

**ERIC Forum Implementation Project**  
**Technical and Innovation Report: Creating synergies**  
**between ERICs and the (Regional) Research and**  
**Innovation Strategies for Smart Specialisation -RIS<sup>3</sup>-**

Work Package 6 – Deliverable 6.10

Deliverable no	D.6.10
Deliverable Title	1 <sup>st</sup> Technical and Innovation Report: Creating synergies between ERICs and the (Regional) Research and Innovation Strategies for Smart Specialisation -RIS <sup>3</sup> -
Contractual delivery month	12
Responsible Partner	LifeWatch ERIC
Author(s)	Juan Miguel González-Aranda, Cristina Huertas Olivares, Christos Arvanitidis

## TABLE OF CONTENTS

### **EXECUTIVE SUMMARY**<sup>3</sup>

### **BACKGROUND**<sup>3</sup>

### **ERICs AT REGIONAL LEVEL**<sup>4</sup>

### **REGIONAL STRATEGIES & FUNDING**<sup>5</sup>

Research and Innovation Strategies for Smart Specialisation -RIS<sup>3-5</sup>  
Regional Funding<sup>9</sup>

### **SYNERGIES BETWEEN ERICs AND -RIS<sup>3-10</sup>**

10

Best Practice: The case of Andalusia Region (Spain)<sup>13</sup>

### **DISCUSSION: THE WAY FORWARD**<sup>14</sup>

### **CONCLUSIONS**<sup>16</sup>

### **REFERENCES**<sup>17</sup>



## Executive summary

This report has been produced in the context of the ERIC FORUM H2020 Project. It forms part of the Work package 6: “The Role of ERICs in European science policy and research strategy”. It presents the existing and potential synergies between Regional Research and Innovation Strategies for Smart Specialisation-RIS<sup>3</sup> and the European Research Infrastructures (ERICs).

The report is divided into six main sections: (a) At the beginning, a background is introduced to highlight the importance of this synergy; (b) Then after, an analysis on why ERICs are important at Regional Level is presented; (c) Subsequently, Regional Strategies for Research and Innovation Smart Specialization and the related Regional funding mechanisms are analysed; (d) the next section, the main one, reviews the historical attempts to link ERICs with RIS<sup>3</sup>. It also explains in detail an innovative Best Practice in this synergistic approach, the case of Andalusia Region in Spain; (e) Based on the previous analyses, a proposal on how ERICs could move forward to maximize their potential synergies with ERDF and other regional funding mechanisms is presented; (f) Finally, the main conclusions of the report are provided.

## BACKGROUND

ERICs are important both for boosting Excellence in European Science and Innovation as well as for their contribution to the development of the Regional and Innovation Strategies for Smart Specialization-RIS<sup>3</sup>. They act as catalysts of the economic growth by promoting innovation, favouring high-quality employment and trans-national cooperation.

In this context, the ERIC FORUM project analyses the synergies between the two sides of this interrelationship: one hand, how Regions can benefit from Research Infrastructures, and on the other hand, how ERICs can gain access to additional resources from regional funding sources, such as European Regional and Structural Funds, and INTERREG.

This concerted approach would create a window of opportunity for RIs and Regions through a synergistic development and growth, which would address the needs of the Regions for access in knowledge and innovation creation and at the same time it would help the ERICs to get actively involved in the primary Regional and local issues and find support for their economic sustainability. A win-win situation for all European Regions and ERICs.

## ERICs AT REGIONAL LEVEL

Research Infrastructures (RIs) are at the centre of the quadruple helix (Pór, 2005), where research, academy, private companies (including SMEs), civil society organizations and public administration meet by applying an incremental and iterative process for creating new knowledge (González-Aranda et al., 2009). They provide a backbone for innovation by involving not only scientific and technological communities of practice, but also decision makers and citizens in general terms.

Regionally, the impact is principally on local industries and stakeholders that benefit from their proximity and therefore privileged access to the research infrastructure. This provides a boost to the local innovation and a competitive advantage to the region. Furthermore, the construction of the infrastructure facilities provides local employment and opportunity. Finally, there is an important opportunity for local industry to work on the technological development of the facility, when the expertise is available and the trading zone of their mutual interests is defined. RIs thus generate a significant local socio-economic impact and, as such, provide an incentive to regions to attract RIs in order to set-up in their territory, or if already present, to invest financially in them.

