Orkestra
INSTITUTO VASCO
DE COMPETITIVIDAD
FUNDACIÓN DEUSTO

Cuadernos Orkestra
2016/17
ISSN 2340-7638

Implementing RIS3

The Case of the Basque Country

María José Aranguren
Kevin Morgan
James Wilson

A report prepared for the Presidency Department of the Basque Government

June 2016

IMPLEMENTING RIS3:

THE CASE OF THE BASQUE COUNTRY

Professor Mari José Aranguren (Orkestra-Deusto University)
Professor Kevin Morgan (Cardiff University)
Dr. James Wilson (Orkestra-Deusto University)

Keywords: RIS3, entrepreneurial discovery process, innovation policy, regional governance, Basque Country

List of Contents

GLOSSARY

ACICAE	Basque Automotive Cluster Association
ACLIMA	Basque Environment Cluster Association
BBPP	Basque Board of Public Policies
BERCS	Basque Excellence Research Centres
BIOEF	Basque Foundation for Health, Innovation and Research
BSTIC	Basque Science, Technology and Innovation Council
BSTIAG	Basque Science, Technology and Innovation Advisory Group
BSTIN	Basque Science, Technology and Innovation Network
CRCS	Cooperative Research Centres
DCED	Department of Competitiveness and Economic Development
DELC	Department of Education, Language and Culture
DESP HD	Department of Employment and Social Policy: Housing Directorate
DETP	Department of Environment and Territorial Policy
DH	Department of Health
DP	Department of the President
DPAJ	Department of Public Administration and Justice
EIKEN	Basque Audio-visual Cluster Association
ERAIKUNE	Basque Building Cluster Association
EVE	Basque Energy Agency
DTF	Department of Treasury and Finance
ECA	Energy Cluster Association
EUDEL	Association of Basque Municipalities
FCA	Food Cluster Association
GAIA	Basque ICT Cluster Association
HABIC	Basque Cluster Association for Housing, Office and Contract Furnishing
IHOBE	Basque Environment Agency
Ikerbasque	Basque Science Foundation
Innobasque	Basque Innovation Agency
Jakiunde	Basque Academic of Science, Arts and Literature
Langune	Basque Language Industry Cluster Association
Orkestra	Basque Institute of Competitiveness
RIS3	Research and Innovation Policy for Smart Specialisation
SMEs	Small and Medium-sized Enterprises
SPRI	Basque Industrial Development Agency
STI	Science, Technology and Innovation

1 INTRODUCTION

1.1 What is RIS3?

The European Commission has pushed for all regions to develop and implement a 'research and innovation strategy for smart specialisation' (RIS3).[1] There are two key elements to RIS3:

1. They should prioritise investments in research, development and innovation within the region. These priorities should support strategic structural change in the economy that builds from existing strengths and responds to emerging opportunities.
2. They should identify which areas to prioritise through an entrepreneurial discovery process that engages key regional stakeholders from business, government, research/university and civil society.[2]

Critically this implies that RIS3 are not 'government strategies', but rather should be seen as 'territorial strategies' in which government participates in the identification of and pursuit of targeted investments in science, technology and innovation priorities together with actors from business, research and civil society.

1.2 Today's challenge: From RIS3 design to implementation

For the 2014-2020 period of European Regional Development Funding the European Commission introduced an ex-ante condition that requires all EU member states and regions to have a Research and Innovation Strategy for Smart Specialisation (RIS3) in place before their operational programmes could be approved (European Commission, 2014). Following the publication of the Guide to Research and Innovation Strategies for Smart Specialisation (Foray et al., 2012), and supported by the S3 platform (http://s3platform.jrc.ec.europa.eu/), regional and national governments spent much of 2013 and 2014 engaged in the process of designing their RIS3 for validation by the European Commission. The focus in 2015 and onwards into 2016 has moved from design to implementation, although such a linear logic is not easy to apply to RIS3. This is because RIS3 are by nature flexible and evolving strategies whose implementation should interact with processes of evaluation and re-design in an organic strategic process.

[1] The concept has its roots in the work of the knowledge for growth expert group established in 2005 by the European Commission. Analysis of the EU-US productivity gap showed: (1) that R&D in Europe was fragmented along national lines; and (2) that there was a tendency for both countries and regions to try to emulate success elsewhere rather than explore original ideas (Foray and Van Ark, 2008). This led to arguments that '"he European Research Area will only benefit countries and regions with clear visions and strategies for developing distinctive, original and modern areas of specialisation for the future" (Foray and Van Ark, p. 28). These arguments were rapidly adopted by European regional policy-makers (European Commission, 2010, 2011, 2012), and continue to be explored, developed and critiqued (Aranguren et al., 2015a, 2016; Foray, 2014, 2015; Kroll, 2015; McCann, 2015; McCann and Ortega-Argilés, 2016; Morgan, 2013b, 2016b; Thissen et al., 2013; Valdaliso and Wilson, 2015).

[2] In this sense smart specialisation strategies are part of a wider trend towards a 'new industrial policy' or 'new regional policy'. The emergence of the new industrial policy is heavily influenced by Dani Rodrik's (2004) paper on Industrial Policy for the 21st Century, in which he highlighted a rare historic opportunity to build an economic policy agenda between the typical choices of government-centred or market-centred dogma. New industrial policies recognise that it is important for territories to have strategies, which means making choices around which economic activities to support. Where they break from old industrial policies is in emphasising that making those choices is not the job of government alone, but must build new forms of private-public interaction.

What is clear is that smart specialisation should be measured in time on whether or not it has prompted and helped regions to take a more strategic and engaged approach to their economic development. There are certainly many regional governments that are using smart specialisation as a focal point to question how they are doing things, and to try to make improvements to governance so that the innovation investments of firms, universities and government can be better aligned. The Basque Country has long been acknowledged as a leading-thinking region on innovation policy, and makes an ideal case to study to promote learning around the complex RIS3 process.

1.3 This Report

The aim of this report is to get into the heart of the processes that are underway in the Basque Country as it seeks to move from the design to the implementation of its RIS3. It is based on interviews with 35 people from government, business, research and other agencies who are intimately involved with different aspects of the Basque RIS3 process (see annexes1 and 2). These interviews have been combined with a review of the many working documents being produced by the RIS3 process to generate the reflections that are contained in this report.

It is explicitly not an evaluation report, however, and doesn't pretend to enter into a detailed analysis of every aspect of the Basque RIS3. Rather, it aims to succinctly document, explain and analyse the most significant developments in the process of implementing the Basque RIS3 since it was approved at the end of 2014 in the shape of the Science Technology and Innovation Plan 2020 (STIP 2020). In particular, therefore, the report focuses on two key features of the implementation process to date: the deepening of regional governance mechanisms for RIS3 and the stimulation of entrepreneurial discovery processes. By doing this the report hopes to provide a focal point for learning both in the Basque Country and elsewhere, and to identify areas where particular challenges are present as the RIS3 process moves forwards.

2 DESIGNING THE BASQUE RIS3

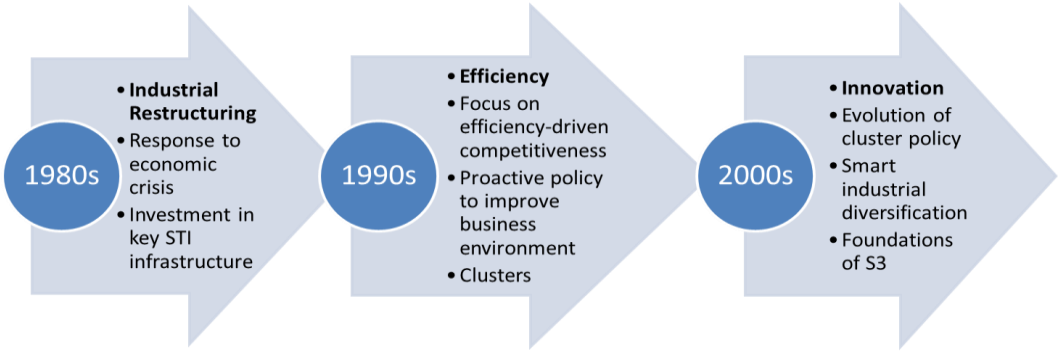
2.1 Antecedents

The Basque RIS3 is embodied in the current STIP 2020. This emerged from a process that was explicitly triggered at the end of 2012, but that has antecedences well beyond that.

At the end of 2012 the government was conscious of the need to update the STIP 2015, particularly in the light of findings of the recently-conducted expert assessment by Kevin Morgan (Morgan, 2013a). It was also aware of the strong interest in the European Commission around the notion of smart specialisation strategies, and the role that the Basque Country could play at the forefront of RIS3 development. In this context the design of a RIS3 in the form of a new STIP 2020 came to be seen as an opportunity: (i) to work on existing weaknesses; (ii) to improve the efficiency of the Basque Science, Technology and Innovation Network (BSTIN), and; (iii) to ´lead the way' in Europe with regards smart specialisation.

While it was the recognition of these needs and opportunities that led directly to the design of a new plan, the STIP 2020 itself is very clearly a continuation of previous plans. Indeed, it has built very strongly on the previous STIP 2015, which Morgan (2013a) noted was "designed in a highly iterative and inclusive manner, even though … not originally conceived as part of a RIS3 process". It has also built on other plans and initiatives – for example existing strategies for advanced manufacturing, biosciences and energy, or the priority cluster policy – that have emerged in the evolution of Basque competitiveness policy. In this regard, it is important to place the current RIS3 within the bigger picture of the evolution of Basque competitiveness strategy over the last four decades. Valdaliso (2015) provides a detailed analysis of this, and three distinct phases can be highlighted.

Figure 1: Evolution of Basque Competitiveness Strategy



Source: Own Elaboration

The 1980s was defined by the creation of a new regional government and administration, and the need to carry out a substantial industrial restructuring of the Basque economy in response to deep economic crisis. This evolved in the 1990s into a strategy explicitly built around clusters that was geared towards improving the efficiency of Basque firms, fostering non R&D-based diversification, and promoting internationalisation. In turn, this evolved in the 2000s into a sustained focus on innovation and science-driven industrial diversification, which can be seen as laying the immediate foundations for the Basque RIS3.

2.2 Elaboration of the STIP 2020

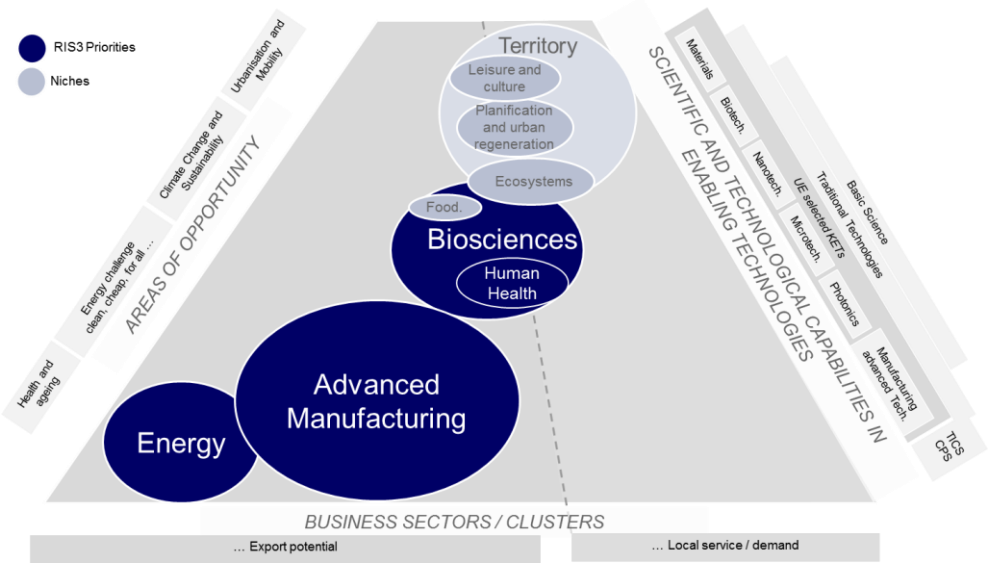
The elaboration of the STIP 2020 can be divided into two phases. The first phase was under the leadership of the Department of Competitiveness and Economic Development (DCED) and corresponds broadly with the year 2013. The second phase was under the leadership of the Department of the President (DP) and corresponds broadly with the year 2014.

2.2.1 Department of Competitiveness and Economic Development Leadership

The DCED started working explicitly on a RIS3 for the Basque Country early in 2013, in tandem with a process of reorganising the Basque Science, Technology and Innovation Network (BSTIN). In line with the underlying RIS3 philosophy of quadruple helix involvement in the identification of strategic priorities, the Basque Government decided to delegate the initial responsibility for RIS3 coordination to the DCED because it was closest to companies and to the related re-ordering of the BSTIN.

Discussions around the RIS3 within the DCED were supported by Orkestra, which had recently published its biannual *Basque Country Competitiveness Report* (Orkestra, 2013) that analysed and initiated a discussion around thematic priorities for the Basque economy. In this initial phase of discussion and analysis particular emphasis was placed on the need for a 'living strategy' rather than another 'static strategy document'. SPRI, the Basque industrial development agency, was also heavily involved in undertaking a detailed diagnostic to support the justification of priorities. While three priority areas – advanced manufacturing, energy and biosciences-health – were very clear from the outset, it was seen as particularly important at this stage to rigorously justify these priorities with data within a solid framework. The framework developed by SPRI sought to position economic activities in a triangle that reflected the existence of industrial capabilities, scientific capabilities and market opportunities / societal challenges.

Figure 2: SPRI's Triangle Framework



Source: SPRI / Basque Government

2.2.2 Transition of Leadership to the Department of the President

The framework and diagnostic analysis of SPRI formed the basis for consultations between the industry department and other departments (in particular education and health). Indeed, it was during this consultation process that the importance of the involvement and collaboration of multiple government departments became recognised, and the Basque Science, Technology and Innovation Council (BSTIC) decided to create an Operational Working Group coordinated by the Department of the President (DP). Transfer of the leadership of the process to the DP was an important step, and has proved to be a critical moment for beginning to work more transversally across departments and moving towards a philosophy of more distributed leadership, both within government and more widely. As one of the Ministers noted, *"If you want to go fast go alone, but if you want to go far go together. There is a need to be in control at the beginning and after this, you step back and give leadership to others to take a step forwards"*.

