



**THE GOOD, THE SMART,
AND THE INNOVATIVE:
GOVERNANCE AND
IMPLEMENTATION OF
SMART SPECIALISATION
STRATEGIES IN 2021-27**

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PREFACE

The IQ-Net Network promotes exchange of experience on the management and implementation of Structural Funds programmes among Managing Authorities, Intermediate Bodies, and Coordinating Authorities. The network is managed by the European Policies Research Centre Delft under the direction of Professor John Bachtler and Heidi Vironen. The research for this report was undertaken by EPRC Delft in preparation for the 57th IQ-Net Conference taking place in Eindhoven, Netherlands on 11 to 13 November 2024. The report was written by Liliana Fonseca and Rachel Maguire.

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The partners in the IQ-Net network are as follows:

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- ÖROK Secretariat – Austrian Conference on Spatial Planning

Belgium

- Flanders Innovation & Entrepreneurship

Czechia

- Ministry of Regional Development

Denmark



- Danish Business Authority

Finland

- South and West Finland (Etelä- ja Länsi-Suomi)

Greece

- Management Organisation Unit of Development Programmes S.A., Ministry of Economy and Finance

Hungary

- National Development Centre

Ireland

- Southern Regional Assembly, EU and Corporate Affairs Division
- Northern & Western Regional Assembly

Netherlands

- Managing Authority Kansen voor West
- Managing Authority Noord, Northern Netherlands Alliance (SNN)
- Managing Authority Stimulus (OP Zuid)

Poland

- Marshal Offices of the Warmińsko-Mazurskie and the Pomorskie Regions

Portugal

- Cohesion and Development Agency (ADC)

Spain

- Provincial Council of Bizkaia/ País Vasco (Basque Country)



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Disclaimer

It should be noted that the content and conclusions of this paper do not necessarily represent the views of individual members of the IQ-Net Consortium.



LIST OF ABBREVIATIONS

ADC	Cohesion and Development Agency (Portugal)
CDTI	Centre for the Development of Industrial Technology (Spain)
CPR	Common Provisions Regulation
CF	Cohesion Fund
CORIS	Challenge-Oriented Regional Innovation Systems
EC	European Commission
EDP	Entrepreneurial Discovery Process
EGD	European Green Deal
EIS	European Innovation Scoreboard
ERDF	European Regional Development Fund
ESF/ESF +	European Social Fund/ European Social Fund Plus
ESIF	European Structural and Investment Funds
GBARD	Government Budget Allocations for Research and Development
GINOP	Economic Development and Innovation OP (Hungary)
Interreg	European Territorial Cooperation Program
IOI	Innovation Output Indicator
ISIF	Irish Strategic Investment Fund
JTF	Just Transition Fund
JRC	Joint Research Centre
MFF	Multiannual Financial Framework
MA	Managing Authority
MS	Member State
MYR	Regional Management Group (Finland)
NCBR	National Centre for Research and Development (Poland)
NEIA	New European Innovation Agenda
NIPS	National Innovation Platforms (Czechia)
NRDI	National Research Development and Innovation Agency (Hungary)
OP	Operational Programme
OPEIC	Operational Programme Enterprise and Innovation for Competitiveness (Czechia)
PA	Partnership Agreement
PO1	Policy Objective 1 - A more competitive and smarter Europe
PO2	Policy Objective 2 - A greener, low-carbon Europe
RDI	Research, Development, and Innovation
RIS	Regional Innovation Scoreboard/Strategy
ROP	Regional Operational Programme
(N)RRP	(National) Recovery and Resilience Plan
S3	Smart Specialisation Strategy
S3CoP	S3 Community of Practice
SO	Specific Objective
SNN	Northern Netherlands Alliance
SME	Small and Medium-sized Enterprises
VLAIO	Flemish Agency for Innovation and Entrepreneurship (Belgium)



COUNTRY/PROGRAMME ABBREVIATIONS

Country	Abbreviation
Austria	AT
Belgium (Vlaanderen)	BE (Vla)
Bulgaria	BG
Czechia	CZ
Cyprus	CY
Denmark	DK
Estonia	EE
Finland	FI
France	FR
Greece	EL
Hungary	HU
Ireland	IE
Ireland (Southern Regional Assembly)	IE (SRA)
Ireland (Northern and Western Regional Assembly)	IE (NWRA)
Latvia	LV
Lithuania	LT
Luxembourg	LU
Netherlands	NL
Poland	PL
Poland (Warmińsko-Mazurskie)	PL (W-M)
Poland (Pomorskie)	PL (Pom)
Portugal	PT
Slovenia	SI
Slovakia	SK
Spain	ES
Spain (Bizkaia, País Vasco)	ES (PV)
Sweden	SE



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EXECUTIVE SUMMARY

Smart Specialisation Strategies (S3) have become central to bridging regional innovation gaps in the European Union (EU)

by focusing investments on local strengths. Lessons from S3 governance and implementation in the 2014-20 period reveal the need for stronger stakeholder governance, continuous evaluation, and targeted capacity-building efforts to enhance effectiveness. Under the 2021-27 framework, S3 has evolved with an emphasis on a continuous engagement process and interregional cooperation, aiming to foster a more agile and resilient innovation ecosystem. Changes emphasise digital and green transitions, aligned with overarching EU goals.

Effective **S3 demands coordinated stakeholder engagement, and adaptable governance and implementation frameworks.** Across Member States (MS), differences in governance models, from centralised to more decentralised structures, influence each region's capacity to implement S3 and integrate stakeholder feedback. Interregional collaboration remains a strategic goal, driven by initiatives like Interreg and the I3 instrument. Cross-regional S3 have emerged, and MS are integrating new approaches like mission-orientation, sustainability, and inclusivity goals. S3 financial implementation includes diverse

sources, like ERDF, national funds, and sector-specific investments.

Monitoring and evaluation (M&E) systems

enable a continuous and adaptive S3 process. MS have established regular committees, and thematic workshops for this. Stakeholder engagement is increasingly embedded within M&E practices, facilitating transparent and participatory feedback loops that strengthen policy relevance and responsiveness. S3 capacity-building is accessed through tools including digital platforms, workshops, cross-border collaboration, and cooperation with EU bodies and networks, like the JRC. Establishing synergies with other EU and domestic initiatives is highlighted for maximising S3 impact, with Horizon standing out. Good practices across countries emerge related to policy experimentation and cooperation, underscoring the importance of structured support, stakeholder involvement, and interregional collaboration, in driving a competitive and resilient innovation ecosystem.

Considering the future of regional innovation policy, **IQ-Net partners emphasise the need for flexibility, improved regional, national, and international coordination, clarity in regulations, and a practical focus on implementation.**



1 INTRODUCTION: A NEW AGE OF INVENTION?

Regional disparities in economic development and innovation capacity persist throughout the European Union (EU) and globally. The challenges posed by the post-pandemic recovery, the climate crisis, geopolitical disruptions, and other external shocks underscore the need to enhance European productivity and resilience. Improving innovation capacity is critical for addressing these challenges and sustaining long-term economic growth.

*“Europe’s competitiveness – and its position in the race to a clean and digital economy – will depend on starting a new age of invention and ingenuity. This requires putting **research and innovation, science and technology**, at the centre of our economy.”*

Ursula von der Leyen, President of the European Commission

In line with this vision, the **New European Innovation Agenda**, adopted on 5 July 2022, seeks to position Europe at the forefront of a new wave of deep tech innovation and the growth of start-ups. As countries strive for sustainable growth and competitiveness in an increasingly knowledge-based economy, the significance of adapted, place-based innovation strategies has become more prominent within the EU's policy framework.

Regional innovation strategies have gained significant traction as tools to bridge the innovation gap between regions and promote more balanced territorial development. The factors contributing to a regions capacity and ability to be innovative are complex, entailing specific historical, economic, structural, and social considerations. To address these multifaceted challenges and opportunities requires tailored, place-based policy responses.¹ However, the successful design and implementation of these responses through regional strategies depend heavily on effective governance mechanisms and implementation processes.

The **Smart Specialisation Strategies (S3)** framework aims to leverage local strengths, address regional specificities, and foster innovation ecosystems that can drive economic growth and societal progress. As addressed in previous IQ-Net papers, presented in 2016² and 2018,³ the design and implementation of S3 in 2014-20 presented a challenging but valuable experience, motivated by MS commitment through capacity building and stakeholder mobilisation. In the 2021-27 programme period the utilisation of S3 is emphasised further, as it continues to be seen as a requirement to improve and sustain economic growth and productivity by strengthening regional innovation systems.⁴

This paper will compare the experiences of IQ-Net countries and regions in the governance and implementation of regional innovation policy, drawing lessons from the 2014-20



programme period and highlighting operational best practices for the 2021-27 programme. The paper draws on fieldwork interviews with programme authorities and Commission services conducted between August and October 2024, and secondary source research.

2 INNOVATION: HOW TO CLOSE INNOVATION GAPS?

Innovation serves as a cornerstone of economic progress and a key driver for maintaining competitiveness in an increasingly complex global landscape. The EU, neighbouring countries, and global partners face challenges that threaten economic resilience, including ongoing recovery from the Covid-19 pandemic, the urgent climate crisis, and geopolitical disruptions that have unsettled supply chains. **The 2024 Draghi Report on European Competitiveness**⁵ identifies three critical areas of action to reignite growth and productivity in Europe:

1. Europe must close the innovation gap with the United States and China, particularly in advanced technologies;
2. A coordinated strategy for decarbonisation and competitiveness is essential for aligning environmental goals with economic progress;
3. Enhancing security and reducing strategic dependencies, particularly in energy and critical supply chains, is vital.