In fact, the distributed nature of most of the RIs has made aware some regions of its potential for:

- Capitalizing already existing investments
- Improving ICT developments that may be useful for biodiversity research and for other purposes
- Special attention that must be paid to the expected impact in the regional industrial sectors (Small and Medium Enterprises -SMEs-).
- The relevance of this regional dimension is especially critical when dealing with environmental issues. Such as the case of some ENVRI (e.g. LifeWatch, EMSO) and LIFE (e.g. EMBRC) ERIC clusters ones.

Moreover, ERICs can be considered as research-focused inter-organizational knowledge systems to which they are tightly related with along with the space where they are located, making them valuable assets when thinking about territorial competitiveness considering a multi-level geo-political framework (European, National, Regional), as well as trans-national, trans-regional and trans-boundary perspectives (Carlsson, 2003; González-Aranda et al., 2014). In fact, they also bring together a wide diversity of actors looking for solutions to global and local problems, following the approach of "thinking globally, acting locally", and therefore, including the regional dimension in their every day workload.



## REGIONAL STRATEGIES & FUNDING

### Research and Innovation Strategies for Smart Specialisation -RIS<sup>3</sup>-

#### The context

Smart specialization is not a new concept. Rather, it is a refinement and upgrading of the existing methodology for Structural Funds planning and programming. It is based on 15 years of experience in supporting innovation strategies in the Regions, and placed on the front-line economic thinking by major international institutions such as the World Bank, the OECD and the IMF. The most advanced regions are already engaging in similar strategic exercises, as highlighted by the Regions for Economic Change initiative or the Regional Innovation Monitor. Smart specialization is about identifying the unique characteristics and assets of each country and Region, highlighting each Region's competitive advantages, and rallying regional stakeholders and resources around an excellence-driven vision of their future. It also means strengthening regional innovation systems, maximizing knowledge flows and spreading the benefits of innovation throughout the entire regional economy.

#### RIS<sup>3</sup> today

The idea behind RIS<sup>3</sup> comes from the European Union. The EU's growth strategy for the coming decade has been named "Europe 2020". Its three mutually reinforcing priorities in the context of the actual changing world is to become a smart, sustainable and inclusive economy. This should help Member States to deliver high levels of employment, productivity and social cohesion.

For that, the EU has set five ambitious objectives – on employment, innovation, education, social inclusion and climate/energy – to be reached by 2020. Each Member State has adopted its own national targets in each of these areas, which has to be reached by concrete actions.

According to these objectives, national and regional authorities across Europe shall design smart specialization strategies in entrepreneurial discovery process, so that the European Structural Investment Funds (ESIF) can be used more efficiently and with synergies developed between different EU, national and regional policies, as well as public and private investments can be increased.

### RIS<sup>3</sup> in a Nutshell

National/Regional Research and Innovation Strategies for Smart Specialisation RIS<sup>3</sup> are integrated, place-based **economic transformation agendas** that carry out five important activities:

- They turn their focus to the policy support and investments on key national/regional priorities, challenges and needs for knowledge-based development.
- They build on each country/region's strengths, competitive advantages and potential for excellence.
- They support technological as well as practice-based innovation and aim to stimulate private sector investment.
- They get stakeholders actively involved and encourage innovation and experimentation.
- They are evidence-based and include sound monitoring and evaluation systems.

RIS<sup>3</sup> has an aim at policy level and also at economic level. The rationale behind the policy is to:

- *Make innovation a priority for all regions:* 'Europe 2020' requires policy makers to consider how the different aspects of smart, sustainable and inclusive growth are interrelated. Integrated smart specialisation strategies respond to complex development challenges by adapting the policy to the regional context. RIS<sup>3</sup> supports the creation of knowledge-based jobs and growth not only in leading research and innovation (R&I) hubs but also in less developed and rural regions. RIS<sup>3</sup> is a key part of the proposed EU Cohesion Policy reform supporting thematic concentration and reinforcing strategic programming and performance orientation.
- *Focus investment and create synergies:* RIS<sup>3</sup> focuses on economic development efforts and investments on each region's relative strengths, exploiting its economic opportunities and emerging trends, and taking action to boost its economic growth. RIS<sup>3</sup> enhances the added value, impact and visibility of EU funding. It ensures value for money in times of tighter budgets and scarce(r) public resources. RIS<sup>3</sup> ensures synergies between European policies and funding, complementing national and regional schemes and private investment.