The core group established by the DP to work on the STIP 2020 brought together her representatives from the key government departments[3] and from relevant organisations such as SPRI, Ikerbasque, Orkestra and Innobasque. Headed by Txus Peña from the DP and under the technical secretariat of Innobasque, this group worked to a strict timetable to prepare the plan for publication at the end of 2014. In this sense the desire to develop a living strategy sat alongside the inertia of normal government procedures for working towards a more traditional written plan. However, the groundwork previously undertaken by the DCED ensured that this ultimate desire was not lost, as the

[3] Alongside the DCED these included the Department of Education, Language and Culture (DELC), the Department of Health (DH) and the Department of Treasury and Finance (DTF).

notion of a living strategy had already been socialised among participants in the core group. Indeed, participants from Innobasque – who provided the technical secretariat for the elaboration of the plan – argued that "everybody was interpreting that our role was not to make a paper to send to the Commission, but to change something more fundamental".

The result was a traditional plan, but one that was seen as a starting point. It was conceived as a living document rather than an end result to be presented in Parliament and then sit on shelves in government. Indeed, the plan that was published at the end of 2014 has been updated at the end of 2015 with an annex that reflects the paths emerging from the initial implementation steps.

2.2.3 Participation of the Quadruple Helix in the Design of the RIS3

The sensitivity of the process of prioritising among regional stakeholders was clearly evident during both phases of the development of the STIP 2020. Moreover, this sensitivity was accentuated by the parallel reorganisation of the BSTIN, provoked in part by the external analyses of the likes of Morgan (2013a) and Orkestra (2013) that highlighted issues such as excessive density of agents, problems with bridging the so-called 'death valley' between investing in R&D and generating innovative firms, and the relative absence of more experimental development. The reorganisation of the BSTIN involved developing a new map of agents, reducing the number of categories of agents, and aligning funding with the objectives of each category of agents, processes that implied change and funding uncertainty, and which were meeting with resistance from some agents. Indeed, it was recognised by several of those involved that it was a difficult and stressful process.

With regards participation of the quadruple helix of government, business, education/research and civil society in the design of the STIP 2020 itself, the process was not widely opened. However, while the elaboration of the plan was very much controlled by government, there were mechanisms to integrate input from at least the triple helix of agents (evidence of civil society involvement is harder to find).

In the first instance it is important to note that the plan built strongly on the previous STIP 2015, which was widely acknowledged as being strongly participative in its design, and on other analyses that had been widely socialized such as the 2013 Basque Country Competitiveness Report (Orkestra, 2013). Indeed, part of the reluctance to explicitly open the STIP 2020 to wider participation was due to a feeling that agents were tired from so much participation and that not a lot new would emerge. Rather than launching a widespread and open participation process, therefore, feedback on the development of the plan was actively sought through three key mechanisms:

1. Bilateral discussions between the key departments involved and their stakeholders. For example, the CDED contrasted developments quite widely

with firms and technology centres, and the education department with the universities.
2. Individual consultation with each member of the BSTIC, which includes formal institutional representatives from the three universities, a selection of firms, and different levels of government (see Section 3.3).
3. Consultation with the newly-formed Basque Science, Technology and Innovation Advisory Group (BSTIAG), which includes a selection of individuals who bring expertise from different parts of the quadruple helix (see Section 3.4).

During the process of consultation through these channels there were important changes made to the STIP 2020. These included: the placing of greater emphasis on basic research (as opposed to the initially proposed strong bias towards experimental development); the integration of a challenge related to the attraction and retention of talent; and perhaps most significantly, the identification and specification of four opportunity niches (food, urban habitat, creative and cultural industries, and ecosystems) to be pursued alongside the three priority areas.

The process of consultation also served to integrate the interests of the university into the development of the formal RIS3. The public university, following the example of universities in other Spanish regions, was eager to play more of a leading role in the RIS3 process. Consequently, it had elaborated through its Euskampus initiative a RIS3 in parallel to that being developed by the government, and these informal consultations provided a channel through which those ideas could be integrated.

2.3 Key elements of the RIS3 Document

The STIP 2020 that was published at the end of 2014 set out the RIS3 of the Basque Country, or at least the starting point for the RIS3 of the Basque Country. The centerpiece of the plan is the identification of three strategic priority areas:

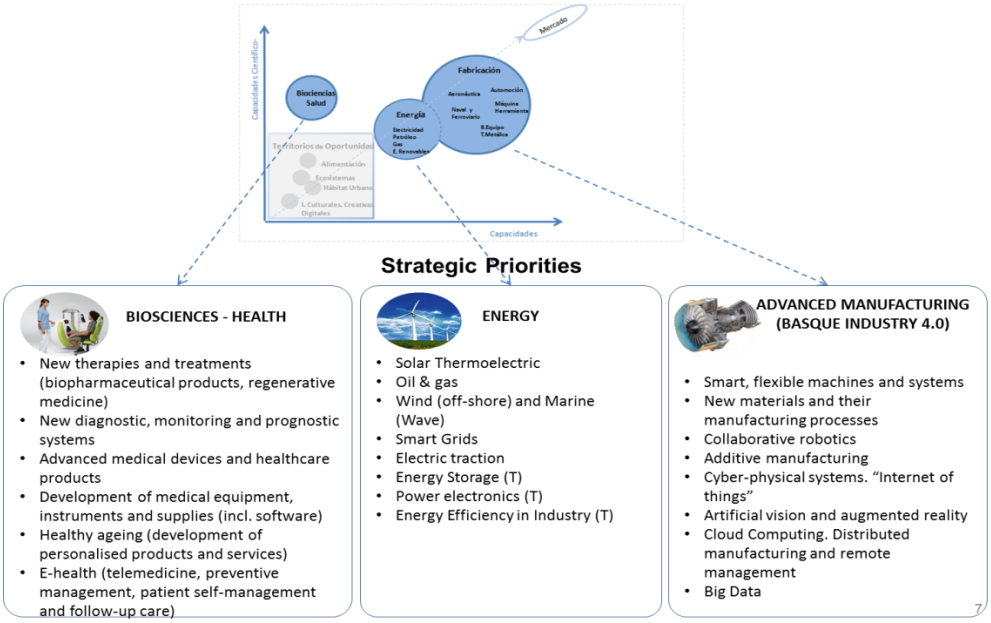
- Biosciences-Health
- Energy
- Advanced Manufacturing (Basque Industry 4.0)

Alongside these three strategic priorities the RIS3 also identifies four opportunity niches that are strongly linked to the territory (urban and rural development):

- Food
- Creative and Cultural Industries
- Urban Habitat
- Environmental Ecosystems

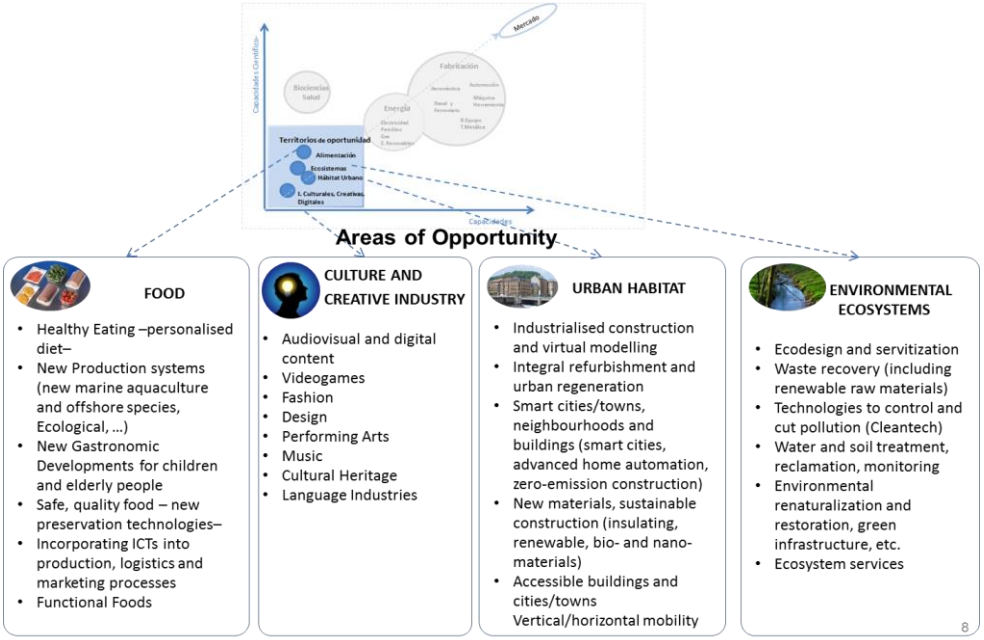
Some more detail on the activities that were initially contemplated within these priority areas and opportunities niches is set out in Figures 3 and 4.

Figure 3: Three Strategic Priorities



Source: Basque Government

Figure 4: Four Opportunity Niches



Source: Basque Government

In addition to a commitment to focus on these vertical priority areas and opportunity niches, the STIP 2020 also sets out five axes for transversal (or horizontal) actions:

- Guarantee the development of human capital in science, technology and innovation
- Ensure excellence in the science, technology and innovation system

- Promote social, business and public innovation as the key to the process of transforming the Basque Country
- Use public-private collaboration to promote a business ecosystem with high value-added
- Open the science, technology and innovation system to promote the uptake and generation of new knowledge not existing within the Basque region

Finally, the plan also sets out five operative objectives that seek to take advantage of the main opportunities and respond to the main weaknesses that were detected in the science, technology and innovation system:

- Concentrate research, development and innovation resources and investments in the priority areas
- Strengthen basic research and experimental development
- Orientate the BSTIN towards results
- Strengthen the capacity to capture international research, development and innovation funds
- Increase the number of firms that innovate

It is widely acknowledged that the strategic priorities, opportunity niches and transversal measures identified in the RIS3 'make sense' for the region and are consistent with the trajectory of previous strategies. Indeed, the Basque RIS3 is very much a continuation, not a radical break from the past, although the priorities are balanced in the sense of combining short term needs (the evolution of existing industrial strengths) with long-term needs (the identification of areas likely to be important in the future).

The priorities themselves remain very broad, nevertheless, and it is important that the RIS3 as set out in the STIP 2020 should be seen as a starting point and not as an end point. A refining and focusing of the priority areas and opportunity niches is envisaged in the entrepreneurial discovery spaces through which the RIS3 will be implemented (see Sections 3 and 4).

2.4 What Next? Towards a living RIS3

Once the initial document had been published, what were the next steps? Following a traditional linear planning logic, the twelve months following the approval of the STIP 2020 at the end of 2014 might be labelled an 'early implementation phase' of the RIS3 strategy. Yet such linear logic is not accurate when considering what is supposed to be a living and evolving strategy. Implementation cannot easily be separated from design because as aspects of the STIP 2020 are 'implemented' they inevitably provoke 're-design' and the plan itself evolves.

In practice, the phase since the approval of the initial plan has been characterized by two key features:

1. A process of ***deepening in the governance mechanisms*** of the RIS3 to guide its practical implementation. The main developments have taken place at different levels. Within the regional government an inter-departmental committee has been formalized to oversee the government's role in the development of the strategy, recognizing that this role crosses departments. Alongside this there have been attempts to strengthen inter-institutional governance across different levels of government administration. On the ground the deepening in governance mechanisms has been focused on the identification of relevant participants to constitute 'steering groups' that would explore, develop and ultimately focus each of the priorities and opportunity niches.
2. A process of ***stimulating entrepreneurial discovery*** to focus prioritization in each of the areas identified in the STIP 2020. This has been set into motion through the establishment of seven steering groups corresponding to the three key priorities and the four opportunity niches identified in the RIS3. While this is the start of an ongoing process, the developments in this initial phase have been geared towards two inter-related aims:

    a) To understand and explore what is behind each priority and opportunity niche, identifying a set of 6-8 key technology or business areas that underpin each, and identifying key projects that are already underway.
    b) To visualize and socialize the activity underway in each of the priorities and opportunity niches, identifying the key people in research in each area, and trying to 'spread the word' and generate noise and dynamism around the prioritized areas.

The next two chapters explore progress during 2015 and the first part of 2016 in the deepening of the ***governance*** of the Basque RIS3 and in the stimulation of ***entrepreneurial discovery around thematic priorities***. We focus mainly on these two aspects of the RIS3 implementation – rather than, for example, on developments with respect to the horizontal priorities identified in the STIP 2020 – because they represent the key novel features of the RIS3 concept. Thus from analysis of the Basque experience with these central features of RIS3, the report hopes to provide a stimulus for learning that could be useful also in other regions.

3 DEEPENING GOVERNANCE AND SHARED VISION TO TAKE RIS3 FORWARD

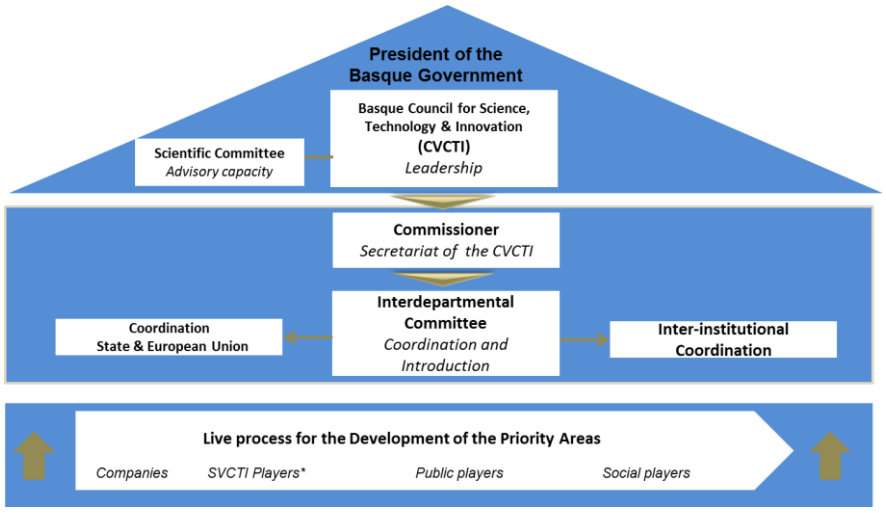
3.1 Introduction

The STIP 2020 set out a governance framework for the Basque RIS3 (see Figure 5). At the top of the governance 'house', the overall leadership of the RIS3 rests with the BSTIC, and ultimately with the President of the Basque Country. Advice to the BSTIC and the President is provided by the newly-formed BSTIAG (Scientific Committee in Figure 5).

