of Spanish NUTS1 regions (essentially an administrative decision) and divide the current EAST region (which, as the second of 117 EU regions and twice the recommended size for NUTS1 regions, is abnormally large as well as inoperative) into two similar-sized regions (of the maximum size envisaged for NUTS1 regions): NORTH EAST (Catalonia) and EAST (the Valencian Community and the Balearic Islands). This would enable NUTS2 regions to be defined within Catalonia with more appropriate dimensions for European NUTS2 regions. A second option would be similar to the one adopted for Finland: the current organisation system could be maintained but regional strategic development competences at the NUTS3 level could be transferred and activated by law, with the creation or operative identification of *regional councils*. This option would not solve the problem of the availability of NUTS2 classification data for these internal regions and the *regional council* itself would be responsible for collecting them, as does, for example, the Council for the region of Tampere.

For any of these or other options, a question remains regarding the definition of the expansion of the region. The current Tarragona NUTS3 region exactly matches the Spanish division of the territory into provinces. However, Catalonia has applied a moratorium on its *Law of Vegueries* and therefore still has to consolidate its own internal division. Clearly, this is not a minor or a technical matter, but introducing applicability criteria for regional policies based on smart specialisation through research and innovation in the new Europe 2020 framework could help provide a better operative definition that should also take into account the historical relationships between territories.

MAIN CONCLUSIONS FROM SECTION 4

15. The operational existence of a Knowledge Region can be defined when there exists, firstly, the capacity at regional level to design, agree and implement plans of action for developing a social and economic structure that is (more) based on knowledge and, secondly, the capacity to monitor and reformulate those plans.
16. Eurostat provides information in the NUTS2 classification about 275 indicators. These include most of the important ones for monitoring the Europe 2020 objectives. Of these indicators, only 53 provide information about NUTS3 regions and they do so only in certain fields. They do not provide information about NUTS3 regions on such significant fields for society and the knowledge economy as education, R&D expenditure, employment (particularly employment in the high-technology sectors), human resources in science and technology, health, business structure, information and communications technologies, energy and the environment, agricultural holdings, or tourist activity.
17. The Regional Innovation Scoreboard monitors the innovation performance of over 200 European NUTS2 regions using 12 of the 25 indicators that are used to monitor the performance of the countries. Catalonia has lost ground in the last few years (falling from 89% of the EU average in 2010 to 82%).
18. Developing the Tarragona region as a knowledge region will require the availability of data with the same level of quality and comparability as those provided by Eurostat and those used for the Regional Innovation Scoreboard.
19. The best option would be to enable Southern Catalonia to achieve NUTS2 classification status by modifying the map of the Spanish NUTS1 regions. This would involve dividing the current EAST region into two – NORTH-EAST (Catalonia) and EAST (the Valencian Community and the Balearic Islands) – and defining NUTS2 regions inside Catalonia with dimensions that are appropriate for European NUTS2 regions. Alternatively, the current organisation system could be maintained but regional strategic development competences at the NUTS3 level could be transferred and activated by law through the creation or operative identification of regional councils.
20. Introducing applicability criteria for regional policies based on smart specialisation through research and innovation could, in the new Europe 2020 framework, help to provide a better operative definition of regional organisation in Catalonia. This regional organisation should also take into account the historical relationships between territories.

5. EUROPEAN REGIONAL POLICY, RIS3 AND UNIVERSITIES

In the previous chapters we have seen how and why European regional policy has incorporated knowledge society criteria into eligibility for cohesion funds through the requirement of regional and national smart specialisation based on research and innovation, i.e. RIS3. It is clear from this vision and definition that each region needs to possess knowledge-related assets such as research centres, technological centres, hospitals and, especially, universities. Universities are the nucleus of the knowledge society because of their dual role as educators of citizens to the highest levels – necessary in a knowledge-based production system (bearing in mind the 40% target in higher education in a cohort set by Europe 2020) – and generators of fundamental and applied knowledge in all fields of science.

Despite the above, the RIS3 programme does not involve the knowledge structures explicitly, although these structures, especially universities, are permanently invited. Such caution probably has something to do with the need to preserve the institutional autonomy inherent to the definition of a university in an advanced and democratic Europe, where any relationship of functional dependence between the university and the administration and/or institutions of political governance must always be avoided. Whatever the reason, universities are clearly invited to become involved in regional development strategies, and administrations are encouraged to promote and ensure their involvement.

Numerous significant documents have been published by the European Commission in this area. In preparation for the 2014–2020 seven-year programming period, in 2011 the then Regional Policy and Education, Culture, Multiculturalism and Youth commissioners (Johannes Hahn and Androulla Vassiliou) signed a joint document entitled *Connecting Universities to Regional Growth: A Practical Guide (A guide to improving the contribution of universities to regional development, with a view to strengthening economic, social and territorial cohesion, in a sustainable way*). Below we reproduce the introduction to this joint document in full since it perfectly describes the direction the RIS policy will take and the role they hope the universities will play:

> The Europe 2020 strategy highlights the key role of innovation in contributing to smart, sustainable and inclusive growth. Regions are important sites for innovation because of the opportunities they provide for interaction between businesses, public authorities and civil societies.
>
> In meeting major societal challenges, which have both a global and local dimension, universities and other higher education institutions have a key role to play in knowledge creation and its translation into innovative products and public and private services, a process that can engage the creative arts and social sciences as well as scientists and technologists. This role has been highlighted in the agenda adopted by the Commission in September 2011 for the modernisation of Europe's higher education systems.
>
> A range of mechanisms are available to facilitate this translation process. These include advice and services to SMEs, the placement of graduates in these businesses, incubating spin-offs in science and technology parks, facilitating networks in business clusters and meeting the skills needs of the local labour market. All of these activities and many more can be supported under Cohesion Policy although the conditions of this may vary across regions according to the priorities and rules implemented by the managing authorities of the related operational programmes.
>
> This EU Guide "Connecting Universities to Regional Growth" has been designed to enable public authorities to promote the active engagement of universities and other higher education institutions in regional innovation strategies for smart specialisation, in cooperation with research centres, businesses and other partners in the civil society.

> It can also be used by academic and economic partners to explore the benefits they can expect from working together for regional development. Moreover, this guide might support those interested in submitting an application to the RegioStars award 2013 on this topic, based on good practice co-funded by Cohesion Policy.
>
> To maximise the effectiveness of universities in contributing to regional growth, the guide provides an analysis of their possible role and presents a range of delivery mechanisms. It explores how to overcome barriers, to build capacity and to implement partnerships and leadership processes to interconnect the partners in regional innovation systems. These issues are illustrated by practical examples and case studies taken from a range of sources and policy documents.
>
> It is not an academic publication but a practical tool with recommendations, part of a series of guides prepared in the framework of the Smart Specialisation Platform set up by the Commission for providing methodological assistance and practical guidance to national and regional policy makers involved in designing and delivering innovation strategies for smart specialisation. It is intended to facilitate discussions between the stakeholders.
>
> This guide will be useful for preparing the next programming period (2014-2020). Indeed, under the proposals recently adopted by the Commission for the future Cohesion Policy Regulations, delivery mechanisms presented here would continue to be eligible, including technical assistance, provided some conditions are fulfilled, such as an appropriate innovation strategy for smart specialisation.
>
> All the regions can make the full use of the last years of the current programming period to test, improve and support delivery mechanisms presented here for better connecting universities to regional growth. Moreover, universities will appreciate the opportunities that their regions present for their activities as 'living laboratories' opened to international linkages.

The document provides a set of recommendations for governments and the universities. Significantly, these recommendations were based on the study of five cases of well-established relationships between university and region selected from across Europe. Also significantly, one of these cases is that of the Universitat Rovira i Virgili and its role with society in southern Catalonia.

The basic Commission document that should serve as a guide for developing smart specialisation strategies is the *Guide to Research and Innovation Strategies for Smart Specialisations (RIS3)* (2012). This document makes constant reference to: the crucial role of universities and research centres ("...it is crucial that knowledge is identified and activated elsewhere, such as in universities or public research institutes"); their necessary involvement at the initial stages when smart specialisation strategies are drawn up, vision is configured, and studies aimed at diagnosis and revision are planned; and their leadership role and contribution to governance ("Universities and other knowledge institutions should be closely linked to the process of designing national/regional innovation strategies for smart specialisation. They are needed to develop several steps of these strategies and they can also act as intermediary bodies for the implementation of several delivery instruments that are described in this guide").

Finally, among many other documents that describe and guide regional policy based on knowledge, we ought to mention *The role of Universities and Research Organisations as drivers for Smart Specialisation at regional level* (2014), which, as the title implies, specifically describes the role that universities and research centres should play in the smart specialisation of the regions. As the authors of the document point out:

> In the context of the current socio-economic crisis, coupled with an increasingly globalised economy, Europe and its regions are facing new challenges for economic recovery and growth. The concept of smart specialisation, based on the development and exploitation of the knowledge economy in a novel way, is one response to this

> new landscape, aiming to bridge the gap between European regions and also increase their competitiveness at a global level. HEIs (Higher Education Institutions) and ROs, as sources for the creation and dissemination of knowledge and innovation, have a critical role to play in this process. The question is how this can be achieved in an optimal manner.

This is therefore a fundamental document containing recommendations on universities and smart specialisation strategies for the European Commission, national governments, regional governments and universities. We cannot reproduce all of these recommendations here but they are worth taking into account. In any case, once again it is highly significant that the document cites three cases as examples: France and its platforms of competitiveness; Austria and its programme contracts between the government and universities as tools for encouraging the involvement of universities in their regions; and Southern Catalonia and the involvement of the Universitat Rovira i Virgili in the economic transformation and industrial specialisation of the region.

The entry into force of the Europe 2020 strategy and in particular of the RIS3 requirements for eligibility for structural and cohesion funds is already beginning to affect university policy. By way of example, on the occasion of its 650th anniversary, the University of Vienna organised a seminar entitled "Global universities and their regional impact", where it called for precisely this regional impact role to ensure that those universities that are considered global were also taken into account. Leaving aside the self-designation of "global" university, what is significant is that a large university with as much history as the University of Vienna should also demand a regional role.

The Global University Network for Innovation (GUNI) is currently completing what will be its 6th World Report on Higher Education. Significantly, its title this year is: *Towards Socially Responsible Higher Education Institutions, Globally and Locally Engaged*. The report analyses the need for a dual commitment on the part of universities to global society and the planet on one hand, and to their immediate society, which creates and supports them, on the other, i.e. what Grau (2016) defines as the "Glocal University".

By definition, public research universities are universal institutions inasmuch as knowledge is one and global, both when it comes to training at the highest level and when it comes to research. In this sense, they are institutions with a clear vocation and global projection. However, all are rooted in a place – a city, a region and a country – in which society at a given moment decided to create them and essentially supports them with public funds (while private universities may also be involved regionally or locally, this involvement is not necessarily one of their obligations). With significant differences from one country to another across Europe, every European country has nevertheless developed a public university system which, over the years, has fully extended across its respective territory, resulting in a system of regionally implanted universities.

Figure 15, extracted from *Territorial potentials in the European Union*, a publication by NordRegio (2009), provides a graphical image of the distribution of research universities across Europe, covering all territories and regions (NUTS2 regions are identified by the percentage of people of working age with tertiary level education). There are practically no regions without university towns or cities.

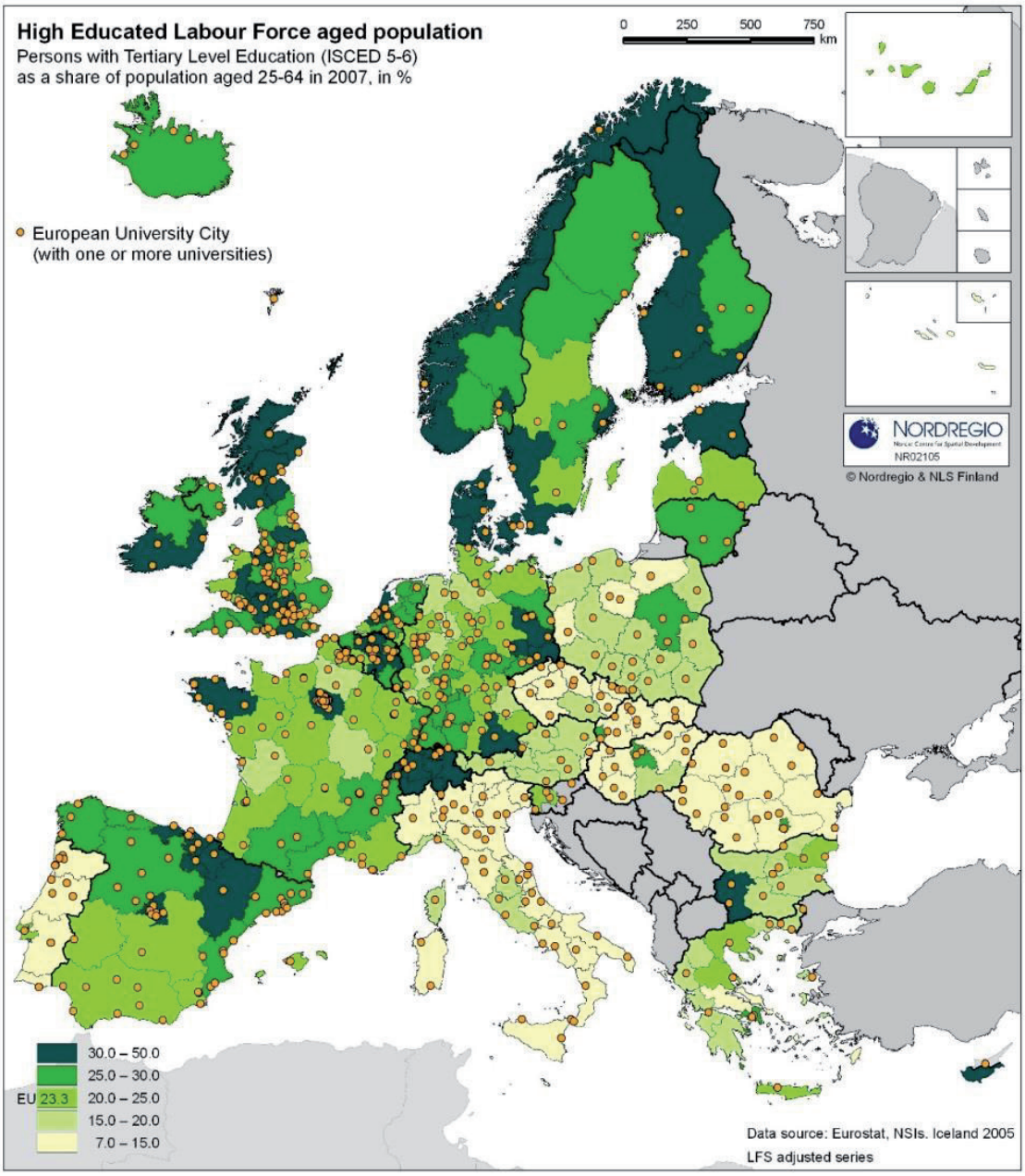


Figure 15. Distribution of universities and their identification with NUTS2 regions (from NordRegio).

Table 7 provides an overview of the size of these systems in countries with similar dimensions to Catalonia (the same countries as those in Table 6, i.e. Sweden, Austria, Denmark, Finland and Ireland, plus the addition of Scotland, a NUTS2 region of a similar size to Catalonia and a good, century-old university system). Although this is a relatively small group of countries (which enables a comprehensive study to be made), it provides a sufficiently representative overview of the university systems in Western Europe (the 15 EU countries before the incorporation of the Eastern European countries, whose university systems are in transformation).