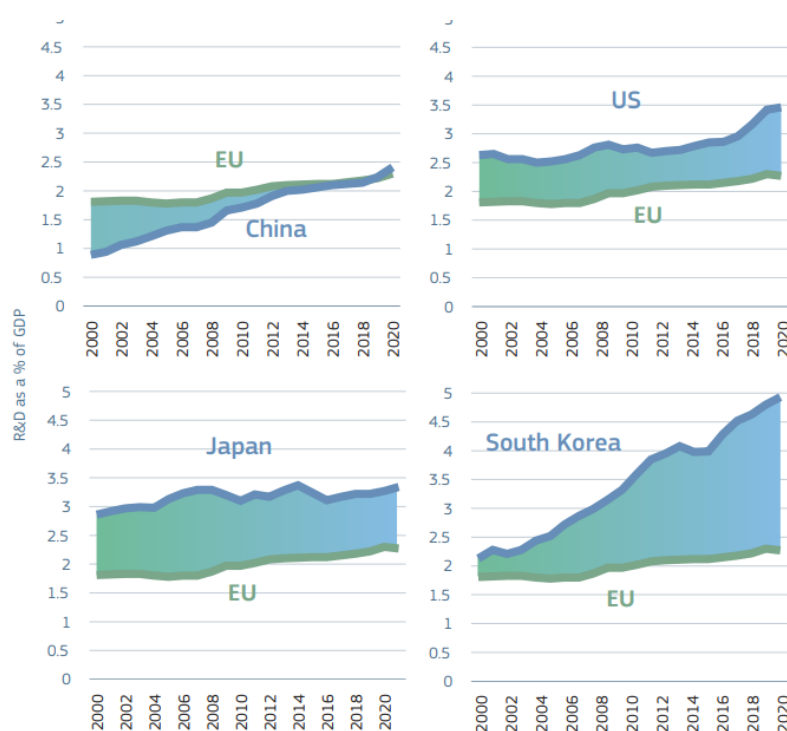
In this context, innovation becomes essential for driving growth and ensuring Europe's long-term competitiveness and security. At the regional level, despite a continued drive for innovation in policy and strategy making, marked disparities persist between European regions,⁶ this is evident across even leading innovative MS. Reflective of these challenges, place-based innovation strategies and initiatives have been prioritised within the EU's regional policy framework. As Europe aims to maintain its competitiveness in a rapidly changing global economy, innovation and specialisation are indispensable tools for overcoming current challenges and securing sustainable growth.

2.1 Global context: Slow and steady is not winning the race

Innovation remains a core component of the European Union's strategy to maintain its competitive edge in the global economy. The 2024 '**Science, Research and Innovation Performance of the EU**' (SRIP) report⁷ highlights that although there have been steady improvements in R&I over the past decade, with an increase in EU R&D expenditure and maintenance of a leading research profile, it has not been enough to close the gap with leading competitors, and other economies are catching up.



Figure 1: R&D intensity gaps between EU and other major economies



In 2024, the EU's R&D intensity sits at 2.2 percent of GDP, short of the longstanding 3 percent target first set in 2002,⁸ and remains below that of the US, Japan, South Korea, and China (Figure 1). This can be attributed in part to large scale private investment, as the venture capital market in the EU remains limited in comparison to other global competitors.⁹ Among EU MS, Sweden, Belgium, Austria, and Germany sat above the 3 percent target in 2022, with Finland and Denmark closing in. South Korea sits above all MS at 5 percent with Sweden

holding the highest percentage (3.47 percent) among MS.

The measurement of innovation for comparative and strategic purposes is incredibly complex, entailing consideration of multiple economic and structural factors to provide well founded statements on a country/region's innovation performance. Two complementary benchmarking tools, developed by the European Commission (EC), are the Innovation Output Indicator (IOI)¹⁰ and the European Innovation scoreboard (see Section 2.2).

Table 1: Innovation benchmarking tools

	European Innovation Scoreboard	Innovation Output Indicator
Scope	Comparative tool looking at multiple aspects of innovation performance including inputs, activities, and outcomes	Focused as an outcome-based measure
Indicators	A wide range 32 indicators to provide overall sense of framework conditions for innovation	6 specific indicators reflecting economic impact of innovation
Purpose	To provide an overall comprehensive view of a country's innovation environment and performance through a metric innovation index	To provide a more targeted analysis of how countries can convert innovation efforts into tangible economic outcomes

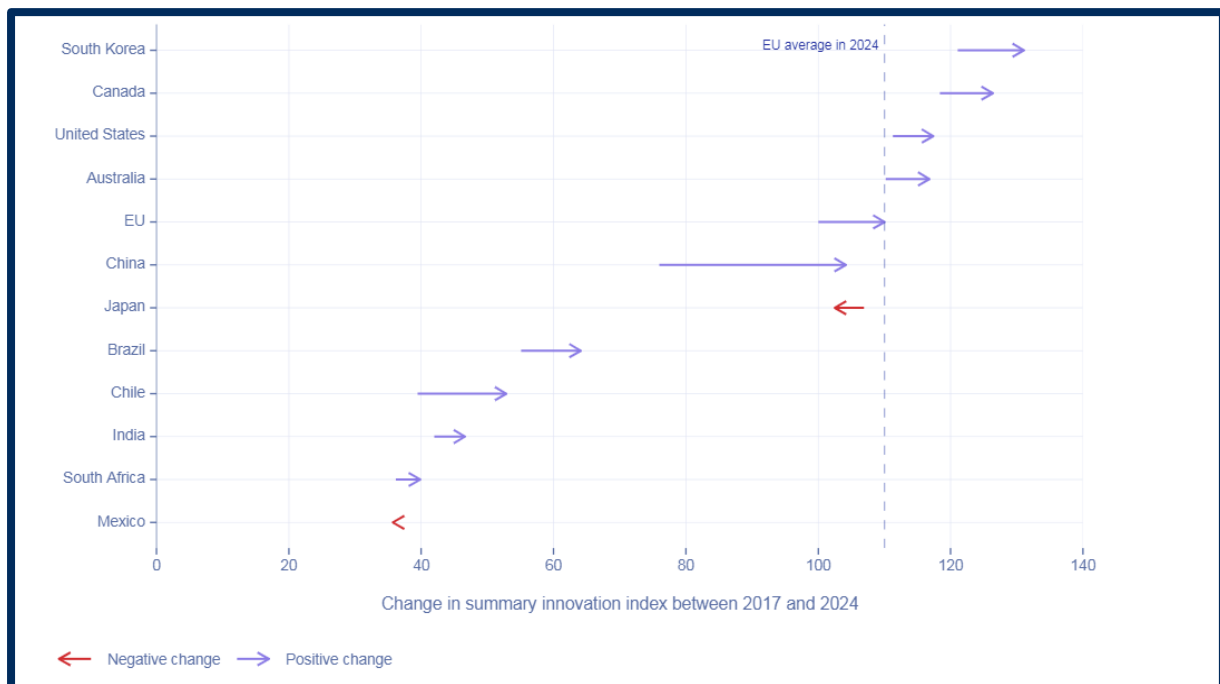


The IOI, released by the JRC in June 2024, provides a composite indicator on innovation performance, comprised of six indicators aggregated into four components covering metrics on intellectual property and patent registrations, employment in knowledge intensive activities, domestic technological capacity, and innovation-active companies. Between 2012 and 2022 the EU recorded an 8 percent increase in its IOI, on par with the US with an 11 percent increase. However, global innovation leader South Korea marked a 50 percent increase in the same period, assisted by significant R&D investment.

In 2025, a regional level IOI will be released based on NUTS 2 data and will provide information complementary to the Regional Innovation Scoreboard (see section 2.3).

Moreover, in the past decade, China has rapidly developed its innovation capacity and output, evident through significant increase in both IOI and Innovation index performance (Figure 2). As an emerging major competitor, China's significant rise in innovation performance emphasises the urgency for the EU to accelerate its efforts to maintain global standing.¹¹

Figure 2: Innovation performance change 2017 to 2024, EU and global competitors



Source: European Commission: Directorate-General for Research and Innovation, European Innovation Scoreboard 2024, Publications Office of the European Union, 2024,

The EU has responded to these challenges with key initiatives, such as the **Multiannual Financial Framework (MFF) 2021-27 and the NextGenerationEU** recovery package, both of which prioritise innovation as a cornerstone for sustainable growth. However, these efforts must overcome the structural limitations of Europe's fragmented innovation landscape, which presents through an uneven distribution of innovation capacity across MS and regions (see Sections 2.2 and 2.3).



A critical challenge for the EU is its ability to translate research excellence into market-oriented innovation.¹² Although the EU and its MS have prioritised twin green and digital transitions – both key areas for driving future innovation – the capacity to capitalise on these advancements hinges on stronger connections between research institutions, industry, and policymakers.

The EU's **New European Innovation Agenda (NEIA)**, introduced in 2022, and the **European Green Deal** both highlight innovation as central to achieving long-term sustainability and economic competitiveness. The Green Deal aims to position Europe as the first climate-neutral continent by 2050, driving advancement in clean energy, sustainable transport, and circular economy initiatives. These policy frameworks aim to foster a thriving innovation ecosystem that will enable the EU to remain competitive whilst achieving climate goals.

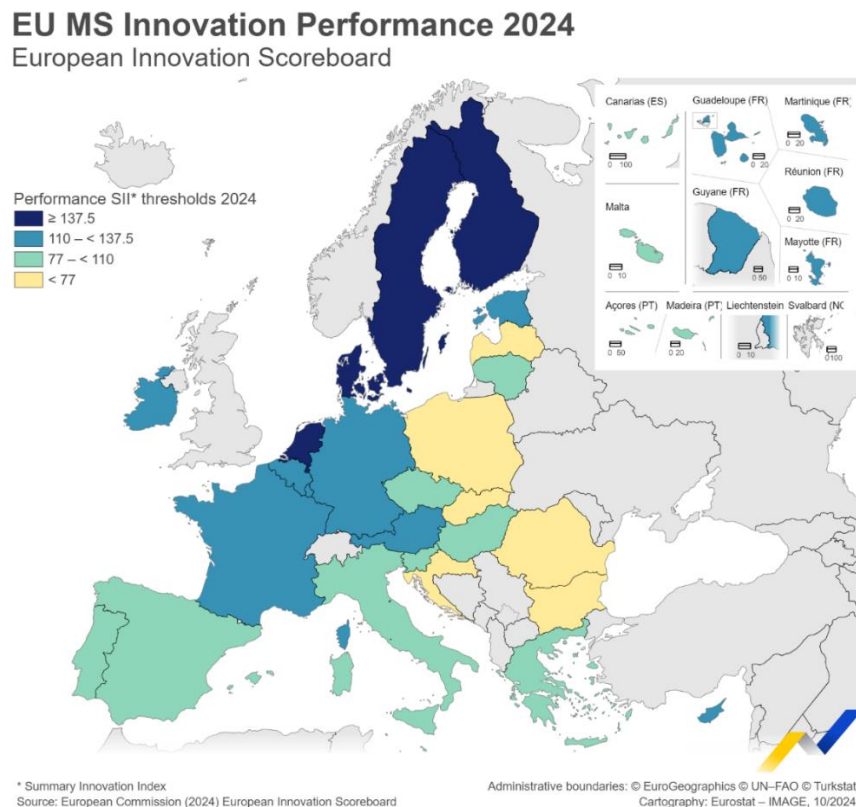
As illustrated above, innovation and research performance across Europe has not accelerated fast enough to close the gap with its global competitors, and as such without sustained efforts to enhance R&D and foster stronger public-private partnerships, the EU risks falling behind in the race for global innovation leadership. The EU is a sum of its parts, so to improve global standing and productivity, advancement is required by all MS and their incorporated regions.

