

# **Mainstreaming Smart Specialisation in the EU R&I Framework Programme: challenges and opportunities. A view from a policy maker's perspective**

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**Abstract** This paper focuses on the need for mainstreaming the concept of Smart Specialisation in the EU Framework Programme for Research and Innovation to maximise its beneficial impact on European countries and regions, regardless of their degree of development of economic growth. The importance of innovation as the backbone of European growth policies was stressed in particular in the context of the present programming period (2014-20), both in the inception and architecture of the EU Research and Innovation Framework Programme (Horizon 2020) but also and in particular in the context of Regional and Urban Policy (Cohesion Policy funding through the European Structural and Investment Funds). Cohesion Policy made Research and Innovation Strategy for Smart Specialisation (RIS3) a conditionality for Member States and Regions, in order to fund Research and Innovation productive investments through the ESIF. However, except for a few recitals in the institutional texts adopting Horizon 2020, no particular provisions were foreseen in the FP pointing to effective interactions and synergies between Horizon 2020 and Smart Specialisation Strategies, imposed nevertheless to all Member States in the context of the Structural Funds. While this can be explained in institutional terms, essentially because of the conceptual origins of the two programming frameworks, in operational terms this is rather an anomaly: although both Smart Specialisation Strategies and the R&I FP share the objective of innovation based growth, the spatially blind profile of the FP drives it to ignore the importance of a coordinated approach to innovation at European level. Thus the significant potential for synergies between the two (2) frameworks is largely wasted. This paper discusses ways to mainstream Smart Specialisation inside the R&I FP and transform it as key enabler for an effective coordination between Cohesion and Research and Innovation Policies in the EU. To make this process a success, relevant authorities implementing the two policies but also universities and businesses have to engage at national and local level in a process that goes well beyond the so-called Entrepreneurial Discovery Process (EDP) and connects relevant stakeholder experience together.

**Keywords:** Smart Specialisation, Knowledge-Based Economies; Innovation and entrepreneurship; Funding strategies and priority identification,

## 1. EU Policies for Research and Innovation

The European Union is a unique political experiment. Brought out of the ashes of World War II, as an initial coalition of neighbouring countries designed to prevent further production and proliferation of deadly weapons, it developed into a powerhouse of economic development, bringing peace and prosperity to its members, at large. Its success is underlined by its multiple enlargements that made it a Union of 28 countries as well as a powerful and desirable partner in the world markets (despite the fact that one of the current members, namely the United Kingdom, decided through a referendum to leave the bloc by 2019). Widespread economic growth is due to many structural factors, among which its fundamental principles on the so-called four freedoms, namely the freedom of circulation for individuals, the liberty of establishment, the freedom of trading goods and services as well as the freedom of capital circulation (which jointly establish one of the greatest achievements of the Union, its Internal Market (the Single Market), a unified space for living, working and trading inside the Union.

The gradual establishment of the Single Market came with challenges too, namely the potential reinforcement of inequalities. To counterbalance these, the Union introduced specific policies with strong socio-economic objectives: the European Structural and Investment Funds' (ESIF) goal is to reduce economic disparities, with a strong focus on regional (sub-national) ones and to promote a balanced and sustainable economic growth.

In addition and to keep the EU as competitive as possible, additional policies have been deployed: promotion of quality education and training with a strong emphasis on evolving skills in adaptation to technological change and support of high quality research and innovation activities. The latter is being supported through two specific policy frameworks that together make two of the biggest parts of the Union's spending budget: the Framework Programme for Research and Innovation (Horizon 2020 in its current implementation, future Horizon Europe) and the European Structural and Investment Funds (ESIF or else Cohesion Policy). Both policies are strongly underpinned by the concept of the Triple Helix<sup>1</sup> (cooperation between universities, businesses and national or regional governments, increasingly together with the civil society) with different connotations and intensity. The reformed Cohesion Policy for the current programming period (2014-20) has introduced many novelties for better guiding regions towards economic growth. One of these was Smart Specialisation, a place-based strategy for growth through prioritisation of research and innovation investments that became a conditionality for any new support to productive investment of Member States and Regions for Research and Innovation, through the European Structural and Investment Funds (ESIF).

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<sup>1</sup> The dynamics of innovation: from National Systems and “Mode2” to a Triple Helix of university–industry–government relations, Henry Etzkowitz, Loet Leydesdorff, Research Policy 29 (2000)109–123 <http://www.elsevier.nl/locate/econbase>

Smart Specialisation has introduced a new model for innovation policy in the EU that is place-based (meaning that is strongly correlated with the particular strengths of the local economy and guided by the future growth drivers which are specific to it and identified through the so-called Entrepreneurial Discovery Process, a bottom-up co-consultation and co-creation process in the context of the local communities). This model is particularly geared towards the optimal prioritisation of future local productive investments, that have to give preference to those related with new activities, shaped and influenced by critical choices in research and innovation (this however does not confine this prioritisation in the realm of technologies: S3 is also very much open to Social Innovation).

A place-based approach to policy focuses in particular to the importance of regional (sub-national) mechanisms that are linked with producing and disseminating innovation and knowledge. The OECD (2009) has noted *that there is a “strong spatial content to growth” and that without an understanding of “place” there is a strong possibility of creating a “leaking instead of a linking process”* among regions resulting often to an increased centralisation of human capital and infrastructure. It is therefore assumed that planning authorities may achieve better results by achieving better synergies across horizontal policies that share similar objectives.