Year 2013	Sweden	Austria	Denmark	Finland	Scotland	Ireland	Total for the group	Catalonia	Tarragona
Population (in thousands)	9.609,00	8.468,60	5.515,10	5.440,00	5.327,70	4.593,10	**38.953,50**	**7.553,70**	**810,20**
GDP (M€ per current prices)	436.342	322.595	252.939	201.995	210.262	174.791	**1.598.924**	**206.617**	**20.674**
GDP/capita	45.410	38.093	45.863	37.131	39.466	38.055	**41.047**	**27.353**	**25.518**
Public Research Universities	14	22	8	14	18	8	**84**	**8**	**1**
Public Teaching Universities	20	21	9	27		13	**90**		
Total Public Univeristies	34	43	17	41	18	21	**174**	**8**	**1**
Private Universities	3	12				6	**21**	**4**	
Total Universities	**37**	**55**	**17**	**41**	**18**	**27**	195	**12**	**1**
Population/Total number of Universities	259.703	153.974	324.418	132.683	295.983	170.115	**199.761**	**629.471**	**810.178**
Population/Public Universities	282.618	196.943	324.418	132.683	295.983	218.719	**223.871**	**944.206**	**810.178**
Population/Public Research Universities	686.357	384.935	689.389	388.571	295.983	574.138	**463.732**	**944.206**	**810.178**
GDP/Total number of Universities (M€)	11.793	5.865	14.879	4.927	11.681	6.474	**8.200**	**17.218**	**20.674**
GDP/Public Universities (M€)	12.834	7.502	14.879	4.927	11.681	8.323	**9.189**	**25.827**	**20.674**
GDP/Public Research Universities (M€)	31.167	14.663	31.617	13.428	11.681	21.849	**19.035**	**25.827**	**20.674**
Students in Public Research Universities	252.617	309.074	161.443	167.179	215.600	126.479	**1.232.392**	**227.042**	**13.990**
Students in Public Teaching Universities	91.627	43.593	70.398	138.880		65.866	**410.364**		
Students in Private Universities	20.319	8.086				11.788	**40.193**	**25.724**	
Total number of students	**364.563**	**360.753**	**231.841**	**306.059**	**215.600**	**204.133**	1.682.949	**252.766**	**13.990**
Total students in Public Universities/thousand inhabitants	36	42	42	56	40	42	**42**	**30**	
Total students/thousand inhabitants	38	43	42	56	40	44	**43**	**33**	**17**
Base finance from government for Research Universities (M€)	4.249	2.678	2.136	1.750	1.266	698	**12.776**	**788**	**59**
Total income of Public Research University (M€)	**5.541**	**3.612**	**3.544**	**2.758**	**3.496**	**2.011**	**20.962**	**1.443**	**102**
Total income of Public Teaching University	920	838	753	1.078	-	560	**4.149**	**-**	
Total income of Public University (M€)	**6.461**	**4.450**	**4.279**	**3.836**	**3.496**	**2.570**	**25.111**	**1.443**	
Base finance for Research Universities as % GDP	0,97	0,83	0,84	0,87	0,6	0,4	**0,8**	**0,38**	**0,28**
Total income of Research Universities as % GDP	1,27	1,12	1,4	1,37	1,66	1,15	**1,31**	**0,7**	**0,49**
Base finance for Public Universities as % GDP	1,13	1,09	1,07	1,32	0,6	0,61	**1,01**	**0,38**	
Total income of Public Universities as % GDP	1,48	1,38	1,7	1,9	1,66	1,47	**1,57**	**0,7**	
Base finance for Research Universities/student	16.820	8.665	13.228	10.469	5.871	5.17	**10.367**	**3.427**	**4.205**
Total income of Research Universities/student	21.934	11.687	21.952	16.498	16.215	15.897	**17.009**	**6.354**	**7.307**
Base finance for Public Universities/student	14.382	9.970	11.662	8.698	5.871	5.562	**9.842**	**3.427**	**4.205**
Total income of Public Universities/student	18.769	12.618	18.534	12.535	16.215	13.363	**15.286**	**6.354**	**7.307**
Base finance for Research Universities/inhabitant	442	316	387	322	238	152	**328**	**103**	**73**
Total income of Research Universities/inhabitant	577	427	643	507	656	438	**538**	**191**	**126**
Base finance for Public Universities/inhabitant	515	415	490	489	238	233	**415**	**103**	**73**
Total income of Public Universities/inhabitant	672	525	779	705	656	560	**645**	**191**	**126**

Table 7. Data from the university systems of European countries with similar dimensions to those of Catalonia.

The table also includes economic data, which is for information only since they will not be used in this section. However, these data also enable a comparison of the economic dimensions to be made and the distance the Catalan university system still has to grow to be calculated. The relevant data for this section are:

- Most universities are public (89%). This is a much higher percentage than for Catalonia (67%). This is also true for the other 15 EU countries, while in the Eastern European countries the number of private universities is increasing.

- Public universities receive the vast majority of students (97%). The figure for Catalonia is 90%.

- The majority of European countries (including those not in this table) have a dual system of teaching and research universities. This is not true in Catalonia (or in Spain, Italy or France).

- In these countries there is one public university for every 200,000 inhabitants (in Western Europe as a whole, there is one for every 400,000 inhabitants). In Catalonia there is almost one for every million inhabitants, i.e. in comparison, the Catalan public university system is highly underdeveloped.

- There is one public research university (which is the most important type as far as the generation of knowledge is concerned) for every 500,000 inhabitants (one for every 700,000 inhabitants in Western Europe as a whole). Since Catalonia does not have teaching universities, there is also one public research university for every million inhabitants.

- The total number of university students in Catalonia, both by university and population, is 25% lower than in the countries in the table. This indicates there is potential for growth in this category as the knowledge economy develops and the demand for university education grows.

Table 7 and Figure 15 show how the distribution of a country's research universities can, because of their size, constitute an effective network of nodes for generating and transmitting knowledge with a regional impact that is compatible with each institution's global requirements.

Like a country's other large public infrastructures (such as tertiary hospitals), research universities require sufficient human, physical and, of course, economic dimensions to guarantee training and knowledge generation at the global level in all areas of knowledge. Table 7 shows that the public resources they receive vary from country to country, though in a comparable order both from the economic and the human perspectives. European research universities (which are mainly public) require total funds ranging from 600 to 800 euros per capita, or between 1.1 and 1.4% of GDP. In absolute terms, this means a population of around 500,000 people and/or a GDP of around 20,000 million euros. These reference numbers are important because they show which human and economic dimensions are needed if a region, supported by an internationally competitive research university, is to have full capacity to undertake complete projects in the knowledge society. Table 7 also shows that Catalonia (and more so the Tarragona region) should further develop its university system in addition to further developing its knowledge economy. What is also evident from the table, however, is that the Tarragona region, with 800,000 inhabitants and a GDP of 20,000 million euros, has a human and economic dimension that is more than sufficient to sustain a complete knowledge system.

MAIN CONCLUSIONS FROM SECTION 5

21. Universities, as well as all the other knowledge infrastructures (research centres, technological centres, etc.), are requested to engage in regional smart specialisation strategies. Universities are identified as crucial players that should help to construct the vision, design, implementation and monitoring of these strategies.
22. European research universities, the vast majority of which are public, constitute a knowledge network covering every region of Europe and could constitute the nucleus for RIS3 strategies, engaging in developing their region as a knowledge region.
23. A research university must be of a sufficient size to guarantee the quality of its global impact in all areas of knowledge. It is therefore also necessary that the human and economic dimensions of the region that sustains it should be sufficient. These are estimated to be a population of around 500,000 people and a GDP of around 20,000 million euros a year.
24. The Tarragona region has sufficient human and economic dimensions to sustain a comprehensive research university.
25. Both the Universitat Rovira i Virgili and the Catalan public university system as a whole need to grow (in number of students but especially in resources) to meet the demand for education and research generated by the development of the knowledge economy.

6. DEFINITION OF SOUTHERN CATALONIA* IN THE FRAMEWORK OF EUROPEAN REGIONAL POLICY

(*) Provisional designation for the region; designation to be chosen by the region itself.

In the previous chapters:

- We have established the need to base the development of European regions on regional specialisation strategies based on research and innovation, i.e. on knowledge as the main instrument for offsetting the trend towards greater differences between regions due to the concentration of activity and talent in the more globally competitive areas.
- We have also shown that the dimensions of Catalonia are larger than those of most EU states and that this leads to a situation in which regional policies like those in regions of similar countries (such as Sweden, Austria, Denmark, Finland and Ireland) are not applied in Catalonia. Paradoxically, the result is that implementing the European regional policy reinforced by RIS3 may lead to the concentrations of activity and knowledge in Catalonia being higher than they are today.
- We have also seen that the dimensions of Tarragona, which are large for a NUTS3 region, are in line with the dimensions NUTS2 regions need in order to implement a regional development policy based on RIS3. However, Catalonia has neither the political capacity nor a recognized system of governance with defined responsibilities.
- We have highlighted the need for sufficient databases and indicators to make diagnoses, define visions and plans of action, and monitor results. Thanks to Eurostat, the European NUTS2 regions have a broad, coherent and stable database. However, the main indicators for the knowledge economy have not been defined at the NUTS3 level.

In this section we propose a working definition for the Southern Catalonia region. This is a bottom-up need that stems from concerns and demands repeatedly expressed by different levels of society in the southern regions of Catalonia whenever it has been necessary to make a strategic regional decision on, for example, infrastructures, health, tourism, industrial development, or developing a shared vision for the future. It is also a top-down need that stems from the desire for better implementation of European policies on growth and cohesion. Both needs are actually different manifestations of the same, for the region exists as a human, social, cultural and economic reality and is necessary in the overall panorama of European regions, but it does not have an adequately defined political reality that enables it to define its own contribution to the whole. Of course, this question is not unique to the counties of Tarragona; rather, it stems from an inadequate Spanish territorial division that limits the performance of Catalonia as a NUTS2 region – a classification that is too small for its cultural, social, demographic and economic dimensions – and shuts the door to other Catalan regions whose dimensions, like those of Tarragona, are sufficient to act as NUTS2 regions at the European level. However, having these necessary dimensions does not mean per se that it is feasible or even desirable, to change the current situation. In this section, we therefore also examine the suitability of defining the region as one having the attributes of a NUTS2 region. We also analyse the advantages and disadvantages of not doing so, discuss the main strengths and weaknesses, and consider the difficulties to be overcome. Finally, we describe the action plan that is currently being developed by the URV Chair for University and Knowledge Region to contribute to the definition of Southern Catalonia, Knowledge Region.

6.1. Designation and geographical scope

Two of the main challenges to be faced are the definition of the region's geographical scope and the designation of the region. As we mentioned earlier neither of these challenges has an easy solution. On one hand, the province of Tarragona is an unambiguous geographical definition with a good set of functional implications at all levels (social and economic as well as political). As a province, it is the designation given to the NUTS3 ES514 region, for which Eurostat regularly provides over fifty indicators and statistics. As a province, Tarragona is therefore already fully defined as a region and all the data we have used refer to it in all the previous sections correspond to it. Why, then, is this designation not sufficient? Because Catalan regional organisation has not yet been fully defined and the current state of the definition conflicts with the existing provincial territorial division.

The Statute of Catalonia states, in article 83, (Spain, Act 6/2006, 19th July, The Statute of Catalonia, art. 83) that "Catalonia structures its basic territorial organisation on municipalities and *vegueries*". On the other hand, the article 2 of the Law on *Vegueries*, of August 2010, (Spain, Act 30/2010, 3rd August, Law on *Vegueries*, art. 2) establishes the nature of vegueria:

1. The vegueria is a local entity with its own legal personality that is determined by the grouping of municipalities and is the specific territorial area for the exercise of inter-municipal government for local cooperation.
2. As a local government, the vegueria is territorial in nature and has autonomy in the management of its interests. The government and autonomous administration of the vegueria correspond to the Council of the Vegueria.
3. The Generalitat adopts the division into vegueries for the territorial organisation of its services. The vegueria demarcations determine the scope of the territorial division.

Article 9 defines the seven *vegueries* by which Catalonia is organised:

"*Vegueria* demarcations. The territorial area of each vegueria demarcation by which the Generalitat organises its services is as follows:

a. The Alt Pirineu vegueria comprises the municipalities located in the counties (comarques) of Alta Ribagorça, Alt Urgell, Cerdanya, Pallars Jussà and Pallars Sobirà.

b. The Barcelona vegueria comprises the municipalities located in the counties of Alt Penedès, Baix Llobregat, Barcelonès, Garraf, Maresme, Vallès Occidental and Vallès Oriental.

c. The Catalunya Central vegueria comprises the municipalities located in the counties of Anoia, Bages, Berguedà, Osona and Solsonès.

d. The Girona vegueria comprises the municipalities located in the counties of Alt Empordà, Baix Empordà, Garrotxa, Gironès, Pla de l'Estany, Ripollès and Selva.

e. The Lleida vegueria comprises the municipalities located in the counties of Garrigues, Noguera, Pla d'Urgell, Segarra, Segrià and Urgell.

f. The Camp de Tarragona vegueria comprises the municipalities located in the counties of Alt Camp, Baix Camp, Baix Penedès, Conca de Barberà, Priorat and Tarragonès.

g. The Terres de l'Ebre vegueria comprises the municipalities located in the counties of Baix Ebre, Montsià, Ribera d'Ebre and Terra Alta."

There is currently a moratorium on this Act after the adoption of Act 4/2011, of 8th June (Spain, Act 4/2011, 8th June, amending Act 30/2010, 3rd August, on *Vegueries*), which modified the transitory provision that established a specific schedule for the creation of the *Councils of the Vegueries*.

Nevertheless, the province of Tarragona completely matches the union of the Camp de Tarragona and Terres de l'Ebre *vegueries* envisaged by the Act on *Vegueries*. However, this issue is not entirely resolved because claims for a *vegueria* of the Penedès region, which would include Baix Penedès and so require an amendment to the Camp de Tarragona *vegueria*, are still very much alive.

Moreover, Act 23/2010, 22nd July, which preceded the Law on *Vegueries* by several days, redefined the territorial planning areas that had been operational since 1983 and introduced Penedès, which comprises the counties of Alt Penedès, Baix Penedès, Garraf and Anoia (except for municipalities which, in accordance with the procedure established by regulations, express their intention to remain assigned to the Catalunya Central Area). A Government agreement of February 2014 defined which Anoia municipalities will remain in the Comarques Centrals territorial planning area and which will be incorporated into the Penedès area. It is also worth mentioning that IDESCAT (Statistical Institute of Catalonia) produces statistics on Catalonia using the territorial planning areas for a certain level of geographical aggregation.

As we can see, there is no single or established definition for the geographical area that comprises the southern counties of Catalonia. Naturally, it is desirable that progress should be made in this direction so that the areas of inter-municipal government – which are necessary for any definition of regional strategies – can be defined, but this document cannot provide the solution. The doubts involved are certainly not minor: including or not including Baix Penedès in the definition of the region encompassing the southern counties of Catalonia is highly significant. Given the current level of uncertainty and the coexistence of several definitions, one might consider a broader definition than the current province of Tarragona that would incorporate, for example, the county of Alt Penedès, which has many cultural ties and economic links with the counties in the north of Tarragona province. However, any decision on this matter is one for politicians and while the arguments presented in this document may help a definition to be made, they cannot replace the need for that decision, which is still pending.