2.2 National innovation performance: uneven progress

Innovation performance across the European Union varies significantly among its MS, as evidenced by the **European Innovation Scoreboard (EIS)**. Over the past decade, EU MS have made steady, yet uneven, progress in innovation investment and growth. This period saw an overall increase in R&D spending, particularly in response to the twin transitions. However, the pace of growth has varied widely, with some countries solidifying their positions as global leaders in innovation, while others struggle to catch up.¹³



Figure 3: Member State innovation index 2024



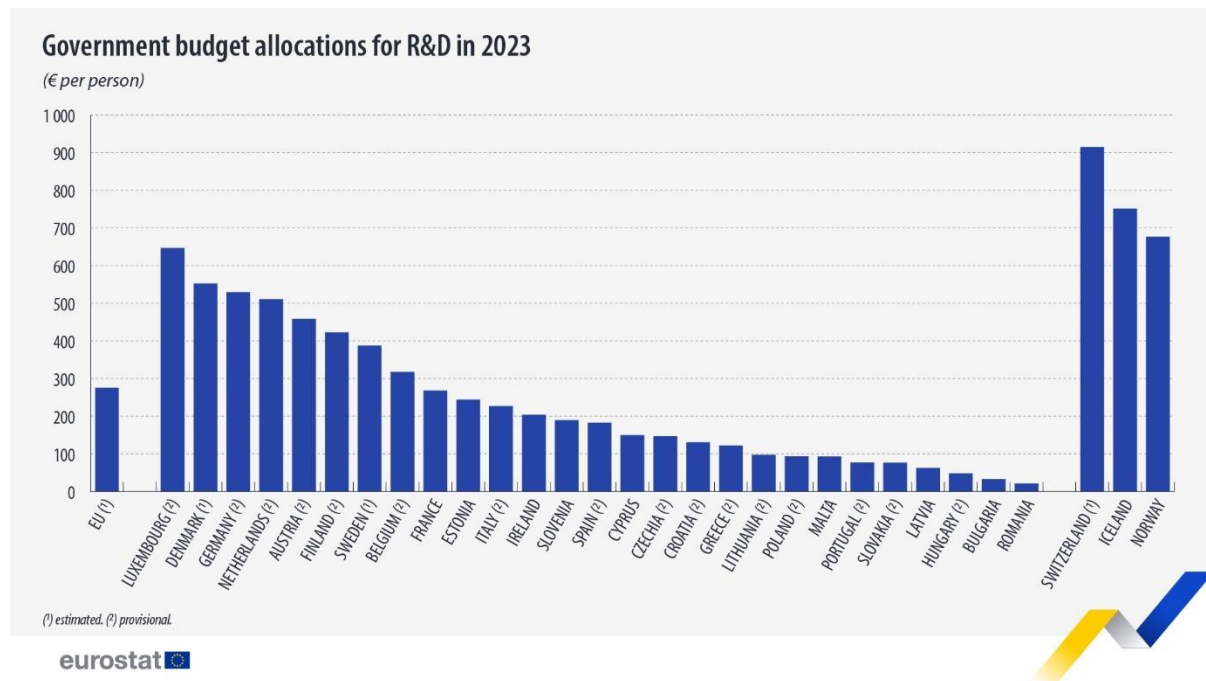
Source: European Innovation scoreboard (2024)

- **Innovation Leaders** (125 percent of EU average): **DK, FI, NL, SE**
- **Strong Innovators** (100-125 percent of EU average): **AT, BE, CY, EE, FR, DE, IE, LU**
- **Moderate Innovators** (70-100 percent of EU average): **CZ, EL, HU, IT, LT, MT, PT, SI, ES**
- **Emerging Innovators** (below 70 percent of EU average): **BG, HR, LV, PL, RO, SK**

Over the past decade, EU MS have generally increased their investments in innovation, although the level and pace of this growth has varied. In 2023, the total government budget allocations for R&D (GBARD) across the EU stood at €123,684 million, equivalent to 0.73 percent of GDP. This was a 5.3 percent increase compared with 2022 (€117,424 million) and a 54.8 percent increase compared with 2013 (€79,886 million).¹⁴



Figure 4: European national budget allocations for R&D 2023



Source: Eurostat (2024)

The growth in innovation investment has been driven by both public and private sectors, with increased funding channelled into areas such as digital transformation, green technologies, and healthcare innovation. In 2021, the EU's R&D intensity within the public sector – which includes government and higher education expenditures – was higher than that of Japan, the United States, and China.¹⁵ Among innovation leaders, only South Korea demonstrated a higher public R&D intensity than the EU. This elevated level in the EU's public R&D expenditure contributed significantly to its **Gross Domestic Expenditure on Research and Development (GERD)**. However, **Business Enterprise Expenditure on Research and Development (BERD)**, reflecting private sector R&D intensity, was lower in the EU than in these other economies.

The launch of initiatives such as **Horizon 2020** and its successor, **Horizon Europe**, has played a key role in this increase, providing over €75.6 billion for research and innovation between 2014 and 2020, with an indicative allocation of €93.5 billion for the 2021-27 period. However, a strategic assessment of Horizon Europe indicates that whilst improvements have been made in funding inclusivity and strategic planning with challenge orientated missions, there is still concern as to how the programme can effectively respond to widespread EU research objectives and MS disparities.¹⁶

In the post-2020 period, the **MMF** and the **NextGenerationEU** recovery fund have continued to prioritise innovation. However, while R&D investments have increased, the gap between research excellence and market-oriented innovation remains a persistent challenge across many MS, as outlined in the 2020-24 DG Research and Innovation Strategic plan (Specific objective 2.2).¹⁷ Bridging this gap will be essential to ensuring that innovation leads to tangible economic growth and competitiveness.



The disparities in innovation performance across MS highlight the importance of tailored national and regional strategies to drive innovation growth. While the EIS provides a comparative overview at the national level, regional innovation strategies play a critical role in addressing localised strengths and weaknesses.

2.3 Regional innovation: even greater variation

Innovation performance across regions in the European Union is as varied as it is among MS, reflecting localised differences in economic development, industry specialisation, and access to R&D funding. The **Regional Innovation Scoreboard (RIS)** provides a detailed assessment of innovation capabilities at the regional level, highlighting both leading and lagging areas within and across countries. The RIS helps to identify where innovation policies are most effective and where additional support is needed to foster innovation-driven growth.

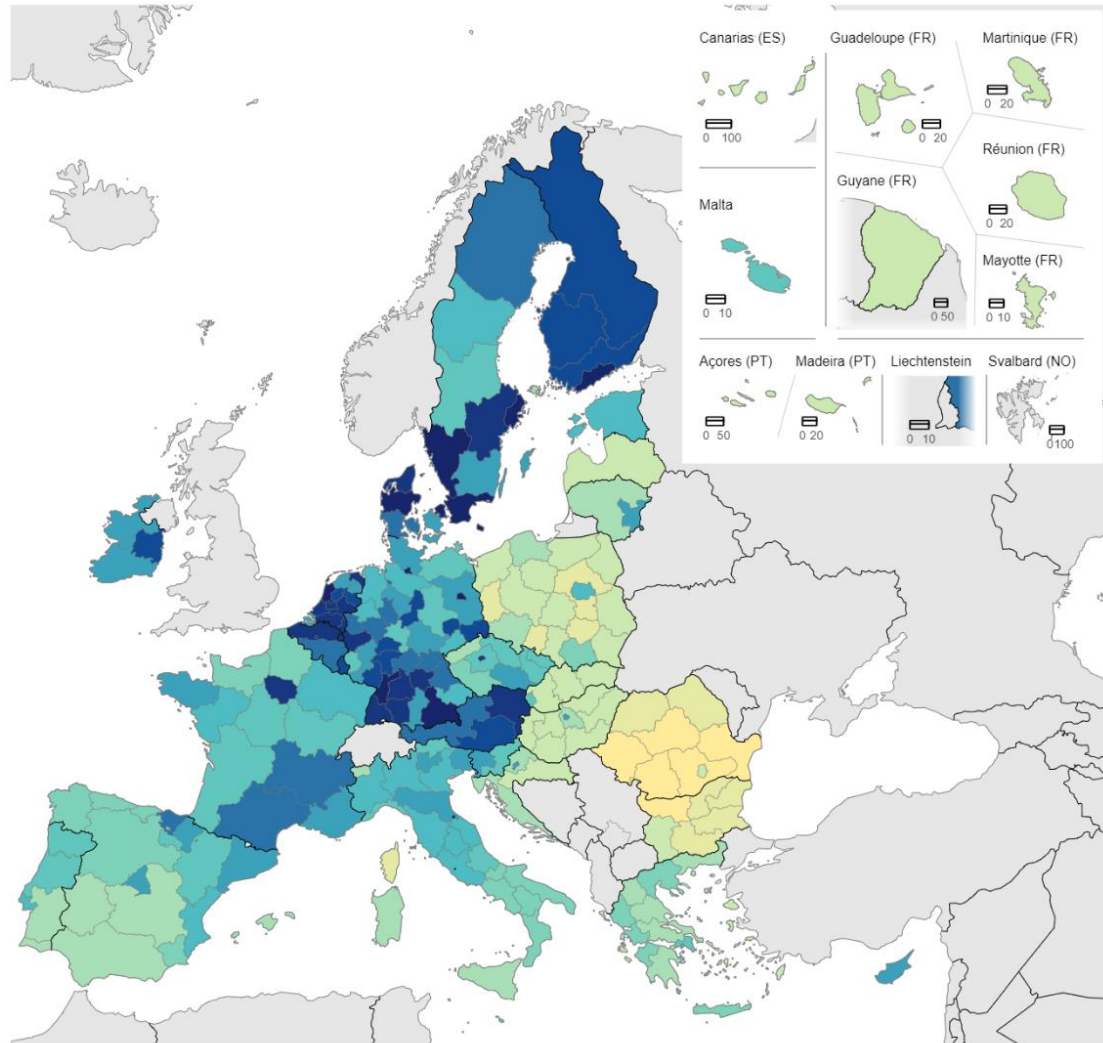
The RIS, utilising the same methodology as the EIS, is measured as an innovation index of regional performance against 32 indicators grouped in terms of, framework conditions, innovation activities, investments, and impacts.