The coordination and implementation of the RIS3 rests with relevant government departments through the interdepartmental committee, which is another newly-established structure. This committee is also a focal point for inter-institutional coordination within the Basque Country and for coordination beyond the Basque Country, with the State and with the European Commission. The work of the interdepartmental committee, and the link to the top tier of the governance house, is supported by the figure of a Commissioner working with a Technical Secretariat.

The foundations for the house are provided by live processes for the development of priority areas, which involve quadruple helix agents from business, research, government and civil society. These entrepreneurial discovery processes are analysed separately in Chapter 4. The aim of this chapter is to explore how the more formal structures in the top two tiers of the house have been working during the early implementation period of the STIP 2020.

Figure 5: The Basque RIS3 Governance House



Source: STIP 2020, Basque Government

3.2 Basque Science, Technology and Innovation Council and Advisory Group

The BSTIC was initially constituted in 2007 as the maximum organ for the strategic orientation of STI policy in the Basque Country. It was set up in response to the need to establish a systemic leadership that integrated initiatives from different levels of government, and in 2014 its composition was amended to include a wider range of agents from the quadruple helix, explicitly to support the RIS3. Thus from 2014 the BSTIC is constituted by:

- The President of the Government, Council of Ministers and Commissioner
- The Heads of the three Provincial Councils
- The Presidents of the two Technology Centres
- The Rectors of the three Universities
- Representatives from four leading firms
- Representatives from the Basque Science Foundation (Ikerbasque), the Basque Innovation Agency (Innobasque) and the Basque Academy of Science, Arts and Literature (Jakiunde)

Their role is to establish overall direction and priorities, for example through the formal approval of the STIP 2020. In practice the Council is a highly formal organ that meets twice a year to discuss and approve key elements of the strategic direction of the STI system. Meetings are structured in two parts. Firstly the Commissioner and Ministers explain what has been done since the previous meeting. Discussion is then opened up around suggestions and future actions.

A further significant novelty of the reforms of 2014 was the establishment of the Basque Science, Technology and Innovation Advisory Group (BSTIAG). Rather than advising the BSTIC, as was envisaged in the governance structure set out in the STIP 2020, this group in practice plays a direct advisory role to the President, the Ministers and the Commissioner. They meet on a monthly basis with the Council of Ministers, and also on their own (with the Commissioner) every five-six months in the form of a working group. They are also made aware of everything that is happening in the BSTIC through the Commissioner, and are consulted directly on relevant documents and decisions.

According to members of the Council of Ministers and members of the BSTIAG alike, this novel dynamic is proving to be very agile and effective in enabling an injection of external advice into day-to-day decisions. An important part of the success of the BSTIAG stems from its composition. Members were identified by the departments of industry, education and the presidency, who explicitly sought to avoid the ‘usual suspects’ and incorporate fresh perspectives by drawing on new faces that were related to the main needs and capacities of the system. Members thus come from a wide range of backgrounds and disciplines, and are from both home and abroad, taking advantage of the Basque diaspora.

They are also explicitly appointed in a personal capacity, rather than representing their institutions.

The members of the BSTIAG interviewed expressed surprise (in a positive sense) and enthusiasm at being able to share their ideas directly with the President and Council of Ministers, and the overall impression of the working of the Group from both sides is of the freshness brought by this diverse and genuinely independent forum. In the words of one of the members of the Group, "it is very interesting and you feel that you can move … they are open to listen to critical voices". The interviews also highlighted several concrete examples of changes that have been or are being brought about due to reflections within and suggestions from the BSTIAG. Three examples are highlighted below.

- One suggestion concerned the potential benefits that could be reached by bringing together capacities in the health system with business capacities, for example by having workers and researchers from within the health system giving direct advice to companies. This is now one of the strategic lines of the health strategy and is being pursued within the steering group set up to develop the biosciences-health priority area (see Chapter 4 and Annex 5).
- Another suggestion concerned the need to find projects that cross the different priorities and opportunity niches, to avoid within-priority myopia and lock-in. Again, this has been followed up explicitly, with the steering groups set up for each of the priorities being asked to explore the interface between what they are working on and what other groups are working on. This has led to the emergence of several thematic working groups and projects that cross priorities.
- A third suggestion was connected with the policy mix, and concretely with the management of programmes of R&D subsidies for firms. The current system means that subsidies are confirmed a long time after application and with a very short time-span until the project should be finished. This impedes private-sector decisions on co-investments, and is a barrier to opening up private funding streams within the RIS3. What is particularly interesting about this suggestion is the dialogue that it has opened up between the BSTIAG and the government, which responded by explaining the administrative issues that hinder fast approval of subsidies. This explanation in turn led to a proposal from the BSTIAG for an intermediate solution that would provide a report on whether or not the application was favourable quickly, to help private-sector investment decisions, even if the formal approval of public funds took longer.

3.3 Commissioner and the Technical Secretariat

The Commissioner and Technical Secretariat link the different parts of the RIS3 governance house together and seek to ensure a smooth operation of the sum of all of the parts. As the Commissioner humbly put it, "my role is not to disturb". However this underplays what is in fact a pivotal role in the overall governance of the system. It is the Commissioner that makes the important link between the two key strategic-orientation organs (the BSTIC and the BSTAG), and between

these organs and the main operational organ (the interdepartmental committee).

The Commissioner is supported in making these connections by the Technical Secretariat, which also plays a strong and involved role in coordinating the link between the live processes for the development of the priority areas (the steering groups, see Chapter 4) and the interdepartmental committee. Innobasque is charged with the Technical Secretariat role, building on synergies from their involvement in the design of the STIP 2020 and indeed of the previous STIP 2015. There are also important synergies with their involvement in the reorganization of the BSTIN, and their knowledge of the system as a whole helps them to execute the role.

Perhaps the best way to understand the role of the Commissioner and Technical Secretariat is as the nervous system of the RIS3 governance. This role of 'connecting' is interpreted in a very straightforward way by the current Commissioner, who argues that the key aspects of their job are "to simplify things, to ensure cooperation, and to focus on results".

3.4 Government departments and inter-departmental coordination

Each government department is playing a different role in the governance of the RIS3 (see Table 1), in line with the implication required from them by the nature of the three priority areas and four opportunity niches. Specific departments are leading the live processes for the development of these areas (the steering groups, see Chapter 4), and other departments (and their agencies) take part in these steering processes where appropriate. The mix of priorities and opportunity niches means that the DCED continues to be the most strongly implicated department, but other departments are far more widely involved in the implementation of the STIP than has been the case in previous plans. Moreover, a new governance mechanism has been established and consolidated in the form of an inter-departmental committee, which meets three times a year to oversee progress with the RIS3 and coordinate government actions. Led by the DP and involving seven other departments, this is particularly significant development as it represents a step past the silo approach to government that presents a barrier to joined-up government action around science, technology and innovation policy.

The interdepartmental committee was established as a continuation of the core group that worked on the development of the STIP under the leadership of the DP. Rather than departmental Ministers, it is Vice-Ministers and Directors of Department that sit on this committee, given that they are more directly involved in policy design and implementation.[4] The role of the committee is to establish

[4] These are nevertheless political appointments, and there is an argument for a parallel committee of the highest civil service posts in each Department to facilitate continuity across the electoral cycle.

the overall RIS3 process by setting milestones, and oversee that process by sharing what is happening in the live processes for the development of the priority areas. Thus while operational decisions are taken in the steering groups (see Chapter 4), the inter-departmental committee provides all government departments with a general vision of what is happening elsewhere, and is designed to help to identify and pursue synergies.

Table 1: Government Departments Involved in the Basque RIS3

Department	Roles
Presidency (DP)	Leadership of overall RIS3 process and convener of inter-departmental committee
Competitiveness and Economic Development (DCED)	Leadership of Advanced Manufacturing and Energy Priority Areas, and Food Opportunity Niche
Health (DH)	Leadership of Biosciences-Health Priority Area
Education, Language and Culture (DELC)	Leadership of Culture and Creative Industry Opportunity Niche
Environment and Territorial Policy (DETP)	Leadership of Environmental Ecosystems Opportunity Niche
Employment and Social Policy: Housing Directorate (DESP HD)	Leadership of Urban Habitat Opportunity Niche
Public Administration and Justice (DPAJ)	Leadership of transversal Big Data project
Treasury and Finance (DTF)	Participation in inter-departmental committee

There is strong agreement among those interviewed from different departments that the interdepartmental committee is playing a role in improving cross-department coordination. Indeed, it marks another step in the evolution of science, technology and innovation policy-making in the Basque Country towards being more 'joined up'. Ten years ago both the development and implementation of the STIP was led by the DCED (then the Industry Department), and while the development of the last plan (STIP 2015) was led by the DP it was still the DCED that was charged with its implementation. Leadership of both the development and implementation of the STIP 2020 by the DP is therefore significant, and the interdepartmental committee appears to be contributing to more joined-up thinking in government. Examples include: the DCED and the DELC working together on industrial doctorates; the DCED and the DH working together on the interface between food and disease; the DCED

and the Housing Directorate of the Department of Employment and Social Policy (DESP HD) working together on energy-efficient buildings; and the Department of Public Administration and Justice (DPAJ) working with the DH around big data.

The Interdepartmental Committee in Session

Some gaps inevitably remain, and one that stands out concerns bridging the artificial distinction that exists between the contributions to the RIS3 of basic research in the public university and the Basque Excellence Research Centres (BERCS) (which falls under the DECL) and applied research in the technology centres and other agents (which falls under the DCED). The private universities fall somewhere between this divide – in the words of one of the Rectors, "between the two worlds of industry and education" – and while initiatives such as Euskampus that brings together the public university and technology centres are playing a role in bridging the divide, it is evident that stronger coordination between these two departments is needed. More generally, while the inter-departmental committee has stimulated new conversations across government at the operational and political levels, it is acknowledged that they are not yet feeding into the policy mix (the policy level). Indeed, further steps need to be taken to deepen this joined-up approach in the management of joint funding programmes and policy instruments. This need is recognized by those involved, alongside an understanding that evolving to more joined-up government is a long-term process and that "things must be done slowly to get the house built".

3.5 Inter-institutional relations

Inter-institutional relations are particularly important in the Basque context given the complexity of multi-level government that characterizes the region. This is recognized, for example, in the creation of a Basque Board for Public Policies (BBPP) to coordinate policy areas across the regional government, provincial councils, cities and municipalities. With regards STI policy, while most competences rest with the regional government, the sub-regional Provincial Councils also have some important competences (in innovation policy in particular), as do certain municipalities and groups of municipalities (in particular the three cities of Bilbao, Donostia-San Sebastián and Vitoria). There

are also potentially significant STI initiatives coordinated by the Spanish State and the European Commission.

STI policy coordination is being pursued by two of the committees established in the RIS governance house (see Figure 5). At the most formal level the BSTIC, on which the heads of the three Provincial Councils sit, provides a high-level degree of inter-institutional coordination. However, the BSTIC meets just twice a year, and doesn't include representation from the municipal level. In practice, therefore, the focal point for within-region inter-institutional governance is provided by the inter-institutional committee. This committee meets after each interdepartmental committee and is constituted by representatives from:

- Four departments of the regional government (DP, DCED, DECL and DH)
- The innovation or economic development departments of the three Provincial Councils
- EUDEL (the association of Basque municipalities).

It operates as a forum to share the regional RIS3 strategy in a way that should enable the sub-regional institutions to connect and/or align their own strategies with the regional strategy. These connections and alignments are expected to happen operationally through involvement of other levels of government in the live processes for the development of the priority areas (see Chapter 4), although due to recent elections in the Provincial Councils and municipalities this has only just began to take shape. For example, the Provincial Council of Gipuzkoa is undertaking a study to identify the specific priorities within that territory, from which to engage with the most relevant steering groups. The three cities are also engaging with the steering groups in this way to some extent (for example Bilbao in the creative and cultural industries opportunity niche). However their lack of direct involvement in the inter-institutional governance mechanisms – their representation in the committee comes indirectly through EUDEL – is a limitation.

Given the important role that cities, with their concentration of citizens and economic muscle, can play as laboratories in smart specialisation processes, a closer involvement of the three Basque cities in the governance of the RIS3 stands out as an opportunity waiting to be grasped. A further opportunity has been identified in terms of working on the combined policy mix of Basque institutions at different levels, where as a starting point the inter-institutional committee has been working on an inventory of all of the different programmes.

In terms of beyond-region inter-institutional governance, the Basque Government through its different departments participates in various committees coordinated by the Spanish State, and brings any interesting initiatives/issues to the interdepartmental committee for discussion. The Basque Government's office in Brussels also plays an important role in linking the Basque RIS3 strategy with European-level initiatives, for example through

supporting Basque involvement in the Vanguard Initiative. Nevertheless the mechanisms for coordination of the RIS3 strategies of neighbouring regions (in Spain and France) are insignificant, and there has been very little coordination of the Basque RIS3 with that of its neighbours.

3.6 Conclusions: Openness to change and emerging distributed leadership

To conclude this chapter, a number of key messages emerge from this analysis of the governance of the Basque RIS3. The governance structures established in the STIP 2020 represent a subtle but significant evolution from previous structures, in particular with regards moves towards wider involvement (broadening of the membership of the BSTIC and establishment of the BSTIAG) and more joined-up thinking in government (establishment of the interdepartmental committee).

A first message, therefore, is that the new governance structures appear to be supporting ***openness to change and willingness to listen to critical voices*** within the strategy as a whole. This openness to change is being reflected in a series of changes in the leadership and coordination of Basque STI strategy and policy, where there is in effect a double movement taking place. On the one hand leadership is moving to a higher plane in the political arena, with the implication of the DP in the design and implementation of the STIP 2020. This is accompanied with a ***more distributed leadership*** at the operational level, both within government and, as we shall see in Chapter 4, in terms of involvement of a wider range of actors in live processes for the development of priority areas. In turn the more distributed leadership within government is ***being supported by greater cross-departmental coordination*** at the operational level, although at the strategic level – and in particular with regards joint funding mechanisms – gaps remain. Finally, while a more distributed leadership also ***contemplates stronger multilevel coordination***, such coordination has developed more slowly until now, in part due to the political cycle. This remains a key area to work on.