TERRITORIAL ENTITY	Population 2014	GDP 2012 (M€)	COMPOSITION OF SOUTHERN CATALONIA	Population 2014	GDP 2012 (M€)
Baix Ebre	78.743	1.641,7			
Montsià	68.261	1.183,2			
Ribera d'Ebre	22.390	1.118,6			
Terra Alta	11.742	232,4			
TERRES DE L'EBRE (A)	**181.136**	**4.175,9**			
Alt Camp	44.225	1.175,3			
Baix Camp	188.331	4.256,6			
Conca de Barberà	20.399	645,0			
Priorat	9.475	148,9			
Tarragonès	249.440	8.006,8			
CAMP DE TARRAGONA (B1)	**511.870**	**14.232,6**	**(A) + (B1)**	**693.006**	**18.408,5**
Baix Penedès	98.990	1.612,2			
CAMP DE TARRAGONA (B2)	**610.860**	**15.844,8**			
TARRAGONA PROVINCE	**791.996**	**20.020,7**	**(A) + (B2)**	**791.996**	**20.020,7**
Alt Penedès	105.399	2.914,0	**(A) + (B2) + Alt Penedès**	**897.395**	**22.934,7**

Table 8. Population and GDP of the comarques (counties) and the various groups of *vegueries/ comarques* that could make up the Southern Catalonia region. Data by IDESCAT.

Table 8 shows the population and GDP of the various *comarques* (counties) of the Terres de l'Ebre and Camp de Tarragona *vegueries* both according to the version contained in the Law on *Vegueries* (option B2) and according to the possible creation of the Penedès *vegueria* (option B1). Data for various aggregation possibilities are also provided. The table shows that the Terres de l'Ebre *vegueria* has very small dimensions to be a fully operational NUTS2 region in the knowledge economy (it would lie in 272nd place out of the existing 276 NUTS2 regions). The Camp de Tarragona without Baix Penedès county would lie in 244th place while with Baix Penedès county it would lie in 230th place. On the other hand, the province of Tarragona, as we have seen, would be in 219th place while the addition of Alt Penedès would raise its position to 209th.

All the points on dimensions raised in the previous sections were made by taking into account the current dimensions of the province of Tarragona, which in fact is the only geographical aggregation of the southern counties of Catalonia that is formally recognised as a NUTS3 region. Until new policy decisions are made to draw the definitive map of *vegueries* and activate the process to set up the Councils of *Vegueries*, the possibilities for aggregation shown in Table 8 must be considered as mere speculation. For the remainder of this document, we will no longer address the issue of the geographical scope of the region and will refer in all cases to the current province of Tarragona.

6.2. Motivation

As we have seen, on the one hand, different levels of society in Southern Catalonia have for several decades expressed concern about the lack of decisions or joint vision for the future. This has occurred whenever a need has been identified beyond a single municipality – for example, in the area of public services, infrastructures, or large-scale private investment. However, many fine examples of *ad hoc* entities exist that on specific issues have filled the gaps in government structures and inter – or supra- municipal services. These include: public consortiums such as Aigües de Tarragona (the

Tarragona municipal water company), Transport del Camp de Tarragona (the Camp de Tarragona transport company), the Vila-seca/Salou recreational and tourist centre, and healthcare consortiums; public companies such as SIRUSA (Urban Waste Incineration Services); and foundations such as the Tourism Observatory and technological centres, etc. However, no arena for strategic discussion and political decision making exists at these levels other than those of the Government of Catalonia. So why is one missed when political bodies and competent administrations do exist for Catalonia as a whole?

Once again, it is basically a matter of size: Catalonia is too large to properly deal with numerous supra-municipal issues in the interests of its citizens, and the decisions taken by the Catalan organs of government are perceived to be and are too distant and do not include the level of consensus, involvement and/or commitment at the regional level that it should be possible to achieve. In short, the principle of subsidiarity is not employed as well as it could and it sometimes even breaks down. Of course, this problem does not have an easy solution: which issues and competences could or should be adopted by a regional government structure below that of the Catalan government?

The Act on Vegueries consolidates the regional aspects of the current governance structure based on the implementation of territorial services:

> The Generalitat organises its structure and services territorially and exercises its functions territorially in accordance with the territorial division into vegueries. Consequently, the demarcation of the vegueries:
>
> a. is the unique demarcation by which all the services of the government and administration of the Generalitat are territorially organised.
> b. is the territorial ambit on the basis of which the government and administration of the Generalitat exercise their functions of territorial planning, programming and coordination.
> c. is the demarcation by which the authorities and services that depend on the Parliament are organised territorially.

This proposed structure is already in operation. However, this is not mentioned often enough because, at the regional level, the structure does not incorporate the vision or interests of society, which is large enough to notice the gap. It is precisely and primarily concerning the functions of "territorial planning, programming and coordination" that the regions should have the political role that they currently lack. For an external example we can refer to the definition of the regional Council of Tampere (Pirkanmaa, Finland) (500,000 inhabitants and a GDP of 17,500 million euros), which, like Tarragona, is a NUTS3 region (http://www.pirkanmaa.fi/en/council-tampere-region-regional-developer).

Figure 16. Screenshot of the Tampere region website.

Figure 16 is a screenshot of a page from the website of the Tampere region. In Finland, the NUTS3 regions are responsible for regional planning, regional development, promoting innovation (and the relationships between universities/research centres and companies) as well as promoting the region itself. There is one NUTS2 region – Länsi-Suomi in Western Finland (see Table 6) – which, according to the European Commission is meant to be responsible for implementing the cohesion policies (and especially those pertaining to RIS3), but has delegated these competences to the NUTS3 regions that configure it.

Without going too far afield, the Spanish regions of Navarre, Cantabria and La Rioja, which are smaller than Tarragona province, are able to develop the same levels of political decision-making as Catalonia, and these are much more extensive than those of the Tampere region. In other countries we also find well-known NUTS2 regions that, though much smaller than Tarragona, have the capacity and the obligation to develop their own strategic vision: Salzburg and Tyrol in Austria, Bremen in Germany, Limousin in France, Bolzano and Trento in Italy, Groningen in the Netherlands, the Algarve and Alentejo in Portugal, etc.

In summary, the benefits that would be gained from **defining the region of Tarragona as one with a capacity for regional planning and regional development** – like Tampere and all the other similar-sized regions that already benefit from NUTS2 classification – are those that stem from the application of the principle of subsidiarity. Paraphrasing how the European Commission explains it, we can address this issue by asking the following three questions:

- Are there any inter-regional aspects to actions and competence that cannot be regulated by a region on its own?
- Can regional action contradict what is established in the Statute of Autonomy of Catalonia?
- Does action for Catalonia as a whole have any clear advantages?

If there is no affirmative answer to any of these questions, the principle of subsidiarity would recommend that the decision or action concerned could be taken at the regional level. The advantages of doing so affect all levels of society and administration:

- For both Europe and Catalonia it would enable regional policies to be implemented more effectively and efficiently, improve the internal cohesion of the major European regions, and increase regional specialisation and the capacity for competition. It would also increase regional commitment and the responsible assumption of priorities: the current situation encourages the fragmentation of resources and actions based on local or sectoral requests submitted to higher decision-making authorities.
- It would allow the region of Tarragona to define its own regional development policy; enable planning that would involve all sectors of society in the region and maximize both the region's capacities and the opportunities provided by European regional development policy; and increase the level of responsibility for its own development; and heighten the sense of community. Also with reference to the region of Tarragona, it would:
    - Encourage explicit proposals for joint projects and synergies between areas that are currently not so well connected, e.g. Terres de l'Ebre with Camp de Tarragona and Penedès, and the Camp de Tarragona coastal region with the Camp de Tarragona inland region, etc.
    - Encourage the expression of every territorial and sectoral interest.
    - Enable a united voice and position on inter-regional projects such as proposals for large infrastructures that have financial and regional implications and/or impact on important business sectors such as the energy sector, the chemical industry, tourism, viticulture, etc.
    - Break the dynamic of fragmentation caused by the void existing between the region at the municipal level and the region at the Catalan level.

The main disadvantages of not defining an operational and functional role for the region of southern Catalonia would be the opposite of the advantages outlined above. Other disadvantages would be the continuation of the current inefficiencies and deficiencies and the feelings of frustration caused by the sense of lost opportunities that are definitely not positive either for the region or for Catalonia and Europe. Large companies would still clamour in different ways and with different voices and without coordination for solutions to the problem of transporting goods to Europe or complain about the loss of competitiveness due to the cost of energy. Mayors would still hold separate meetings with the Spanish Ministry for Development, taking their own demands for a particular plan or schedule for some infrastructure or other. Complex and incomplete health plans would still not satisfy the needs of the people in the Tarragona region. And Tarragona would still have no plans of its own, and for which it would take responsibility, for promoting competitiveness or attracting talent, investment and innovation, etc.

European regional policy – the basis for cohesion policy with a focus currently on the harmonious development of regions as knowledge regions (i.e. regions that base their smart specialisation policies on research and innovation) – is what makes it essential to define southern Catalonia as a region with the capacity for regional planning and regional development based on knowledge: **Southern Catalonia, Knowledge Region.**

6.3. Strengths and opportunities

Of the region. The main arguments presented thus far relate to the dimensions of the Tarragona region, Southern Catalonia. By comparison with the NUTS2 regions around Europe and with Catalonia as a whole (whose dimensions far exceed those of typical NUTS2 regions). The dimensions of Tarragona are sufficient for the region to develop with the competences of a NUTS2 region. These arguments are sufficient because they have a bearing on the functionality, effectiveness and efficiency of European regional policies. But in addition, Southern Catalonia has a set of characteristics that reinforce its uniqueness and identity and help to define it as a region.

	Total Tarragona	% Catalonia	% Spain
Population (2014, Eurostat)	793,155	10.72	1.71
GDP (2013, Eurostat) M€	20,674	10.49	2.00
Hotel accommodation capacity (beds, 2013)	62,253	20.69	3.58
Hotel employees	7,630	19.49	3.20
Protected natural areas (natural parks of Catalonia)	4	21.05	2.04
Cultural heritage (BCIN, 2012)	403	18.28	2.43
Wine Designations of Origin (2014)	8	66.67	11.43
Qualified Designatios of Origin (2014)	1	100.00	50.00
Gross energy production (Gwh)	200,925,372	76.90	9.33
Registered for social security (energy industry, 2013)	1,427	27.49	3.76
Chemical production (2013)	17,2 Mt/year	50.00	25.00
Registered for social security (food industry, 2013)	5,755	10.17	1.78
Agriculture, farming and fishing GDP (2011)	360,979	16.16	1.51

Table 9. Strengths of the Tarragona region.

Table 9 shows the main distinctive features of the Tarragona region with respect to potential and economic activity. In terms of population and GDP, Tarragona accounts for roughly 10% of Catalonia and 2% of Spain. It also:

1. Accounts for roughly 20% of Catalonia's touristic activity.
2. Has 20% of Catalonia's sites of natural interest and 20% of its sites of cultural heritage.
3. Has eight of the twelve Catalan Designations of Origin (Conca de Barberà, Montsant, Priorat, Tarragona and Terra Alta plus shared Designations with Penedès, Catalunya and Cava).
4. Has the only Qualified Designation of Origin in Catalonia and one of the two in Spain (Priorat).
5. Produces most of the energy consumed in Catalonia (75%) and 10% of the energy consumed in Spain (10%).
6. Accounts for 50% of chemical production in Catalonia and 25% of its production in Spain.
7. Has a food industry whose weight is equivalent to that of its population but that is highly concentrated, and highly specialised, in Baix Camp and Montsià.

In addition to these areas of unique economic activity, the region has several large-scale international transport infrastructures: it is home to Reus Airport and the Port of Tarragona; the great axes of

the Mediterranean and Ebro Valley land communication networks (motorways and railways) meet here; it has a vast logistic platform linked to the Port of Tarragona, and the largest refinery and petrochemical complex in the south of Europe. In parallel to this logistical and industrial activity with global characteristics, Tarragona is also a worldwide tourist attraction, with a huge theme park – Port Aventura (one of the 30 most visited theme parks in the world and the 6th most visited in Europe). In addition, several new projects for major tourist facilities are also in place (including Ferrari Land and a new Recreational and Tourist Centre that will result from the initial BCN World project). It has great potential in the area of wine and nature tourism, which is not yet fully developed, thanks to the opportunities offered by the Els Ports, Ebro Delta and Montsant natural parks and the protected natural areas of the Prades mountains. Also, from the cultural point of view, the World Heritage Site of Roman Tarraco and the Cistercian monasteries of Poblet and Santes Creus are located in Tarragona.

Clearly, the Tarragona region is blessed with a rich and diverse infrastructure, economy, nature and culture. It is a region that needs to be granted the opportunity to express itself beyond the level of fragmentation caused by the simplicity of organisation at the municipal and Catalan levels.

Of its knowledge structures. Despite all that has been written above, Tarragona could do little in the current European regional policy context, where regions are required to make concrete efforts at specialisation based on research and innovation, if it did not have adequate knowledge structures.

Ever since its creation 25 years ago, the Universitat Rovira i Virgili has assumed its responsibility to work towards the development of every southern counties of Catalonia, first by educating its citizens and second by conducting world-class research to avoid the risk of being categorised as a regional university. With these missions in mind, the University has long fostered a multitude of links with society, other institutions and the productive sector. Today we can safely say that this approach has been successful and that its results have been recognised at every possible level.

Internationally, the URV is now a world-renowned university with a place in the main global rankings (*Times Higher Education and Academic Ranking of World Universities*). One way or another (international collaborations, foreign students, foreign staff, and cooperation, etc.), the URV's activities now reach practically the whole world, while only 8% of the more than 2,500 research universities in the world generate more scientific production of a higher quality. In Europe, where it is well regarded as a university that is committed to its region, it is put forward as an example or as a case study in the guidelines for implementing RIS3 across Europe. And naturally, in Spain, Catalonia, and its region, it is recognised for the quality of its work in education (it has received many awards), research and its relations with society in general.

A complement to the University is the Campus of International Excellence Southern Catalonia (CEICS), which was approved in 2010 and established in 2015 when it was given its seal by the Spanish Ministry of Education, Culture and Sport (MECD). Although the call from the MECD to create the Campus of International Excellence (CEI) was launched in 2009, well before the RIS3 strategy was conceived, it contained many features that are typical of RIS3 relating to the function of universities as drivers of regional development towards the knowledge economy. The following text is the

translation of part of the introduction to the CEICS project. It shows the extent to which the vision of the university has been sustained over time and how the University has developed the key elements that today make up a world-class nucleus of knowledge. The extract is quite long but is transcribed here in full because both the vision it transmits and the specific information it contains are relevant to the purpose of this document: in developing its University project, the URV has created a world-class knowledge system for the southern regions of Catalonia that is today fully operational:

> The organisation of regions capable of attracting talent –ones that can act as first class motivators for the development of a knowledge-based economy – not only implies specific university guidelines in teaching, research, transfer, and general third mission activities based on a viable, competitive and prioritised project, but also the creation of a real knowledge, administration and business framework that is self-aware and through commitment and shared objectives provides its own vision and mission. The CEICS, in alliance with the university, research centres, university hospitals, technological centres, business associations and the administration, makes these dynamics a reality in Southern Catalonia.
>
> Integrated and diverse, CEICS makes available a growing critical mass in specific scientific fields that are crucial for the country and fits perfectly into the Spanish, European and international contexts on various levels:
>
> - As a meeting point for the two main corridors of development in the Iberian peninsula.
> - As an ambit with growing links to the metropolitan area of Barcelona and to the future projection of that area, not only in relation to labour mobility but also regarding relations in education and business, etc.
> - As an increasingly better positioned component of the Mediterranean Arch Euroregion, which connects the infrastructure and development policies in place on either side of the French-Spanish border.
> - As an active promoter of cohesion for the Lyon-Barcelona-Valencia mega-region, one of the clearest examples of an area of intense demographic and economic flows that is an authentic global driving force. Such areas often go beyond state borders, generate higher GDP than many sovereign states, and act as magnets for knowledge and the creative classes in an international context of increasing competitiveness.
>
> When speaking of Southern Catalonia we refer to a region that, with all its internal peculiarities, is increasingly resembling a multi-centred city, becoming one of the most dynamic regions in Spain, and emerging as a significant player in the European arena. For all these reasons, the application of a territorial, economic and social model based on research excellence in Southern Catalonia in several scientific fields (Chemistry and Energy, Nutrition and Health, Tourism, Heritage and Culture, and Oenology) is not only an achievable objective but a strategic approach for the necessary development of Catalonia (Barcelona is on the world map of the network economy) and Spain. The Campus of International Excellence Southern Catalonia is a clear example of the impulse provided by knowledge generation in alliance with the productive sector and administration to help consolidate one of the world's top knowledge regions. Below is the vision of the Campus of International Excellence Southern Catalonia:

> CEICS is an international knowledge hub that is strategically positioned at the intersection of the Mediterranean arch and the Ebro axis, is specialised in chemistry and energy, nutrition and health, tourism, heritage and oenology, and will make a decisive contribution to Spain's participation in the economic, social and cultural development of the world.