In this paper we will examine how the funding principles that govern the two frameworks supporting research and innovation in the EU can be streamlined through an effective mainstreaming of the concept of Smart Specialisation inside the Framework Programme for R&D and Innovation. Without harming or altering in any way the principle of scientific and technological excellence which is a sine-qua-non condition for the FP. We will compare similarities and differences and will determine how the regions (sub-national entities) and the Member States can make the most out of them, increasing the synergies between seemingly diverse activities. We will also show that Smart Specialisation, if properly handled can become the single most important factor for achieving the maximum of synergies between the two policy frameworks. It will also try to illustrate the ways that this can be effectively achieved through some examples. Finally we will bring examples of real-world cases that illustrate the synergies that can be achieved.

## **2. The Framework Programme**

### ***2.1. Treaties and History***

The first glimpses of the European Union’s involvement with Research and Innovation policy, date back to the first European Steel and Coal Community Treaty, established in 1952. It was not however at the time the centrepiece of the political priorities of the founding fathers of the EU, since the ESC focused primarily on limiting the powers of some Member States for developing and producing lethal

weapons. Despite this, a first embryonic research activity saw the light with the ESC Treaty: article 55 of the ESC Treaty included a small programme of R&D to: “...encourage technical and economic research concerning the production and the development of consumption of coal and steel, as well as labour safety in these industries”.

It might seem awkward today, but the real first EU research actions started nuclear: in 1955 the UN holds the “Atoms for Peace” Conference in Geneva, a breakthrough for the promotion of peaceful future use of atomic energy and international collaboration (fission and fusion). This encouraged the introduction of the EURATOM Treaty (signed also in 1957 as the EEC Treaty) which is the only one that holds research provisions: in its article 2 it stresses: “ ...in order to perform its task, the Community shall, as provided in this Treaty, promote research and ensure the dissemination of technical information”. Following this, EURATOM scientists have been recruited for the first time as permanent EC officials, with the task to act as ‘science catalysts’ around Europe. Around the same time, the European Commission’s own research centre (the Joint Research Centre, JRC) has been established in Ispra (Italy).

While the Rome Treaty on the European Community remained silent about research, it was the Single European Act (1986) and the Maastricht Treaty (1992) that defined and strengthened the legal bases of the EU action on Research and Innovation. With the Single European Act (SEA) the aim of the Union’s RTD policy was defined as “...strengthen the scientific and technological basis of European industry and to encourage it to become more competitive at international level”. Today, the Lisbon Treaty defines the EU action on Research and Innovation with Articles 179 to 190 of the so-called Treaty on the Functioning of the European Union (TFEU). In particular and in the spirit of an ‘ever closer Union’ article 179 of the TFEU specifies that ‘the Union shall have the objective of strengthening its scientific and technological bases by achieving a European Research Area (ERA) in which researchers, scientific knowledge and technology circulate freely’. Thus the concept of a broader unified space for European Research is introduced by providing a strong message of unity and cooperation of scientists and innovators under the sign of the European Union.

## ***2.2. The Concept of the FP***

The EU’s Framework programme for Research and Technological Development is the largest funding instrument for science, technology and innovation at world level. It brings together universities, research organisations (public and private), businesses (big and small) as well as individual researchers, in a multi-purpose programming activity that focuses primarily on strengthening the competitiveness of the Union by pushing the frontiers of knowledge and by creating the framework conditions that will allow knowledge-intensive technological breakthroughs. This objective was significantly specialised over the years to include important support for scientific excellence, as well as using science and research to address big societal

challenges like environmental protection, climate change, health, sustainable transport etc. As a concept it is fully defined in the EU Treaties (see box). It is important also to note that most of the activities have to be carried out in a transnational cooperation mode, thus favouring, on the one hand, the broader European Integration process but at the same time, opening up the frontiers of the Union to world-wide peaceful and productive cooperation.

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*Article 180*

*(Ex Article 164 TEC)*

*In pursuing these objectives, the Union shall carry out the following activities, complementing the activities carried out in the Member States:*

*(a) Implementation of research, technological development and demonstration programmes, by promoting cooperation with and between undertakings, research centres and universities;*

*(b) Promotion of cooperation in the field of Union research, technological development and demonstration with third countries and international organisations;*

*(c) Dissemination and optimisation of the results of activities in Union research, technological development and demonstration;*

*(d) Stimulation of the training and mobility of researchers in the Union.*

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The Framework Programme is now in its current (8<sup>th</sup>) edition (2014-20) with a budget circa EUR 80 bn), having started operations in a quite more modest format, in the early '80s (1984). A new (9<sup>th</sup>) version is in the making with an even bigger budget for the next programming period (2021-27, Horizon Europe; projected budget circa EUR 100 bn). The FP is centrally managed by the Commission services in Brussels with the help of a number of Commission Executive Agencies that are entrusted with contract management and the day-to-day administrative and financial operations. The Commission services are in charge of strategy, policy and coordination.

### **2.3. Main actions and beneficiaries of the FP**

The *aim* of the EU's Framework Programme (at the moment Horizon 2020, Regulation EU No 1291/2013) has been defined by the legislator in these terms: “*to build a society and a world-leading economy based on knowledge and innovation across the whole European Union, while contributing to sustainable development*”.