- Improve the innovation process: RIS<sup>3</sup> requires smart, strategic choices and evidence-based policy making. Priorities are set on the basis of a bottom-up entrepreneurial discovery process supported by strategic intelligence about a region's assets (1), its challenges (2), competitive advantages and potential for excellence (3). RIS<sup>3</sup> develops by making sure that the policy mix, i.e. the combination of policy instruments available in a given regional environment – grants, loans and other support – is effective in reaching the overall policy goals, helps businesses, and leverages private investment. RIS<sup>3</sup> entails developing result indicators and using them to drive, steer and adjust policies and programmes. They thus promote continuous policy evaluation and learning, sharing experience and good practices between regions.
- Improve governance and to get stakeholders more actively involved: RIS<sup>3</sup> encourages all stakeholders to unite under a shared vision. It links small, medium-sized and large firms, encourages multi-level governance and helps to build creative and social capital within the community. The RIS<sup>3</sup> process must be interactive, regionally-driven and consensus-based. While the precise mix of organisations involved will depend on the regional context, it is important that all partners be fully involved in developing, implementing and monitoring smart specialisation strategies.

The economic rationale is to:

- Develop and implement strategies for economic transformation: RIS<sup>3</sup> requires an integrated and place-based approach to policy design and delivery. Policies must be tailored to the local context, acknowledging that there are different pathways for regional innovation and development. These include: a) rejuvenating traditional sectors through higher value-added activities and new market niches; b) modernising by adopting and disseminating new technologies; c) diversifying technologically from existing specialisations into related fields; d) developing new economic activities through radical technological change and breakthrough innovations; and e) exploiting new forms of innovation such as open and user-led innovation, social innovation and service innovation.
- Respond to economic and societal challenges: Europe faces relentless global competition for talent, ideas and capital. At the same time, fiscal austerity requires governments to focus scarce resources on a few areas and measures that have genuine potential to create sustainable jobs and growth. Most regions can only acquire a real competitive edge by finding niches or by mainstreaming new technology into traditional industries and exploiting their 'smart' regional potential. Smart specialization strategies can also be a powerful instrument to tackle social, environmental, climate and energy challenges, such as demographic change, resource efficiency, energy security and climate resilience.

- *Make regions more visible to international investors:* By focusing on what gives a region its greatest competitive potential, smart specialisation helps to position the region in specific global markets/niches and international value chains. To attract private investment and to get the attention of international investors it is important to brand a region's expertise in a specific knowledge domain or niche market and to provide solid, integrated support to help strengthen this specialisation.
- *Improve a region's internal and external connections:* Improving internal connections has long been a trademark of innovation policy (e.g. triple or quadruple helix networks, knowledge triangles, university-business cooperation, clusters, etc.). However, regions also need to be outward looking, to position themselves in European and global value chains, and to improve their connections and cooperation with other regions, clusters and innovation players. This is important for the internationalisation of their companies, to achieve a critical potential of cluster activities and to generate inflows of knowledge relevant to the region's existing knowledge base.
- *Avoid overlaps and replication in development strategies:* In the past, regions facing development challenges have often tried to replicate the same or similar priorities as other, leading, regions, even when they had few assets and little chance of becoming world leaders in their chosen fields. RIS<sup>3</sup> encourages regions to adopt policies realistically tailored to their capabilities, opportunities and needs.
- *Accumulate a 'critical mass' of resources:* RIS<sup>3</sup> can ensure that research and innovation resources reach critical mass, i.e. sufficient momentum to become self-sustaining, or critical potential, supporting them through targeted action to boost human resources and knowledge infrastructure. It clearly pays off to focus on areas of real potential and strength rather than spreading investments thinly over unrelated areas. Critical mass/potential can be accumulated either internally within the region or via in-sourcing and cooperation with other regions.
- *Promote knowledge spill over and technological diversification:* The most promising way for a region to promote its knowledge-based growth is to diversify into technologies, products and services that are closely related to existing dominant technologies and the regional skills base. Knowledge spillover is most successful if it is within related industries (as opposed to a diversity of unrelated sectors). New industries will grow out of the most successful existing clusters, but only if sectoral boundaries are abandoned. What matters is not the diversification *per se* but rather specialised technological diversification in emerging economic activities. This starts from existing regional knowledge and economic capabilities and aims at the relevant but higher value-added activities. Regions should thus prioritise complementarity between related economic activities, and find better ways to combine their strengths so as to create new industrial capability in areas with high growth potential (e.g. cross-clustering).