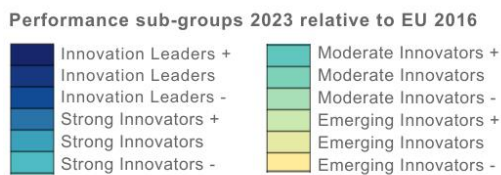
Figure 5: Regional Innovation Scoreboard by sub-performance groups 2023

Innovation Index

Regional Innovation Scoreboard 2023



Administrative boundaries: EuroGeographics UN-FAO Turkstat. Cartography: Eurostat - IMAGE, 09/2024
European Commission (2024) Regional Innovation Scoreboard 2023



Source: Data from Regional Innovation scoreboard (2023)

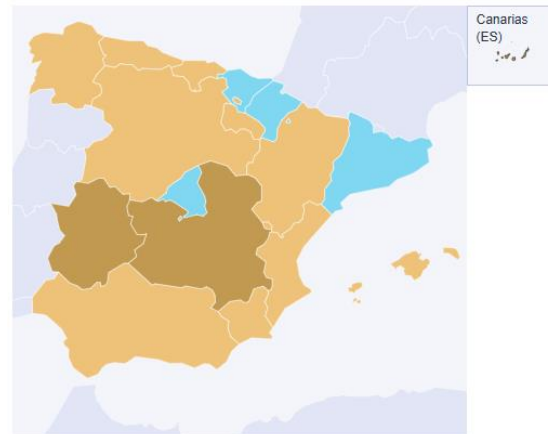
In countries which exhibit significant regional disparities, regional innovation strategies are vital to ensuring that innovation-driven growth is not only concentrated in leading centres and regions. As illustrated above in Figure 5 there persists a geographic divergence in innovation performance, with Northern Europe positioned as innovation leaders and most emerging innovators situated in Eastern Europe. This can be attributed in part to historic circumstances and ongoing discrepancies in R&D investment and infrastructure. Overarching trends indicate that as some capital regions are outperforming national averages (**CZ**, **HU**) (Box 2), middle-



income regions are facing economic stagnation within so-called 'development traps',¹⁸ and other less innovative regions are facing challenges of brain drain, unemployment, social inequality, limited access to services, and resultant weaker economic development.¹⁹

Box 1: Disparities in Regional innovation: Spain

In **Spain**, specific regions such as Catalonia and **País Vasco**, have developed advanced innovation ecosystems in renewable energy and advanced manufacturing, with increasing innovative SME activity and patenting, well outperforming national averages. Whilst other regions, such as Extremadura, with a heavy economic reliance on agriculture and traditional industries, face limited opportunities and capacity for diversification. Contributing factors also include weak digital infrastructure and low rate of R&D investment.



Source: EIS scoreboard (2024)

For the RIS, 12 performance sub-groups (Figure 5) can be utilised to illustrate the scale within each of the threshold EIS groups.

Innovation Leader Regions, such as **BE (Vla)** and the Capital region in **DK**, consistently outperform their European peers. These regions benefit from well-established research institutions, strong private sector investment, and robust public-private partnerships.

Over the past decade, these regions have seen continuous growth in innovation investment and employment. All regional **Innovation Leaders** belong to countries identified as **Innovation Leaders** or **Strong Innovators** in the EIS. The only exception to this is Praha (CZ01) as **CZ** is a **Moderate Innovator** in the EIS.

Strong Innovator Regions, perform well above the EU average but can face challenges in scaling up innovation efforts. For example, in **IE**, where all regions belong to this category, there is a tracked decrease in public R&D expenditure. These areas have strong innovation ecosystems but must strengthen their integration of digital technologies to maintain competitiveness.

Moderate Innovator Regions, often demonstrate pockets of high innovation potential but face systemic barriers, such as limited access to venture capital and underdeveloped infrastructure. For example, **Norte** in **PT** has shown innovation capabilities in renewable energy and biotechnology, through indicators pertaining to publications and trademark applications etc. but has struggled with lower R&D investment relative to the EU average. By identifying and



investing in unique strengths, they have begun to narrow the gap with more developed regions.

Emerging Innovator Regions, continue to perform below the EU average but have made significant strides in recent years. These regions face structural challenges, including limited infrastructure and weak institutional frameworks. Nonetheless, they represent considerable potential for innovation-driven growth if adequately supported. In the past decade, emerging innovator regions have benefited from increased EU funding and initiatives. For example, regions in **PL** have focused on improving digital infrastructure and fostering innovation in manufacturing, leading to steady improvements in innovation rankings.

Box 2: Regional Pockets of Excellence

Regional 'pockets of excellence', where individual regions excel over the national average, can be identified in several Moderate Innovator countries, including **País Vasco** (ES21) in Spain, Provincia Autonoma Trento (ITH2), Friuli-Venezia Giulia (ITH4) and Emilia-Romagna (ITH5) in Italy, and Budapest (HU11) in **Hungary**, and in Emerging Innovator countries: Grad Zagreb (HR01) in Croatia, Warszawski Stołeczny (PL91) and Małopolskie (PL21) in **Poland**, Bratislavský kraj (SK01) in Slovakia, and Belgrade (RS11) in Serbia. However, for most countries, there is limited variation in overarching regional performance groups.

The high performance of capital regions can be indicative of centralisation of capacity and resources. Place-based innovation strategies aim to improve the performance of all regions, to produce a cohesive innovation system and robust market value trains, built on regional competitive advantages.

Source: European Innovation Scoreboard (2024)

2.3.1 Overall trends in innovation investment and growth

Despite positive trends in regional innovation investment EU-wide, regional disparities in persist. Regions in Northern and Western Europe continue to outperform their counterparts in Eastern and Southern Europe. This uneven distribution of innovation capacity reflects broader economic inequalities, with wealthier regions able to attract more investment in advanced technologies and research infrastructure. Meanwhile, less-developed regions remain heavily reliant on EU cohesion funds to drive innovation.

Looking ahead, the EU's focus on regional innovation strategies, particularly through S3, aims to close these gaps by fostering more balanced and place-based innovation across the continent. The success of these strategies will depend on each region's ability to leverage its unique strengths while aligning with broader EU goals such as sustainability, digital transformation, and industrial modernisation.



2.3.2 Role of regional strategies

Regional innovation strategies, either governed by or integrating S3, have been crucial in driving innovation at the local level. By encouraging regions to focus on their comparative advantages, S3 enables areas to develop tailored innovation strategies that align with their specific economic and industrial contexts. For example, **BE (Vla)** has capitalised on its strong manufacturing sector, while regions in **Spain** and **Portugal** have leveraged their renewable energy potential.

S3 has also facilitated the integration of emerging and moderate innovator regions into EU-wide innovation networks. By fostering collaboration among regional stakeholders – including universities, businesses, and governments – these regions are better positioned to attract investment and develop sustainable innovation ecosystems. The success of S3 in promoting regional innovation highlights the importance of localised strategies in achieving broader EU innovation and competitiveness goals.

The interaction between national policies and regional strategies is critical for ensuring that innovation is not only driven by top-performing MS but also nurtured in emerging and moderate innovators. By leveraging the strengths of regional innovation ecosystems, the EU can create a more cohesive and competitive innovation landscape that aligns with the overarching goals of the European Green Deal and the NEIA.

Regional innovation strategies and the interaction between national policies and regional strategies are also crucial in territories at which support from Just Transition Fund (JTF) is directed.

2.4 S3 experiences 2014-20: what were the lessons learned?

S3 was introduced as an ex-ante conditionality for the 2014-20 European Structural and Investment Funds (ESIF), aimed at ensuring that regions within the EU focused their investment strategies on areas where they held competitive advantages. Rooted in Cohesion Policy, S3 encouraged regions to identify competitive advantages and focus on areas with high growth potential to foster sustainable development and reduce regional disparities.²⁰ These place-based strategies were designed to promote effective and targeted use of public funds by fostering collaboration among stakeholders in the "**quadruple helix**" – governments, businesses, academia, and civil society. This collective engagement can leverage regional knowledge and expertise through various communication and cooperation mechanisms, fostering robust, sustainable innovation systems.²¹ By making S3 an ex-ante conditionality, countries/regions were required to produce a clear and structured smart specialisation strategy. However, during the 2014-2020 period, S3 encountered various implementation challenges. Among these were issues with **governance and coordination**, which were especially challenging in regions with limited institutional infrastructure. Many regions had to address cross-level coordination, between different stakeholders, policy areas and the complex alignment of



regional and national strategies²². Additionally, **resource and capacity constraints** posed significant obstacles, restricting local pre-conditions for innovation, particularly in less-developed regions where administrative capabilities were limited.²³ As such these regions would also find it difficult to effectively engage with the private sector, as SMEs often lacked the funding and expertise necessary for meaningful participation in the EDP. A **fragmented approach to funding** also hampered S3 implementation, as reliance on the ERDF created challenges in mobilising additional national and private funding, whilst new frameworks, including NRRF, were not necessarily formatted in alignment with S3 priorities. As a result, some regions struggled with insufficient resources for multiple priorities, which would limit their ability to explore innovative approaches or expand upon best practices.²⁴

As such an academic review of the 2014-20 period highlights several key lessons for the 2021-27 cycle.

1. Need for flexible governance and stronger inter-agency cooperation;
4. The strengthening stakeholder of engagement, particularly with small and medium enterprises (SMEs);
5. The requirement for more sustainable and integrated funding approaches, incorporating both national and private investment, to ensure long-term financial viability for S3 initiatives.

The lessons above are reflected within the practical experience of IQ-Net programme authorities in S3 governance and implementation, influencing approaches and prioritisation for the 2021-27 period.

A core aspect of S3 continues to be priority-setting for specialisations. In **PT**, the previous strategy was characterised by a wide spread of multiple priorities, which impacted the efficiency of implementation with a stretched strategic focus. In **NL (West)**, S3 priorities were shaped primarily as economic plans with a lack of overall strategic considerations. For the 2021-27 period **there has been a reorientation towards a more evidence-based approach**. **NL (North)** found that **priority-setting based on societal issues and challenges** formed a good base for stakeholder commitment and engagement, this approach will continue through the 2021-27 period. For **CZ**, reliance on pre-existing industries was found to limit the innovative potential of sectoral diversification and specialisation.

Multiple IQ-Net programme authorities faced challenges with coordination in terms of S3 governance and implementation, often shaped by distinct national and regional factors (see Section 3). In **PL**, where both national and regional level strategies are utilised, there were issues regarding priority duplication between the different levels of governance. In **IE**, the formation of a national S3 invoked criticisms of spatial blindness to territorial differentiations and strengths. For this reason, a more regionally-focused implementation of the national strategy is utilised for the 2021-27 period. The top-down approach to governance was recognised as outdated for



effective S3 and a more collaborative governance model has been adopted, with a strong role for each of the NUTS regions to ensure any gaps are bridged between national and regional policies. Conversely, **DK** has centralised to a nationally managed strategy to improve resource allocation and coordination of regional and national priorities for cohesive innovation policy. In **FI**, the coordination of information from the numerous regional strategies was difficult to consolidate. This has been addressed through the promotion and utilisation of a central information website/hub.