4 STIMULATING ENTREPRENEURIAL DISCOVERY

4.1 Creating spaces for entrepreneurial discovery: The steering group model

The live process for the development of the priority areas provides the foundations for the Basque RIS3 (see Figure 5). It is where entrepreneurial discovery in and across the priority areas should happen to refine priorities and shape the evolution of the overall strategy. Spaces for different agents from across the quadruple helix to meet are essential to stimulate entrepreneurial discovery, and in the Basque case these spaces have been created through a steering group model. Specifically, seven steering groups have been established since the approval of the STIP 2020, corresponding to the three priority areas and the four opportunity niches (see Figures 3 and 4).

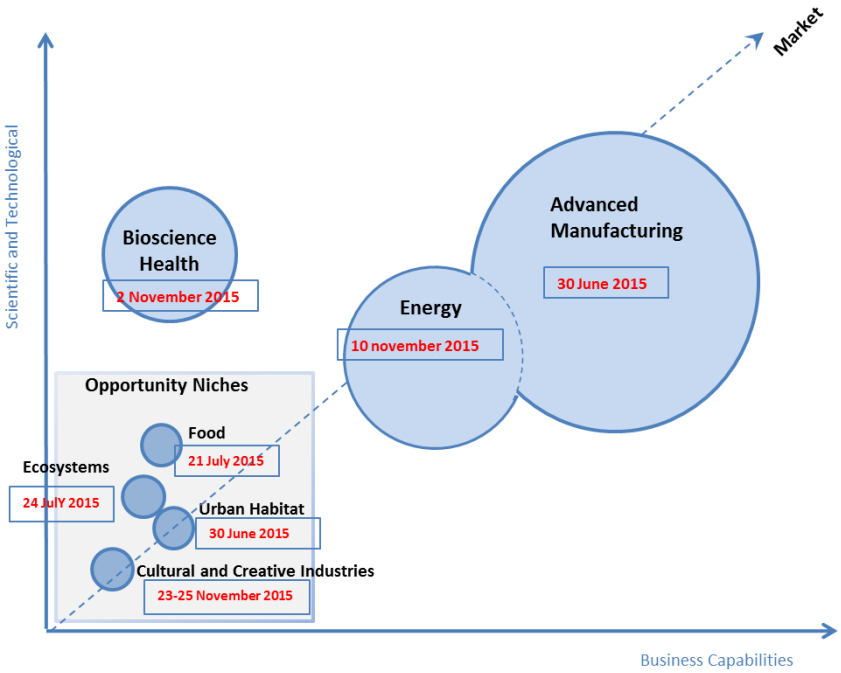
The idea of creating steering groups as spaces to bring together private and public actors emerged from the DCED and SPRI, alongside recognition that existing cluster associations should play a key role in the process so as to build where possible on dynamics already in place.[5] Moreover, the 25-year-old policy that supports cluster associations has been reformed in parallel with the design and early implementation of the RIS3, so that it is better able to serve the needs of the RIS3. While the main goal of the cluster policy remains similar to its conception (fostering collaboration among firms in order to increase their competitiveness), the reform seeks to find convergence processes among clusters in order to go beyond the sectoral cluster concept and face challenges derived from RIS3 strategies through a value chain approach that must be more flexible in facilitating cooperation across sectoral/cluster boundaries (Orkestra, 2015).

In terms of the steering committees themselves, two interdepartmental committees that took place in the first part of 2015 established some broad guidelines for their constitution.[6] These guidelines set out: (i) the type of agents to be involved; (ii) a common governance structure for the steering groups; and (iii) a set of activities around which initial meetings should be focused. As can be seen in Figure 6, the pace of development has been different in each of the steering groups, reflecting the reality already existing in each of the priorities. What all of the steering groups have in common is that their dynamics are the central mechanism for stimulating processes of entrepreneurial discovery that should feed the ongoing development of the Basque RIS3. Thus while there is flexibility in how each steering group operates and within which timeframes, this flexibility is exercised within overall 'rules of the game' that establish:

[5] See Aranguren and Wilson (2013) for early reflections on the synergies between Basque clusters and RIS3.
[6] The inter-departmental committee meetings in 2015 took place on 26th February, 22nd May, 8th September and 4th December.

1. That the groups should be constituted with representatives from the public administration, firms, clusters and scientific and technological agents.
2. That the groups should have a direction committee and technical secretariat, under which specific thematic working groups may be established, and that they should report to the inter-departmental committee, thus feeding the evolution of the overall Basque RIS3.
3. That the groups should initially work on the identification of the most significant projects in their areas, according to a set of orientative criteria,[7] and that they should also explore synergies in the intersection with other priority areas and opportunity niches.

Figure 6: Constitution of the Steering Groups



In practice the strong variation in the characteristics of each priority area or opportunity niche in terms of the development of existing clusters and activities, and the actors involved, has meant that the process has been quite different in each case. While the government has set the rules of the game and has decided which actors should initially constitute the steering groups, it is the groups themselves that have established their own governance and who else to invite to be part of the group or to participate in any specific working groups that might be established. This dynamic process is playing out in different ways in each of the steering groups, and Annexes 3-9 provide a detailed summary of the process to date in each case. In the next section we reflect on the main learnings from stimulating entrepreneurial discovery processes that stand out from the steering groups.

[7] These include things such as economic importance, scientific excellence, integration of quadruple triple agents, international orientation, social projection, and innovation potential.

4.2 What can we learn from the process to date?

In terms of overall lessons, and in line with conclusions from the governance analysis in Chapter 3, one of the key features of the steering group process is the gradual emergence of distributed RIS3 leadership. Who chairs each steering group is decided in each one; in advanced manufacturing, for example, it has been decided that a representative from business should chair on a rotatory basis. Moreover, the emergence of specific leaderships from different agents can also be observed in the working groups that have been established under several of the steering groups. Thus from strong initial government involvement there is a progressive spreading out of leadership happening to involve actors from business and research, with a great deal of time and energy being invested by a lot of people. It should be mentioned that the fourth element of the quadruple helix – civil society – remains largely outside of the steering groups and working groups, with some notable exceptions (in particular in the biosciences-health priority and urban habitat opportunity niche). It is also the case that until now business involvement has been mostly channelled through clusters. There is a concern among some that wider business involvement is necessary, in particular given the need to convert time and energy invested in the steering group process into concrete financial commitments in emergent research and innovation project opportunities.

The heterogeneity in how the entrepreneurial discovery process is taking place in each of the steering groups (see Annexes 3-9 for detail) means that different messages stand out in each case (although that is not to say that they are not present/relevant in other cases too). The remainder of this Section passes through each of the steering group experiences to date to highlight these stand-out messages.

4.2.1 Advanced Manufacturing

The Advanced Manufacturing steering group was the first to be constituted and also has perhaps the widest remit given that it reflects a significant part of Basque industry and is built on the dynamics of several existing clusters. The stand-out message here concerns the openness of the process to date, which has facilitated a wide and deep involvement of people. More than 50 people and 21 organizations have participated with a very high intensity of work during one year in this priority, in a process which has been characterised by great generosity in time and energy from the people involved. In the words of one of the participants: "*In the first meeting we were expecting to receive some documentation, but the reality was that we had a white paper and we had to construct something from scratch. The process was very open and we even modified the groups and everything. For me the most amazing thing in the process was the openness and the generosity of people"*.

What is more, the time and energy invested in this process appears to have been critical in generating a shared vision of what is required to take forward

this priority area in the Basque Country. Another participant underlined that "*One of the main conclusions after a year of hard collaborative-work is that the steering group shares a common strategy, a jointly defined model and objectives. So we are ready for action: we do know our starting point, we do know where we want to go, and we do know how to do it in an effective way. Now it is time to run!".*

A widespread concern, however, is present with regards the extent to which this generosity of time and resources in the early, planning phase will be sustained and backed-up with concrete financial commitments from both public and private agents as the projects identified are put into motion and intensify in their funding requirements. Another related concern is the need to spread the results of this process and in particular to directly involve more companies. In the words of one of the participants: "*We have not been able to spread the results yet. … We do know this is for every company, for every person in the Basque Country, so we need to start deploying the results as soon as possible. Also, we see clearly that industrial companies' direct involvement in the design and definition process is critical, mainly if we want their further commitment with the implementation process. So we would like to have more industrial companies, from different sectors and sizes, present very soon, not only through clusters, despite the critical role they are playing to give an equilibrated solution to diverse interest. If we aspire to an 'entrepreneurial discovery process', we need 'entrepreneurs' inside it".*

4.2.2 Biosciences-Health

The biosciences-health steering group was the second to be formally constituted and has evolved to see itself as a "think tank", explicitly recognising the need to share knowhow and to develop collective intelligence that bridges the health system and the health-related business and research sectors. There is a global understanding within the group that health is an industry. Yet it is a different sort of industry due to the nature of its principle client (the public health system), and one that the system is not currently prepared for. Indeed one of the main learnings from the initial work within this priority is around the possibility that exists to transform some existing mature industries towards the health market, inspired by and building on successful examples of this transformation such as Cikautxo, Createch or Kiro-Robotiks. However, creating the collective intelligence on existing capabilities and opportunities is critical to be able to do this, and is seen as the main challenge for the priority area. In this priority area, more than others, there is recognition that meeting this challenge will require the proactive involvement of different government departments (DH, DCED, DECL and DPAJ in particular), and also explicit connections with other RIS3 priorities and opportunity niches such as advanced manufacturing and food.

4.2.3 Energy

The energy steering group was the last of the three priority areas to be formally constituted, but builds very strongly on pre-existing cooperation dynamics in the Energy Cluster Association (ECA) and in the framework of the EnergiBasque strategy. Indeed, one of the stand-out messages from the experience with this steering group concerns the benefits of building new entrepreneurial discovery dynamics on what already exists, rather than starting from scratch. Literature on RIS3 underlines the clear synergies between clusters and RIS3,[8] and the case of the energy steering committee is a good example of how the work already developed in the working groups of the ECA have facilitated the entrepreneurial discovery process of the RIS3. The other side of the coin, however, is that the inertias of the existing cluster dynamics are carried forwards into the RIS3, and there is a concern, for example, that some energy value chains are better represented than others in the cluster which may bias the evolution of the energy priority if care is not taken to ensure involvement also beyond the cluster.

More generally, the experience with the energy priority also highlights the role that working groups can play in enabling wider business involvement than would be possible in the main steering group. Indeed, one of the firms involved in several working groups commented that *"these spaces are good to get new blood to the table. You do not get new products and markets directly from these groups, but if you are there new breath is created"*. As already reflected in the advanced manufacturing priority, and more generally, it will be critical to ensure that the step is made from the ideas and proposals that emerge from working groups to the commitment of public and private funding for concrete projects.

4.2.4 Urban Habitat

The urban habitat opportunity niche was the first to formally constitute a steering group, and a great deal of enthusiasm has been generated among stakeholders very quickly (in part, it should be recognised, due to the difficult economic outlook of the traditional construction sector in the Basque Country). Companies, in collaboration with different clusters, have identified unique innovative opportunity areas for service or product delivery within this niche, which have the potential to respond to the latest global and regional trends (e.g. housing efficiency, digital transformation, urban growth and rural development). They have also started claiming the need for a more holistic approach of their operation.

One of the stand-out messages from this experience concerns the challenges of pursuing an emerging priority where its economic and research activity is diluted across departments (DESP HD and DCED most obviously, but with clear impacts also for DH and DETP). Moreover, in addition to the demands that this niche places on inter-departmental coordination, it is also one of the areas

[8] See, for example, Aranguren and Wilson (2013) or Ketels *et al.* (2014).

where the integration of civil society concerns is most obvious. All of this is reflected in the challenges faced by companies working within this niche, which need to understand and respond to the complexity and diversity of issues, technologies and business models involved. Yet the opportunities from doing this are highlighted by the enthusiasm with which many diverse stakeholders have embraced the initial outreach of the steering group.

4.2.5 Food

One of the lessons that stands-out most from experience with the food opportunity niche concerns the need to be open to potential cross-priority cooperation. A good example of this is provided by the entrepreneurial discovery space that has been initiated between the food and biosciences-health priorities. In particular, the work in the food steering group demonstrates that analysis of industry value chains can serve as an excellent input basis for the formulation of strategies or opportunity niches that cross traditional boundaries, their actors and their needs. Moreover, it illustrates the benefits of looking at global trends and demands in terms of guiding regional decision-makers and companies to prioritize the sector operations for the forthcoming years, herewith automatically incorporating their activities into the global context. In doing this, one of the concerns uncovered is that most innovations in this area (and indeed more generally) in the Basque Country are incremental, and a challenge remains to foster more disruptive innovations.

4.2.6 Environmental Ecosystems

Experience with the environmental ecosystems opportunity niche echoes many of the messages emerging from the urban habitat and food opportunity niches. In particular, one of the biggest challenges concerns the funding for projects. Although most of the projects identified have clear objectives and can benefit from links with other strategic priorities, the risks are still high and this is identified as a key barrier to private sector investment, particularly among SMEs. On the other hand, being an opportunity niche that is strongly linked to grand societal challenges, there are strong opportunities for European funding, for example through the H2020 programme. This is a message that also clearly applies to the urban habitat and food opportunity niches. Specifically with regards the environmental ecosystems niche it is also worth referencing the recent establishment of the Basque Ecodesign Centre. This is a platform where around 8 big companies and 9 clusters are exploring topics related to Basque eco-innovation in products and services, for example the design of new methods for servitization, which are then being applied at the company level through cluster networks.

4.2.7 Cultural and Creative Industries

The culture and creative industries opportunity niche was the last to constitute a steering group, and so developments have been slower than in other areas. The steering group is thus facing up to some early challenges, one of the most

central being discussion around the (sub-)sector definitions themselves. This is further impeded by different profiles of companies with (non-)existing internationalization and growth interests. In addition, while creating this opportunity niche gave companies solid steps towards seeing themselves in the bigger picture of the Basque RIS3, there is much work to be done to convince others and demonstrate that, although being small, is an area that can have significant economic impact on the Basque economy. Moreover, given the rooting of much activity in this area in the Basque cities, one of the main learnings concerns the need for vertical and horizontal cooperation across departments and institutional levels. Likewise, the large degree of heterogeneity found in this area is accentuating the necessity to realize and explore different ways to deal with companies of different profiles, and the importance of creating a bigger sector vision to overcome fragmentation.