This overall target is broken down to three ‘mutually reinforcing actions’ focused on: *a) excellent science; b) industrial leadership; c) societal challenges*. Each of these “priorities” have a number of particular objectives, that is:

— *Priority I excellent science: reinforcing and extending the EU science base excellence, and consolidating the ERA (European Research Area, a unified space for researchers), to enhance the competitiveness of the EU research and innovation system on a global scale;*

— *Priority II industrial leadership: focusing on accelerating the development and deployment of technological innovations that will be able to scale-up the innovative European SMEs;*

— *Priority III societal challenges: addressing the policy priorities and societal challenges, identified in the Europe 2020 strategy that require common research and innovation actions, since no Member State can afford to address them alone (like health, sustainable development, energy and the environment etc.)*

The ways and methods of designing and delivering the Framework Programme have developed substantially throughout the few decades of its history: there has been a clear evolution to more strategic programming that takes into account not only the declared strategic priorities of the European Commission's Work Programme but equally the views of the numerous stakeholders coming from all parts of society (universities, public and private research organisations, big industry but also Small and Medium Size Enterprises, Professional associations, civil society, etc.). The programme is now designed following open public consultations that use heavily the Internet and most recently Social Media, together of course with the formal consultation and co-decision process with the Council (EU Member States) and the European Parliament. Increased publicity is given to the forthcoming work programmes and Calls for proposals that have been heavily rationalised and rendered fully electronic, through an entirely online proposal submission system.

It is important to note that while there are different classes of actions under the Framework Programme, in principle the basic structure is shaped on the basis of typical Triple Helix partnerships with several variations. From the full-blown helix of academia – industry –government, the typology ranges from public-private, to private-private, public-public partnerships. Another factor that shapes the type of the partnership is content: thus, for example, there are several different types of actions used under Horizon 2020: collaborative R&I projects (most specifically Research and Innovation Actions (RIAs) Innovation Actions (IAs)), support to individual applicants for fundamental research under the European Research Council, Future and Emerging Technologies (FET) schemes, Marie Skłodowska-Curie mobility and training Actions for researchers (MSCA) as well as support to disruptive innovation under the so-called SME Instrument. Other types of actions include the procurement of innovative solutions (Pre-commercial procurement for innovation (PCP), Public Procurement of Innovative solutions (PPI), P2P (including ERANET Co-funds, Article 185), Public- Private - Partnerships (including Joint Technology Initiatives (JTIs), contractual public-private partnerships), inducement prizes and financial instruments. Finally the so-called "Coordination, support and other actions" are used for studies, expert groups, support to conferences, as well as for disseminating and exploiting results.

The first and most visible impact of the Framework programme is its funding to beneficiaries researchers, research teams and partnering institutions. On a total budget which stands at present at EUR 74.8 bn and on the basis of January 2017 statistics, EUR 20.4 billion have been allocated to 11 108 (eleven thousand one hundred eight) signed grants. Of these, EUR 7.5 bn were allocated to Pillar 1:

excellent science (36.8 %); EUR 4.5 bn to Pillar 2: industrial leadership; EUR 7.4 billion to Pillar 3: societal challenges; and EUR 944.1 million to additional priorities. Most of this money was allocated through the so-called Research and Innovation Actions (39.3 % of total funding), followed by fundamental research grants awarded by the European Research Council (19.0 %). Again, it has to be stressed that such funding has an immediate and lasting impact on the research communities of the Member and Associated States since it allows the creation of new knowledge as well as important synergies and breakthroughs within cooperating industries and small businesses. **However, it is important to note that this kind of funding is “location blind”**, meaning that its totally competitive nature allows only the best teams to succeed, regardless of location and any other economic indicators. This has resulted over the years in significant asymmetries on the ground, with little or no corrective action (until Horizon 2020 introduces the important actions on “Spreading excellence and Widening Participation” with promising results). Resulting fund distribution in the form of grants for successfully selected projects tends to over-concentrate in specific geographical zones (mainly in Northern and Western Europe), although geography has never been a selection or award criterion in the context of the Framework Programme.

Thus, while the Framework Programme promotes the creation and the advancement of knowledge, it does not pay any attention on where and how such advancement will result into meaningful gains for hosting communities / places. **As such it falls in the category of “location-blind” policies, in stark contrast with EU’s Cohesion Policy which is place-based.**

**There are strong arguments in favour of a “location-blind” approach** (as well as against): first and foremost the main reason is the unconditional quest for scientific excellence that cannot afford to be “contaminated” with other criteria types. Even if this is not entirely true for the majority of the actions of the FP (where, in addition to the excellence criterion, there are two others at play, namely, impact and efficient use of resources) the nature of the partnerships which are almost always transnational, renders very difficult any attempt for effective localisation of any funded R&D project: partners are dispersed all over Europe, with no particular principal geographic base, even if the coordinating entity often plays an important role in this process. On the other hand, the declared objective for funded projects, is the significant advancement of knowledge and innovation for humanity at large (and of course for the benefit of Europe), with the expectation that the overall impact will eventually override any kind of localised perspective. **Thus it is very difficult to capture the local dimension in the context of the FP.**

**This said, there is of course an important regional and local dimension of the FP funded projects that materialise over a number of research institutions across Europe**, mobilising several research teams in different socio-economic and geographical contexts. For the majority of FP funded projects, research teams follow a typical Triple Helix pattern, linking together universities, research organisations and businesses. In the context of the FP, the government role is mostly represented by the European Commission that sets the stage and manages the projects as they go

along; this however does not exclude the occasional involvement of local or national authorities in significant projects: in these cases the involvement is either through a provision of facilities, training of researchers or technical staff or support on diffusion and commercialisation of results. However there is currently no way for a proposal to involve the local or regional dimension argument to be taken seriously in the context of the FP.