Engagement with the 'quadruple helix' drives S3 governance and implementation but can be subject to unequal commitment and participation across stakeholder groups, particularly in the fulfilment of the EDP. **For stakeholders, initial engagement with the S3 framework presented a steep learning curve**, with support impacted by existing structures and coordination on innovation. Nonetheless, an experience of 'learning by doing' has improved comprehension and visibility of S3 for the 2021-27 period (**PL**). Past knowledge-building and collation experience can provide a stronger baseline of understanding for the more dynamic S3 framework of the 2021-27 period. In **PL (Pom)**, reflecting an overall S3 experience of establishing and learning a new framework, the EDP required preliminary work to understand and market. In **NL (North)**, it was recognised as initially underused. Knowledge and practices will continue to develop as EDP persists as a dynamic fulfilment criterion for the 2021-27 period.

Experiences in the financing of projects and fund allocation in 2014-20 varied across IQ-Net countries and regions. In **BE (Via)**, there was difficulty in coordinating multiple funding streams under different priorities. In 2021-27, projects must be aligned with the S3 framework to allow for more focused resource management, a similar approach is evident in **DK**. In **IE**, funding under S3 was previously focused on multiple micro-enterprise allocations. This has now shifted towards larger strategic investments with consolidated resources.

The learning experience of S3 2014-20 is also evident in the development of monitoring and evaluation practices and tools for 2021-27 (see Section 4.1). In **IE**, there was no formal monitoring and reporting mechanism in place with no indicators agreed, making it difficult to understand where progress was made. This led to a 'static' policy, which lacked the agility to withstand changes. Addressing this in the new period meant developing a clear monitoring and reporting model involving national and regional stakeholders, setting indicators to measure progress with the acknowledgement that these may need to be refined further, and integrating reviews into ongoing implementation to ensure that the strategy remains flexible. In **HU**, monitoring has intensified with expanded use of indicators and a more detailed methodology. This change develops from a reorientation towards active strategy implementation, whereas previous efforts had been focused on initial strategy creation.



2.5 The 2021-27 framework: more emphasis on innovation

In the 2021-27 programme period, each EU region and MS is required to allocate at least 30 percent of their ERDF to Policy Objective 2 (PO2), which focuses on fostering a greener, low-carbon transition towards a net-zero carbon economy and enhancing resilience across Europe. Additionally, based on their level of prosperity, regions and MS must concentrate funding on Policy Objective 1 (PO1) Figure 6, which aims to create a more competitive and smarter Europe. The funding distribution is as follows:

- **Less Developed Regions or Member States** must allocate at least 25 percent of their ERDF to PO1.
- **Transition Regions or Member States** are required to dedicate at least 40 percent to PO1.
- **More Developed Regions or Member States** must allocate at least 85 percent of their funds to PO1 and PO2 combined.

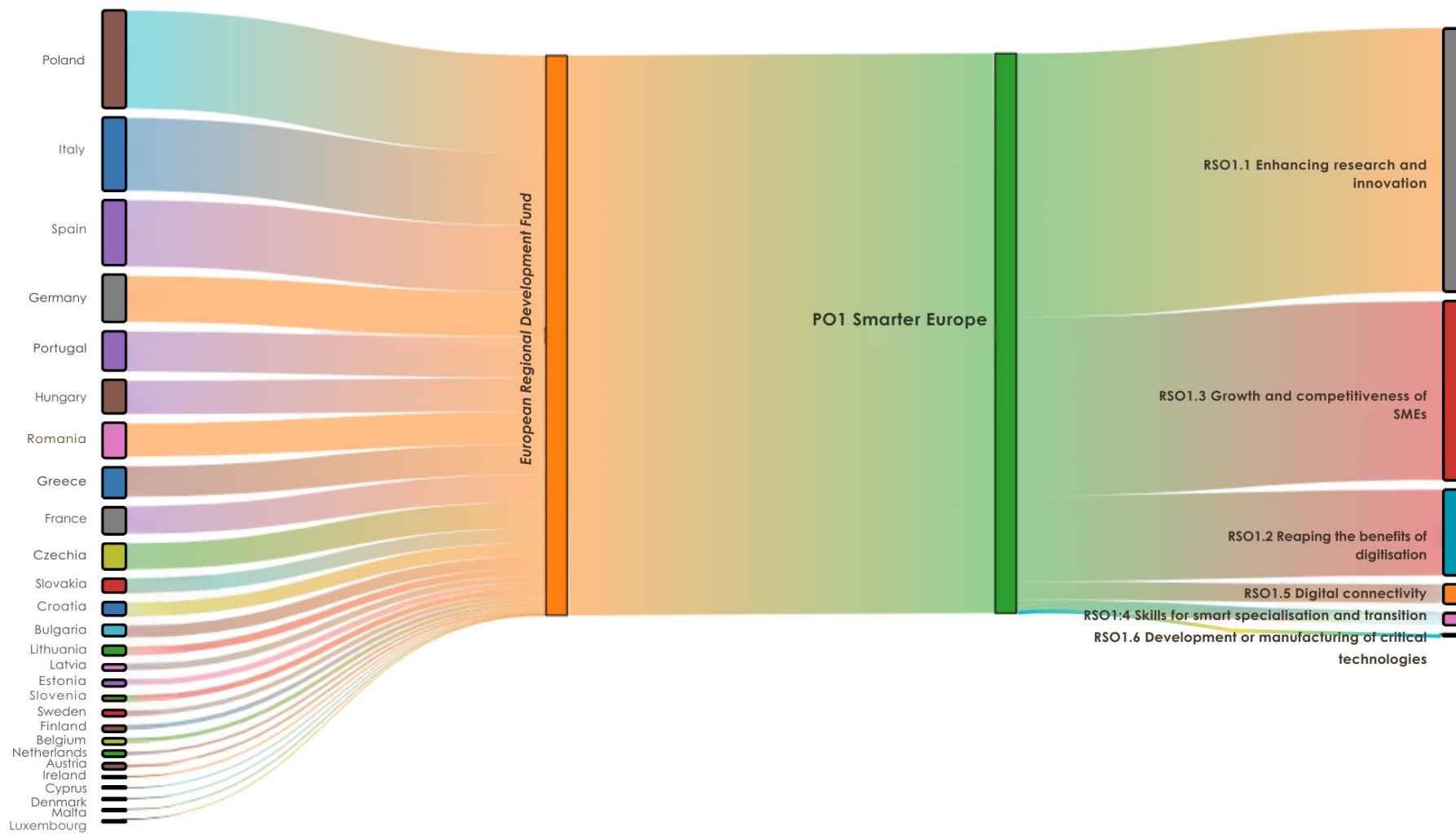
Smart Specialisation Strategies (S3) have been repositioned as an enabling condition under PO1 Smarter Europe, rather than an ex-ante condition, meaning they will no longer require a European assessment for approval²⁵. This shift reflects an understanding that the integration of S3 within broader regional policies can better facilitate innovation-driven growth.

As outlined in the **Common Provisions Regulation (CPR)**, there is a clear emphasis on governance under PO1, particularly regarding the thematic enabling condition of "**Good Governance of National or Regional Smart Specialisation Strategy**". The fulfilment criteria for this enabling condition (see section 2.5.2), offer a comprehensive framework to guide the S3 process.



Figure 6: EU planned financing of PO1 Smarter Europe

2021-2027: Cohesion Policy Planned EU financing for PO1 Smarter Europe





2.5.1 Evolution of the smart specialisation framework

The Smart Specialisation framework has undergone changes in preparation for the 2021-27 period. These changes shape a clear development and expansion of the framework, reflective of the knowledge base built throughout 2014-20.

Table 2: Changes to the Smart Specialisation framework in 2021-27²⁶

	Deeper Analysis of Innovation Diffusion and Digitalisation Bottlenecks: A more thorough examination of barriers to innovation diffusion and adoption, especially in digital domains. The new S3 guidelines call for region's investigation and tackling of these bottlenecks, aiming to maximise the impact of innovative solutions.
	Reinforced Focus on Governance: S3 effectiveness depends on strong multi-level governance and coordination between different stakeholders. The new guidelines mandate the designation of a competent body to oversee S3 management and ensure inclusive stakeholder participation in S3 development and implementation. This approach aims to enhance management effectiveness and align strategies with broader development goals at both regional and national levels.
	Emphasis on the Continuous and Iterative Nature of the EDP: Guidelines stress that innovation and entrepreneurship are not static but rather dynamic processes that require continuous assessment, learning, and adaptation to changing circumstances. The EDP should then be an ongoing process that allows regions to regularly reassess their specialisation areas and adapt their strategies to evolving circumstances, fostering a more responsive and agile innovation ecosystem.
	Creation of Cross-Border Value Chains and Enhanced Interregional Cooperation: Increased collaboration and synergy between regions, recognising the global nature of many S3 areas. The new framework encourages leveraging complementary strengths across regions to develop and commercialise new products and services. This enhanced interregional cooperation aims to foster knowledge exchange, share best practices, and create synergies that boost innovation and economic growth on a broader scale.

Source: Fonseca et al. (2023)

More attention is to be paid towards continuous implementation and updating of strategic priorities and stakeholder engagement. This will take place alongside a renewed drive for innovation diffusion and interregional cooperation, motivated to increase European cohesion and overall innovation structural flows.

2.5.2 Fulfilment criteria to enhance innovation capacity

The S3 framework is designed to enhance regional innovation capacity through targeted actions that promote effective governance and stakeholder engagement. The following



fulfilment criteria of the enabling condition 'Good governance of a national or regional smart specialisation strategy' are essential for ensuring the successful implementation of S3 initiatives in the 2021-27 period.