A vision with a long history

The constituent base of CEICS is provided by the course taken by the Universitat Rovira i Virgili, a young and enterprising university that is strongly committed to the region to which, by the law by which it was created, it belongs – the region of Tarragona, which is made up of two different areas: Camp de Tarragona and Terres de l'Ebre.

The foundations upon which the URV has built its project and which form the core of the CEICS proposal are defined by successive milestones in the development of the University's scientific policy:

- **The Strategic Research Plan** (Senate, 2001), which establishes the objectives and guidelines of the University's research policy as it aims to reach a competitive level in Spain in all areas of research (horizontal positioning) and identifies priority areas in which the University expresses its intention and commitment to become an international benchmark (vertical position):
  - Chemistry and Energy
  - Classical Archaeology and Prehistory
  - Oenology
  - Leisure and Tourism
  - Health and Nutrition
- **The Strategic Teaching Plan** (Senate, 2003), which establishes the bases for a new student-centred teaching methodology that focuses on identifying different training objectives at the different levels of university education. These objectives are fundamental to defining the range of specialised postgraduate studies offered by the University.

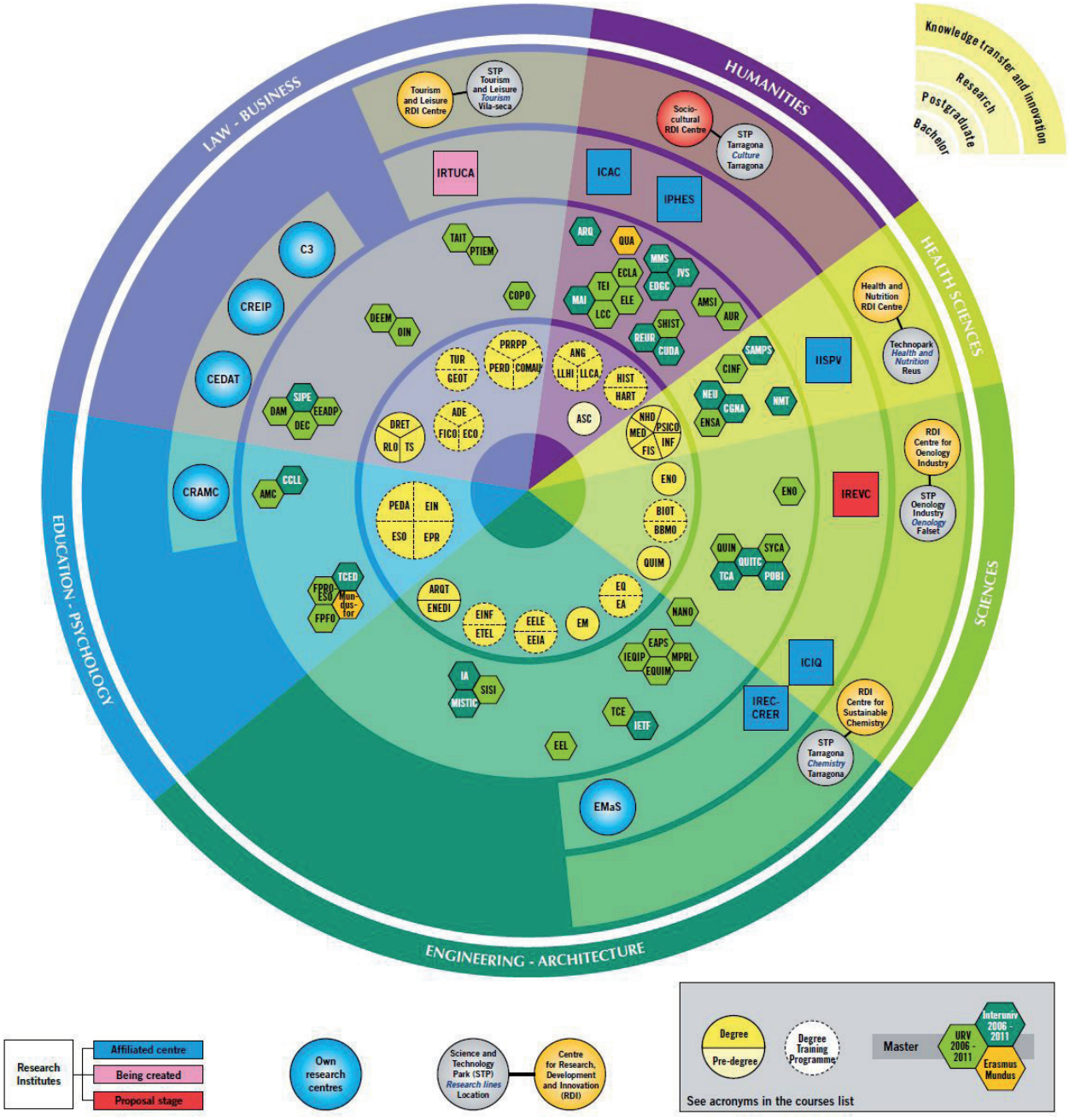
- **The postgraduate policy and teaching-research alignment** (URV Governing Council, 2004), which establishes the bases for planning the future new Master's programmes adapted to the EHEA (European Higher Education Area) and the dual vertical-horizontal strategy for the promotion of research.

- **The policy on academic commitment,** which establishes the PDI (teaching and research staff) commitment agreement and defines an active researcher (University Governing Council, 2005 to 2010). The PDI commitment agreement defines the procedure for department-level agreement on the global commitment of University teaching staff. Across the University, this agreement has generalised the notion of global and flexible academic dedication that incorporates teaching, research, knowledge transfer and relations with society. This concept has also led to the need to define the role of active researcher, i.e. a member of the teaching staff who demonstrates externally accredited research activity.

- **The Socioeconomic Committee of the Camp de Tarragona** (2008). Together with other socio-economic players in the region (employers'associations, trade unions, chambers of commerce and the Port of Tarragona), the URV –aware of the growing importance of participating in the region's strategic vision, of the University's needs in the socio-economic arena, and of the priorities they have in common – created the Socioeconomic Committee of the Camp de Tarragona (Mesa Socioeconòmica del Camp de Tarragona), which it also coordinates. With the participation of over fifty institutions and organisations, this Committee has drafted the Strategic Plan for the Camp de Tarragona to map out a future scenario for the region that is based on sustainability, social and territorial cohesion, and creativity for the period 2008-2015. In an analogous process the Terres de l'Ebre Strategic Plan Promotion Council was created on 27 July 2010. This council, which consists of 28 socio-economic and administrative bodies, is also chaired by the URV.

- **Third Mission and Internationalisation Strategic Plans** (URV Senate, 2009), which collected, concluded and locally and internationally projected the development of the strategic teaching and research plans, which define the main lines of action and objectives for the URV's regional impact and international activity.

- **The Tarragona Knowledge Region Office,** which was created through a strategic agreement with Tarragona Provincial Council, has helped to obtain funding for a specialised team to support the development of projects promoted by all agents involved in generating knowledge and innovation that are external to the URV. The aim of the Office is to facilitate and promote investment in R&D&I by the industrial and business sectors of the region.



To summarise the policy developed in recent years, this figure depicts the starting point for the proposal for the Campus of International Excellence Southern Catalonia. All the University's knowledge areas are shown as segments and: 1) the inner most circle shows the URV's undergraduate degree programmes, designed to meet the needs of higher education in Southern Catalonia (the distribution is practically homogeneous); 2) the next circle shows the URV's Master's degrees and doctoral programmes, with international references and aligned with research potential; 3) the next circle shows the URV's (circles) and external (squares) research institutes; and 4) the outermost circle shows the R&D&I and knowledge-transfer structures in which the URV participates with other institutions and companies (technological centres and science and technology parks).

This alliance has taken shape progressively since 2001 and has been supported by successive administrative policies. For example, to implement the policy of creating a Catalan network of research institutes, the URV has helped to establish several benchmark research institutes in the region financed by the Government of Catalonia. In the field of Chemistry, the Institute of Chemical Research of Catalonia (ICIQ) was created in 2004; in the field of Archaeology, the Catalan Institute of Classical Archaeology (ICAC) was created in 2005 and the Catalan Institute of

Human Paleoecology and Social Evolution (IPHES) was created in 2006; in the field of Biomedicine, and especially Health and Nutrition, the Pere Virgili Institute for Health Research (IISPV) was created in 2008 and shared with the university hospitals, and in the field of Energy, the Catalonia Institute for Energy Research (IREC) was created also in 2008, with headquarters in Barcelona and Tarragona. To complete this scenario, the Tourism Research Institute of Catalonia (IRTUCA) and the Institute for Research into Oenology and Viticulture of Catalonia (IREVC) are in the pipeline.

As well as these legally independent centres, the URV has created its **own research centres**: in the field of Engineering, the Research Centre on Materials Engineering and Micro/Nanosystems (EMaS); in the field of Psychology, the Research Centre for Behavioural Assessment (CRAMC); and in the field of Law, the Tarragona Centre for Environmental Law Studies (CEDAT). This scenario was recently completed with the creation of the Climate Change Research Centre (C3), which is located in Tortosa in the southernmost region of Catalonia. Together with the research centres already present there – the Aquaculture Centre in Sant Carles de la Rapita (IRTA) and the Ebro Observatory C3 will help to identify and reinforce specific research activity in the field of Environmental Sciences. And in the field of Social Sciences, the creation of the Research Centre on Industrial and Public Economics (CREIP) was approved at one of the meetings of the URV Governing Council (July 2010).

Also important to mention is the Institute of Agrifood Research and Technology (IRTA), with which the URV collaborates widely. In the region of Tarragona, IRTA has a centre in Constantí dedicated to animal nutrition and the production of olives, olive oil and nuts, and a centre in Sant Carles de la Ràpita dedicated to aquaculture and aquatic ecosystems. Also located in the region are the following private technological centres: the Mestral Technology Centre created by ENRESA (a public, non-profit organisation responsible for managing radioactive waste) and located in the former Vandellós nuclear power plant. Mestral works closely with the URV as part of a stable collaboration programme; the European Technological Centre in Valls, which is owned by the multinational automotive company, the Lear Corporation, which has a broad and longstanding relationship with the URV for R&D&I projects; and the Global Water Technology Development Centre, which was built and inaugurated in Tarragona by Dow Chemical in 2011, another multinational with a long history of scientific collaboration with the URV.

As a result of the determination to prioritise certain areas of knowledge transfer that are directly related to the socio-economic potential of Tarragona, and with the support of grants from the administration for developing science and technology parks, the URV has helped to create a **network of science and technology parks** (STP), some of which are also the locations for technological centres. These are:

- the Tarragona STP in Tarragona, where the Chemistry Technological Centre of Catalonia (CTQC) is located.
- the Nutrition and Health STP (TECNOPARC) in Reus, where the Technological Centre for Nutrition and Health (CTNS) is located.
- the Tourism and Leisure STP of Catalonia (PCTTO) in Vila-seca.
- the Wine Industry STP (VITEC) in Falset.

Before and now in parallel with the creation of this network of legally independent transfer structures, the URV has fostered transfer actions via the **URV Foundation**. This Foundation acts as the link between the URV and companies that promote the STPs and the technological centres.

As we mentioned earlier, this introduction to the CEICS project demonstrates the continued implementation of an internationally competitive university model and the university's commitment to its region (a truly glocal university). It also illustrates how all the elements of this Southern Catalonia Knowledge Hub are related. Figure 17 shows this hub using the format proposed in the CEICS call. In addition to the URV-driven research and technology centres, this figure includes other knowledge structures present in the region, such as the Institute of Agrifood Research and Technology (IRTA) and the University Hospitals. We could complete this figure by adding other centres such as IDIADA in Baix Penedès, the Technological Centre for Composite Materials, and the Technological Centre for Wood and Furniture in Montsià.

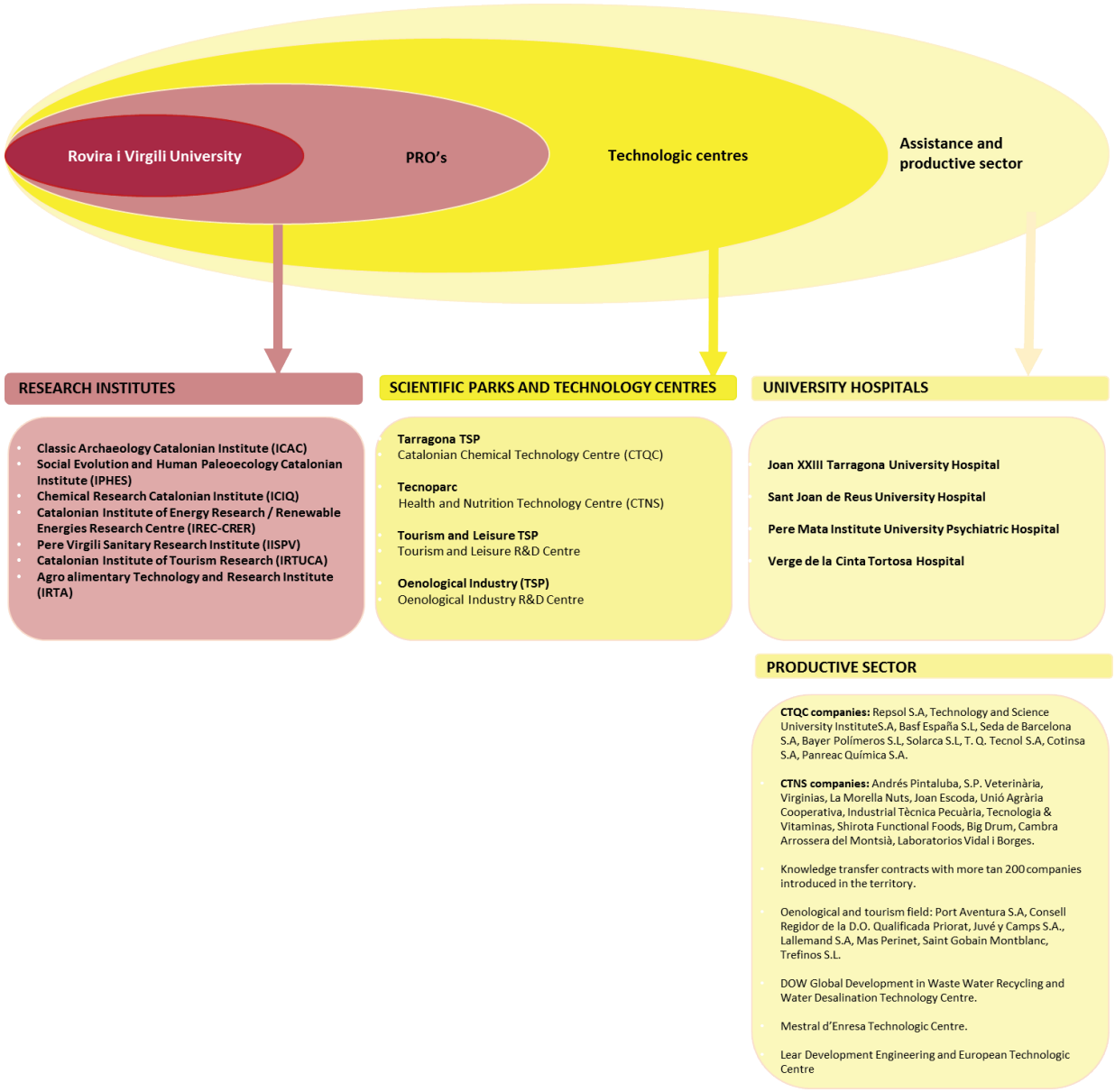


Figure 17. Components of the Campus of International Excellence Southern Catalonia (CEICS).