## Regional Funding

Research Infrastructures can benefit from different funding mechanisms for their Construction, Operation & development phases. As it can be seen in Table 1, Structural Funds, European Regional Development Funds -ERDF- are a suitable tool for their Construction phase.

**Table 1. Funding mechanisms vs ERICs phases**

CONSTRUCTION	OPERATION	DEVELOPMENTS
<p><b>Upgrade</b> of existing facilities  <b>Construction</b> of new elements</p>		
<ul style="list-style-type: none"> <li>➤ Funding from countries</li> <li>➤ Structural Funds (Smart Specialization Platforms - RIS3) - ERDF</li> </ul>	<ul style="list-style-type: none"> <li>➤ Funding from Countries</li> <li>➤ Fees from services to public &amp; private companies</li> <li>➤ European Investment Bank</li> </ul>	<ul style="list-style-type: none"> <li>➤ HORIZON EUROPE</li> <li>➤ National &amp; Regional Programmes</li> </ul>

Since 2013, the European Commission has been proposing that Regions need to have a Smart Specialization Strategy as a per-condition for a Region to obtain ERDF funding. Therefore, EU Members States and regions must have RIS<sup>3</sup> in place before their Operational Programmes supporting these investments are approved.

But there are multiple avenues for regions to invest in RIs. This section reviews the existing funding opportunities which can link regional strategies and RIs.

The foremost way of funding is through capital investment in the RIs for buildings and equipment, for the construction and up-grading of facilities. This can come either through national funds or through European Structural Funds (e.g. ERDF). Similarly, regions can invest in human resources to ensure, or increase, the capacity of a platform to serve local enterprises. The European Social Funds (ESF, part of the European Structural and Innovation Funds (ESIF)) could also be deployed in this context. ESF can be used to enhance, improve, and build up the capacities of scientific communities (opportunities to the youth, new technicians) or the human resource quality in public sector institutions (business development, incubation, and consolidation) that will serve local enterprises. Their knowledge and enhanced skills could provide more efficient or better-quality services for local businesses and the research community. Recently, a number of regions have expressed an interest and willingness to be part of such a process. Several regions of Eastern and Southern Europe (e.g. Crete (Greece), Andalusia, Canary Islands & Galicia (Spain), Puglia (Italy), Porto (Portugal)), have included the construction or upgrade of existing RIs in their RIS<sup>3</sup>, with the aim to mobilize the ERDF allocated to them.

Another approach to facilitate regional access for SMEs and thereby encourage the use of RIs, is to create an access fund for the use of the RI. This is particularly interesting as it essentially enables SMEs and Start-Ups that may have limited financial capabilities, i.e. those that are likely to benefit most from access to equipment and expertise they do not possess and cannot afford, to benefit from the RI (this is currently the case for the Basque Country Region (Spain) for EMBRC-ERIC).

INTERREG (e.g. POCTEP, SUDOE, ATLANTIC ARC, and MED programmes) funding is a mechanism for promoting and improving inter-regional collaboration in the European Union. The funding is connected to ERDF and is therefore heavily geared towards tangible and measurable outputs. This funding is particularly interesting for connecting regional players, such as companies, local officials/regions, researchers, RIS, and science parks, to create joint activities, particular developments with a business aim, and to build stakeholder engagement.

## **SYNERGIES BETWEEN ERICS AND -RIS<sup>3</sup>-**

### History

The initial idea to support the Research Infrastructures (RIs) through structural funds was already applied as early as 2011, if not earlier. Countries such as Spain, Italy, Portugal and Greece invested structural funds in the construction and operation of the RIs. Greece, for example, had invested 2.8 M€ in LifeWatchGreece during 2011-2015. Spain (Andalusia Region) invested 7.5 M€ during 2007-2013. Italy has approved a budget of 16.4 M€ in LifeWatch ITA, over the period 2020-2022. Spain (Andalusia Region) has recently decided to make an investment of 51.2 M€ in LifeWatch Spain by its structural funds period of 2020-2023. In that sense, by following the 80%-20% co-funding rule, the total budget allocated to actions co-financed by the FEDER Framework in Spain for activities related to LifeWatch ERIC is 64.0 M€.