5 ACHIEVEMENTS SO FAR AND CHALLENGES AHEAD

5.1 Introduction

The Basque Country has taken full advantage of the opportunities presented by RIS3 to review and reform both its regional innovation *system* and its regional innovation *strategy.* Far from being a paper exercise to access EU regional funds, the design and development of the Basque RIS3 has been as thoroughgoing as anything we have witnessed in the European Union and this is attributable to the political commitment of the Basque Government on the one hand and to the cooperation of its partners in the BSTIN on the other (Morgan, 2016a).

Reforming a regional innovation system takes time, trust and tenacity. The most difficult challenge to date has been the reform of the STI network, a network that has grown steadily in density and complexity over the past thirty years. The reform of the BSTIN was designed with four objectives in mind: (i) to align the performance of agents with the objectives set out in the STIP 2020, establishing a set of metrics and a scoreboard to support the task of performance management; (ii) to place each agent in the best position to maximize the level of complementarity and coherence of the whole; (iii) to address weaknesses resulting from the high density of agents; and (iv) to give public visibility to all agents that make up the network, so that they are publicly known and recognized. Throughout the reform process the Basque Government endeavored to convey clarity and direction to its STI partners so that everyone knew the direction of travel and what was expected of them. Although the reform did not eliminate resistance within the BSTIN, it was conducted in such a way that it allowed that resistance to be managed in a clear and transparent manner.

The reform process inherent to the Basque RIS3 strategy sought to balance stability and change, or continuity and novelty, by encouraging established agents to evolve and by introducing novel agents into the system. A conspicuous example of novelty was the creation of a wholly new BSTIAG, the aim of which was to circumvent the ‘wise old men’ of science and technology and inject fresh perspectives by drawing on new faces from home and abroad, including the Basque diaspora. This was a bold and inspired move because, by involving high calibre outsiders in the RIS3 process, the Basque Government was effectively subjecting itself to a form of constructive challenge from within, which is a critically important antidote to the ‘groupthink’ virus that can infect the best laid plans. To help ensure that the RIS3 is fit for the future the following section aims to identify the key challenges and suggest how to meet them.

5.2 Keeping RIS3 alive

STI plans in many countries have been enormously complex and time-consuming affairs: they took years to design and were deemed to be a fixed reference point until they were supplanted by a new multi-annual plan. This linear model of policy-making meant that STI plans ran the risk of becoming fossilised in the sense that they were inflexible and unresponsive to the ever changing worlds of business, politics and civil society. In recent years a new world of *experimentalist governance* has begun to emerge in which traditional models – like the hierarchical models of multilevel governance and static principal-agent models – are being superseded by more dynamic pragmatist-inspired problem-solving models (Sabel and Zeitlin, 2012). In practical terms this means that innovation policy is evolving into a more real-time process, where the distinction between design and delivery will be less pronounced because of the need for continuous feedback and constant pivoting, relegating the linear model of innovation policy (based on the silo worlds of design-delivery-evaluation) to the sidelines where it belongs (Morgan, 2016a).

The challenge of keeping RIS3 alive – to ensure it is as close to a real-time process as possible so that it does not become fossilised – has surfaced in the Steering Groups and in the BSTIAG, each of which merits some attention.

In the operational work of the Steering Groups there is a strong desire to keep the entrepreneurial discovery process as open and as flexible as possible, because of the need for constant pivoting in the light of internal discussion and external feedback. However, this desire for constant pivoting runs counter to the political need to set an annual budget and assign funds to established support programmes, a prosaic but important bureaucratic task that cannot be avoided. This systemic tension – between the commercial need for *constant pivoting* and the political need for *budget setting* – is not confined to the Basque Country because it is a generic problem that is inherent in the RIS3 process.

The aim of keeping RIS3 alive and relevant was also compromised, according to the BSTIAG, by the time-consuming process of project appraisal and approval, which meant that projects were supposed to finish by the time formal approval was received. To overcome this problem – the problem of duality of time horizons – a new system of allocating grants is under consideration in which an 'amber light' would be used to signal to firms that a project was likely to be funded before final approval had been formally received. This would help to alleviate the problem of differential time horizons in the worlds of business and government by abbreviating the bureaucratic cycle through which grants are appraised and approved.

5.3 Collaborative and distributed leadership

The RIS3 process can also be kept alive through a collaborative and distributed form of leadership, which would help to spread the burden of implementation

across many partners, depending on the stage of the policy cycle and the nature of the task. Although the Basque Government played a strong leadership role during the early stage of the RIS3 process – to the point where some observers thought it was seeking to dominate the whole process – in retrospect this was appropriate for the initial stage of the RIS3 policy cycle, when the critically important rules of the game have to be established (Gertler, 2010; Rodriguez-Pose, 2013; Aranguren *et al*., 2015b).

Having established the rules of the game, and designed a more performance-based STI network in which agents had to be accredited, the Basque Government signaled that it was prepared to stand back from the RIS3 process and create space for its partners to play a leadership role. The partners who need to play a more pro-active role in the current stage of the policy cycle – the implementation stage – are to be found in the Steering Groups, the operational level where the all-important commercial expertise is located. Far from being a mechanical or linear process, collaborative and distributed leadership was best described by one senior participant as a process of governance in which leadership goes up and down – up to the President's office on strategy and down to the operational level for the commercial decisions, making for a collective leadership style. This is a profoundly challenging process because, in many cases, the regional government is reluctant to cede control of the process to other partners, even though a state-centric approach is totally alien to the RIS3 ethos (Morgan, 2016b). The Basque Country is unusual in this respect because its highest office is fully prepared to listen to feedback from the operational level in the Steering Groups and from the constructive critics in the BSTIAG, which has frank face-to-face discussions with the President and his Ministers on a monthly basis.

Collaborative leadership presumes that partners – especially industrial partners – will be able and willing to devote their time to the RIS3 process over a sustained period of time. A senior figure who is involved in a number of different groups thought the most remarkable thing about the RIS3 process to date was the generosity of senior industrialists, many of whom had devoted a lot of their time to the operational discussions in the Steering Groups. To sustain their interest and their goodwill, these industrialists expect their projects to be funded, otherwise they are unlikely to stay the course. This is one of the least acknowledged problems in the exercise, namely how does one deal with the high expectations that have been generated by the RIS3 agenda? We try to offer an answer to this question in the section on monitoring and evaluation.

Another issue in the generation of distributed leadership concerns the role of clusters versus companies. While some firms are directly involved in the Steering Groups, their participation has mainly taken place through clusters. On the one hand this is positive as the very existence of cluster associations opens the door to the participation of a wide range of firms in the entrepreneurial

discovery process. Moreover, the diversity of clusters involved in different priorities and opportunity niches is encouraging the emergence of cross-cluster dynamics, another positive development. However, this approach assumes that the clusters themselves are functioning well and are truly representative of the firms in their sectors. In this regard there is a view – expressed, among others, by one of the industrialists participating in one of the steering groups – that it is critical to involve more companies directly in the process and to animate more firms to assume leadership in the entrepreneurial discovery process.

5.4 Funding the RIS3 policy mix

Throughout the EU the RIS3 process is forcing regional governments and their development agencies to review the way they design and finance the policy mix through which they plan to deliver their smart specialisation strategies. Although the Basque policy mix has been stable for many years, it will need to evolve in response to the feedback from the Steering Groups, where new projects may need to be funded from budgets that don't necessarily correspond clearly to a single department. In particular this will require flexibility and innovation in existing policy programmes and instruments.

The Basque Government has adopted the principle that public funding for R&D and innovation should not be compartmentalized, and has opted to maintain competitive funding programmes for all firms and all themes within the DEDC, where they are managed by SPRI. A key change is that applications to these programmes corresponding to RIS3 priorities now have preference. This includes projects related to the four opportunity niches, although around 80% of funds are being channeled towards the three priority areas, and projects that work on the connection between opportunity niches and priority areas are more likely to be funded. With this in mind there has also been a small amount of funding allocated to the opportunity niches directly from the DP to support the initial process of identifying synergies with the priority areas and of strengthening capacity to attract European funding.

The key challenge for funding the policy mix will concern the capacity or programmes and instruments to adapt and change over time, as the priorities and niches of the RIS3 evolve. In this regard some of the niches, especially in their interaction with priority areas, may turn out to be far more important to the regional economy than is generally recognised. The Urban Habitat niche, for example, illustrates the challenge of funding an emergent priority where by nature it straddles issues that are relevant for various government departments, diluting its political status. However new narratives around Sustainable Cities and Smart Cities are beginning to emerge to convey the significance – in economic, ecological and cultural terms – of social and technological innovation in the built environment. It is likely that new instruments will need to be incorporated into the policy mix to respond to the different needs of such

emerging priorities.[9] Indeed, designing a policy mix to do justice to the inter-dependent and evolving nature of RIS3 priorities is a major challenge which illustrates two very important issues: (i) the need for multi-departmental coordination and (ii) the need to integrate multiple funding streams from within the public sector and from the private sector, not least because the former can help to de-risk the investment opportunities from which the latter stands to gain so much (Mazzucato, 2012).

5.5 Multi-departmental coordination

The goal of "joined-up policy" is a major challenge for governments all over the world because so many different forces – not least professional disciplines, knowledge communities, budgetary reporting lines and department-based governance systems – conspire to sustain silo working cultures. Under the auspices of the RIS3 process, the Basque Country has made strenuous efforts to overcome the traditional silo-based culture in which a single department – the DCED – was deemed to being solely responsible for all innovation and economic development policies. However, in an era of societal challenges and social innovation, there is a growing consensus that other departmental portfolios – particularly health and education for example – have an equally important role to play in nurturing innovation and social wellbeing.

The key mechanism for promoting multi-departmental coordination in the Basque RIS3 process is the Interdepartmental Committee. In principle – and hopefully in practice too – the IDC has the mandate to promote multi-departmental coordination and one of the most important challenges here is to foster a sense of shared destiny between the DCED and the DECL, not least because the latter is responsible for the Basque universities, a sector that needs to be much better integrated into the operational level of the RIS3 process.

Although the four Opportunity Niches have the greatest potential for inducing multi-departmental coordination, on account of their transversal character, it needs to be more widely appreciated that the three Priority Areas cannot be successfully managed on a silo-basis. One of the key recommendations of the BSTIAG is pertinent here because it made a strong plea for better linkages to be forged between the health sector and the business community, a recommendation that has been taken up by a new working group and a new project in Vitoria, where the Basque hospital sector is clustered. This example shows the potential for a mutually beneficial engagement between the Departments of Health and Industry.

[9] These might include a greater emphasis on demand-side instruments (such as public procurement) that have typically been under-represented in the Basque innovation policy mix, and on making greater use of the Basque Country's unique fiscal policy competences.

5.6 Multi-level coordination

Multi-level governance is another key challenge for governments everywhere, particularly in the EU, where the multi-level polity is more developed than anywhere else in the world. However, as the OECD review concluded, the Basque Country has major multi-level coordination challenges within its borders, especially as between the central Basque Government and the 3 Provincial Councils (OECD, 2011). In principle the STI Council is one of the mechanisms designed to promote multi-level coordination among the three governance tiers of the Basque Country, but the Council meets just twice a year and therefore it cannot be expected to provide the operational level synergies that are required by the RIS3 process. On the contrary, these local RIS3 plans ought to be integrated into the operational work of the three Priority Sectors and the four Opportunity Niches.

One of the distinctive features of the Basque RIS3 process in recent years – a feature that was not anticipated at the outset – is the emergence of more localised RIS3 plans at the level of the province and the city. The emergence of RIS3 plans in Gipuzkoa and Bilbao cannot be ignored and indeed should be seen as opportunities for more granular forms of local experiments, along the lines suggested by the emergent models of experimentalist governance.

Cities are assuming a much more prominent role in innovation and economic development, as the burgeoning Smart City agenda demonstrates, and the Basque Country is well-positioned to capitalise on this new urban dynamic given the economic calibre and aesthetic quality of its three major cities.

5.7 Monitoring and evaluation

Monitoring and evaluation (M&E) activity has been the Cinderella of regional innovation policy throughout the EU and the Basque Country has not been exempt from this criticism in the past (OECD, 2011). Although it is widely (mis)construed as a "looking back" exercise, to see what worked where and why, a robust M&E system is also about looking ahead by using the evidence of the past to fashion a better future. Having neglected M&E in the past, the Basque Country is now making up for lost time by investing time and energy into a new performance based system (like the scoreboard for the STI network) to assess the value-added of its innovation investments.

A robust M&E system can also help to resolve the dilemma noted in section 5.3 – namely how to maintain the active involvement of industrial partners when their pet projects have failed to secure funding? A clear and transparent evidence base, demonstrating what worked where and why, can help to resolve conflicts about the claims and counter-claims about which projects to fund at a time when budgetary discipline demands that all regions make strategic choices. A robust M&E system can furnish the data that projects have been selected on the basis of sound evidence rather than through lobbying or

clientelism and such a process can help to persuade all partners – even unsuccessful partners – that the exercise to which they have committed time and effort is a credible and worthwhile endeavour.

5.8 Embedding the RIS3 outside Political Processes

Last but not least is the challenge of political change. The Basque Country has one of the very best records in the EU for its sustained political commitment to regional innovation policy over the past thirty years. Although the past is not a sure guide to the future, it does demonstrate that the Basque Country can achieve so much more by building on the past and working in concert rather than jettisoning the past and starting afresh with each new electoral cycle. Mature political systems can accommodate electoral change and the test of a mature political system is whether a radical strategy like RIS3 can be sustained across electoral cycles regardless of the government of the day. If the RIS3 process has been embedded in the fabric of the region – as a result of the hard work of all the partners – then a new government would be ill-advised to dismiss the collective efforts of so many for the short term interests of the few.

Future Basque governments would do well to address the hard won knowledge of regional innovation policy reformers. To be successful the RIS3 process in the Basque Country needs to think about simplification and collaboration as it seeks to strike the right balance between means and ends. It needs simplification because of the complexity of the regional innovation system. It needs collaboration to reaffirm the spirit of cooperation. And it needs to remember that collaboration is a means to an end and not an end in itself, so the ultimate focus must be on the results of collaboration.

REFERENCES

Aranguren, M-J., Magro, E. and J. R Wilson (2016), 'Regional competitiveness policy in an era of smart specialisation strategies', in R. Huggins and P. Thompson (eds), *Handbook of Regions and Competitiveness: Contemporary Theories and Perspectives on Economic Development*, Cheltenham, UK and Northampton, MA, USA: Edward Elgar.