6.4. Difficulties and weaknesses

If despite all these favourable conditions – the dimensions, the level of specialisation, the assets, and the quantity and quality of its knowledge structures – Southern Catalonia still has no mechanism for creating its own planning and development strategy, there must be many difficulties that need to be overcome and some of these must stem from weaknesses of its own.

The current political structure, however, does not make things easy. Indeed it contributes to the problem. The gap between the municipal and the Catalan levels of government is too wide and is not covered by any regional governance structure. In addition, the bilateral relations that are created for matters of regional interest between municipalities on the one hand and stakeholders and the

Government of Catalonia on the other contribute to the fragmentation of positions and, ultimately, to the lack of action. Of course, Tarragona Provincial Council (*Diputació de Tarragona*) exists and performs its functions very well but these do not cover the areas where the needs of the region are most pressing and that regions such as Tampere (Pirkanmaa, Finland) have been entrusted by law to carry out. In short, **the Provincial Council today does not have the competences that are required for regional planning and regional development, particularly through innovation.**

This situation is what it is because of the current design. The Government of the Generalitat has Territorial Delegations but these are merely technical in nature and do not develop any political relationship with the region. Consequently, interests are not expressed, options are not discussed politically, future visions are not jointly constructed, and strategic priorities and plans of action are not established or followed up at the regional level. In the best scenario, they are included within the general policies for Catalonia and defined and implemented by the Government of Catalonia. Once again, the overall dimension of Catalonia means that this situation corresponds to that of an average, centralised European country.

The main identifiable weakness, therefore, is the system that is currently in place, with its **lack of a governance structure for the region of Tarragona** with legally defined competences for planning and development.

The dynamics of the region would be very different, however, if it had a regional structure that supported it, but this is not the case in Southern Catalonia. As we have seen, **the very definition of Southern Catalonia is not easy** as today no unambiguous definition for it exists. While a definition does exist for the province of Tarragona, we have seen that there may be conflict when the Act on *Vegueries*, on which there is currently a moratorium, is developed. The key word to define the complexity of the situation is **fragmentation**: Southern Catalonia is a highly fragmented region with a different definition depending on the functional unit concerned. Compared with other regions in Catalonia, the number of municipalities in Southern Catalonia is not excessive: it has a higher average population per municipality than the provinces of Lleida and Girona and, naturally, a lower average population per municipality than Barcelona or than the average for Catalonia. The key point, however, is that Catalonia has a very large number of municipalities in the dominant European context in which regional and cohesion policy and RIS3 are conceived and developed.

Country	Number of municipalities	Population	Population/Municipality
Sweden	290	9,644,864	33,258
Austria	1,725	8,506,889	4,932
Denmark	98	5,627,235	57,421
Finland	317	5,451,270	17,196
Ireland	85	4,605,501	54,182
Tarragona	**184**	**793,155**	**4,311**
Catalonia	**947**	**7,416,237**	**7,831**
Spain	**8,124**	**46,512,199**	**5,725**

Table 10. Municipalities and populations of EU countries similar to Catalonia.

The situation in Catalonia, and in Spain, is not exceptional: countries such as France and Italy also have a large number of municipalities, as does Austria (see Table 10). However, comparison with countries such as Sweden, Denmark, Finland and Ireland indicates a trend towards the formation of larger municipal entities. **The municipal fragmentation in both Tarragona and Catalonia as a whole causes an intrinsic difficulty for defining regional strategies** because of the average size of the various components that need to express their own visions and interests.

Fragmentation might be less important if it did not also occur at the level of the **regional leader.** This is one of the main weaknesses: Tarragona, the capital of the region, and the city that gives its name to the province, does not possess or exercise clear leadership precisely because of the fragmentation existing at the sub-regional or county levels (probably due to arguments that are well grounded in history). The result is that the city of Tarragona appears small in comparison with the region as a whole, and is accompanied by a twin city and close neighbour, Reus, which is even slightly smaller. Nevertheless, they are still by far the largest cities in the region. The historical relationship between Reus and Tarragona, like that of many other pairs of cities all over Catalonia, Spain, Europe and the world, could itself be the subject of study. What is of interest in this document is to demonstrate some of the effects of this relationship. **The two largest cities, Tarragona and Reus, are too small on their own to lead the region** or, with their own respective, non-shared areas of influence, to accommodate regional service structures. The origins of the Universitat Rovira i Virgili itself and the difficulties it encountered when choosing its name are an example (the URV was created by the Catalan Parliament on the same day as the Universities of Girona and Lleida, both of which unequivocally adopted the names of the cities that welcomed them). Another example of the recurrent effect of the fragmentation of regional influence between Reus and Tarragona is found in the healthcare field. The wealth generated by the region makes it large enough to support a tertiary healthcare structure to provide every healthcare service. And the population is large enough throughout the year (and it increases significantly during the tourist periods) to justify such a service. However, a tertiary healthcare structure does not exist in the region because the healthcare field is also fragmented between the Tarragona and Reus areas of influence, both of which have their own secondary structure. As we explained in section 4 and showed in Table 6, the human and economic dimensions must be sufficient to support a full university structure (i.e. a population of 500,000 and a GDP of 20,000 million euros per year). Splitting the URV into the *Universitat de Reus*, the *Universitat de Tarragona* and the *Universitat de Tortosa* would have led, or would lead, to insufficient university

NUTS2 Region	Population	Population of the regional capital	% Regional capital/region
Bremen	657.391	548.319	83
Rioja	315.223	151.962	48
Tampere	500.166	221.007	44
Groningen	582.728	200.336	34
Navarra	636.450	196.166	31
Cantabria	587.682	175.736	30
Salzburg	534.185	150.269	28
Trento	536.237	117.307	22
Bolzano	515.714	105.774	21
Limousin	735.320	137.758	19
Tarragona	**793.155**	**132.199**	**17**
Tirol	721.574	119.584	17
Algarve	442.358	64.560	15
Alentejo	743.306	56.596	8

Table 11. NUTS2 regions similar to Tarragona (NUTS3) and the percentage populations of their capitals.

structures for carrying out teaching and research activities with the international quality required to compete globally and that the URV currently achieves. Exactly the same thing occurs in healthcare: the secondary health structures we currently have in Reus, Tarragona and Tortosa do not provide the full service that could be supported by an annual GDP of 20,000 million euros and could be justified by a population of 800,000 (and over a million during the summer months).

Table 11 shows how the population of the city of Tarragona as a percentage of its region is relatively low in comparison with NUTS2 regions that, as we have mentioned, have similar dimensions to Tarragona.

Another manifestation of this regional fragmentation is the number of counties that make up the province (10 out of the 42 counties in Catalonia), each of which has its own county council. The 10 counties are divided into the two previously described *vegueries* – Camp de Tarragona and Terres de l'Ebre-. The result is that there are now two tiers of administration, one for the county and one for the *vegueria* (yet to be activated), neither of which have the competence to make political or strategic decisions in regional development.

	2011	2012	2013	2014	2015	GDP 2012 (M€)	GDP/capita (k€)	Index
Alt Camp	**45.189**	**45.299**	**44.771**	**44.578**	**44.306**	**1.175**	**26,2**	**94,9**
Valls					24.321			
Baix Camp	**191.947**	**193.535**	**193.455**	**190.249**	**188.026**	**4.256**	**22,2**	**80,4**
Reus					103.194			
Cambrils					32.915			
Baix Penedès	**101.115**	**101.138**	**101.100**	**100.262**	**99.934**	**1.612**	**16,1**	**58,2**
Vendrell, el					36.558			
Calafell					24.256			
Conca de Barberà	**21.290**	**21.148**	**20.992**	**20.723**	**20.482**	**645**	**30,8**	**111,8**
Priorat	**10.087**	**9.971**	**9.756**	**9.550**	**9.547**	**148**	**15,2**	**55,1**
Tarragonès	**250.142**	**251.282**	**251.226**	**250.306**	**249.939**	**8.006**	**32,1**	**116,3**
Tarragona					131.255			
Salou					26.459			
Vila-seca					22.332			
Camp de Tarragona	**619.770**	**622.373**	**621.300**	**615.668**	**612.234**	**15.842**	**27,5**	**99,8**
Baix Ebre	**82.634**	**83.125**	**81.514**	**80.637**	**79.748**	**1.641**	**20,3**	**73,5**
Tortosa					33.864			
Montsià	**72.261**	**72.121**	**71.577**	**69.613**	**68.524**	**1.183**	**16,7**	**60,5**
Amposta					20.952			
Ribera d'Ebre	**23.889**	**23.867**	**23.477**	**22.925**	**22.723**	**1.118**	**48,3**	**175,2**
Terra Alta	**12.847**	**12.713**	**12.310**	**12.119**	**11.872**	**232**	**18,7**	**67,8**
Terres de l'Ebre	**191.631**	**191.826**	**188.878**	**185.294**	**182.867**	**4.174**	**22,3**	**80,7**
Province of Tarragona	**811.401**	**814.199**	**810.178**	**800.962**	**795.101**	**20.016**	**24,5**	**88,7**
Catalonia	**7.539.618**	**7.570.908**	**7.553.650**	**7.518.903**	**7.508.106**	**206.919**	**27,6**	**100**

Table 12. Towns and cities with over 20,000 inhabitants, counties, and vegueries in the Tarragona region. Data by IDESCAT.

Table 12 shows the demographic and economic dimensions of the municipalities and counties in the province of Tarragona. We can see that the level of fragmentation at the municipality and county levels means that there are **only 10 municipalities in the region with over 20,000 inhabitants** (to which full municipal powers are assigned by the Act on the Bases of Local Government [Spain, Act 7/1985, 2nd April]). Only the county of Tarragonès has more than 200,000 inhabitants. Terres de l'Ebre is a *vegueria*, whose demographic and economic dimensions would be unable to support full tertiary structures. Although the Camp de Tarragona *vegueria* has well over 500,000 inhabitants, if Baix Penedès is not included the population will be closer to that figure. The population of what constitutes the nucleus of the region –which may be defined as the metropolitan area (part of Alt Camp, part of Baix Camp, and Tarragonès)– would be close to 400,000.

Table 12 also shows that there are large regional differences in GDP per capita, with an average that, due to the concentration of industrial activity (energy and chemistry) in certain counties, is similar to the average for Catalonia as a whole.

Some specific weaknesses derive from those already mentioned: as there are no competences for planning or development, neither is there a consistent set of data for conducting diagnoses and follow-up. Any project to define the region should also have a **regional information system**. Likewise, there has never been any **joint definition of a future vision**, which of course is linked to **region identification and awareness**.

6.5. Chair for University and Knowledge Region

We saw earlier how for many years the URV and Tarragona Provincial Council have shared a vision, drawn up common workplans, and collaborated to strategically develop a knowledge system for Southern Catalonia. In a joint presentation at the 9th Awards Ceremony of the Business Confederation of the Province of Tarragona (CEPTA) in March 2009, the president of the Provincial Council and the rector of the URV publicly presented the Tarragona Knowledge Region Office. This Office was set up to: "promote the development of the Camp de Tarragona and the Terres de l'Ebre via in-company research and innovation and convert these territories into unique European regions that are references in the field of knowledge".

Structures such as the Tarragona Knowledge Region Office and others that have developed over the years (see Figure 17) have always needed (and still need) specific support to help them consolidate. However, as this becomes clear through the results of their activities, what also becomes clear is that this group of structures is lacking the functions and qualities of a system, since no arena for strategic discussion exists that would provide them with at least some shared objectives that are in line with the interests of the region in which their elements are located.

In short, also in the specific ambit of knowledge, there is a need to define a decision-making arena where regional planning and regional development competences can be developed and that can take full advantage of the possibilities provided by the Southern Catalonia Knowledge Hub. Now is the time, therefore, to join our efforts and work towards that definition. For this reason, the Tarragona Provincial Council and the URV created the Chair for University and Knowledge Region.

Mission

The Chair for University and Knowledge Region was created at the end of 2014 by approval of the Governing Council of the Universitat Rovira i Virgili with funding from Tarragona Provincial Council and Banco Santander via collaboration agreements between those entities and the URV.

The purpose of a University-Society Chair is academic. The Chair therefore has the specific responsibility to:

Promote the dissemination of specialised knowledge associated with regional development linked to university activity, and accompany the University in its smart specialisation activities in the region aimed at improving citizen welfare.

As established by the URV's Governing Council agreement. Ultimately, however, the Chair was created on account of the need to foster the development of Tarragona as a Knowledge Region. In this context, the mission of the Chair is also to:

Help set up and organise a system for governing the Southern Catalonia Knowledge Region.

Action plan

As we explained in the previous sections, the strategy employed by the Chair to achieve its objectives follows the line and reasoning behind the Europe 2020 strategy: the best development – smart development – must be sustainable and united across the European Union; every region must be developed and the potential of each region must be identified. This is precisely the approach taken eight years ago with the Tarragona Knowledge Region Office, with one important caveat: as we have seen, Europe focuses on the statistically named NUTS2 regions, which have a certain capacity to define their own policies.

We have also seen how Catalonia is one of the largest NUTS2 regions, with greater human and economic dimensions than half of the countries in the European Union. With its size and the diversity of its activities and economic sectors, it is natural that simply identifying a few priority sectors is impractical for Catalonia. Hence the uniqueness of RIS3CAT (RIS3 strategy for Catalonia), which nevertheless does identify seven leading sectors: food, energy and resources, industrial systems, design-based industries, industries related to sustainable mobility, healthcare industries, and cultural and experience-based industries. For all these sectors, the Government promotes specific strategic plans and helps create knowledge centres (universities and research and technological centres) to nurture innovation. Southern Catalonia is well represented in the list of sectors where specific strategic plans are promoted, with the food and agricultural, energy, chemical, auxiliary automotive, and mechanical industries, not to mention the hugely important tourist industry, which thrives on the environment, landscape and natural wealth in the south of Catalonia and the abundance of sensations to be enjoyed there.

As part of this European-wide strategy, and specifically the strategy as applied to Catalonia, the Tarragona Knowledge Region Office created eight years ago by the Tarragona Provincial Council and the URV has always made a great deal of sense, even more so now with the development of the European RIS3 strategy: there are clearly identifiable sectors, the economic and human dimensions are sufficient, and all the necessary elements are in place – competitive businesses, internationally recognized knowledge centres, and a committed administration.