This of course does not diminish the value or the impact of the FP: the recent interim detailed evaluation of Horizon 2020 confirmed its European added value and the strong relevance of its actions for its beneficiaries. The FP was found to strengthen indeed the science base of the Union while bolstering also its industry, although doubts remain on its ability to close effectively the existing innovation gap across the continent. The FP is also an effective means of working towards the fulfilment of the UN Sustainable Development Goals while focusing on great societal challenges like environmental protection, health and energy security to name but a few.

However, despite the fact that the Framework Programme represents the biggest source of funding at EU level for Research and Innovation, **it is not the only one that matters in terms of funding for Research and Innovation: Cohesion Policy (the European Structural and Investment Funds)** is the second biggest research and innovation funder in the same context, and its role is greatly increasing over time. From a modest percentage of 4% of its budget devoted to R&D and Innovation (RDI) in the early 90's, the European Regional Development Fund (ERDF) has climbed to almost 30% in the last programming period (2014-20). In concrete figures this represents more than EUR 40 Bn for all kinds of support to RDI with funding rates that can go from 40 to 80 % of the total expenditure (The FP in comparison provides the 100% of the total expenditure for public bodies while it goes up to 70% for companies). Thus in absolute numbers, the ERDF expenditure on RDI is almost half of the total one of the FP.

**There is however an important difference between the two frameworks:** while the FP follows a totally competitive approach for allocating grants, the ERDF (and the rest of the European Structural and Investment Funds, ESIF) work(s) in partnership with the Member States' Managing Authorities, allocating money to the national governments in a non-competitive approach, based on specific economic and population indicators and on a number of jointly agreed strategic programmes (however no project is funded by the Commission in this way, since any project deriving from these programmes has to be selected on a competitive basis by the national or regional authorities following calls for proposals that they hold). In the case of Research and Innovation Policy, this difference creates a number of tensions on the ground, as on the one hand there is one single common objective at Union level (advancement of the Knowledge Economy and strengthening of competitiveness and growth) pursued by both policies; on the other however the ways actions and beneficiaries are selected differ profoundly and lead to questionable results when seen from an efficiency perspective. Such results tend to favour, over time, strong institutions as they lead to an increased networking concentration among the-best-in-class (forming competitive partnerships coming out



of the strongest places and communities in terms of resources but also of institutional thickness). **The question thus is how to re-conciliate the seemingly contradictory policy frameworks by increasing positive synergies, interactions and coordination while respecting their respective philosophies and rationale (as both policies are fully justified in their own arguments).**

An interesting analysis had been performed by the authors of the **2014 Regional Innovation Scoreboard**. Specifically the use of EU funding for research and innovation in the 2007-2013 programming period has resulted to 5 typologies of regions<sup>2</sup>: (a) *Framework Programme leading absorbers* (15.85%); (b) *Structural Funds (ESIF) leading users targeting research and technological activities* (3.66%); (c) *Structural Funds leading users prioritising services for business innovation and commercialisation* (6.10%); (d) *Users of ESIF for both types of RTDI priorities with similar medium-to-high amounts of ESIF committed to projects targeting both of the above fields* (3.66%); and (e) *regions with low use of Structural Funds, which make up the majority of regions included in the analysis* (71%).

It is then clear from the outset that the majority of European regions, were not prioritising research and innovation in terms of productive investment, since they could not articulate any meaningful strategy nor expectation, on whether this orientation could result in any growth and jobs perspective. The advent of Smart Specialisation Strategies has broken new ground in the field and raised hope for a new kind of local qualitative development, offering new perspectives.

The 2014 RIS went further on its analysis “*to understand the extent to which the EU funding is reflected in the innovation performance of the recipient regions*”. Thus, a thorough “cross-analysis” of the regions’ absorption of EU funding and their results was carried out. The analysis demonstrated that, while a substantial population of regions could be identified as “*pockets of excellence*” in terms of their FP participation and regional innovation capacity, only a few of the regions using EU funds for business innovation in a more substantive way were standing above average innovation performers. Furthermore, data have shown that the vast majority of the regions analysed were rather low absorbers of FP funding and ESIF simultaneously, while presenting “moderate to modest levels of innovation”. The analysis confirmed that the so-called “*regional innovation paradox*” (i.e. regions that are most in need of innovation, almost completely underinvest in innovation terms) has become an almost permanent feature of the European regional system that raised the attention of the policy makers and led to a major overhaul of the principles of Cohesion policy in the next Programming period (2014-20)

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<sup>2</sup> See 2014 Regional Innovation Scoreboard, Regional research and innovation potential through EU funding, p.24 <https://publications.europa.eu/en/publication-detail/-/publication/69a64699-18d7-40b9-8f92-1db3226cd2ec/language-en> (last accessed on 17/02/19)

### **3. Support for Research and Innovation in the context of EU's Cohesion Policy and the need for increased Synergies with the Framework Programme**

#### ***3.1. EU's Cohesion Policy as a power funder for Research and Innovation***

The birth of Cohesion Policy preceded the EU's actions on Research and Innovation as the latter are still perceived as shared competence between the Union and its Member States. The European Community Rome Treaty (1957), has put emphasis on the concept of "promotion of 'harmonious development of economic activities', somehow pre-announcing a policy for sustainability and balanced development. However it is far later (in 1972) and following the first enlargement (IRL, DK, UK) and the adoption of the objective for achieving an Economic and Monetary Union, that the European Regional Development Fund (ERDF) is created, based on art. 235 of the Treaty (now art. 308), while the first ERDF Regulation is adopted in 1974, allowing it to become operational on the ground.