Aranguren, M-J., M. Navarro and J.R. Wilson (2015a), 'Constructing research and innovation strategies for smart specialisation (RIS3): lessons from practice in three European regions', in J.M. Valdaliso and J.R. Wilson (eds), *Strategies for Shaping Territorial Competitiveness*, Abingdon, UK and New York, NY, USA: Routledge.

Aranguren, M-J, M. Navarro and J.R. Wilson (2015b), 'From Plan to Process: Exploring the Leadership Implications of RIS3', *Orkestra Working Paper 2015-R01*, www.orkestra.deusto.es.

Aranguren, M.-J. and J.R. Wilson (2013), 'What can experience with clusters teach us about fostering regional smart specialisation', *Ekonomiaz*, 83(2), 126-45.

European Commission (2010), *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions COM(2010) 553 final. Regional Policy Contributing to smart growth in Europe 2020*, Brussels, Belgium: European Commission.

European Commission (2011), *Regional Policy for Smart Growth in Europe 2020*, Brussels, Belgium: European Commission.

European Commission (2012), *Guide for Research and Innovation Strategies for Smart Specialization (RIS3)*, Brussels, Belgium: European Commission.

European Commission (2014), *National/Regional Innovation Strategies for Smart Specialisation (RIS3)*, Cohesion Policy 2014-2020 Factsheet, Brussels: European Commission.

Foray, D. (2014), *Smart Specialisation: Opportunities and Challenges for Regional Innovation Policy*, Abingdon, UK and New York, NY, USA: Routledge.

Foray, D. (2015), 'Should we let the genie out of the bottle? On the new industrial policy agenda and the example of smart specialisation', in Antonietti, R., Coró, G. and Gambarotto, F. (eds.) *Uscire dalla crisi: Cittá, comunitá, specializzazioni intelligenti,* Milan: FrancoAngeli.

Foray, D. and B. Van Ark (2008), 'Smart specialisation in a truly integrated research area is the key to attracting more R&D to Europe', in European Commission, *Knowledge for Growth: European Issues and Policy Challenges*, Brussels, Belgium: European Commission.

Foray, D., Goddard, J., Goenaga, X., Landabaso, M., McCann, P., Morgan, K., Nauwelaers, C., and Ortega-Argilés, R. (2012), *Guide to Research and Innovation Strategies for Smart Specialisations (RIS 3)*, Brussels: European Commission.

Gertler, M. (2010), Rules of the Game: The Place of Institutions in Regional Economic Change, *Regional Studies* Volume 44/1, pp 1-15

Kroll, H. (2015), 'Efforts to implement smart specialisation in practice – leading unlike horses to the water'*, European Planning Studies*, 23(10), 2079-98.

Mazzucato, M. (2012), *The entrepreneurial state,* London: Anthem Press.

McCann, P. (2015), *The Regional and Urban Policy of the European Union: Cohesion, Results-Orientation and Smart Specialisation*, Cheltenham, UK and Northampton, MA, USA: Edward Elgar.

McCann, P. and R. Ortega-Argilés (2016), 'Regional competitiveness, policy transfer and smart specialization', in R. Huggins and P. Thompson (eds), *Handbook of Regions and Competitiveness: Contemporary Theories and Perspectives on Economic Development*, Cheltenham, UK and Northampton, MA, USA: Edward Elgar.

Morgan, K. (2013a), *Basque Country RIS3: Expert Assessment*, An expert assessment on behalf of DG Regional and Urban Policy, Contract Number CCI 2012CE160AT058.

Morgan, K. (2013b), 'The regional state in the era of smart specialization', *Ekonomiaz*, 83(2), 102-25.

Morgan, K. (2016a), 'Collective Entrepreneurship: The Basque Model of Innovation', *European Planning Studies*.

Morgan, K. (2016b), 'Nurturing Novelty: regional innovation policy in the age of smart specialisation', *Environment and Planning C.*

OECD (2011), *OECD Reviews of Regional Innovation: Basque Country*, Paris, OECD

Orkestra (2013), *The Basque Country Competitiveness Report 2013. Productive transformation for tomorrow*, Bilbao: Deusto Publications.

Orkestra (2015), *The Basque Country Competitiveness Report 2015. Productive Transformation in practice*, Bilbao: Deusto Publications.

Rodriguez-Pose, (2013), Do institutions matter for regional development? *Regional Studies* Volume 47/7, pp 1034-1047

Rodrik, D. (2004), 'Industrial policy for the twenty-first century', *Kennedy School of Government Working Paper*, RWP04-047.

Sabel, C. and Zeitlin, J. (2012), Experimentalist Governance, in D. Levi-Faur (ed) *The Oxford Handbook of Governance*, Oxford, Oxford University Press, pp 169-183

SPRI-Basque Government (2014), *Scoping Paper in Adavanced Manufacturing for the Basque Country*, April.

Thissen, M., F. Van Oort, D. Diodato and A. Ruijs (2013), *Regional Competitiveness and Smart Specialization in Europe: Place-Based Development in International Economic Networks*, Cheltenham, UK and Northampton, MA, USA: Edward Elgar.

Valdaliso, J. M. (2015), ‘The Basque Country: past trajectory and path dependency in policy – and strategy- making’, in J.M. Valdaliso and J.R. Wilson (eds), *Strategies for Shaping Territorial Competitiveness*, Abingdon, UK and New York, NY, USA: Routledge.

Valdaliso, J. M. and Wilson, J. R. (2015), *Strategies for Shaping Territorial Competitiveness*, Abingdon, UK and New York, NY, USA: Routledge.

ANNEX 1: INTERVIEW SCHEDULE

Interview Number	Person	Roles
1.	Carlos Peña (Innobasque) Alaitz Landaluze (Innobasque)	• Technical Secretary of RIS3
2.	Alex Arriola (General Director, SPRI) Alberto Fernandez (SPRI) Cristina Oyon (SPRI)	• Public funding programmes (industrial research & technological research)
3.	José Ignacio Hormaeche (Director, Energy Cluster) Eduardo Jimenez (INGETEAM, firm)	• Energy priority: Business
4.	Javier Urreta (Tecnalia) Antonio Porro (Tecnalia) Juan Pérez Sainz de Rozas (Tecnalia) Xabier Ipiña (Director, ERAIKUNE Construction Cluster)	• Urban Habitat Opportunity Niche: Research • Urban Habitat Opportunity Niche: Business
5.	Agustin Sáenz (Tecnalia)	• BSTIAG • Advanced Manufacturing Priority: Research
6.	Arantxa Tapia (Minister, DCED, Basque Government) Estibaliz Hernáez (Vice-Minister, DCED, Basque Government) Leire Bilbao (Technology Director, DCED, Basque Government)	• Interdepartmental Committee • Advanced Manufacturing priority: Government
7.	Vicente Atxa (Rector, Mondragon University)	• BSTIC
8.	Txus Peña (General Secretary, DP, Basque Government)	• Commissioner
9.	Guillermo Viñegra (Vice-Minister, DH, Basque Government) María Aguirre (Director of Health Research & Innovation, DH, Basque Government)	• Bio-Health Priority: Government
10.	Maria Covadonga Solaguren (Vice-Minister of Housing, DESP HD, Basque Government)	• Interdepartmental Committee • Urban Habitat Opportunity

	Iñigo Basañez (Director of Housing, DESP HD, Basque Government) Marcos Muro (General Director, VISESA)	Niche: Government • Funding Programmes: Urban Habitat Opportunity Niche
11.	Amaia Esquisabel (Director of Science Policy, DELC, Basque Government)	• Interdepartmental Committee • Role of University • Funding Programmes
12.	Roberto Uribeetxeberria (Head of Research, Faculty of Engineering, Mondragon University) Carlos García (Faculty of Engineering, Mondragon University)	• Advanced Manufacturing priority: University
13.	Ana Gonzalez Pinto (Head of Psychiatric services, Osakidetza)	• BSTIAG
14.	Antxon Pradera (President, CIE Automotive, firm) José Esmoris (R&D Director, CIE Automotive & President of Automotive Cluster ACICAE)	• BSTIC • Advanced Manufacturing priority: Business
15.	Bittor Oroz (Vice-Minister of Farming, Fishing and Food Policy, DCED, Basque Government) Peli Manterola (Director of Quality and Food Industries, DCED, Basque Government) Rogelio Pozo (General Director, AZTI Marine and Food Innovation Technology Centre)	• Food Opportunity Niche: Government • Food Opportunity Niche: Research
16.	Juan Diego (Adviser on Cultural and Creative Industries, DCED, Basque Government)	• Cultural and Creative Industries Opportunity Niche: Government
17.	Ignacio Quintana (Eco efficiency and Eco-design Coordinator, IHOBE) Mikel Ibarra (Basque Environment Cluster) Oscar Santa Coloma (Tecnalia)	• Ecosytems Opportunity Niche: Government • Ecosystems Opportunity Niche: Firms • Ecosystems Opportunity Niche: Research

ANNEX 2: SEMI-STRUCTURED INTERVIEW GUIDE

Question	Interviews
• Did you (or your institution/department) have any involvement in the ***design of the initial RIS3 plan*** (PCTE 2020)? o If so, what type of involvement? o To what extent were the different elements of the quadruple helix (government, business, education, civil society) involved in the design of the strategy?	**All**
• In terms of ***governance and shared vision*** of the RIS3, we would like to explore what has happened since the strategy was approved? o What sorts of information do you receive in the ***Basque Science, Technology and Innovation Board***? o What sorts of decisions do you make in the context of the RIS3? o What sorts of information do you receive in the ***Basque Science, Technology and Innovation Advisory Group***? o What sorts of decisions are you asked to advise on in the context of the RIS3? o As ***commissioner***, what relationships do you maintain with the other elements of the governance of the RIS3? o Where and how are key decisions concerning the strategy made? o What role has your ***department*** played subsequent to the strategy being approved? o Which structures are you part of? o Which decisions are you involved with? o In what ways is the RIS3 influencing day-to-day work in the department? o How does the ***inter-departmental committee*** work in practice? o What information is discussed? o What decisions are made? o Is it helping or not to strengthen coordination across departments? o What ***coordination mechanisms*** with other administrative levels (Spanish State, Provincial Councils, City Councils) exist with regards the development of the RIS3? o How (and how well) are these mechanisms working in practice? o What roles has ***Innobasque*** played subsequent to the strategy	**All** **5, 7, 14** **13** **8** **6, 9, 10, 11, 16, 17**

being approved? ○ Which structures are you part of? ○ Which decisions are you involved with? ○ In what ways is the RIS3 influencing day-to-day work in Innobasque?	
○ How were the ***pilot groups*** constituted? ○ Which criteria/processes were used to identify participants? ○ How open are they to others who want to participate? ○ What is your impression of the balance across different types of agents that participate in the pilot groups (government, business, education, civil society)? ○ How does the work of the pilot groups feed into the other governance organisms of the RIS3?	**1, 6, 8, 9, 10, 11, 16, 17**
○ Have the ***design of funding programmes*** been influenced by the processes taking place around RIS3? ○ If so, which inputs have influenced them and what has changed? ○ Through which (formal and informal) mechanisms has the information to change policies arrived? ○ If not, do you foresee them being influenced in the future?	**1, 6, 8, 9, 10, 11, 16**
	1
	1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 14, 15, 16, 17

	2, 10, 11, 17
• In terms ***of stimulating entrepreneurial discovery***, we would like to explore what has happened specifically in the pilot groups since they have been constituted? o What happened in the first meeting? o What are your expectations from your involvement in the pilot group? o What working groups have been subsequently within the pilot group? o What types of actors are involved in leading the different working groups and in participating in them? o Is there a common vision around the purpose of the working groups and the challenges to be addressed in this priority area? o Which results are starting to emerge from these groups? o What is the main strength of the process to date? o What do you think should be changed?	**1, 2, 3, 4, 5, 6, 10, 12, 14, 15, 16, 17**
• In terms of the ***transversal action areas*** highlighted in the PCTE 2020, what has happened since the plan was approved (for example, the reordering of the STI network or the evaluation of the STI system)?	**1, 2, 6, 8, 9, 10, 11, 16, 17**

ANNEX 3: ADVANCED MANUFACTURING PRIORITY

The Basque Government has defined advanced manufacturing as an activity that focuses on creating new products, incorporating new materials and improving manufacturing processes (SPRI-Basque Government, 2014[10], p. 17). Current efforts relating to this strategy go beyond machine tools and attempt to place more emphasis on so-called user industries (aeronautics, automotive, etc.) and give a stronger role to other central solution providers (ICT, consulting, etc.). The reasons for the Basque Government's commitment to advanced manufacturing are rooted in the territory's economic/entrepreneurial and scientific/technological capabilities, as well as market opportunities. In fact, for the Basque Government, advanced manufacturing is the priority with the most developed and balanced entrepreneurial and scientific/technological capabilities (SPRI-Basque Government, 2014, pp. 18–19 and 31). In particular, the Basque Country has scientific/technological capabilities and competitive advantages in the following industries: aeronautics, automotive, energy, machine tools, machinery and accessories, and other transport equipment (Orkestra 2015).

It is the most complex priority as it combines capabilities from diverse industrial clusters in the Basque Country. Indeed, compared to the other two priorities, it is more a platform than a cluster (Orkestra, 2015). As one of the interviewed persons underlines '*Advanced Manufacturing is a complex environment, even in the Basque Country, as plenty of agents need to be taken into account, heard and followed. It's a multisector priority, with automotive industry, train and ship manufacturers, metal industry, aeronautics, machine-tool manufacturers, even ICT - all of them are involved. Each industrial sector has its own historical and operational dynamics, so joining visions, steps and strategies requires a really intensive-cooperation driven process. Even in the public area, and although the Department of Economic Development and Competitiveness is leading the process, there are clear links to other departments, institutions…'*

The Advanced Manufacturing Priority Steering Group was the first to be set up in June 2015. The responsibility of facilitating the development of this Steering Group was assigned to the DCED. However, in the first meeting of the Direction Committee of this steering group it was decided that the leadership should be assumed by a firm and should be rotating. Thus Antxon Pradera, the President of the firm that has the presidency of the Automotive Cluster Association (CIE Automotive), assumed the initial leadership of the steering group. Besides the leader, the Direction Committee is composed by representatives of 4 types of institutions[11]:

- Basque Government (Minister and the two Vice Ministers of DCED) and public agencies (CEO of SPRI);

[10] See SPRI-Basque Government (2014). *Scoping Paper in Advanced Manufacturing for the Basque Country,* April.
[11] About the participation of the civil society in this steering group, one of the interviewed persons highlighted that '*it is true that civil society has had neither representative nor direct participation during this first year of work. It has been a year to create the architecture and design a working process, in the complex environment previously mentioned.'*

- Clusters and firms (Presidents of Automotive, Machine Tools, Energy and ICT clusters, who are also representatives of specific firms);
- Knowledge and technology agents (Presidents of IK4, Tecnalia and the Rector of Mondragon University); and
- Intermediate agents (Presidents of Innobasque and CIC Margune)

The Direction Committee has established a delegated committee to coordinate entrepreneurial discovery processes within thematic working groups. This is composed of people in which each member of the Direction Committee delegates and a Technical Secretary composed of SPRI, Innobasque and Margune. The main strategic issues defined to date are five, and each one is being developed in a thematic working group lead by one of the agents of the delegated committee.