- The first meeting to coordinate approaches taken by the EU member states towards the direction of finding synergies between the Regional Strategies and RIs was held in Brussels in May 2014, under the auspices of the DG Connect. As many as 80 attendees from 15 countries and a total of 20 regions participated to that Workshop, first of its kind in the EU.
- At the same year, in July, this topic was introduced to the 20th APDR Congress, named “Renaissance of the Regions of Southern Europe, in Évora, Portugal.
- In April 2016, the RICH Symposium on Funding Instruments for developing Research Infrastructures, was held in Madrid. This Symposium was instrumental in summarizing and systematizing the experience and expertise gained not only by the EU member States but also

the directions provided by the European Commission’s Research and Innovation Directorate-General, which co-organized the Symposium along with the network of National Contact Points for Research Infrastructures. The RIS<sup>3</sup> of Andalucía region has built on the ideas of this Symposium and has paved the way for this new avenue of opportunities to come to light and become part of the priorities of the Region (González-Aranda, 2016).

- Finally, EMSO ERIC organized the all Regions Workshop – EMSO, in October 2017, in Rome. This workshop promoted a discussion on access and services required by the scientific community and the industrial sector and on training needs of operators, managers and users.

Examples of synergies between ERICs and the (Regional) Research and Innovation Strategies for Smart Specialisation (RIS<sup>3</sup>), as they immerse out of the current experience and practices are shown in Table 2.

**Table 2. Synergies between ERICs and the RIS<sup>3</sup>**

Important features of the RIs and the Smart Specialization approach goal	Attributes of the RIs which can assist the Regions to achieve their goals
<ul style="list-style-type: none"> <li>• <b>Improve governance</b>; get <b>stakeholders</b> more closely involved</li> </ul>	<ul style="list-style-type: none"> <li>• Develop tools for public <b>administration knowledge-based decision-taking</b></li> <li>• <b>Connect</b> public administration with academic research, industry, civil society and media</li> </ul>
<ul style="list-style-type: none"> <li>• Support technological as well as practice-based innovation</li> <li>• Get <b>stakeholders</b> fully <b>involved</b> and encourage <b>innovation</b> and experimentation</li> <li>• Make <b>innovation a priority</b></li> <li>• Improve the <b>innovation</b> process</li> </ul>	<ul style="list-style-type: none"> <li>• Boost local <b>innovation, involving</b> not only scientific and technological communities of practice, but also decision makers and citizens in general terms.</li> <li>• Benefit <b>local industries</b> and <b>stakeholders</b> from their proximity and therefore privileged <b>access to the research</b> infrastructure.</li> </ul>
<ul style="list-style-type: none"> <li>• Build on each country/region’s strengths, <b>competitive advantages</b> and potential for excellence</li> </ul>	<ul style="list-style-type: none"> <li>• Become a <b>competitive advantage</b> and asset for the region</li> <li>• <b>Improve territorial competitiveness</b> at multiple levels, European, National, Regional, and cross-cutting perspectives.</li> <li>• <b>Provide</b> local employment and opportunity though the construction of the infrastructure facilities</li> </ul>