According to the Treaty<sup>3</sup>, the main aim of Cohesion policy is to reduce regional disparities across the EU. Article 174 of the Treaty on the Functioning of the European Union (TFEU) stipulates that: *'In order to promote its overall harmonious development, the Union shall develop and pursue its actions leading to the strengthening of its economic, social and territorial cohesion. In particular, the Union shall aim at reducing disparities between the levels of development of the various regions and the backwardness of the least favoured regions'*. The stage thus is set for a complex web of integrated operational programmes that are agreed between the Member States and the Commission, in terms of overall strategy and objectives (partnership agreements); however the shared management principle that governs these actions, leaves a lot of freedom to national and regional authorities at the level of implementable projects.

Cohesion policy forms a substantial part of the EU budget since it is roughly around 30% of the total (current amount for Cohesion budget stands at about EUR 454 billion). Factoring-in national / regional and private money, this figure goes up to some EUR 638 billion. In practical terms, five (5) funds<sup>4</sup> are operational of which the biggest and most significant is the European Regional Development Fund (ERDF). Applying specific pre-allocation criteria, the 'less developed regions' (whose GDP per capita is lower than 75 % of the EU average) get the lion's share, while the so-called 'transition regions' having a GDP per capita between 75 % and 90 % of the EU average get the rest.

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<sup>3</sup> EPRS, European Parliamentary Research Service, PE 565.873, Briefing, How the EU Budget is spent, July 2015

<sup>4</sup> These are the European Regional Development Fund (ERDF), the European Social Fund (ESF) and the Cohesion Fund (CF), as well as the European Agricultural Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund (EMFF).

During its long history the objectives of the ERDF have been remarkably steady, but during the two last programming exercises they have been significantly broadened to reflect the commitment of the reformed Cohesion policy to the Lisbon strategy (and its successor policy, Europe 2020) **towards a knowledge economy and society**. Consequently we have witnessed a major turn towards innovation and intangible investments favouring R&D, the Union's Digital Agenda, the Sustainable Development Goals and the strengthening and modernisation of SMEs. It has also to be noted that over the years, the component of efficient partnership of the Triple Helix partners on the ground has played an important role on conceiving and designing local and regional strategies. This culminated in the use of the Entrepreneurial Discovery Process a participatory exercise to identify the unique growth drivers of a country / region in the context of Smart Specialisation Strategies (S3). **It was indeed the introduction of the concept of Smart Specialisation as a compulsory approach to the programming of the Structural Funds that provided the strongest opportunity for efficient synergies with the Framework Programme in the field of innovation.**

### ***3.2. The advent of Smart Specialisation***

*Smart specialisation<sup>5</sup> strategy here means the national or regional innovation strategies which set priorities in order to build competitive advantage by developing and matching research and innovation own strengths to business needs in order to address emerging opportunities and market developments in a coherent manner, while avoiding duplication and fragmentation of efforts; a smart specialisation strategy may take the form of, or be included in, a national or regional research and innovation (R&I) strategic policy framework. The development of smart specialisation strategies through involving national or regional authorities and stakeholders such as universities and other higher education institutions, industry and social partners in an entrepreneurial discovery process is compulsory for the regions and Member States that wish to invest resources from the ERDF into research and innovation. Smart specialisation strategies have to include upstream and downstream actions with the Framework Programme (i.e. Horizon 2020).<sup>6</sup>*

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<sup>5</sup> EPRS, European Parliamentary Research Service, PE 589.813, “Smart Specialisation: The concept and its application to EU Cohesion Policy”, October, 2016

<sup>6</sup> See: RIS3 Guide: <http://s3platform.jrc.ec.europa.eu/s3pguide> See [http://ec.europa.eu/regional\\_policy/thefunds/fin\\_inst/pdf/fin\\_esif\\_2014\\_2020.pdf](http://ec.europa.eu/regional_policy/thefunds/fin_inst/pdf/fin_esif_2014_2020.pdf) and [http://ec.europa.eu/regional\\_policy/thefunds/fin\\_inst/index\\_en.cfm](http://ec.europa.eu/regional_policy/thefunds/fin_inst/index_en.cfm) (an update of the “Practical Guide to EU funding opportunities for research and innovation”)

**The concept of Smart Specialisation was born in the context of a High Level Expert Group of the European Commission** set up by former Research Commissioner Janez Potocnik (Knowledge for Growth). Coming out from earlier work of innovation economists the concept originated out of examining the causes of the persistent productivity gap between Europe and the USA, a gap blamed primarily to fragmentation of innovation programmes and efforts in Europe and lack of capacity in exploiting better the so-called General Purpose Technologies (Foray & van Ark 2007; Barca 2009; Foray et al. 2011). The expert group then advised in a working paper to “*encourage investment in programs that will complement the country's other productive assets to create future domestic capability and interregional comparative advantage*” (Foray, David & Hall 2009). What was surprising in this respect was what followed, since a particularly significant concept for future Cohesion Policy in the EU was actually born within the context of an Expert Group set up in the context of EU Research Policy, arguably a first in the Union’s history.