1. Identify and prioritize the sectorial technological needs (lead by ACICAE, the automotive cluster association);
2. Develop intelligent systems (lead by Tecnalia);
3. Develop advanced materials and processes (lead by IK4);[12]
4. Develop new innovative models (lead by GAIA, the ICT cluster association);
5. Develop human capabilities for advanced manufacturing (lead by Mondragon University).

In each working group working areas and responsibilities were identify and assigned to define an action plan and a map of strategic initiatives and concrete projects for 2016. Some of these initiatives crossed with initiatives of the steering groups of other priorities or opportunity niches, and there was a special effort in the delegated committee to identify synergies with other steering groups. For example, the energy efficiency working area, defined in the thematic working group for identifying and prioritizing the sectorial technological need, has significant crossover with issues identified in the energy priority steering group, so they are working together in this area. Indeed, the result of this process until now has been the identification of synergies with the energy, ecosystems, creative and cultural industries and bioscience-health steering groups.

From the work developed in the thematic working groups eight strategic initiatives to transform the Basque industry towards Industry 4.0 have been identified, five of which are connected with other steering groups and department initiatives:

1. Connected and distributed intelligent manufacturing;
2. Basque Open Industry Platform 4.0;
3. Intelligent Capability Development Network (connected with Education and Employment departments);
4. Promotion of STEM (Science, Technology, Engineering and Maths) in Secondary Education (connected with Education department);
5. Circular economy (connected with Ecosystem Opportunity Niche);
6. Offshore 4.0 (connected with Energy Priority);
7. Using residual Heat (with Energy Priority and Ecosystems Opportunity Niche);

[12] This working group was not identified from the outset, but as the entrepreneurial discovery process emerged within the steering group it was identified as a strategic issue and the working group was established in February 2016.

8. Advanced Services 4.0.

Another important work developed in the Delegated Committee has been the enforcement of the positioning of the Basque Country in advanced manufacturing in Europe, which is a critical issue for the internationalization of the RIS3. The Basque Country has an important role in the Vanguard Initiative, in which the Advanced Manufacturing and Energy steering committees are working in a coordinated way. For instance, the Basque Country co-lead with Scotland the initiative of “Advanced Manufacturing for Energy Related Applications in Harsh Environments”. The Vanguard Initiative is proving to be an experience of “learning by doing”, because there is no clear framework established for collaboration. Another European initiative in which the Basque Country is positioning itself as a regional pole to work on thematic strategic issues is the Manufacturing KIC.

ANNEX 4: BIOSCIENCES-HEALTH PRIORITY

The Basque Bioscience Cluster is an emerging cluster, whose most characteristic technology (although not its only one) is biotech. The Basque Biocluster Association has the mission of business development and technology promotion and the Biobasque Agency (part of SPRI) has been in charge of developing the regional strategy in this field.

The stakeholders that make up this cluster are: firms; knowledge infrastructures (technology centres, Cooperative Research Centres, hospitals and health research centres and universities); investors, both public and private; and public administrations at the different territorial levels. The Basque Country has a little over fifty-biotech firms, which make up the core of the bio cluster. Many of them devote more than 75% of their activity to this field and almost all have fewer than 50 employees. Their main area of activity is human health, followed by agro-food and industry/environment. The Basque Country's efforts and resources have not solely focused on creating a core of biotech companies, but also on producing scientific and technological capabilities in this sphere (universities, BERC, CRCs, technology centres, hospitals and health research centres). If analysed from the perspective of producing scientific and technological capabilities, promotion of R&D infrastructure in the biosciences has been successful. However, there is a significant weakness when looking at its connections among different components of the infrastructure and links between these and biotech companies (Orkestra, 2015). Another critical issue in the Basque Bioscience cluster association is that it is focused on the biotech companies themselves and doesn't involve its providers and users.

The Basque Government's significant commitment to biosciences is undeniable, as is the fact that without this commitment the industry would not have the considerable scientific/technological capabilities it does today, as well as an initial core of biotech companies. As one of the three priority areas of the STIP 2020, the Steering Group in Biosciences and Health was established at the end of 2015 creating the space for public-private cooperation aiming to explore entrepreneurial opportunities within the area of biosciences and health, enhance the coordination of key opportunities and identify and apply available knowledge. The Steering Group sees itself as a think tank – a unanimous decision – aiming to work together towards knowhow sharing and the development of collective intelligence for making prioritization decisions.

Initially the DH of the Basque Government led the process, which is connected with their Research and Innovation Health Strategy. The aim of this strategy is: "Contribute to consolidate the development of Bioscience-health in the Basque Country, institutionalizing the R+D+i activities of the health system and facilitating the interaction with companies and other agents to increase the health results and the generation of value added."

The Steering Group itself is composed of:

- Basque Government departments: DH, DCED, DELC and DTF
- Industry representatives: Basque Biocluster

- Knowledge and technology actors: Health Research Centres, Cooperative Research Centres (Cicbiogune, CICbiomacgune), IK4, Tecnalia, Basque Public University
- Euskampus
- Intermediate agents: BIOEF (Basque foundation for health, innovation and research), SPRI and Ikerbasque
- Technical secretary: Innobasque

The steering group started working along two pillars: i) setting priority areas; and ii) developing strategic initiatives (projects) that were already defined by the DH in its strategy. The main criteria for defining priority areas were the need to respond to two demands: the own demands of health system and the demands posed by the ecosystem as a whole (of which the health system is a part). Thinking like this has influenced day-to-day work in the DH. Taking into account the above demands, four working groups were launched at the cross-roads between thematic areas (personalized medicine, advanced therapies and regenerative medicine, medicine and rehabilitation, E-health/ ICT, equipment's, components and supplies, analytics/ big data) and application fields (rare diseases, chronical diseases, infection diseases, aging, health services):[13]

- Rare diseases
- Personalised medicine
- Equipments and ICT
- Big Data

Each working group has a coordinator that is part of the Steering Group and is formed from representatives of different territorial agents, including representatives from business, knowledge agents and from the general public. For example, within the working group "Equipments and ICT" there are around 20 members representing: 1) companies (CREATECH, Kiro Robotics); 2) knowledge agents (CIC bioGUNE and IK4); and 3) representatives of sanitary systems (OSATEK, etc.).

By the beginning of 2016 the working groups had already made some advances. For instance, the 'rare disease' working group had almost finalised a report that contains the design of a strategy paper for rare disease within the overall health system (herewith addressing urgent social needs), identified scientific & technological capacities towards developing the opportunities within this area and started designing an action plan to 2020. Moreover, the following strategic initiatives are currently defined in the priority area as a whole:

- Innosasun: seeing health as a part of the social system by creating groups among the sanitary system and companies with special interests.
- Baliosasun: aims to improve the application of health system R&D results, which means managing the innovation of the health system from a holistic perspective, both that related with experimental biomedicine and the organizational aspects.

[13] The idea is to create new working groups later in the process.

- Innovative Public Purchase: aims to promote innovation from the demand side, via purchasing of products or services that do not yet exist in the market.
- European Innovation Partnership on Active and Healthy Ageing (EIP on AHA): a European initiative with an active participation of the Basque Country.

ANNEX 5: ENERGY PRIORITY

This priority area connects strongly with the activity of the energy cluster association. The Basque Energy Cluster has two differential aspects. First, it groups together different value chains that include producers and distributors of different forms of energy, manufacturers of capital goods and components, engineering firms and other companies offering specialised services for the energy industry. Second, it is made up of a small core of very large firms – some of them global leaders in their respective industries – and a large number of small and medium-sized enterprises, most of which have a high degree of internationalisation (Orkestra, 2015).

In general, the Energy Cluster is facing a global energy situation marked by sustained growth in energy demand, and prospects that vary significantly by geographical area, although within an increasingly more globalised single market. In addition, significant energy transitions are being undertaken, with repercussions for the energy mix, and consequently, for energy-related industry and technology. The situations described above point to a rise in business opportunities linked to an increasingly more global market that will also increase the size, resource and capability requirements for firms seeking to enter or remain in the market.

The energy strategy of the EU focuses on three priorities. First, increasing diversification of energy sources to reinforce energy security. Second, strengthening the role of renewable energies and energy efficiency (particularly in transport and construction) to accelerate the transition to a low-carbon economy. Third, completing integration of the single European energy market, with cross-border energy transmission and distribution networks.

The 2020 Energy Strategy of the Basque Country is aligned with EU priorities, particularly in the areas of renewable energies and energy efficiency (Orkestra, 2015). The government also approved the Energybasque strategy for industrial and technological development in energy in 2009, which the Basque Energy Agency (EVE) has the responsibility to lead This strategy was reviewed in 2015 by SPRI, EVE and the Energy Cluster Association (ECA), with the renewed strategy being incorporated into the STIP 2020. Some of the firms in the energy sector participated in this review through their involvement in the ECA.

The new EnergyBasque strategy establishes three main objectives:

1. Consolidate Basque lead firms as technological references in their energy areas, generating a traction effect throughout the value chain though high value-added products and services;
2. Develop new activities in new emerging energy areas in which Basque firms and knowledge agents have a competitive advantage;
3. Foster the integration of key transversal technologies for the development of value-added solutions in prioritized areas.

The Energy Priority Steering Group was set up in November 2015, with responsibility for facilitating its development assigned to the DCED. However, in the first meeting of the Direction Committee its members decided that firms should lead this steering

group, and the ECA has therefore taken the lead. The Direction Committee is composed of representatives of 4 types of institutions:

- Basque Government: Two Vice-Ministers and a Director of the DCED, and representatives of their public agencies (SPRI and EVE);
- Energy Cluster Association in representation of firms;
- Knowledge and technology agents (representatives of IK4, Tecnalia and CIC Energygune);
- Technical secretary (Innobasque and SPRI)

Their mission is to facilitate an entrepreneurial discovery process to identify strategic initiatives and projects to develop the energy strategy. In coherence with the review of the energy strategy developed during 2015, there are 9 working groups related with each strategic area defined in the energy strategy. These groups were already working under the facilitation of the ECA, and so the development of the entrepreneurial discovery process of the energy priority is a continuation of existing processes. The main strategic areas defined in this priority are: Electric Networks, Oil & Gas, Wind Energy, Marine Energy, Solar Thermoelectric, Energy Efficiency, Energy Storage and Transport Electric Traction and High Potential Electronics.

There have been meetings in each strategic area with a total participation of 234 people from firms11 R&D agents, EVE, Innobasque and SPRI. Among the participants, were also representatives of different cluster associations related with the strategic areas and firms from these cluster associations. Examples include: Automotive Cluster Association in the Transport Electric Traction and Energy Efficiency working groups; and the Basque Environment Cluster in the Oil & Gas and Energy Efficiency working groups. Each working group is pursuing three aims:

1. Identify the technological lines that will orient and prioritize the resources devoted to support R+D in the sector.
2. Identify crosscutting actions, which act as facilitators and contribute to the development of the sector globally.
3. Identify strategic initiatives, which due to their dimension and/or their technological challenge, will foster a qualitative leap in the development of one or more energy areas in the Basque Country, with the development of key stakeholders and business collaboration.

Taking into account the overall reflection and ideas from different working groups 11 strategic initiatives were identified in the energy priority:

1. Floating offshore wind energy demonstrator project.
2. Floating offshore components testing laboratory.
3. Testing and simulation infrastructure-Business intelligence unit.
4. Differentiated advances services offer on Marine Energy testing.
5. Testing laboratory for offshore aero generator components in hostile environments.
6. Storage systems for electric networks.
7. Electric mobility storage system management demostrator project.
8. Bidelek Sareak 2.0.

9. Integration of multisectorial solutions for residual heat exploitation.
10. Integrated systems living lab: electric-vehicle, recharging infrastructure and information management.
11. Thermal storage solutions testing laboratories.
12. Another work developed in the Steering Committee has been the enforcement of the positioning of the Basque Country in Energy in Europe, which is a critical issue for the internationalization of RIS3. As we already mentioned Basque Country has an important role in the Vanguard Initiative, in which the Advanced Manufacturing and Energy steering groups are working in a coordinating way.

ANNEX 6: URBAN HABITAT AND SUSTAINABLE CONSTRUCTION OPPORTUNITY NICHE

The core activities of this opportunity niche were part of two clusters (HABIC, the Cluster Association for Housing, Office and Contract Furnishing and Eraikune, the Building Cluster Association). These clusters started receiving support from the DCED in 2009. HABIC created a platform for the extremely fragmented sector, which included micro- to large- firms of different characters, such as building, wood, materials, etc.. Since its establishment, this clusters association has growth exponentially in number of associates and activities.

Companies from HABIC and Eraikune, in collaboration with the ICT cluster, GAIA, and the Energy Cluster, have identified unique innovative opportunity areas for service or product delivery in urban habitat, which could stronger respond to the latest global and regional trends (e.g. housing efficiency, digital transformation, urban growth and rural development) and started claiming the need for a more holistic approach to their operations. Realizing the connection between housing and sustainable, healthy urban development turns this opportunity niche and its actors into innovation players, not only fostering technological innovation, but also institutional and social innovation.

The development of this opportunity niche has formed in the frame of the Basque Housing Policy (Government programme 2012 - 2016). This has committed to address three axis - smart growth, sustainable growth and human development – with an overall aim to increase employment and reach social balance. The housing policy is reflected in two plans: 1) Principal Housing Plan 2012-2016 and 2) Plan Renove for Housing Renewal 2013-2016. Notably both plans are terminating this year and the focus on this opportunity niche in the STIP 2020 takes these forwards.