However, Catalonia does things differently from similar-sized countries such as Finland. In Catalonia, the NUTS3 regions do not intervene directly in the definition of RIS3CAT: rightly in this context, the Government of Catalonia has incorporated a sound instrument –Specialisation and Territorial Competitiveness Projects (PECT). With this instrument, RIS3CAT promotes specialisation and territorial competitiveness projects, which are regional initiatives for smart specialisation to transform the economy based on R&D&I. These initiatives promote and strengthen collaboration between stakeholders of the quadruple helix in order to generate innovative and original responses to the needs and challenges of the region and at the same time reinforce the role of the universities as engines for regional development.

The Government of Catalonia intends the PECT to focus on:

- Identifying a smart specialisation opportunity based on differential assets in the territory.
- Promoting a vision of future opportunity shared by stakeholders in the territory.

- Being committed to smart specialisation in the territory that is aligned with the RIS3CAT thematic specialisation objectives and priorities and highlights the importance of the region's assets.
- Producing an action plan that includes coherent programmes, projects and actions that enable the initiative to be brought to fruition and to contribute to the 2020 targets.

The objectives of the PECT are to: organise the participation of the territory in RIS3CAT; promote cooperation among quadruple helix stakeholders in the territory in order to strengthen business fabric competitiveness; strengthen the universities' fourth mission, and generate new economic and job creation opportunities in the region.

Again, these objectives are fully aligned with the project that was begun eight years ago, a project that now has an excellent opportunity to consolidate, develop and project itself to the world along the same lines as the great dynamic force that RIS3 represents in Europe. This wonderful idea is already being copied in other parts of the world even before it has started to bear fruit on this continent.

To seize this opportunity, difficulties such as those mentioned in the previous sections must be overcome. Among these, of course, is the need to configure a strategic arena for decision making and governance in the Knowledge Region. The configuration of this arena is therefore an unavoidable transversal project that must also contain the physical elements that are needed to monitor the specialisation and territorial competitiveness projects to be developed now and in the future

OBJECTIVE: As stated earlier, the operational existence of a Knowledge Region can be defined when there exists, firstly, the capacity at the regional level to design, agree and implement action plans for developing a social and economic structure that is (more) based on knowledge and, secondly, the capacity to monitor and reformulate those plans. The Chair for University and the Knowledge Region therefore proposes to help develop the material resources and political arenas that are needed to ensure the operational capacity and stability of Tarragona as a Knowledge Region.

To achieve this objective, the Chair proposes three lines of action:

1. **Identify, compile and harmonise all the active projects** that contribute in some way to the directions identified by the previous indicators, most of which were developed under the Tarragona Knowledge Region project sponsored by Tarragona Provincial Council and the URV, and the Campus of International Excellence (CEICS) project, which was developed, with the same objectives, by the URV in response to calls for the CEI programme of the MECD (Spanish Ministry of Education, Culture and Sports).

2. **Develop a comprehensive information system,** based on indicators selected initially and others that may be added, that is open to all stakeholders and forms the basis of the strategic decision-making arena for the region.

3. **Construct a strategic decision-making arena in Southern Catalonia** that is based on the experiences developed in recent years, facilitates participation and knowledge-sharing at different levels for all stakeholders (companies, business associations, majority trade unions, social entities, as well as the administration, the University and research and innovation institutions) and allows politicians to make informed joint decisions at the regional level.

With these general and specific objectives in mind, in 2015 the Chair completed the following actions:

1. **An Advisory Committee** was set up to offer support and advice on strategy and projects to the Director of the Chair given the current circumstances for Tarragona and the URV. The Committee is made up of Professors John Goddard, Ellen Hazelkorn, Francesc Michavila and Jaana Puukka. The Committee pays two annual visits to Tarragona to meet representatives and exponents from the region.

John Goddard

Emeritus professor of Regional Development Studies at Newcastle University in the United Kingdom. He also founded and directed the Centre for Urban and Regional Development Studies (CURDS), also in the UK.

Ellen Hazelkorn

Has been the director for Research and Enterprise and dean of the Graduate Research School in Dublin, Ireland.

Jaana Puukka

Founder and president of Innovation Engage. She has also worked as a higher education analyst and director of projects for the OECD, especially in the areas of significance, impact and development.

Francisco Michavila

Professor at the Universidad Politécnica de Madrid (UPM), director of the UNESCO Chair on University Management and Policy, and former rector of the Universitat Jaume I.

Figure 18. Members of the Advisory Committee of the Chair for University and Knowledge Region.

2. An **Initial Core Group (ICG)** was formed, made up of: Javier Villamayor, deputy mayor of Tarragona; Martí Carnicer, mayor of El Vendrell; Marc Arza, Reus councillor for Economic Development and Employment; Joaquim Nin, the government delegate for Tarragona; Josep Maria Cruset, first vice-president of the Tarragona Provincial Council; and Ferran Bel, mayor of Tortosa. All members of the ISG are representatives of towns with University facilities, the Tarragona Provincial Council, or the Generalitat's Territorial Services department. This key group should at first instance be the owner of the project and the driving force behind it. While the bodies promoting and facilitating the project are the Chair for University and the Knowledge Region and the URV as a whole, the responsibility must ultimately fall on politicians and administrators to implement any actions.

3. **Studies were conducted to analyse** the situation in the Tarragona region and evaluate the development of European regions that are recognised as knowledge regions and may serve as models for the development of Southern Catalonia. The aim of these studies was to generate a body of specialized knowledge in the field of regional development based on smart specialisation from research and innovation.

4. **Seminars** were held with the Advisory Committee and the Initial Core Group to present the visions and strategic projects for the towns and cities initially represented. Case studies were analysed for Tarragona, Reus and Terres de l'Ebre with the participation of regional service

representatives for Camp de Tarragona, Tarragona Provincial Council, Tarragona, Reus, Tortosa and Amposta.

5. An **initial workshop** was held with the Initial Core Group to define areas of work and set the main objectives.

6. **Relations** were established with regions of reference. Members of the ISG and the Chair visited the region of Tampere (Pirkanmaa, Finland), which has many years experience in regional development, to learn about its decision-making system and strategic positions and as certain the level of involvement and commitment of the various sectors of its society (the city of Tampere, the universities and local business).

We have constructed a grid of the conclusions drawn from these largely learning activities. From these conclusions we have identified our main lines of action (see Figure 19).

Alignment

	Advisory Committee	Core Group	Tampere visit
Governance	Organisation of Southern Catalonia Innovation System (SC-IS)	Internal and external governance alignment (Government of Catalonia)* Tools for the cooperation and coordination of regional actions*	Develop a proposal for the governance of Catalonia
Strategic positioning	Design and management of RIS3 in SC Brand and Communi. Strategy in SC	Create and share a regional brand	Regional strategy Relationship with cohesion funds
Enablers	Building expertise and leardership Foresight exercise for SC Information system for SC-IS	Training programme for leaders* Prospective knowledge management tools	Training programme for leaders* Foresight exercise System of indicators for SC-IS
Leader cities	Cities and citizens are key for co-creation and social innovation	Develop a co-creation and innovation network with towns and cities	Integrated strategic innovation programme for towns and cities
Tools for Innovation and value creation	Arenas for co-creation	Synergies between the main players via tractor projects Company committed to regional development	Open Innovation Platforms DEMOLA Kora Solutions Meeting Programme
Global and talent networks	Strategic International relationships	Creation of an ecosystem and strategy for attracting talent	International talent placement programme International club

* *Top priority*

Figure 19. Grid classifying the conclusions drawn regarding actions required to develop the Southern Catalonia Knowledge Region.

As previous sections have shown, a bottom-up need exists to organise the region of Southern Catalonia, though perhaps this need has not yet been identified in such an orderly fashion. However, a top-down need also exists. The top-down need is the most important one since ultimately it represents the main motivation behind the initiative, i.e. that the region, Catalonia and Europe develop better and more cohesively and from a sound knowledge base. Any advance must therefore be built on sharing these objectives with the main players and with those who have responsibility in the region

and Government of Catalonia. This is a sine qua non because without a shared understanding of the need for the project and the purpose behind it, the intrinsic difficulties we have encountered cannot be overcome. Naturally, the members of the Initial Core Group identified these difficulties right from the outset. Overcoming them is one of the first tasks that need to be done as we advance towards a regional system of governance.

In agreement with the members of the Core Group and with the favourable assessment of the Advisory Committee, the Chair therefore proposes the **following actions** to be taken during 2016 and 2017:

1. **Create an expanded Core Group** to gain further representation in the region and assume ownership of the project. The operational capacity of this group requires transparency, a relatively small number of members, and guaranteed representation for the whole region. Under the approach adopted, therefore, the Group will comprise: representatives from the 10 towns or cities with over 20,000 inhabitants (those with full municipal competences); the first vice-president of Tarragona Provincial Council (which will ensure the representation of the smaller municipalities), the two representatives of the Tarragona and Terres de l'Ebre Territorial Services, and the Secretary of the Government of Catalonia.
2. **Conduct a collective foresight exercise.** Is suggested by the Advisory Committee. This collective journey will aim to build confidence and develop a shared and reflective vision of the future development of Southern Catalonia in which institutions, entities and representatives from regional business and social interests will be invited to participate.
3. In the short term, **develop** a set of viable **regional initiatives** based on the conclusions for the actions described in Figure 19. This is to ensure that results are produced in the early stages of the process and reinforce the commitment of the players in the ecosystem, who will ultimately take on the responsibility. Among these initiatives are:
    a. **A Regional Leadership Training Programme** aimed at a first group of regional leaders in the political and socioeconomic ambits. In parallel with their involvement in the foresight exercise, this group could follow a training programme consisting of three lines: emerging trends and challenges in society, regional development policies, and leadership skills.
    b. **DEMOLA Southern Catalonia.** Following the DEMOLA experience, which began in Tampere (Pirkanmaa, Finland), we propose a teaching activity at the URV that enables URV students to interact with cities, companies and NGOs and develop interesting solutions for them while receiving training in skills with creative and innovative tools.
    c. **Southern Catalonia International Club.** We propose a platform to mobilise foreign talents living in Southern Catalonia to develop an innovative community committed to helping to develop Southern Catalonia and connect the region internationally.
4. Ensure that, in parallel with the Core Group, **a governance model for the region is developed** that can take charge of the results from the foresight exercise and the portfolio of regional initiatives and enable the region to conduct its own regional planning and regional development activities that result from its own strategy.
5. Collaborate with the Tarragona Provincial Council to define the **Southern Catalonia Information System** and decide which indicators the system should contain.

Finally, the objective proposed by the Chair – in agreement with the Initial Core Group and the Advisory Committee – is to develop a specific and comprehensive proposal for a system of governance

for Southern Catalonia within the time frame of the current municipal governments, i.e. before the middle of 2018.

To illustrate what the indicators for the information system for Southern Catalonia could be like; Figure 20 repeats the 25 indicators employed by the Innovation Union Scoreboard for all European Union countries. The red circles show which indicators could be used now in Southern Catalonia. In this way, a strong set of 18 indicators could be configured from the 25 initial indicators of the Innovation Union Scoreboard. This could be the starting point for the command and monitoring centre of the Southern Catalonia Knowledge Region.

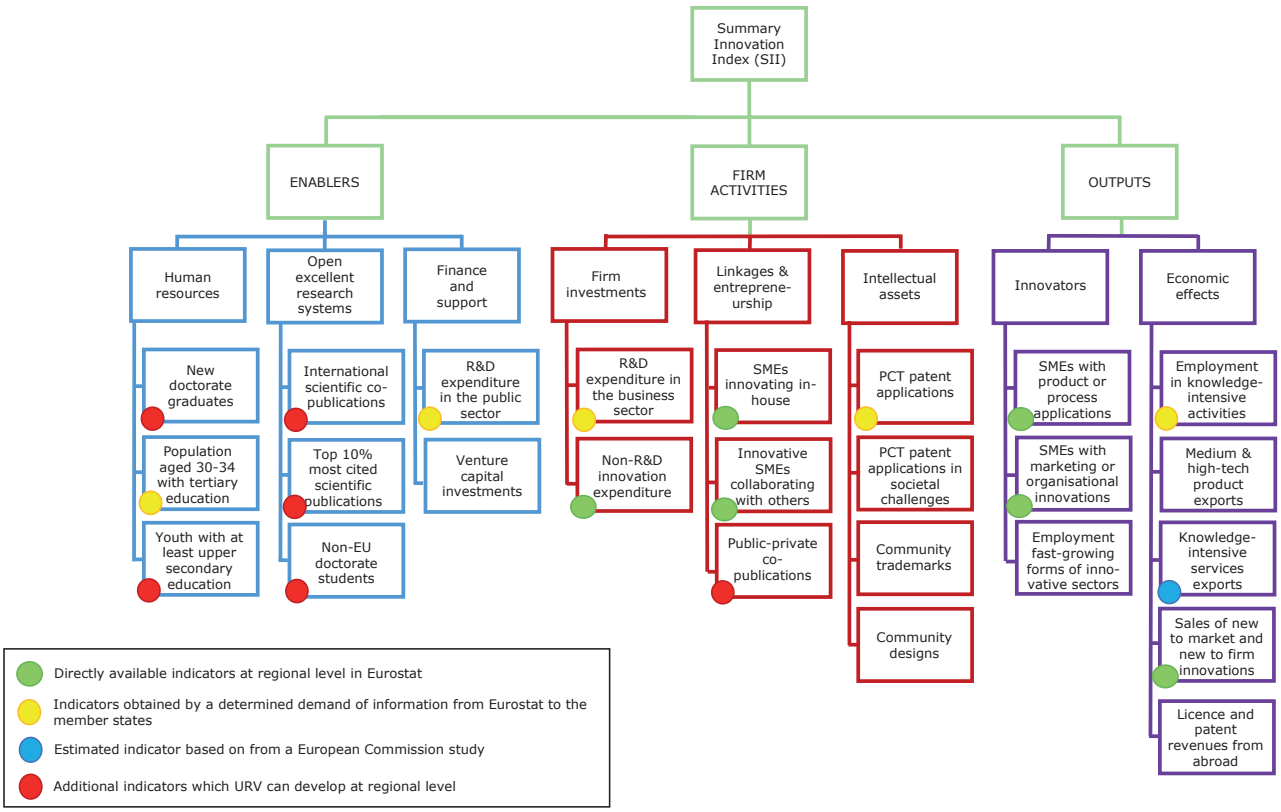


Figure 20. Revised Figure 12, with red circles to show the additional indicators that the URV can develop at the regional level.

Analysing this set and looking for improvements in the indicators could certainly help to guide the development strategies. Following the classification and distribution shown in Figure 20, we therefore propose programmes of action that involve both monitoring and measurement systems. The Knowledge Region must at least be able to monitor:

1. Enablers:
    a. Human Resources:
        i. The percentage of the population with university and non-university higher education (advanced vocational training).
        ii. The number of students with at least secondary education (higher secondary education and intermediate vocational training).

iii. The number of doctorates.

b. Research System:
   i. The number of doctoral students not from the European Union.
   ii. The percentage of publications with international collaboration.
   iii. The impact of scientific publications.

c. Finance:
   i. The level of R&D&I investment in public institutions (universities and research institutes).

2. Business activities:
   a. Investment:
      i. Expenditure on their own R&D.
      ii. Expenditure on innovation (not R&D).
   b. Relations and entrepreneurship:
      i. SMEs with their own innovation activity.
      ii. SMEs with innovation activity in collaboration with other companies and institutions.
      iii. Scientific publications produced by companies
   c. Intellectual property:
      i. Applications for PCT patents.
3. Results:
   a. Innovators:
      i. SMEs with innovative products or processes.
      ii. SMEs with innovative marketing actions or organisation.
   b. Economic effects:
      i. Employment in intensive knowledge activities.
      ii. Sale of new or innovative products.