<ul style="list-style-type: none"> <li>• Develop and implement strategies for <b>economic transformation</b></li> <li>• Promote knowledge spill over and <b>technological diversification</b></li> </ul>	<ul style="list-style-type: none"> <li>• Become an important opportunity for local industry to work on the <b>technological development</b> of the facility</li> <li>• Trigger activities on the economy of knowledge and innovation</li> </ul>
<ul style="list-style-type: none"> <li>• Focus <b>investment</b> and create synergies</li> <li>• Stimulate private sector <b>investment</b>.</li> <li>• Make regions more visible to international investors</li> </ul>	<ul style="list-style-type: none"> <li>• Generate a significant local socio-economic impact and, as such, provide an incentive to Regions to attract RIs to set-up their facilities in their territory, or if already present, <b>to invest financially in them</b></li> <li>• <b>Promote innovation originating from evidence-based knowledge as combined with the local assets and advantages</b></li> </ul>
<ul style="list-style-type: none"> <li>• Respond to <b>economic and societal challenges</b></li> </ul>	<ul style="list-style-type: none"> <li>• Contributing with science and innovation towards solving <b>economic and societal challenges</b></li> </ul>
<ul style="list-style-type: none"> <li>• <b>Avoid overlaps and replication in development strategies</b></li> </ul>	<ul style="list-style-type: none"> <li>• Avoid Regions to invest in technologies and innovation which is <b>already existing</b> somewhere else;</li> <li>• Promote exportation of the technology and innovation they possess to other Regions all over the EU territories</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Accumulate a ‘critical mass’ of resources</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Built facilities and installations</b></li> </ul>
<ul style="list-style-type: none"> <li>• <b>Improve</b> a region’s internal and external <b>connections</b></li> </ul>	<ul style="list-style-type: none"> <li>• Mobilizing the scientific and relevant societal masses from at least as many Regions and countries as those participating to the RIs;</li> <li>• Promoting joint venture schemes inside and outside the Region territories between science, industry, stakeholders and society</li> </ul>

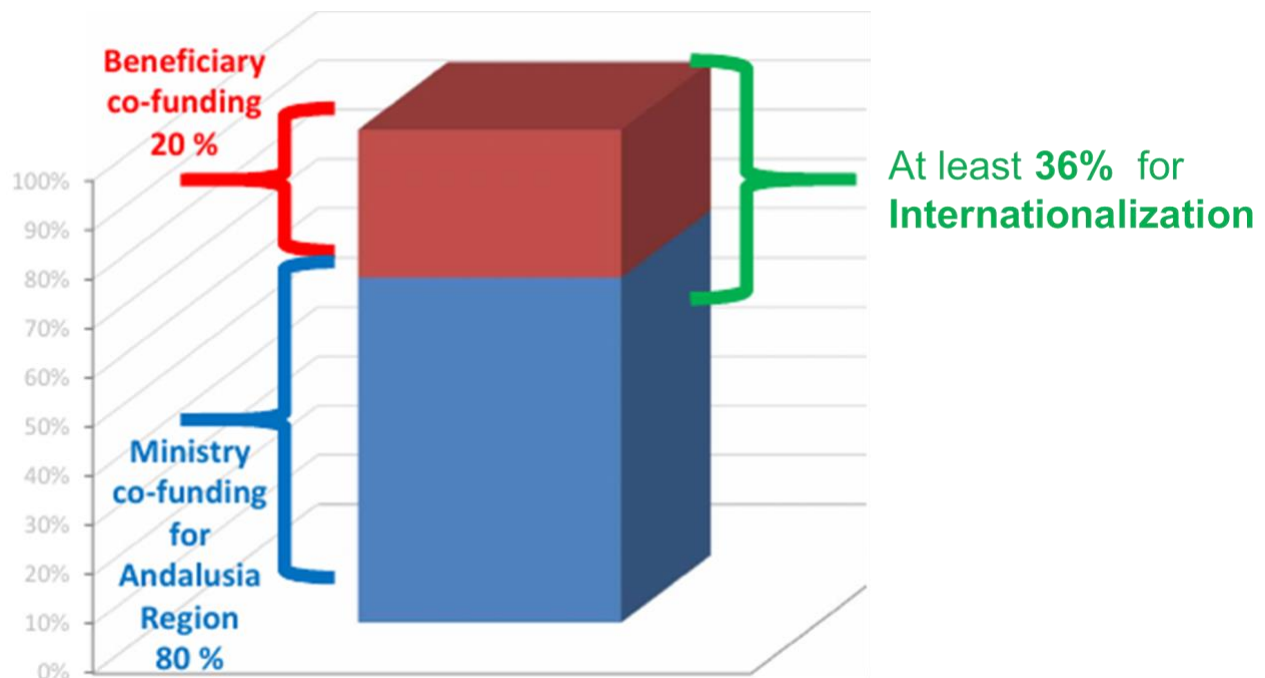


### Best Practice: The case of Andalusia Region (Spain)

The Spanish government has allocated 51.2 M€ for Andalusia Region. Therefore, the total budget allocated to actions, as co-financed by following the 80%-20% co-funding rule, for activities related to LifeWatch ERIC is 64.0 M€. Specifically, this fund should be used between 2020 and 2023.