The Housing Directorate of the Basque Government lead the formulation of the urban habitat and sustainable opportunity niche in May 2015 by identifying areas of action along two priorities: Housing and Urban Living. This resulted in establishment of a Steering Group in June 2015 with a broad institutional diversity in representation:

- Government and Public institutions: DESP HD, DCED, DETP, VISESA (Basque Housing Public Agency), EVE, IHOBE (Basque Environment Agency);
- Cluster associations: Eraikune, Habic and Energy Cluster;
- Technological centres and universities: Tecnalia, IK4, Deusto University, University of the Basque Country and Mondragon University;
- Technical secretary: Innobasque.

Five strategic lines have been set, which form the basis for working groups:

- Industrial construction and virtual modernization (ERAIKUNE), with the aim of efficiency improvement in construction processes.
- Rehabilitation and Urban Regeneration (VISESA), with the aim of efficiency improvement in energy and living in districts.
- Cities, districts and smart buildings (IK4), with the aim of improving living conditions.

- New materials for the sustainable construction (Tecnalia), with the aim of taking advantage of resources and increasing value.
- Accessibility and mobility vertical & horizontal (Basque Government and EVE), improving accessibility conditions in the environment of senior people.

The strategic lines and working areas cover and address the key local and global trends associated with urban development, energy efficiency and mobility. In particular, mobility and general accessibility is an interesting strategic priority, which has a transversal character and is considered in each of the other four strategic lines. Indeed while transportation and mobility is important for the young generation aiming to reduce their mobility costs, it is also important for older groups, where mobility is associated with the style and conditions of living directly impacting their comfort and health.

Since 2016 the working groups are focusing on the development of projects. Initially there have been 24 projects identified, which have been addressing one of the four strategic lines. The fifth strategic line, mobility and accessibility, by being transversal is included and considered by all. The following are examples of some projects:

- BERTIM_OLATEK-HONDARRIBIA (industrial solutions for local wood for sustainable buildings).
- ZenN- Barrio MOGEL (nearly zero energy neighborhoods).
- PIME´s (energy efficient communities based on small networks).
- HISER/IRCOW (innovative solutions for waste recycling).

One of the exercises of the steering groups was to have a map of all the projects that have been developed already and to think what other projects should be developed. Companies are focused on being leaders here so as to sow the seeds for exporting their technologies outside, particularly those related to production of new materials.

ANNEX 7: FOOD OPPORTUNITY NICHE

Food has been an integral part of industrial production of the Basque country for many years. The relevance of the food sector, potentially including sub-sectors such as agriculture products, services and machinery equipment, processed food, gastronomy, beverages, etc., has been numerously addressed in a number of economic and cluster studies. For instance, in the process of defining the RIS3 food opportunity niche a deep analysis of the whole Basque Country food value chain has been conducted.

The Food Cluster Association (FCA) was established only in 2009, through the Basque Government pre-cluster support. This gave the companies of the sector an additional strong impulse and facilitated their pro-activity for developing new products and services in ways that are more effective. Another initiative supporting the development of the food sector through strengthening its quality of products and at the same time having a stronger social impact was the creation of KATILU, a platform that includes the participation of agents such as AZTI, NEIKER, HAZI and Innobasque. The platform is open for all who see a potential contribution with their knowledge, and seeks social innovation via transforming production innovation. The Basque Culinary Center has become one of the recent members and is actively promoting the food culture, regionally and globally.

The food value chain has also shown close links with other priority areas such as Advanced Manufacturing (enhanced forms of food cultivation and processing) and Health (alternative or innovative medicine or systems of health support). Moreover, the direct influence from innovations within the area of life-sciences takes place within every part of the value chain, whether at the production, or at consumption levels.

Further to the above, the opportunities that appear through the support of the food niche are on the one side addressing social and demographic challenges related to longer and healthier lifestyles and on another side preserving the Basque eco-system and natural resources. Maintaining healthier lifestyles impacts directly on the character of employees and their physical and emotional conditions, with further impacts across all economic sectors. The support towards natural resources co-aligns with environmental sustainability and preservation of the territorial natural richness in the long term.

A food industry strategy addressed support for the development of the food niche. The development of the strategy for the food industry started in 2013 with the participation of more than 100 regional actors. At this moment, the Basque Government and territorial actors realized that the Basque food industry builds up the complete food value chain, which interlinks with many other industries. This is when the focused changed from addressing just the food industry to addressing the complete food value chain. The Program for Rural Development 2015-2020 (PDR) sets another basis for the support of the Basque food niche.

Building on the above, in July 2015 the Steering Group for the development of the RIS3 Food Opportunity Niche was formed. Since then a number of working meetings have taken place. One meeting was a joint one with representatives from Biosciences-Health

priority for exploring the links between the two, especially with regards achieving a number of individual and common economic and social objectives.

The Department of farming and fishing of the DECD leads this opportunity niche with a high collaboration from AZTI. A value chain analysis supported the Steering Group in defining six working groups and lines for research support:

1. *Healthy Food* that aims to increase the population health state and improve solutions for active ageing in general.
2. *New Food Production Systems* that aims to support and development new technologies and systems for efficient, high quality, sustainable food processing, which moreover could lead to emergence of new economic activities within the Basque Country.
3. *New Gastronomic development for special society groups*: children and elderly people. This groups aims to improve health and food related solution for two very specific population groups.
4. *Safe and quality food – new technologies of conservation*. This group aims to explicitly strength and assure the high quality of delivered/ manufactured products. For instance to incorporate new technologies, which are able to e.g. rapidly detect different food related diseases via risk assessment systems, or the ones, which ensure better and healthier conservation of products over longer periods of time.
5. *Integration of ICT technologies in the production, logistics and commercialization processes* in production through automation, food traceability, logistic systems.
6. *Food with new benefits resulted from enhanced technologic application and consumption trends* on the post-production stage with initiatives related to better final digesting or product distribution.

Within these six groups, first four have a more vertical character, while the two later ones are transversal. The work in the groups has designed four projects that represent the research-related needs while addressing the whole food value chain and touch the six research lines:

- SMARTFOOD (development of new ingredients for the balanced dieting);
- SOLMILK (milk related products, especially lactose tolerant);
- LONGLINES (water-agriculture in open sea and deep waters for the production of mollusks);
- ALL_IG (development of new gastronomic products of high quality).

Additionally, with regards the cross-links between Food and Health, a work group for experts from multiple areas and institutions to explore both topics were created. This group cooperates to discover Basque opportunities, where enhanced food production quality can directly or indirectly impact human health. This is especially relevant for people who have chronic diseases, such as diabetics, cholesterol, hypertension, etc. All these challenges demand that public and private actors work together hand-in-hand to lead to product and/or service innovation.

ANNEX 8: ECOSYSTEMS OPPORTUNITY NICHE

All are aware that the challenges of sustainable territorial development are essential for the next decades, whether locally or globally. In the early design of the STIP 2020, environmental concerns were present in the relevance of efficiency in the energy and advanced manufacturing priorities. Later, the DETP were invited to provide their feedback, which led to the definition of an additional ecosystems opportunity niche.

The DETP, IHOBE (the Basque Environment Agency), ACLIMA (the Basque Environment Cluster Association, established in 1995 as a priority cluster) and knowledge agents such as IK4, Tecnalia, the Basque public university and the Basque Centre for Climate Change have been working on the development of an environment strategy. This process informed the feedback on the initial draft of the STIP and the proposal for an ecosystem opportunity niche with six strategic lines. It also opened the way for the DETP and IHOBE to participate in the interdepartmental committee. Together they lead the development of the opportunity niche, whose steering group was constituted in July 2015. The following institutions are involved in the steering group:

- Public agencies: SPRI, IHOBE;
- Cluster associations: ACLIMA, HABIC;
- Networks of municipalities: Udalsarea ;
- Technology centres: Tecnalia, IK4, Basque Centre for Climate Change;
- University of the Basque Country.

Participation in the steering group is open, making it possible for other interested institutions to enter, although one of the challenges has been the difficulty to attract companies' participation.

The main objectives defined by the steering group are: i) to develop innovative solutions within the framework of the circular economy; ii) to generate knowledge in the area, which would lead towards developing instruments dealing with the issues; iii) to develop new (non)technology solutions to support companies; and iv) to build up innovative solutions for urban regeneration. To pursue these objectives the steering group works along **six priority lines** in two blocks:

Block 1: Circular Economy

1. More green new types of products and businesses
2. Appraisal of residuals
3. Cleaner technologies and processes

Block 2: Preservation and regeneration for sustainable territory

1. Water and soil: treatment and recuperation
2. Adaptation and mitigation of climate change
3. Eco-systemic services

Implementation is guided by an action plan with a timeline of 2016-2020. Depending on the line being addresses, the plan includes activities such as: i) developing information

systems about technology-environmental issues for the development of the value chain; ii) finding solutions for the upcycling of composites, key metals and critical materials; iii) integrating indicators on ecosystem services into sector policies. Unlike others, the work in this opportunity niche is not built around working groups.

In addition to the above six priority lines the steering group has identified areas of common influence with other priorities or opportunity niches. One is with the energy and urban habitat steering groups to work on urban rehabilitation and regeneration and new construction materials. Another is with advanced manufacturing (initially also with inclusion of the cultural and creative industries niche) to collaborate in projects connected to the circular economy, advanced materials and processes and the set-up of a Basque Eco-design Centre. The Basque Eco-design Centre brings together around 8 big companies and 9 clusters to explore topics related to eco-innovation of products and services, e.g. the design new methods for servitization, which are then being applied at the company level through cluster networks.

By the beginning of 2016 around 5 projects had been defined, including e.g. TRANSRISK, a project to address transition pathways and risk analysis for climate change mitigation and adaptation strategies, and the RESIN project to deal with climate resilient cities and infrastructures. Some of the conditions for the selection of the projects were: i) catalysing effect of the project, ii) market mobilization, iii) capacity to strength the scope of the ecosystem opportunity niche, especially in areas with low R&D, iv) level of innovation, v) R&D contribution into the value chain, vi) openness and internationalization. Sources of project finance have also been identified, including a €600.000 contribution from the DP that is being channelled into projects in priority lines.

ANNEX 9: CREATIVE AND CULTURAL INDUSTRIES OPPORTUNITY NICHE

Attention to creative and cultural industries as a component of the economic system has appeared only in the last few years, even though their influence and territorial embeddedness has been inevitable for territorial development for decades. These industries are very complex, firstly due to their dispersed industrial structure, and secondly due to their roots predominately at the local and city scale. It is represented by a wide variety of companies that are in similar and at the same time very distinct sub-sectors. Moreover, the operation and maturity level of the companies is also heterogeneous; some companies are only operating locally, while others have presence in more than 60 countries.

In the Basque Country creative and cultural industries are composed of segments such as audio-visual and digital content, videogames, fashion, design, performing arts, music, cultural heritage and language industries. There are existing cluster associations in a number of these segments, including EIKEN (the Basque Audio-visual Cluster Association, established in 2004) and Langune (the Basque Language Industry Cluster Association, established in 2012). Moreover, in the context of the identification of a creative and cultural industries opportunity niche in the RIS3 and the ongoing renewal of the Basque cluster policy, these two clusters are joining their forces under one association umbrella, with signs for further growth.

Within the Basque Government the origins of this opportunity niche started with recognition during the development of the STIP of the importance of many locally-rooted activities related to leisure, entertainment and culture, where the strong European attention to these industries played an influencing role. Indeed the Basque Country has been an active member of the Regional Initiative for Culture and Creativity (RICC), an informal European network of regional governments, cities and territories aiming to create strategic European platform to advocate on culture and creative policies and to participate in relevant EU funding programmes. This move was later supported by strategic messages from Brussels in terms of relevance of cultural and creative industries, e.g. by supporting the European Creative Industries Alliance.

The steering group for the creative and cultural industries opportunity niche was constituted in November 2015, led by the DELC. It started by defining what are creative and cultural industries, with reference to: i) sectors which were identified by UNESCO as cultural and creative related, and; ii) what has already been tried out in the United Kingdom in respect to similar sectors. One of the central discussions was to decide on whether the cultural and creative related activities can be attributed as industries at all, or it is rather a transversal part.

Another challenging issue in the process of defining this opportunity niche was to understand and explore the role of other territorial areas, and cities in particular. This was essential due to two main reasons. On one side cities are often centres for many cultural and creative activities, and on other side cities also often have available financial resources in support of such activities. So, one of the main challenges of this opportunity niche has been the generation of a shared vision about what creative and cultural industries should be in the Basque RIS3.

The discussion meetings were of three types. Firstly, *vertical*: considering the need to cooperate between two departments for the development of the opportunity niche. Here the meetings have been held i) separately within the DELC and the DCED, and then ii) jointly with participants from both departments together. Secondly*, inter-institutional*, which involved the discussion between different levels of administration, regional, municipal, etc. Thirdly, *inter-sector* with the representatives of other Basque industries. In these meetings the triple helix approach of participants has been maintained.

These meetings led to the identification of 15 sub-sectors: videogames, audiovisual, performance, gastronomy, editing, visual marketing, music, language, p-culture, crafts, publishing, architecture, fashion, design, cc digital. Fact-sheets for each sub-sector have been created, informing on what represents this sub-sector, what experts it has and what further capacities are needed. The sub-sectors were also analysed through a common framework built up of four dimensions: 1) process, 2) activities, 3) products, 4) markets. All identified sub-sectors have expressed not only interest but also the desire to work together. While the sector is so disperse, the will to work together is especially necessary to build up a common vision and having a critical mass to operate.

For design of concrete projects the sub-sectors have also been prioritized into the following technologic areas: Group 1) language technologies, 2) visual and digital technologies, 3) materials, 4) digital platforms and services, 5) technology transfer, 6) business models. Some of the criteria for project selection were: creating new economic activities and employment, integration of different actors, internationalization and other values related to culture and society.

Connections and links with other Basque RIS 3 priorities or opportunity niches have also been identified and at the beginning of 2016 working groups to explore these opportunities were in the process of being formulated. As an example, the link between the video games sector and advanced manufacturing can be noted as especially potential.


Orkestra
BASQUE INSTITUTE
OF COMPETITIVENESS
DEUSTO FOUNDATION