This set of indicators covers the enablers, agents and results of a knowledge-based society. As part of a general discussion currently taking place on these issues (especially in Europe), it should, as we saw earlier, be completed with the more social aspects of development. Nevertheless, this initial set implies knowing the system at a non-current level and requires every stakeholder, in their own particular sphere of responsibility, to participate in both information gather in and decision making.

FINAL SUMMARY

1. There is a bottom-up need to organise the region of Southern Catalonia (though perhaps this need has not yet been identified in such an orderly fashion). However, there is especially a top-down need: Catalonia needs its own regional policy in order to develop better and more cohesively and to do so from a sound knowledge base.
2. Progress towards organisation of the Southern Catalonia region must be built on shared objectives between the main players and those with responsibility in the region and the Government of Catalonia. Without a shared understanding of the need for and purpose behind the project, the following intrinsic difficulties that we have encountered cannot be overcome:
    a. There is no unequivocal **geographical definition of the region**. The province of Tarragona does not match the territorial organisation into *vegueries* very well and the dimensions of the *vegueries* are not sufficient for their function in the framework of European regional policy.
    b. **There is a lack of a governance structure for the Tarragona region** with competence for planning and development. The only current regional governance structure is Tarragona Provincial Council, which does not have recognised competence in these areas (nor do the *vegueries*).
    c. **Fragmentation.** Southern Catalonia is a highly fragmented region that is defined by numerous different functional units. The number of municipalities is large and their average size is too small. However, the region contains 10 municipalities with over 20,000 inhabitants.
    d. There are **huge differences in GDP per capita** across the region, though the average GDP per capita is similar to that of Catalonia as a whole due to the concentration of industrial activity in certain counties.
    e. **There is a lack of a regional information system** that would provide a basic set of indicators to enable the situation to be identified and the objectives to be established and monitored.
    f. **There is no joint vision for the future.** Naturally, this is linked to the **lack of a sense of regional identity and awareness.**

FINAL SUMMARY

3. However, the Tarragona region has numerous strengths and capacities on which to construct the Southern Catalonia Knowledge Region project:
    a. The region's demographic, geographic, cultural, social and economic **dimensions are sufficient for it to develop as a region with NUTS2 competences.**
    b. **The characteristics of the region reinforce its identity and uniqueness** and make it easily identifiable as a region:
        i. It accounts for roughly 20% of the tourist activity in Catalonia.
        ii. It has 20% of Catalonia's sites of natural interest and 20% of its sites of cultural heritage.
        iii. It has eight of the twelve Catalan Designations of Origin (Conca de Barberà, Montsant, Priorat, Tarragona and Terra Alta plus shared Designations with Penedès, Catalunya and Cava).
        iv. It has the only Qualified Designation of Origin in Catalonia and one of the two in Spain (Priorat).
        v. It produces most of the energy consumed in Catalonia (75%) and 10% of the energy consumed in Spain (10%).
        vi. It accounts for 50% of chemical production in Catalonia and 25% of the production in Spain.
        vii. The size of its food industry is equivalent to the size of its population but the industry is highly concentrated, and highly specialised, in Baix Camp and Montsià.
        viii. In addition, the region has:
            - Large-scale international transport infrastructures (Reus airport and the Port of Tarragona).
            - An intersection of the great axes of the Mediterranean and Ebro Valley land communication networks.
            - The largest refinery and petrochemical complex in the south of Europe.
            - A world tourist hub (Port Aventura, Ferrari Land and a project for a new Recreational and Tourist Centre).
            - The Els Ports, Ebro Delta and Montsant natural parks and the protected natural area of the Prades mountains.
            - The World Heritage Site of Roman Tarraco and the Cistercian monasteries of Poblet and Santes Creus.
    c. It is home to the URV, a world-class university with a place in the main global rankings (*Times Higher Education and Academic Ranking of World Universities*) that is recognised by the European Union for its commitment to its region, has driven the creation of a Knowledge Hub in Southern Catalonia, has earned the distinction of Campus of International Excellence Southern Catalonia, and incorporates six Catalan research institutes, four technological centres and four hospitals.

FINAL SUMMARY

4. Based on the region's current situation, we propose to:
    a. Reach an agreement with the Government of Catalonia on **the need for Southern Catalonia to develop a system of governance** that enables it to assume **competences for regional planning and regional development** based particularly on knowledge and innovation.
    b. Use this process as a **pilot test for a new regional organisation system for Catalonia.**
    c. **Create a Core Group** comprising representatives from the 10 towns or cities in the region with over 20,000 inhabitants, the first vice-president of Tarragona Provincial Council (which will ensure the representation of the smaller municipalities), the two representatives of the Camp de Tarragona and Terres de l'Ebre Territorial Services, and the Secretary of the Government of Catalonia.
    d. Ask the Core Group to make a proposal, within one year of its creation, for legal ordinances and organisation that enable the assumption of **competences for regional planning and regional development** in Southern Catalonia.

    We also propose to:

        i. **Conduct a collective foresight exercise**, as suggested by the Advisory Committee, as a collective journey aimed at building confidence and developing a shared and reflective vision of the future development of Southern Catalonia in which institutions, entities and representatives from regional businesses and social interests will participate.
        ii. In the short term, **develop** a set of **regional initiatives and projects** to ensure that results are produced in the early stages of the process and so help reinforce the commitment of all the stakeholders.
        iii. Entrust Tarragona Provincial Council with defining – in collaboration with the URV Chair for University and Knowledge Region – the **Southern Catalonia information system** and deciding which indicators the system should contain.

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ANNEX 1. EUROSTAT regional statistics with information up to level **NUTS2** and also **NUTS3**

Regional agriculture statistics	
Agri-environmental indicators	
1	Soil erosion by water by NUTS 3 regions
2	Manure storage facilities by NUTS 3 regions
Structure of agricultural holdings	
Structure of agricultural holdings 2010	
3	Key farm variables
4	Key farm variables: area, livestock (LSU), labour force and standard output (SO) by agricultural size of farm (UAA), legal status of holding and NUTS 2 regions
5	Key variables: area, livestock (LSU), labour force and standard output (SO) by economic size of farm (SO in Euro), legal status of holding and NUTS 2 regions
6	Key variables: area, livestock (LSU), labour force and standard output (SO) by type of farming (2-digit) and NUTS 2 regions
Farm land use - Permanent crops, other farmland, irrigation	
7	Land use: number of farms and areas of different crops by agricultural size of farm (UAA) and NUTS 2 regions
8	Land use: number of farms and areas of different crops by economic size of farm (SO in Euro) and NUTS 2 regions
9	Permanent crops: number of farms and areas by size of permanent crop area and NUTS 2 regions
10	Irrigation: number of farms, areas and equipment by size of irrigated area and NUTS 2 regions
Overview - Farm livestock	
11	Livestock: number of farms and heads of animals of different types by agricultural size of farm (UAA) and NUTS 2 regions
12	Livestock: number of farms and heads of animals by livestock units (LSU) of farm and NUTS 2 regions
13	Livestock: number of farms and heads of animals by economic size of farm (SO in Euro) and NUTS 2 regions
14	Farm labour force and management
Labour force: number of persons and farm work (AWU) by sex of workers and NUTS 2 regions	
15	Organic farming: number of farms, areas with different crops and heads of different types of animals by agricultural size of farm (UAA) and NUTS 2 regions
16	Type of tenure: number of farms and areas by agricultural size of farm (UAA) and NUTS 2 regions
17	Type of tenure: number of farms and areas by economic size of farm (SO in Euro) and NUTS 2 regions
Survey on agricultural production methods (SAPM, 2010)	
18	Tillage methods: number of farms and areas by size of arable area and NUTS 2 regions
19	Tillage methods: number of farms and areas by economic size of farm (SO in euros) and NUTS 2 regions
20	Soil conservation: number of farms and areas by size of arable area and NUTS 2 regions
21	Soil conservation: number of farms and areas by economic size of farm (SO in euros) and NUTS 2 regions
22	Landscape features: number of farms and areas by agricultural size (UAA), economic size of farm (SO in euros) and NUTS 2 regions
23	Animal grazing on the holding: number of farms and area grazed by duration, economic size of farm (SO in euros) and NUTS 2 regions
24	Animal housing - cattle: number of farms and places by cattle size classes, economic size of farm (SO in euros) and NUTS 2 regions
25	Animal housing - cattle: number of farms and places by cattle size class, agricultural size of farm (UAA) and NUTS 2 regions

26	Animal housing - pigs: number of farms and places by pig size classes, economic size of farm (SO in euros) and NUTS 2 regions
27	Animal housing - laying hens: number of farms and places by laying hens size classes, economic size of farm (SO in euros) and NUTS 2 regions
28	Manure exported from the holding in % of total produced: number of farms and areas by economic size, agriculture size (UAA) of farm and NUTS 2 regions
29	Manure exported from the holding in % of total produced: number of farms and areas by economic size, livestock units (LSU) of farm and NUTS 2 regions
30	Manure storage and treatment facilities: number of farms and areas by economic size (SO in euros), agriculture size (UAA) of farm and NUTS 2 regions
31	Manure storage and treatment facilities: number of farms and areas by economic size (SO in euros), livestock units (LSU) of farm and NUTS 2 regions
Structure of agricultural holdings - historical data (1990-2007)	
Overview of agricultural holdings	
32	Key variables by legal status of holding, size of farm (UAA) and NUTS 2 regions
33	Key variables by type of farming (2-digit) and NUTS 2 regions
Land Use	
34	Farmland: number of farms and areas by size of farm (UAA) and NUTS 2 regions
35	Farmland: number of farms and areas by economic size of farm (ESU) and NUTS 2 regions
36	Permanent crops: number of farms and areas by size of farm (UAA), size of permanent crop area and NUTS 2 regions
37	Irrigation: number of farms, areas and equipment by size of farm (UAA) and NUTS 2 regions
Livestock	
38	Livestock: number of farms and heads by size of farm (UAA) and NUTS 2 regions (ef_ls_ovaareg)
39	Livestock: number of farms and heads by livestock units (LSU) of farm and NUTS 2 regions(ef_ls_ovlsureg)
40	Livestock: number of farms and heads by economic size of farm (ESU) and NUTS 2 regions(ef_ls_ovesu)
Special interest topics	
41	Organic farming: selected variables by size of farm (UAA) and NUTS 2 regions
42	Type of tenure: number of farms and areas by size of farm (UAA) and NUTS 2 regions
43	Labour force: number of persons and farm work (AWU) by sex of worker, category of worker, legal status of holding, size of farm (UAA) and NUTS 2 regions
44	Labour force: number of persons and farm work (AWU) by sex of worker, category of worker, legal status of holding, economic size of farm and NUTS 2 regions
Structure of agricultural holdings by region, main indicators	
45	Structure of agricultural holdings by NUTS 3 regions - main indicators
Agricultural production	
46	Animal populations (December) by NUTS 2 regions
47	Crop statistics by NUTS 2 regions (from 2000 onwards)
48	Production of cow's milk on farms by NUTS 2 regions (1 000 t)
49	Agricultural accounts according to EAA 97 Rev.1.1 by NUTS 2 regions

Regional demographic statistics	
Population and area	
50	Population on 1 January by age, sex and NUTS 2 region
51	Area by NUTS 3 region
52	Population density by NUTS 3 region
53	Population on 1 January by five years age group, sex and NUTS 2 region
54	Population on 1 January by five year age group, sex and NUTS 3 region
55	Population on 1 January by broad age group, sex and NUTS 3 region
56	Population change - Demographic balance and crude rates at regional level (NUTS 3)
Fertility	
57	Live births (total) by NUTS 3 region
58	Live births by five year age group of the mothers and NUTS 3 region
59	Live births by mother's age and NUTS 2 region)
60	Fertility rates by age and NUTS 2 region
61	Total fertility rate by NUTS 3 region
Mortality	
62	Deaths (total) by NUTS 3 region
63	Deaths by five year age group, sex and NUTS 3 region
64	Deaths by age, sex and NUTS 2 region
65	Infant mortality by NUTS 2 region
66	Infant mortality rates by NUTS 2 region
67	Life table by NUTS 2 region
68	Life expectancy by age, sex and NUTS 2 region
Census: Regional level census 2001 round	
Population structure	
70	Population by sex, citizenship and NUTS 3 regions
Active population	
71	Population by sex, age group, current activity status and NUTS 3 regions
72	Total and active population by sex, age, employment status, residence one year prior to the census and NUTS 3 regions
73	Employed persons aged 15 and over by sex, citizenship, economic activity (NACE Rev. 1), status in employment and NUTS 3 regions
Educational attainment level	
74	Employed persons by sex, age group, educational attainment level, occupation (ISCO-88) and NUTS 3 regions
75	Population by sex, age group, educational attainment level, current activity status and NUTS 3 regions

Households	
76	Population by sex, age group, household status and NUTS 3 regions
77	Population by sex, age group, size of household and NUTS 3 regions
78	Private households by composition, size and NUTS 3 regions
79	Private households by composition, age group of children and NUTS 3 regions
Dwellings	
80	Dwellings by type of housing, building and NUTS 3 regions
81	Persons by type of building and NUTS 3 regions

Regional economic accounts - ESA 2010	
Gross domestic product indicators – ESA 2010	
82	Gross domestic product (GDP) at current market prices by NUTS 2 regions
83	Average annual population to calculate regional GDP data (thousand persons) by NUTS 3 regions
84	Gross domestic product (GDP) at current market prices by NUTS 3 regions
85	Real growth rate of regional gross value added (GVA) at basic prices by NUTS 2 regions - Percentage change on previous year
Branch accounts – ESA 2010	
86	Gross value added at basic prices by NUTS 3 regions
87	Gross fixed capital formation by NUTS 2 regions
88	Compensation of employees by NUTS 2 regions
89	Employment (thousand persons) by NUTS 3 regions
90	Employment (thousand hours worked) by NUTS 2 regions
Household accounts – ESA 2010	
91	Allocation of primary income account of households by NUTS 2 regions
92	Income of households by NUTS 2 regions
93	Secondary distribution of income account of households by NUTS 2 regions
Regional economic accounts - ESA 95	
Gross domestic product indicators - ESA 95	
94	Gross domestic product (GDP) at current market prices by NUTS 2 regions
95	Gross domestic product (GDP) at current market prices by NUTS 3 regions
96	Real growth rate of regional gross value added (GVA) at basic prices by NUTS 2 regions - percentage change on previous year
97	Average annual population to calculate regional GDP data (thousand persons), by NUTS 3 regions
Household accounts - ESA 95	
98	Allocation of primary income account of households by NUTS 2 regions
99	Secondary distribution of income account of households by NUTS 2 regions
100	Income of households by NUTS 2 regions

Regional education statistics	
101	Number of students by level of education, orientation, sex and NUTS 2 regions
102	Number of students by age, sex and NUTS 2 regions
103	Education indicators by NUTS 2 regions
104	Participation rate in education and training (last 4 weeks) by NUTS 2 regions
105	Population aged 25-64 by educational attainment level, sex and NUTS 2 regions (%)
106	Population aged 30-34 by educational attainment level, sex and NUTS 2 regions (%)
107	Early leavers from education and training by sex and NUTS 2 regions
108	Young people neither in employment nor in education and training by sex and NUTS 2 regions (NEET rates)