In the run-up to the next Multiannual Financial Framework of 2014-2020, the **concept of Smart Specialisation reached unexpectedly the heights of the European Council (the Heads of State and Government)**. With such a strong political backing it found quickly itself identified as an Ex-Ante Conditionality in the Regulations laid down by the Council of Ministers and the European Parliament for the new Cohesion Policy (2014-20), advocating for Smart, Sustainable and Inclusive Growth. Doing this, it marked a new ground in making a link between a renovated ‘Smart’ Regional Policy and the Research and Innovation Policy of the Union, energising more Triple Helix links in the process and mobilising new kinds of stakeholders for a new place-based Innovation Policy.

**Smart Specialisation is indeed about specialisation** but is at the same time a departure from a simplistic specialisation logic that can lead to economic lock-ins and sometimes blatant failures (for example after a mega-failure of a given sector due to endogenous or exogenous factors or an unexpected withdrawal of a key investor – e.g. the case of the steel sector in Belgium). It describes rather “a strategic approach to economic development focusing on targeted support for research and innovation” (Boschma 2016), and addresses issues as “smart diversification”, focusing on the real growth drivers of the future for a given location, based on knowledge assets. Because of this, Cohesion policy regulations adopted the term “*Research and Innovation Strategies for Smart Specialisation (RIS3)*” to identify the relevant Ex-Ante Conditionality for all investments in research and innovation to be supported under the Structural Funds.

In their own words the experts that conceived the concept urge policy makers to set priorities in certain domains “*in order to realize the potential for scale, scope and spillovers in knowledge production and use, as these are important drivers of productivity in the domain of R & D and other innovation-related activities*” (Foray, David & Hall 2011).

In the current programming period, more than 120 Smart Specialisation Strategies, focusing on Research and Innovation priorities as significant growth drivers and investment orientation choices, helped the 28 Member States who are all ERDF beneficiaries albeit with differences, commit money from the Fund on RTDI. Starting from a huge EUR 10 bn commitment on RDI from Poland to the smaller commitments of Luxembourg, Cyprus and Malta (that are performing however very well if account is taken for their population, and their researchers' community) it is clear to establish that MS take now the Research and Innovation structural investments very seriously. **This puts however on the table the question of the best possible achievement of meaningful synergies and coordination between the ESIF action on RTDI and the one launched by the Framework Programme.**

To achieve this, it is crucial, first, **to align strategies and implementation modalities and complement existing and future roadmaps.** However, translating this new reality is largely a learning process, given that ESIF implementation is under Member States' shared management rules while FP support is allocated at EU level (directly or indirectly by the Commission). **A first effort lies in making strategic choices and planning on the side of the regions and Member States, i.e. to foster excellence in the smart specialisation areas they have opted for inside the submitted Operational Programmes. On the other hand,** for Framework Programme proposers this means taking at least partially into account the Smart Specialisation Strategies of their region / country to align therein their proposal if this is indeed feasible (however this is by no means compulsory, remaining a voluntary process). On a broader approach, national and regional planning authorities in charge of the ESIF Operational Programmes should deploy harder efforts to raise awareness for universities and companies trying to enter the Framework Programme on the existence and content of these strategies. This may look as a bureaucratic process but it is very important for maximising synergies between the two frameworks on the ground.

**It is useful to concentrate here on the concept of Synergies:** in a relatively detailed guidance document (2014) the Commission services identified *“synergies between the different Union funds as amplifying the research and innovation investments and their impact, combining different forms of innovation and competitiveness support, or carrying innovative ideas further along the innovation cycle or value chain to bring them to the market. Synergies are thus about obtaining more impacts on competitiveness, jobs and growth in the EU by combining ESIF, Horizon 2020 and other EU instruments in a strategic and also cohesion-oriented manner.”*

To make this happen, a strategic approach was introduced with a medium to long-term perspective, starting at the stage of involvement of stakeholders ('entrepreneurial discovery process') to shape the smart specialisation strategies (RIS3 – Research and Innovation Strategies for Smart Specialisation). RIS3 strategies set out the national or regional frameworks for investments in research and innovation not only from ESIF, but from all funding sources. National and regional

authorities directly involved in managing the FP and other EU programmes in specific places were thus invited to get ownership of this process.