The most innovative aspect of this call is that it ensures the use of this funds for internationalization purposes canalized through an ERIC. In this call, at least, 36% of the overall project budget must be allocated to fund Internationalization of R&D+i activities developed and/or carried out by LifeWatch ERIC in collaboration with other Research Infrastructures (other ERICs, EOSC, Copernicus, etc.). Figure 1 shows the percentages of co-funding and internationalization.

**Figure 1. Percentages in LifeWatch ERIC ERDF funds for the Andalucía Region**



Several projects have been submitted in response to this call. The start of the selected projects was planned to start in May 2020. Nevertheless, the implementation is suffering a reasonable delay due to COVID-19. In any case, these funds have been properly approved, upgraded and put in relation with the pandemic<sup>1</sup>.

<sup>1</sup>[https://www.ciencia.gob.es/stfls/MICINN/Ministerio/FICHEROS/Plan\\_de\\_choque\\_para\\_la\\_Ciencia\\_y\\_la\\_Innovacion.pdf](https://www.ciencia.gob.es/stfls/MICINN/Ministerio/FICHEROS/Plan_de_choque_para_la_Ciencia_y_la_Innovacion.pdf), see page 19.

## DISCUSSION: THE WAY FORWARD

In order to maximize the potential synergies between ERICs and Regional Research and Innovation Strategies for Smart Specialisation-RIS<sup>3</sup>, ERICs must engage with local innovation ecosystems and make themselves actively involved. By demonstrating the impact on local research and innovation, it becomes easier to leverage funding from regional governments. **RIs must become aware of regional Smart Specialization Strategies to understand where they can contribute with real and added value for their local stakeholders and benefit from them.**

Based on this, a regional and inter-regional dialog should be established to identify needs and to provide aid in achieving local agendas.

The Interreg projects are a good example of demonstrating this opportunity, as creating real change at the local level is only achievable with the involvement of the regional authorities. Such projects can be used to effectively link regions with similar interests and sectors, that is, to use the RIs as a basis for improving the regions competitive edge, or to solve particular bottlenecks for their S<sup>3</sup> priority sectors. Indeed, regional funding is particularly useful for concrete, tangible projects, along with the industry and local governments, that deliver new products or services specifically tailored for the local needs.

As a general recommendation, ERICs should seek to **engage with regional stakeholders as early as possible** in the establishment of the ERICs in order to ensure they meet local needs and expectations by considering them during their preparation and construction phases.

ERICs are important both for the progress of the European excellence in Science and Innovation as well as for the development of the Regional and Innovation Strategies for Smart Specialization-RIS<sup>3</sup>, as catalysts of economic growth, high-quality employment and trans-national cooperation.

In this context, RIs can gain access to additional resources from regional funding sources, such as a European Regional and Structural Funds, and Interreg. Consequently, it is essential for ERICs to perform a periodical assessment of the impact of international cooperation processes related to the development of RIs, focusing on a multilevel and trans-regional analysis of the returns of investments for the regional economies, which can either be expressed through tangible- (e.g., employment creation) or non-tangible indicators. for example, how to articulate and connect environmental & ICT researchers' communities of practice in a complementary way (Ballesterro & González-Aranda, 2019).

In essence, this is related to the assessment of the mobilization of the socio-economic resources, supported by the huge "social capital" potential of the involved Europe Regions.

It is essential to engage effectively and frequently with regional representatives and even include inviting them to participate in the RI governance to ensure better coordination between local and RI strategies.

As stated above, RI Improve territorial competitiveness at multiple levels, European, National, Regional, and cross-cutting perspectives.

The use of Structural Funds has created **a huge potential** in the Member States of LifeWatch ERIC because **lots of the expenses** of the services in the years to come **will be covered** by such sources.

These resources create an **additional advantage**: they make the MSs to use them in a collaborative way by investing to **each other's capacity**.

The ideal situation is that in the **future all ERICs** can be **included in the budgets** of the Structural Funds. This would allow much more **inter-connectivity between the RIs and Regions**.

That way, the Regions would not need to invest on technologies and innovation which is **already existing** somewhere else.

There is potential for other **Regional Policies** to be **addressed** (e.g. Cohesion, EUSAIR, etc). This should be analyzed.