Source: own illustration

These criteria encompass governance, implementation, and monitoring aspects, with the intent to "inspire transformation strategies"²⁷ across regions. MS and regions are expected to



have varied experiences concerning their strengths and weaknesses in meeting these criteria. For instance, **Austria** and **Finland** are likely to leverage their strong institutional frameworks to effectively implement S3, while **Greece** and **Hungary** may encounter challenges due to existing governance issues (see Section 3). This disparity in implementation capacity will necessitate targeted support and resources from the EU to ensure that all regions can effectively meet the set criteria and contribute to the overarching goals of the 2021-27 programme period. Reflective of the challenges that governing bodies may face in the comprehension and implementation of S3, working groups were initiated through the S3 Communities of Practice (S3CoP) (see Section 4.2.1) for three of the above illustrated fulfilment criteria. An initial synthesis of lessons and recommendations from the WGs has been published.²⁸

Table 3: Description of S3 CoP Working Groups

Working Group	<u>Challenges</u>	<u>Recommendations</u>
Innovation diffusion	Innovation diffusion often lacks a robust systematic approach, and is inhibited by the restricted ability/capacity of SMEs to clearly express their demand for innovation and access appropriate support services	Establish a sustained commitment from local and national authorities to support innovation diffusion through place-based, tailored approaches. Regions should embed innovation diffusion as a core component of their ecosystem by leveraging intermediary support, adapting to demand, and strengthening business-specific supports to improve engagement and alignment across sectors
Industrial Transition	There is difficulty understanding wider systemic change and socio-economic impacts whilst promoting an inclusive, leave no region behind approach.	Emphasise evidence-based policymaking to diagnose, monitor, and evaluate the impacts of industrial transition while aligning strategies with the SDGs. Industrial transition should involve policy experimentation and a comprehensive mapping of stakeholders to foster systemic change, with a focus on preventing any region from falling behind.
Interregional Cooperation	S3 engagement in interregional cooperation faces challenges due to limited capacity, insufficient resources, and fragmented EU funding, which complicates long-term financial planning and the pursuit of funding synergies beyond individual projects.	Clearly articulate the value-added of interregional collaboration (IC) beyond funding acquisition, emphasising long-term economic and innovation impacts. Regions are encouraged to build capacity for IC by securing sustainable funding sources, aligning goals and actions across regions, and leveraging synergies with EU and domestic funding mechanisms.

Source: Adapted from Hunter et.al (2024)



3 GOVERNING S3: ORGANISING STAKEHOLDERS

The enabling condition on 'good governance' makes mention of national or regional smart specialisation strategies. Indeed, while S3 is inherently place-based, and has had a regional focus, its management varies by country depending on structural funds' management, national governance frameworks, and contextual needs. Some IQ-Net countries employ exclusively national frameworks, while others have a more decentralised approach and employ regional S3 (see also Annex 2 for a breakdown of the S3 in IQ-Net countries):

- **National frameworks with regional dimensions** (e.g. **DK, HU, IE**): some countries have adopted a predominantly national S3 framework that directs regional activities while allowing for some regional adaptation. For example, **HU** has a national S3 strategy for 2021–27 with clear national priorities, such as agriculture, health, and digitalisation. Funding is primarily allocated through two main OPs – GINOP+ for economic development and innovation, and DIMOP for digitalisation. In this model, project alignment with S3 priorities is a requirement for access to funding, allowing for strategic consistency across national and regional innovation projects. The **DK** case is talked about more in depth in Annex 1, as an example of “deregionalisation” of S3.
- **Integrated national and regional S3 approaches** (e.g. **CZ, PT**): other countries combine national and regional S3 frameworks to balance high-level coordination with regional adaptation. **PT** demonstrates this approach, with its National Strategy for Smart Specialisation (ENEI 2030) setting priorities such as digital transition and green technologies. Seven regional S3 strategies work in tandem with ENEI 2030, each with region-specific focus areas. This structure ensures alignment with overarching national goals while enabling the distinct needs and strengths of each region, including the two autonomous regions, to guide regional program implementation.
- **Regional S3 frameworks** (e.g. **FI, ES, BE, NL**): some countries grant the regional level a high level of autonomy in the design and management of S3. For example, **FI** relies on regional S3s – 18 in total – each embedded within a regional strategic programme or a standalone S3 strategy. For example, the Helsinki-Uusimaa region prioritises climate neutrality, while Satakunta focuses on clusters in bioeconomy and circular economy, energy, and robotics. These regional S3s are supported by national R&D policies, facilitating a tailored approach to innovation while aligning with Finland's broader economic development objectives. Similarly, **BE (Vla)**'s regional S3 guides industrial and innovation policy through targeted cluster policies. In **NL**, regional S3 frameworks also guide programme calls, particularly in ERDF programmes. Regions within the Netherlands address different priority areas, and this model allows Dutch regions to



adapt funding to local strengths and sector-specific needs, maintaining flexibility within each region's economic landscape.

3.1.1 Governance of the S3 stakeholder engagement process

In the 2021-27 period, stakeholder engagement in S3 has evolved in the various IQ-Net countries and regions. The analysis reveals several key themes and approaches, namely regarding the involvement of varied actors, the structure of the engagement processes, and a shift in governance models. These themes provide insights into how regions foster collaboration among public, private, and civil society actors.

i Governance structures and participation processes

Governance models vary widely, reflecting national and regional administrative structures and priorities:

- **Centralised governance model** (e.g. **AT, HU, DK**): the S3 strategy is managed primarily through national bodies. This is the case in **AT**, where the RTI Task Force, housed within the Federal Chancellery, serves as the key interministerial body responsible for coordinating S3 across various ministries. The task force, which includes representatives from the ministries of finance, education, and economic affairs, provides strong top-down oversight, ensuring alignment between national and regional strategies. However, the influence of regional actors is mediated mainly through the Federal-Länder-Dialogue, which facilitates discussions but does not devolve significant decision-making power to the regions. Similarly, **HU** has a centralised model where the National Research Development and Innovation Agency (NRDI) oversees the national S3 strategy. Coordination across sectors, including innovation, economic policy, and digitalisation, is facilitated by the PO1 Working Group, which includes a range of national stakeholders. While this structure ensures strong national oversight, regional input is incorporated primarily through structured events such as consultation meetings and surveys. In **DK**, the Danish Board of Business Development oversees national strategy, while still working closely with local Business Hubs to ensure that regional variations are integrated into decision-making.

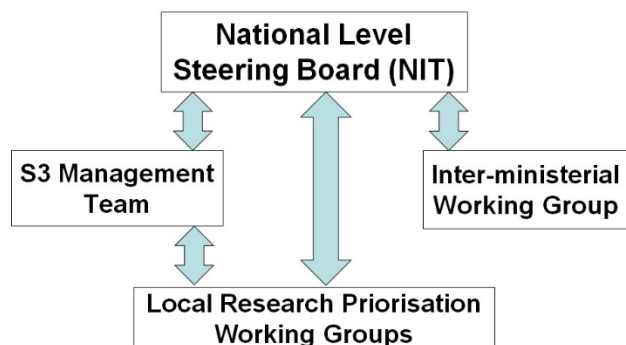


Figure 7: Organisational chart of the governance structure of Hungary's national S3 design.

Source: HU's National S3.



- **Decentralised governance model** (e.g. **PT, FI**): in decentralised governance models, regions play a more autonomous role in shaping and implementing S3 strategies. **PT** exemplifies this approach, where both national and regional levels contribute to the governance of S3. While the National Innovation Agency is the coordinating body for the national dimension of S3, the Regional Coordination and Development Commissions are responsible for the regional strategies. As part of the S3 governance architecture, the National Council for Smart Specialisation defines strategic guidelines at the national level, while regional councils ensure that local priorities and specificities are reflected in the strategies. This decentralisation allows regions to exercise significant autonomy while maintaining alignment with national objectives, and the Innovation and Smart Specialisation Forum, coordinated by the Territorial Commission, coordinates between regional and national bodies to ensure coherence. In **FI**, regional councils, such as Helsinki-Uusimaa's Regional Management Group (MYR), have considerable authority over S3 implementation. This decentralised structure allows regions to tailor S3 strategies to their specific needs, while also coordinating with national bodies to ensure that regional strategies align with national and EU frameworks. The MYR works closely with the high-level RIS steering group, a more flexible body that gathers diverse actors to provide input on regional strategy.
- **Hybrid governance models** (e.g. **CZ, PL, ES, NL, IE**): hybrid governance models combine centralised oversight with decentralised implementation, aiming to balance national coherence with regional flexibility. In **PL (W-M)**, governance is heavily driven by partnership-based structures, where advisory bodies such as the Regional Steering Committee play a significant role in shaping innovation policy. This committee, made up of actors from science, business, and public administration, ensures that regional strategies are co-created and continuously updated through stakeholder input. In **CZ**, the governance of S3 involves both national and regional bodies, coordinated by the Ministry of Industry and Trade and the National RIS3 Manager. The national RIS3 strategy is closely linked with education and R&D strategies, requiring collaboration between multiple ministries and regional innovation platforms. This model allows for centralised strategic direction while giving regions autonomy to adapt and implement strategies based on local needs. National Innovation Platforms (NIPs) also serve as key intermediaries, bringing together experts to guide research and innovation policies at both the national and regional levels. In all **NL** regions, the MA is not the owner of the Smart Specialisation Strategy, but the four provinces and four cities in **West** and the three provinces in **South** are responsible for the S3 governance. In **North**, the three northern provinces, major municipalities, knowledge institutions, and entrepreneurs (united in the Economic Board Northern Netherlands (EBNN)) are responsible for the S3. All relevant stakeholders for the S3 are united in this Board, who meets on a regular basis.



Box 3: Governance and implementation of S3 in Ireland

In **IE**, the Regional Enterprise Plans are the base vehicles for S3 implementation. Established at the NUTS 3 level, delivery in each region is driven by the Regional Steering Committee and Programme Manager. Each Steering Committee comprises of representatives from local authorities, LEOs, Enterprise Ireland, IDA Ireland, Regional Skills Manager Higher, and Further Education Institutes, Education and Training Boards, Regional Assembly, private sector, and others, and is chaired by a senior level private sector businessperson.

It is the intention going forward that there will be regional implementation groups who will perform further analysis on selected regional priority areas, co-ordinated and led at NUTS 2 level, as necessary to inform the S3 national implementation group's deliberations, and regional level implementation. The groups will also provide implementation support at NUTS 2 level for delivery of S3 national and regional strategic priorities as agreed with, and consistent with, the work of the national implementation group. The Regional Assemblies, **NWRA** and **SRA**, are positioned to engage these groups and ensure the quadruple helix of actors are represented.

Alongside formal governance structures, **complementary and informal participation processes have become a key feature in several regions**. For example, the Helsinki-Uusimaa region in **FI** has set up a **sparring group** (idea generation group) and **expert panels** as specific structures to provide more flexibility for stakeholder engagement. These groups allow stakeholders to experiment with new ideas and contribute insights that might not fit within the formal, statutory processes of the MYR. Similarly, **PL (W-M)** has appointed **smart specialisation operators** who animate cooperation among stakeholders. These operators create an increasingly bottom-up process for identifying smart specialisations, offering a flexible framework for stakeholders to propose ideas for regional development. Bottom-up governance is a key feature of the region's S3, placing the initiative squarely with local stakeholders – businesses, research institutions, and government bodies – who are actively involved in defining and implementing the region's specialisations. A pivotal role in this process is played by the **Regional Steering Committee**, which oversees consultations with stakeholders to ensure that regional strengths are at the forefront of specialisation strategies. In terms of wider collaboration, **PL (W-M)**'s approach illustrates the importance of building strong local networks while simultaneously embedding these networks within broader European value chains.