Among the practical ways available for achieving better synergies, is to focus at project level: here participants have been strongly advised to examine how money from the two frameworks can be put to work for the same project, or for a combination of projects that build on each other (through an intelligent road-mapping). **The common breeding ground of this effort then is the relevant, localised, Smart Specialisation Strategy.**

#### **4. Maximising synergies across the board: mainstreaming Smart Specialisation in the Framework Programme**

**The particular characteristics of establishing and running a Smart Specialisation Strategy** provide for a fertile ground for developing synergies between Cohesion policy and the Research and Innovation Framework Programme. It has to be understood that what is actually sought after here is the **maximisation / optimisation of the impact of relevant activities on Research and Innovation, irrespectively of the funding programme that underpins them.** Considering that ESIF related actions are actually broadly planned by the national or regional authorities (albeit in theory at least, through a participatory process where the private sector is normally present) but actually carried out by the regional Triple Helix stakeholders (universities, companies and sometimes non-profits) on the ground; considering also that broadly a similar pattern is followed by the Framework Programme but mostly on a transnational basis and following a centrally designed and delivered competitive selection process, it is clear from the outset that a **thematic approach can form the common starting ground for synergies.** Thus, through the S3 process, crucial choices will have to be made on the orientation of investment and then on the accompanying measures that will support it including on actions on R&D that will normally give it an edge over competitors in the global value chains where ideally it will be integrated on successful outcomes.

**This fundamentally constructive role of Smart Specialisation** can function as a **real accelerator for investments on research and innovation**, especially by allowing involved organisations to identify relevant **transnational partners** and construct a more sophisticated endeavour, on the basis of the growth drivers / priorities that happen to coincide with some of these found simultaneously in their RIS3 and the Framework Programme. However *this kind of organisation requires particular know-how in the area of priority setting.*

Most commentators agree that an efficient priority setting exercise requires careful planning but also an important degree of sophistication that would accompany the

policy cycle. Starting frequently with a foresight exercise<sup>7</sup> that would identify and inspire policy visions, the exercise will be usually deployed via a closed loop where implementation will be constantly under scrutiny, evaluation and monitoring for provision of constructive feedback for possible re-adaptation of goals and means to achieve them. This exercise is crucial as much as fragile as it is open to serious fluctuations by interest groups and political bargains. Nevertheless it is an essential part of the Entrepreneurial Discovery Process and has the potential of delivering real synergies within the policies it touches upon. In this particular case, it can link efficiently the process of the ESIF and the Framework Programme competitive participation, through a dynamic, multi-stakeholder process.

However such an approach is pretty conventional and assumes that in the future, the planning and guiding principles across the two policy frameworks will remain largely unchanged. A more daring perspective could envisage new ways of handling Smart Specialisation outside its usual framework (Cohesion policy only) and into the Framework Programme. This could help mainstream its use across innovation players in Europe in a more meaningful, balanced and coherent way. And the benefits could well be very important, especially for European regions. The question then is how to best achieve this mainstreaming.

It has to be stressed that mainstreaming Smart Specialisation in the Framework Programme should exclude by all means interfering in selection and award criteria for projects to be funded under the FP, in order to preserve the Framework's credibility as an important driver for quality research. **This means, there should be no cohesion criteria or geographic restrictions of any kind in the selection of fundable projects.** This would preserve the basic characteristic of the FP that celebrates excellence.

**Mainstreaming however means that the concept of Smart Specialisation should find ways to penetrate current research and innovation projects funded under the FP and blend its positive locational influence on otherwise spatially blind endeavours.** One way to do this could be to **create a voluntary process** (through relevant calls for expressions of interest) by which already running FP projects (already selected for funding under the FP) would link up with willing regions pursuing relevant (thematic) Smart Specialisation Strategies, for transferring their findings and expertise and getting constructive feedback from specific spatial entities. At the same time these projects would be exchanging valuable experience with the overall deployed strategies in the given territories. There could be also important implications for pilot or demonstration applications of interim or final findings of the linked R&D projects. The concept is somehow present today with the emergence of a number of **Thematic Smart Specialisation Platforms**<sup>8</sup> linking regions with similar RIS3 priorities together, however the initiative emanates from and remains largely confined inside Cohesion Policy funded regions, with little or no

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<sup>7</sup> Clar, G., *Guiding investments in place-based development. Priority setting in regional innovation strategies*, Seville: European Commission, 2018, JRC112689

<sup>8</sup> <http://s3platform.jrc.ec.europa.eu/s3-thematic-platforms>

exposure to FP active players. Such networks follow the principle of learning regions where similar preoccupations and objectives drive forward cooperation, co-creation and co-investment initiatives. There is no particular reason that a similar model could not be applied in voluntary alliances between relevant FP RTDI projects and willing regions with similar research, innovation and technology priorities.

In operational terms, the European Commission (through the FP) would only cover coordination costs in the context of these new alliances, since the rest of the activities would be already funded, either by the FP (RTDI projects) or by ESIF (RIS3 OP). This minimises the possible relative financial burden for the FP, since this would be only intended to cover travel, accommodation, meeting and publication costs for the resulting alliances.

Benefits from such alliances could include, among other things (the list is not exhaustive):

- Increased probability of knowledge transfer between advanced research and innovation organisations (including universities, research centres and corporates) to the connected regions (affecting directly similar organisations in those regions, including the regions' planning authorities)
- Increased chance of better application insights of connected technologies stemming from the FP RTDI projects at the linked regions. Smart Specialisation Strategies here could become an active testbed of such technologies and give eventually rise to promising start-ups and spin-offs
- Improved know-how on governance issues for all parties involved
- Improved experience on priority-setting and prioritisation of investment
- Improved connections of the involved regions with advanced players at an international level (reconnection to or generic development with global value chains).

Resulting networks between RTDI FP projects and regions involved in Smart Specialisation Strategies could be inspired by already prominent examples of rather atypical alliances between research players that have extended their interest towards regional ones. Such examples are broadly characterised by good and innovative governance structures that try to create value by examining cooperation possibilities across the board, using multiple EU channels and funding opportunities.