Regional science and technology statistics	
R&D expenditure and personnel	
109	Total intramural R&D expenditure (GERD) by sectors of performance and NUTS 2 regions
110	Total R&D personnel and researchers by sectors of performance, sex and NUTS 2 regions
Employment in high technology sectors	
111	Employment in technology and knowledge-intensive sectors by NUTS 2 regions and sex (1994-2008, NACE Rev. 1.1)
112	Employment in technology and knowledge-intensive sectors by NUTS 2 regions and sex (from 2008 onwards, NACE Rev. 2)
113	Employment in technology and knowledge-intensive sectors by NUTS 1 regions and type of occupation (1994-2008, NACE Rev. 1.1)
114	Employment in technology and knowledge-intensive sectors by NUTS 1 regions and type of occupation (from 2008 onwards, NACE Rev. 2)
115	Employment in technology and knowledge-intensive sectors by NUTS 1 regions and level of education (1994-2008, NACE Rev. 1.1)
116	Employment in technology and knowledge-intensive sectors by NUTS 1 regions and level of education (from 2008 onwards, NACE Rev. 2)
Human Resources in Science and Technology (HRST)	
117	HRST by category and NUTS 2 regions
118	HRST by category, sex and NUTS 1 regions
119	HRST by category, age and NUTS 1 regions
120	Employed HRST by category, NACE Rev. 1.1 activity and NUTS 1 regions (1994 - 2007)
121	Employed HRST by category, NACE Rev. 2 activity and NUTS 1 regions (from 2008 onwards)
Intellectual property rights	
Patent	
122	Patent applications to the EPO by priority year by NUTS 3 regions
123	Patent applications to the EPO by priority year by NUTS 3 regions, international patent classification (IPC) sections and classes
124	High-tech patent applications to the EPO by priority year by NUTS 3 regions
125	ICT patent applications to the EPO by priority year by NUTS 3 regions

126	Biotechnology patent applications to the EPO by priority year by NUTS 3 regions
Community trade marks (CTM)	
127	European Union trade mark (EUTM) applications by NUTS 3 regions
128	European Union trade mark (EUTM) registrations by NUTS 3 regions
Community design (CD)	
129	Community design (CD) applications by NUTS 3 regions
130	Community designs (CD) by NUTS 3 regions
131	Registered Community designs (RCD) by NUTS 3 regions

Regional structural business statistics	
132	SBS data by NUTS 2 regions and NACE Rev. 2 (from 2008 onwards)
133	Multiannual statistics for distributive trades (NACE Rev. 2, G) by NUTS 2 regions
134	SBS data by NUTS 2 regions (NUTS 2006) and NACE Rev. 1.1 (1995-2007)
135	Number of local units, persons employed and wages and salaries by NUTS 2 regions
136	Multi yearly statistics by NUTS 2 regions (NUTS 2006)

Regional business demography	
137	Business demography and high growth enterprise by NACE Rev. 2 and NUTS 3 regions
138	Business demography by size class and NUTS 3 regions
139	Employer business demography by NACE Rev. 2 and NUTS 3 regions
140	Employer business demography by size class and NUTS 3 regions

Regional health statistics	
Causes of death	
141	Causes of death - Crude death rate by NUTS 2 region of residence
142	Causes of death - absolute number - annual data
143	Causes of death by NUTS 2 regions - crude death rate per 100 000 inhabitants - annual data
144	Causes of death by NUTS 2 regions - standardised death rate per 100 000 inhabitants, 3 years average
145	Causes of death by NUTS 2 regions - crude death rate per 100 000 inhabitants, 3 years average - females
146	Causes of death by NUTS 2 regions - crude death rate per 100 000 inhabitants, 3 years average - males
147	Causes of death by NUTS 2 regions - crude death rate per 100 000 inhabitants, 3 years average - total
148	Causes of death by NUTS 2 regions - absolute Number, 3 years average - females (hlth_cd_ynrf)
149	Causes of death by NUTS 2 regions - absolute Number, 3 years average - males
150	Causes of death by NUTS 2 regions - absolute Number, 3 years average - total

151	Causes of death - Deaths by NUTS 2 region of residence and occurrence (3 years average)
152	Causes of death - Standardised death rate by NUTS 2 region of residence (3 years average)
153	Causes of death - Crude death rate by NUTS 2 regions of residence (3 years average)
154	Causes of death - Years and potential years of life lost by NUTS 2 regions of residence (3 years average)
155	Causes of death - Infant mortality by NUTS 2 region of residence (3 years average)
156	Causes of death - Infant mortality by NUTS 2 region of occurrence (3 years average) (hlth_cd_yinfo)
157	Peri-neonatal mortality by age of mother and parity, by NUTS2 region of residence and occurrence (3 years average)
158	Fetal, peri- and neonatal mortality rates by NUTS 2 region of occurrence (3 years average)
Health care: resources and patients (non-expenditure data)	
159	Health personnel by NUTS 2 regions
160	Hospital beds by NUTS 2 regions
161	Hospital discharges by diagnosis and NUTS 2 regions, in-patients, total number - total
162	Hospital discharges by diagnosis and NUTS 2 regions, in-patients, total number - males
163	Hospital discharges by diagnosis, NUTS 2 regions, in-patients and total number - females
164	Hospital discharges by diagnosis and NUTS 2 regions, in-patients, per 100 000 inhabitants - total
165	Hospital discharges by diagnosis and NUTS 2 regions, in-patients, per 100 000 inhabitants - males
166	Hospital discharges by diagnosis and NUTS 2 regions, in-patients, per 100 000 inhabitants - females
167	Hospital discharges by diagnosis and NUTS 2 regions, day cases, total number - total
168	Hospital discharges by diagnosis and NUTS 2 regions, day cases, total number - males
169	Hospital discharges by diagnosis and NUTS 2 regions, day cases, total number - females
170	Hospital discharges by diagnosis and NUTS 2 regions, day cases, per 100 000 inhabitants - total
171	Hospital discharges by diagnosis and NUTS 2 regions, day cases, per 100 000 inhabitants - males
172	Hospital discharges by diagnosis and NUTS 2 regions, day cases, per 100 000 inhabitants - females
173	In-patient average length of stay (days) by NUTS 2 regions - total
174	In-patient average length of stay (days) by NUTS 2 regions - males
175	In-patient average length of stay (days) by NUTS 2 regions - females
176	Hospital days of in-patients by NUTS 2 regions - total
177	Hospital days of in-patients by NUTS 2 regions - males
178	Hospital days of in-patients by NUTS 2 regions - females
179	Long-term care beds in nursing and residential care facilities by NUTS 2 regions
180	Prevalence of disability by sex, economic activity (NACE Rev. 1) and NUTS 2 regions

Regional tourism statistics	
Occupancy in collective accommodation establishments: domestic and inbound tourism	
181	Arrivals at tourist accommodation establishments by NUTS 2 regions
182	Nights spent at tourist accommodation establishments by NUTS 2 regions
183	Nights spent at tourist accommodation establishments by degree of urbanisation and by NUTS 2 regions (from 2012 onwards)
184	Nights spent at tourist accommodation establishments by coastal and non-coastal area and by NUTS 2 regions (from 2012 onwards)
185	Net occupancy rate of bed-places and bedrooms in hotels and similar accommodation (NACE Rev. 2, I, 55.1) by NUTS 2 regions (from 2012 onwards)
Capacity of collective tourist accommodation: establishments, bedrooms and bed-places	
186	Number of establishments, bedrooms and bed-places by NUTS 2 regions
187	Number of establishments, bedrooms and bed-places by NUTS 3 regions (1990-2011)
188	Number of establishments, bedrooms and bed-places by degree of urbanisation and by NUTS 2 regions (from 2012 onwards)
189	Number of establishments, bedrooms and bed-places by coastal and non-coastal area and by NUTS 2 regions (from 2012 onwards)

Regional transport statistics	
Road freight	
190	Annual road freight transport by region of loading (1 000 t, Mio Tkm, 1 000 Jrnys)
191	Annual road freight transport by region of unloading (1 000 t, Mio Tkm, 1 000 Jrnys)
192	National annual road freight transport by regions of loading (NUTS 3) and by group of goods (1 000 t), from 2008 onwards
193	National annual road freight transport by regions of unloading (NUTS 3) and by group of goods (1 000 t), from 2008 onwards
194	National annual road freight transport by regions of loading (NUTS 3) and by group of goods (1 000 t), until 2007
195	National annual road freight transport by regions of unloading (NUTS 3) and by group of goods (1 000 t), until 2007
Other regional transport	
196	Road, rail and navigable inland waterways networks by NUTS 2 regions
197	Stock of vehicles by category and NUTS 2 regions
198	Victims in road accidents by NUTS 2 regions
199	Maritime transport of passengers by NUTS 2 regions
200	Maritime transport of freight by NUTS 2 regions
201	Air transport of passengers by NUTS 2 regions
202	Air transport of freight by NUTS 2 regions
203	Railway transport - national and international railway goods transport by loading/unloading NUTS 2 region
204	Railway transport - national and international railway passengers transport by loading/unloading NUTS 2 region
205	Maritime transport of passengers by NUTS 2 regions (questionnaire)
206	Maritime transport of freight by NUTS 2 regions (questionnaire)
207	Air transport of passengers by NUTS 2 regions (questionnaire)
208	Air transport of freight by NUTS 2 regions (questionnaire)

Regional labour market statistics	
Regional population and economically active population - LFS annual series	
209	Population aged 15 and over by sex, age and NUTS 2 regions (1 000)
210	Economically active population by sex, age and NUTS 2 regions (1 000)
211	Economic activity rates by sex, age and NUTS 2 regions (%)
212	Economically active population by sex, age, educational attainment level and NUTS 2 regions (1 000)
213	Regional employment - LFS annual series
214	Employment by sex, age and NUTS 2 regions (1 000) (lfst_r_lfe2emp)
215	Employment by age, economic activity and NUTS 2 regions (NACE Rev. 2) - 1 000
216	Employment by age, economic activity and NUTS 2 regions (1999-2008, NACE Rev. 1.1) - 1 000
217	Employment by age, professional status and NUTS 2 regions (1 000)
218	Employment by full-time/part-time, sex and NUTS 2 regions (1 000)
219	Employment by sex, age, educational attainment level and NUTS 2 regions (1 000)
220	Employment and commuting by NUTS 2 regions (1 000)
221	Employment rates by sex, age and NUTS 2 regions (%)
222	Average number of usual weekly hours of work in main job by sex, age and NUTS 2 regions (hours)
Regional unemployment - LFS annual series	
223	Unemployment by sex, age and NUTS 2 regions (1 000)
224	Unemployment rates by sex, age and NUTS 2 regions (%)
225	Long-term unemployment (12 months and more) by NUTS 2 regions
Regional labour market disparities - LFS series and LFS adjusted series	
226	Dispersion of regional employment rates of age group 15-64 by NUTS 3 regions (%)
227	Dispersion of regional unemployment rates by NUTS 3 regions (%)
Regional job vacancy statistics (jvs)	
228	Job vacancy statistics by occupation and NUTS 2 regions - annual data, NACE Rev. 2 (from 2008 onwards)
229	Job vacancy statistics by occupation and NUTS 2 regions - annual data, NACE Rev. 1.1 (2000-2008)
Regional structure of earnings survey 2006	
230	Mean annual earnings by NUTS 1 regions (enterprises with 10 employees or more) - NACE Rev. 1.1, C-O excluding L
231	Mean hourly earnings by NUTS 1 regions (enterprises with 10 employees or more) - NACE Rev. 1.1, C-O excluding L
Regional structure of earnings survey 2010	
232	Mean hourly earnings by NUTS 1 regions (enterprises with 10 employees or more) - NACE Rev. 2, B-S excluding O
233	Mean annual earnings by NUTS 1 regions (enterprises with 10 employees or more) - NACE Rev. 2, B-S excluding O

Regional labour costs statistics

Labour costs survey 2008 and 2012 - regional data, NACE Rev. 2 activity

234	Labour cost, wages and salaries, and direct remuneration by NUTS 1 regions - NACE Rev. 2
235	Structure of labour cost as % of total cost by NUTS 1 regions - NACE Rev. 2
236	Number of employees, hours actually worked and paid by NUTS 1 regions - NACE Rev. 2
237	Number of hours actually worked and paid per employee by NUTS 1 regions - NACE Rev. 2
238	Number of statistical units by NUTS 1 regions - NACE Rev. 2

Labour costs survey 2004 - regional data

239	Labour cost, wages and salaries, and direct remuneration by NUTS 1 regions
240	Structure of labour cost as % of total cost by NUTS 1 regions
241	Number of employees, hours actually worked and paid by NUTS 1 regions
242	Number of hours actually worked and paid per employee by NUTS 1 regions
243	Number of statistical units by NUTS 1 regions

Labour costs survey 2000 - regional data

244	Labour cost, wages and salaries and direct remuneration by NUTS 1 regions
245	Structure of labour cost as % of total cost by NUTS 1 regions
246	Number of employees, hours worked and paid by NUTS 1 regions
247	Number of hours worked and paid per employee by NUTS 1 regions
248	Number of statistical units by NUTS 1 regions

Regional information society statistics

249	Households with access to the internet at home
250	Households with broadband access
251	Individuals who have never used a computer
252	Individuals who used the internet, frequency of use and activities
253	Individuals who used the internet for interaction with public authorities
254	Individuals who ordered goods or services over the internet for private use
255	Individuals who accessed the internet away from home or work

Regional environmental and energy statistics	
Regional waste statistics	
256	Municipal waste by NUTS 2 regions - pilot project data
257	Coverage rate of municipal waste collection by NUTS 2 regions - pilot project data
258	Regional water statistics
259	Freshwater resources by RBD
260	Water abstraction by RBD
261	Water use by RBD
262	Population connected to public water supply by RBD
263	Population connected to wastewater collection and treatment systems by RBD
264	Treatment capacity of wastewater treatment plants by RBD
265	Treatment plants by type of treatment and RBD
266	Wastewater generation and discharge by RBD
Other regional environmental statistics	
267	Energy: primary production and final consumption by NUTS 2 regions - 1 000 tonnes of oil equivalent
268	Specific transport parameters (NUTS2)
Energy statistics - heating degree days (nrg_esdgr)	
269	Heating degree-days by NUTS 2 regions - monthly data (nrg_esdgr_m)
270	Heating degree-days by NUTS 2 regions - annual data (nrg_esdgr_a)

Regional poverty and social exclusion statistics	
271	People at risk of poverty or social exclusion by NUTS 2 regions
272	People living in households with very low work intensity by NUTS 2 regions (population aged 0 to 59 years)
273	Severe material deprivation rate by NUTS 2 regions
274	At-risk-of-poverty rate by NUTS 2 regions

Regional crime statistics	
275	Crimes recorded by the police by NUTS 3 regions

The document *Southern Catalonia, Knowledge Region* argues that Catalonia needs to develop its own internal regional policy, which would provide a framework for a decision-making system of regional planning and development. This system would also cover the southern region. The document describes the features that this system should have, taking as its source the European cohesion policy, which focuses on regional development based on smart specialization (RIS3) and allows to identify regions with economic and social knowledge-based activity.

European regional policy, therefore, identifies **Southern Catalonia as a Knowledge Region, and provides an operational definition of the region**. There is, first, a bottom-up need that arises from the concerns and demands repeatedly expressed by the various levels of society whenever a decision with strategic regional scope has had to be taken (on infrastructure, health, tourism, industrial development, etc.). And, as the document shows, there is also a top-down need: European policies need to be implemented more effectively to allow for cohesive growth. The document discusses the desirability of defining the attributes of the NUTS2 region, and analyses the advantages of doing so (and the disadvantages of not doing so), the main strengths and weaknesses of the region and the difficulties that need to be overcome.

With this document, Universitat Rovira i Virgili's Chair for the University and Knowledge Region rises to the challenge of **facilitating and contributing to the organization of a system of governance for Southern Catalonia as a region of knowledge**. The document also describes the action plan that is being put into practice by the URV Chair for the University and Knowledge Region to help define the Southern Catalonia region.

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