Box 4: Bizkaia's RIS3 governance structure

In **ES (PV)**, governance of the RIS3 strategy is led by the Inter-Departmental Committee and entrepreneurial dynamics that involve stakeholder participation. There are two main instruments:

- **Steering groups**: comprised of stakeholders from the "triple helix" (businesses, universities, research centres, and public administration), these groups drive the deployment of the RIS3 strategy in their specialised areas. Each group follows strategic guidelines and coordinates with relevant Basque Government departments, which participate in broader governance structures like the Inter-Departmental Committee and BCSTI.



- **Working groups for cross-cutting initiatives:** these include stakeholders from steering groups and others from the "triple helix" to coordinate key projects in areas like Healthy Ageing, Electric Mobility, and the Circular Economy. Leadership in these initiatives comes from steering groups focused on the strategic priorities of Health, Smart Industry, and Cleaner Energies.

ii Evolution and expansion of stakeholder participation

Several IQ-Net programme authorities report continuity in stakeholder types and engagement modes from the 2014-20 period but highlight changes in the scope and role of these actors.

For example, **HU**'s S3 governance now involves a broader range of stakeholders due to the inclusion of digitalisation and enterprise development sectors. This expansion reflects a growing recognition that smart specialisation requires not just R&I input but also the engagement of business and technology sectors to ensure comprehensive development. Similarly, in **PL (Pom)**, there is a concerted effort to increase stakeholder engagement through initiatives like the "Smart Green Progress" project, which builds on the previous "Smart Progress" project but with a more focused orientation towards climate neutrality and rural engagement. In **ES (PV)**, SMEs are playing a more active role through their participation in working groups and projects. Cluster associations continue to connect with SMEs, although in some areas, like Advanced Manufacturing, they have taken a more supportive role. Collaboration between Innobasque and local economic agencies has increased to further integrate SMEs. Universities are also becoming more proactive in aligning their strategies with RIS3 and participating in specific projects. However, the inclusion of civil society and entrepreneurs remains limited, except in programmes like Bind 4.0. In **EL**, there are no changes in the composition of bodies, but it is expected that there will be a higher overall number of participants as the EDP process will be activated in more regions. Similarly, in **IE**, there is increased engagement at the regional level, which was not the case in the 2014-20 strategy. There is also more emphasis on the role of enterprise being engaged, reflected in the established stakeholder groups.

In **DK**, while the composition of stakeholders involved in the Danish Board of Business Development has remained largely unchanged, the role of business representatives has been strengthened, reflecting a shift in focus towards more private-sector-led development strategies. There were also not many changes in the actor composition in **NL**, but mainly in the role of actors. In **NL (West)**, engagement mechanisms have been enhanced through public consultations and sector-specific discussions, increasing the number of SMEs involved in S3-related activities. In **NL (South)**, provinces took more of a leading role in decision making, and municipalities have a smaller role due to the nature of the programme. This is similar to **NL (North)**, where social organisations (such as Sustainable North (*Duurzaam Noord*)) and social entrepreneurs have gained a more significant position in the S3 for 2021-27. Additionally, the JRC, which wrote the HESS report (Higher Education for Smart Specialisation)²⁹, can also be perceived as a new actor involved.

iii Diversity and inclusion of stakeholders



Ensuring a diverse range of stakeholders is an important component of the EDP, given its role in identifying regional strengths and fostering innovation. Most programme authorities have embraced the **Quadruple Helix model**, warranting a broad representation of government, academia, industry, and civil society. In **BE (Vla)**, for



Figure 8: Overview of Helsinki-Uusimaa's cooperation in RIS3.

Source: Document of S3 for Helsinki-Uusimaa region.

In **BE (Vla)**, for instance, the Steering Committee of the Europe Platform includes government agencies, universities, strategic research centres, businesses, and civil society actors. This platform facilitates bottom-up participation through clusters and business networks, enhancing the EDP by ensuring that a wide range of voices contribute to strategy development. Similarly, **Finnish** regions involve a mix of municipalities, universities, and businesses through statutory regional bodies like the Regional Management Group (MYR), alongside more informal fora that gather a wider range of stakeholders for steering and decision-making.

AT also involves a wide range of actors, including civil society, businesses, and educational institutions, throughout both the policy design and evaluation phases. This inclusivity is reflected in its regular monitoring committee meetings, where stakeholder input is integrated into programme evaluation. In **PL**, stakeholder diversity is actively promoted. In **PL (Pom)**, through the initiative **Smart Green Progress**, there are efforts to include territories outside the main urban centres. Stakeholder engagement in **PL (W-M)** is also promoted through the **WaMa Smart Lab** initiative (Box 5), which brings together stakeholders from various specialisation areas (e.g., wood and furniture, water economy, high-quality food). These efforts, which include workshops, conferences, and steering committees, ensure that the regional innovation ecosystem is shaped by a broad range of perspectives. In **PT**, each regional RIS3 strategy is organised around platforms, or thematic domains, led by experts to ensure ongoing engagement in the EDP. Involving external actors as participants or leaders of these groups is seen as key to broadening participation from the quadruple helix and strengthening the EDP. This stakeholder mobilisation can be argued to reflect the empowerment of stakeholders in national and regional research and innovation systems, as well as the promotion of cooperation and investment promotion networks.

In contrast, countries like **CZ** place a heavier emphasis on collaboration among governmental bodies and innovation platforms. The Czech National RIS3 strategy, coordinated by the Ministry of Industry and Trade, includes National Innovation Platforms (NIPs) to identify strategic priorities and opportunities. These platforms gather experts from across sectors to guide



research and innovation initiatives, though with a relatively lesser role for direct civil society involvement compared to Belgium or Finland.

Box 5: Broad stakeholder involvement in the Polish region of Warmińsko-Mazurskie

In **PL (W-M)**, the inclusion of diverse stakeholders in a continuous entrepreneurial discovery process is ensured through regular meetings, workshops, process for identifying new specialisations, and the active participation of advisory bodies:

WaMa Smart Lab initiative (2022-23) was funded under Technical Assistance by the ROP. As part of this initiative, the Warmińsko-Mazurskie Voivodeship conducted activities dedicated to three smart specialisations: 'Wood and Furniture', 'Water Economy' and 'High-Quality Food'. The aim was to stimulate cooperation between science, business and administration, and to raise the competence of innovation system stakeholders. As part of this initiative, the following were organised:



- 9 workshop meetings for stakeholders of smart specialisations;
- 6 start-up workshops for people studying in the Warmińsko-Mazurskie Voivodeship;
- 6 conferences (opening and closing) attended by approximately 900 people.
- Regional Steering Committee for the Regional Innovation Strategy. This body, bringing together representatives of science, business, education, administration and the business environment, performs the following tasks:
 - coordination of the RIS implementation and monitoring process;
 - initiation of active participation of social partners in building the innovation system in the Warmińsko-Mazurskie Voivodeship;
 - accepting reports on the implementation, monitoring and evaluation of the Regional Innovation Strategy, and giving recommendations to the Regional Board;
 - preparing and giving opinions on projects which raise the level of innovation in the region;
 - giving an opinion on innovative projects;
 - giving an opinion/assessment on documents relating to innovation policy;
 - to take other measures related to the implementation of RIS and to coordinate initiatives that affect the development of innovation in the region.

The Committee plays a key role in continuous stakeholder involvement; it not only monitors but also promotes the active participation of socio-economic partners in decision-making processes and the implementation of the S3 strategy.

iv Challenges and innovations in stakeholder engagement

Despite the broad participation frameworks, some regions face challenges in effectively mobilising stakeholders, namely outside core metropolitan areas. In **PL (Pom)** there is a noted



effort to include peripheral and rural areas in S3 processes, as high-tech specialisations often dominate metropolitan regions. The regional government has responded by conducting localised assessments to ensure that S3 strategies are relevant across diverse territories, including lower-tech sectors such as agri-food and tourism. A similar issue is seen in **CZ**, where more developed regions like Brno and South Bohemia benefit from strong innovation hubs, including living labs and incubators. However, **less-developed areas struggle to establish innovation infrastructures**, which limits their participation in the S3 process. The Ministry of Industry and Trade has responded by fostering bilateral cooperation between regions, organising regional visits, and offering educational events, though disparities in regional engagement remain a challenge.

Some countries and regions have turned to digital tools to address engagement challenges.

For instance, **HU** has used online questionnaire surveys to systematically gather feedback from stakeholders, including SMEs and universities. This method allows stakeholders who may not be able to attend in-person consultations to still provide input, ensuring a broader participation base. This approach has significantly increased the number of stakeholders involved, reflecting a more inclusive governance process in comparison to previous periods. In **PT**, the creation of a collaborative digital platform for sharing and capacity-building of networks of actors is foreseen under the structuring project "Capacity-building for the operationalisation of Smart Specialisation Strategies" of the Roadmap of Capacity Building.

3.1.2 Towards continuous stakeholder engagement in S3

The CPR for the 2021-27 period includes the requirement to ensure continuous stakeholder engagement throughout the lifecycle of S3, particularly within the strategy's discovery process. Various governance structures and mechanisms have been employed across European regions in response to this, namely in terms of institutionalised processes, and the integration of feedback into policy.

i Mechanisms for continuity and feedback loops

Programme authorities have implemented several mechanisms to ensure stakeholder engagement is continuous in S3 throughout the 2021-27 period, and not just limited to the strategy design phase. Below are key mechanisms used by different regions:



Regular monitoring and evaluation committees (e.g. **AT, IE, PL, NL, FI**): In **AT**, the programme's Monitoring Committee frequently discusses stakeholder engagement. This committee meets regularly to evaluate the progress of S3, providing a structured platform to discuss the strategy's evolution. In **IE**, regional steering committees linked to the Regional Enterprise Plans (REP) also hold regular meetings to monitor S3 and ensure stakeholder feedback is continuously incorporated into the implementation process. The Regional Assemblies will sit on each REP



Steering Committee, ensuring S3 priorities (both agreed and emerging) remain a live consideration at a local level. This is similar in **PL (W-M)**, where the Regional Steering Committee for the Regional Innovation Strategy plays a crucial role in ensuring that stakeholder involvement is not only continuous but also influential. This committee coordinates RIS implementation, monitors progress, and provides policy recommendations, ensuring a regular loop of feedback and policy adjustment. In **FI**, the MYRs in the individual regions have a role in monitoring the implementation of the S3 strategies. In addition, regions have their own fora to bring in specific expertise (e.g. RDI forum in Satakunta) and provide steering (e.g. high-level RIS steering group in Helsinki-Uusimaa). **NL (North)** ensures continuous stakeholder engagement through the EBNN.