<sup>9</sup>. To start with we would refer here to the **case of Bio-Based Industries Joint Undertaking (BBI JU)**<sup>10</sup>, a relatively new EUR 3.7 billion Public-Private Partnership between the EU (Horizon 2020) and the **Bio-based Industries Consortium (BIC)**, an industry group. The BBI JU has devised a particular Vision and Strategic Innovation and Research Agenda developed by industry, mobilising

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<sup>9</sup> European Commission, (2016) "EU Funds working together for jobs and growth *Examples of synergies between the Framework Programmes for Research and Innovation (Horizon 2020) and the European Structural and Investment Funds (ESIF)*"

<sup>10</sup> See <http://www.bbi-europe.eu>



EUR 975 million of EU funds and EUR 2.7 billion of private investments, a financial set-up that creates a sound basis for attracting additional investment from regional authorities (that can use for this purpose Structural Funds to include it in their Smart Specialisation Strategies). BBI JU has an ambitious objective of developing new bio-refining technologies to transform renewable natural resources into bio-based products, materials and fuels and thus create new value chains. This is a particularly promising sector for Europe, especially in the context of sustainability but also growth, targeting new and expanding markets.

Another good example in this sense is the **multi-stakeholder Triple Helix like structure, of the Joint marine and maritime research and innovation initiative BLUEMED<sup>11</sup> focusing on jobs and growth in the Mediterranean Sea**. BLUEMED is an initiative jointly launched by the participating Member States (Cyprus, Croatia, France, Greece, Italy, Malta, Portugal, Slovenia and Spain) and funded by the European Commission. Launched in 2014, the project addresses on research and innovation activities in the maritime sector with a special focus on the Mediterranean Sea, its ecosystems and the potential benefits that can be derived by the sustainable optimal exploitation of its natural resources, while caring for social and environmental protection. As such it is a large and well-structured initiative that invest on a coordinated approach between the involved universities, the relevant authorities and research centres of the area as well as the private sector. A strategic vision and research agenda will allow a multi-fund approach that will be relying on competitive calls (including from the FP) but also from other more stable programmatic fund sources like the European Structural and Investment Funds to which all involved Member States are entitled). The initiative provides a good model for a synergetic approach of multi-instrument funding, clustered around a key specialisation area.

An additional example of a large multi-stakeholder initiative is the case of the **MicroTec Südwest consortium (MTSW)<sup>12</sup>**, consisting of about 200 companies and universities and research institutions, specialised in knowledge advancement, industrial production processes, marketing and exploitation activities in the field of microsystems technologies (MST), an important localised cluster in Baden-Württemberg (BW), Germany. The cluster managed to systematise and expand its activities and better integrate the global value chains in its domain, by improving, codifying and prioritising its activities to anticipate and match the dominant global market trends, making it one of the global leaders in its field.

The consortium worked with teams of experts and consultants to improve its strategic management activities giving emphasis to structured learning and competence building. By doing so, it improved its ability to make the most of its intellectual and technological resources, integrate better the economy of its wider region and expand its activities in Germany and abroad. Furthermore it managed to

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<sup>11</sup> [https://www.researchitaly.it/uploads/12471/BLUEMED\\_Vision.pdf](https://www.researchitaly.it/uploads/12471/BLUEMED_Vision.pdf)

<sup>12</sup> Clar, G., *Guiding investments in place-based development. Priority setting in regional innovation strategies*, Seville: European Commission, 2018, JRC112689

get fully integrated in the local Smart Specialisation Strategy. This was achieved through an effective implementation of the Entrepreneurial Discovery Process (prioritisation of future investment on particularly promising identified growth drivers). Main actions focused on:

- Managing to mobilise all stakeholders in the priority setting exercise through a robust, evidence-based, process.
- Attracting the attention of involved stakeholders on really key priorities with a high technological but equally societal value;
- Looking inwards to understand the real strengths of stakeholders and guide them to the best possible options for own success but also on areas that would be highly significant for the region's prosperity;
- Steering the course toward a real place-based and innovation-driven approach with the right policy mix between the private and public interventions.

## 5. Instead of conclusions

This paper addressed the issue of a better and more efficient synchronisation between two different large programmatic initiatives of the European Union, namely the multi-annual Research and Innovation Framework Programme and the European Structural and Investment Funds (Cohesion Policy) in the field of innovation for growth. Largely driven by top-down policies, and without a more consistent effort for effective synergies they miss a lot of their strong potential to increase the growth capacity for Europe. **Mainstreaming Smart Specialisation in the Framework Programme and making it a cross-programme innovation policy flagship, could greatly boost the weak innovation capacity of the Union.** By providing a clear priority-setting procedure for identifying future growth drivers for a given location (region, country), Smart Specialisation reinforces the ability of the local or national research and innovation stakeholders to focus on their real competence and target their real research and innovation priorities inside the highly competitive Calls for proposals of the Framework Programme. In addition, the strategy allows for a better local preparation for investments that strengthen the innovation capabilities of the stakeholders (infrastructure, smart intermediaries, networks, and exploitation and diffusion policies). Coupling these capabilities with high-quality research and innovation international projects and allowing a real dialogue between the two frameworks will certainly boost the innovation capacity of the Union and lead to more growth and jobs.

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