At the same time, their consideration would prevent Horizon Europe funding instruments from being simple extensions of Preparatory Phase projects, enabling “realistic” constructions and granting the sustainable operation of new-born facilities. This a crucial issue as normally ESFRI Preparatory Phases are usually conceptual-based exercises and they do not take into consideration the actual commitments of the countries (including their regions).

Therefore, if the European Commission embraces such an approach, then we should look for an overall **Coordinating Bureau** on this exercise and try to **connect it** with all the **Directorate-Generals**. An in-depth analysis should be made to study this **option**. After that, the EC should establish a strategy on how all ERICs could **collectively work to achieve it**.

## CONCLUSIONS

- ERICs have a high impact in Regions as catalysts of economic growth, high-quality employment and trans-national cooperation.
- Regional Smart Specialization Strategies are a pre-requisite for a region to leverage ERDF funds.
- ERICs must become aware of RIS<sup>3</sup> to understand how and where they can add value real benefit to their local stakeholders.
- ERICs should seek for ERDF funds to help the development of the RIS<sup>3</sup>.
- The interest and use of this synergistic approach are not new (examples of Greece, Italy, etc.). Spain is the first Member State that has launched a specific call for projects to maximize this synergy, with Andalusia to be the Region case-study. This can be used as Best Practice.
- A coordinating Bureau should be established in order to promote and implement a framework to multiply and channel ERICs efforts to this direction.





## REFERENCES

Ballesteros, F., González-Aranda, JM. (2019). *“El uso de TIC disruptivas para mejorar la sostenibilidad ambiental y la competitividad. LifeWatch ERIC como oportunidad”*. ICE: Revista de Economía. ISSN 0019-977X, N° 912, 2020. Special edition: Sostenibilidad para la competitividad, pages. 135-146.

Carlsson, S. (2003). *“Knowledge Managing and Knowledge Management Systems in Inter-Organizational Networks”*. Knowledge and Process Management. 10. 194 - 206. 10.1002/kpm.179.

*EU Regulation (EU) 1301/2013 of the European Parliament and of the Council of 17 December 2013; and European Commission S3-Guide (2013, updated on 2020).*  
<https://s3platform.jrc.ec.europa.eu/s3-guide>

González-Aranda, J.M. (2016). *“Structural Funds in support of Research Infrastructures. Synergies with Cohesion Policy and the role of Smart Specialization Strategies: LIFEWATCH example of beneficiary”*. RICH SYMPOSIUM on European Funding Instruments for the development of Research Infrastructures. Madrid (Spain), April 2016.

González-Aranda, J.M., Sánchez Gimeno B., Ballesteros F., Migueis R., Basset A., Escacena-Ortega D. (2014). *“Making a joint use of the EU-FUNDS: Opportunities and challenges associated to European Research Infrastructures”*. Published by the 20<sup>th</sup> APDR Congress “Renaissance of the Regions of the Southern Europe”. Évora (Portugal), 10-11 July 2014.

González-Aranda Juan Miguel, Rodríguez-Clemente Rafael, Lozano Sebastián (2009). *“E-Research In International Cooperation Networks In Science & Technology Research”*. Book chapter on *“E-Research Collaboration: Frameworks, Tools and Techniques”*. Berlin/Heidelberg: Springer-Verlag. ISBN 978-3-642-12256-9 e-ISBN 978-3-642-12257-6, pp. 167-199.

*LifeWatch ERIC European Regional Development Funds -ERDF- for Andalusia Region (Spain).*  
<http://www.fondos.ciencia.gob.es/portal/site/fondos/menuitem.e1bc720d51edb26fc2b33510026041a0/?vgnnextoid=035f13b7f411a610VqnVCM1000001d04140aRCRD> and  
[https://www.ciencia.gob.es/stfls/MICINN/Ministerio/FICHEROS/Plan\\_de\\_choque\\_para\\_la\\_Ciencia\\_y\\_la\\_Innovacion.pdf](https://www.ciencia.gob.es/stfls/MICINN/Ministerio/FICHEROS/Plan_de_choque_para_la_Ciencia_y_la_Innovacion.pdf).Page 19.

Pór, G. (2005). *“Liberating the Innovation Value of the Communities of Practice”*. Knowledge Economics: Emerging Principles, Practices and Policies. Tartu University Press.