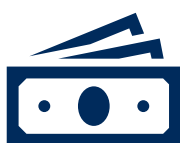
Workshops, conferences and thematic meetings (e.g. **PL, CZ, PT, EL, IE**): In **CZ**, as in the previous period, regular thematic platforms allow for continuous meetings between national and regional stakeholders. These meetings focus on thematic areas, ensuring stakeholders are continuously engaged with relevant and current topics tied to the region's S3 priorities. In **PT**, the national RIS3 governance model includes thematic platforms and the Innovation and Smart Specialisation Forum, where constant interaction between stakeholders is encouraged. These institutional bodies are responsible for maintaining ongoing engagement and ensuring that input from across the quadruple helix is integrated into policy revisions.



Recurrent surveys and consultation processes (e.g. **AT, IE, NL, HU**): To maintain a broad and inclusive feedback loop, **AT** incorporates publicly accessible online surveys. From August to October 2019, an open-response survey was made available, offering a participatory method for ongoing input from diverse stakeholders, and ensuring the strategy remains aligned with their evolving needs. Similarly, in **IE**, upon the completion of the Regional Enterprise Plans (REPs) in 2024, a new round of consultation processes will be launched. This forward-looking approach ensures that stakeholder input will continue to guide future iterations of the strategy, keeping it relevant to regional challenges and opportunities. In **NL**, mid-term evaluations trigger renewed rounds of stakeholder consultations, reflecting an ongoing process of assessment and realignment. For example, Balland & Boschma's evaluation³⁰ informed the need for new consultations with the Economic Board, ensuring that stakeholder views are reassessed and incorporated in the mid-programme period. In **NL (South)**, there is a continuous EDP. The



region plans to periodically (e.g. every two years) involve the steering group of the S3 process in keeping the strategy current and dynamic, based in part on quantitative progress and qualitative input from stakeholders.



Funding mechanisms (e.g. **HU**, **FI**): **HU** approaches the implementation of the EDP from two angles. On the one hand, RDI, digitalisation, and enterprise support policies are an integral part of the S3 EDP process, which in practice means that the resources required for EDP are shared, and that S3 can cover a much wider range of stakeholders. On the other hand, the innovation agency, which is responsible for S3 implementation, is also beneficiary of GINOP+ funding aiming to support the S3 EDP process. This not only sustains engagement but also ensures that stakeholder involvement is both technically and financially supported. In **FI**, the (domestic) regional strategic programmes tie all the different regional initiatives whether domestic or EU co-financed. This enables therefore the S3 to be connected to other regional initiatives, and the aim is to foster these connections to deliver larger actions.

These mechanisms illustrate a range of strategies that ensure the continuous engagement of stakeholders in the EDP and S3. Regular meetings, evaluations, thematic events, and institutional structures collectively create feedback loops that not only maintain stakeholder involvement but also ensure that their contributions directly influence the ongoing development of S3.

ii Institutionalised structures

A critical theme for MAs in ensuring continuous stakeholder engagement is the establishment of formalised, institutional structures that can sustain participation over time. Countries like **AT** and **PT** have adopted multi-tiered governance frameworks that facilitate ongoing dialogue between policymakers and stakeholders. In **AT**, the creation of the **RTI Strategy Austria 2030** was an outcome of several broad consultations, including public discussions, sector-specific events, and an accessible online survey (Box 6). Similarly, **PT** institutionalised stakeholder engagement through **National Thematic Platforms**, the **Innovation and Smart Specialisation Forum**, and **Regional Innovation Councils**, which serve as continuous fora for collective decision-making. These formalised platforms provide a mechanism for structured interactions, ensuring that the voices of science, business, education, and civil society are regularly heard and integrated into the development and monitoring of S3 strategies. These are also regularly monitored as part of the monitoring compliance with Enabling Condition 1.1 Good Governance of the Smart Specialisation Strategy.



BE (Vla) demonstrate a more centralised approach, utilising the **Europa Platform** as the key forum for engagement. This highlights a potential trade-off between centralisation and participatory breadth, as more structured, top-down platforms may limit the active participation of diverse stakeholders compared to broader, multi-level governance systems.

Box 6: Stakeholder engagement in the RTI strategy Austria 2030

AT has a traditionally strong system of stakeholder involvement. The RTI strategy Austria 2030 was created in an open, participatory process. The OECD Review 2018 provided key input for the redesign of the RTI strategy. In addition to that there were:

- a public discussion as part of the Ministry of Education, Science and Research European Conference (14 December 2018);
- an exchange with interest groups (Federation of Austrian Industries) and business and social partners (May 2019);
- a special event involving the Ministry of Education, Science and Research and the *Länder* with a focus on regional smart specialisation on 15 October 2019; and
- a broad-based, publicly accessible online survey including open response options (August to October 2019).

Stakeholders from science, business, education, civil society and administration are regularly involved in the creation and evaluation of thematic strategies. Also, the stakeholder engagement is regularly discussed in the programme's Monitoring Committee meetings.

Federal Government
Republic of Austria

RTI Strategy 2030

Strategy for Research, Technology
and Innovation of the
Austrian Federal Government

iii Flexibility and responsiveness to stakeholder input

An important aspect of governance for S3 is how flexible and responsive the system is to the inputs provided by stakeholders. Several countries and regions have governance systems that not only engage stakeholders but also ensure that their input actively shapes policy directions. For example, in **PL (W-M)**, the **Regional Steering Committee** plays a dual role in both monitoring the implementation of the Regional Innovation Strategy (RIS) and promoting active participation in decision-making processes. This ensures that stakeholder feedback is not merely symbolic but is used to guide policy development. Another example is that of **PT**'s governance model, which also reflects this responsiveness. The **Innovation and Smart Specialisation Forum** and thematic platforms are designed to produce prospective analyses and policy recommendations based on continuous stakeholder input. This process encourages the autonomy of various working groups, which fosters innovation by allowing actors outside the formal coordination structure to lead on specific themes, thereby increasing the system's responsiveness to new ideas and priorities. In a similar vein, in **FI** the individual



regions have adopted different approaches (via their specific regional fora) to ensuring ongoing input to their S3 from relevant stakeholders.

The above examples highlight the importance of ensuring that governance structures not only engage stakeholders but are also able to adapt flexibly to their contributions, ensuring that the S3 strategy remains dynamic and aligned with regional realities.

3.1.3 Interregional cooperation in S3 implementation

Interregional cooperation has been a key feature of S3 implementation across Europe, with countries and regions engaging in collaborative initiatives aimed at fostering innovation, economic development, and cross-border synergies. However, the experiences of regions vary significantly depending on their specific contexts, including the availability of resources, institutional capacity, and strategic priorities.

In several regions, interregional cooperation has been deeply embedded into the design and execution of S3 strategies, often as a reflection of broader regional or national innovation policies. For example, in **FI**, interregional projects are an integral part of day-to-day S3 implementation, with regions like Helsinki-Uusimaa actively fostering cooperation, particularly around emerging themes such as food-related innovation. Similarly, **BE (Vla)**, **PT**'s Norte region and **NL**'s Southern region participate in the Vanguard Initiative, a partnership of 35 European regions aimed at strengthening European manufacturing through smart industries.

In some cases, **cross-border collaboration** has been formalised through strategic frameworks. For instance, the Portugal-Northern Spain (Galicia) cross-border Smart Specialisation Strategy (RIS3T) stands as one of the most



Figure 9: Logos for the RIS3T initiative between Portugal and Galicia.

Source : <https://ris3t-galicianortept.eu/a-ris3t#estratexia>

structured examples of cooperation from **PT**.³¹ This initiative is based on an open discovery process and brings together regional actors to address shared challenges through innovation, pooling resources to maximise the impact of European funding. The strategy is implemented via projects like IMPACT_RIS3T, which leverages interregional cooperation to advance shared innovation goals. Other examples of interregional cooperation as part of S3 implementation in 2021-27 include initiatives from the **PT** regions of Centro and Algarve, and cooperation between coastal regions within the Atlantic Arc Commission (Box 7).

Box 7: Portugal's International Interregional Cooperation between Coastal Regions within the Atlantic Arc Commission

In the Action Plan for 2024/25 of the Innovation Working Group, a co-creation process was initiated for the construction of an "Innovation Made In Atlantic (IMA)" Catalogue,



involving the Coastal Regions of Portugal, Spain, France, Wales and Quebec and their stakeholders, in a broad collaborative debate on Atlantic Innovation initiatives and projects.

This initiative, while remaining dynamic and committing territorial actors to a common goal, strengthens and deepens cohesion between the Innovation ecosystems of these Regions, creating opportunities for cooperation and building partnerships to leverage projects in the strategic areas of smart specialisation that intersect in this vast geography, taking advantage of diversity and shared interests and contributing to European competitiveness, in a logic of territorial impact.

In 2024, CCDR LVT, as a member of the Atlantic Arc Commission (CAA), one of the 6 Geographical Commissions of the Conference of Peripheral Maritime Regions (CPMR), currently holding the interim Presidency, assumed the Coordination of the Innovation Working Group (GTi).

Interregional or cross-border cooperation related to S3 is done mostly through Interreg programmes but is more generally still being developed. In **BE (Via)**, the regional programme's emphasis is on internal development, with few resources available to dedicate to S3-related cross-border cooperation. However, cooperation in cross-border programmes like Interreg aligns closely with the Flemish programme on innovation. Cooperation topics diverge based on the country and region, such as culture and tourism in cooperation with France, or innovation with the **Netherlands**. This is echoed in **IE (SRA)**, which has been particularly proactive in interregional cooperation through several Interreg Europe projects linked to S3 objectives, such as Proximities (focused on sustainable urban development), TALENT4S3 (which supports talent retention and attraction to enhance S3), and MARIE (Delivery of Responsible Research & Innovation (RRI)), among others. **IE (NWRA)** is seeking to develop Interreg engagement in S3 themes as well. They will also strengthen linkages with the Special EU Programmes Body in Northern Ireland (SEUPB), responsible for managing EU funding programmes within Northern Ireland and cross-border programmes with the border counties of Ireland. In **EL**, regions are pursuing collaboration with other regions through the Regional Innovation Valleys instrument and ad hoc participations in I3.

Box 8: Interreg supporting S3

Interreg, plays a critical role in supporting S3 by fostering interregional cooperation across borders. The programmes enable regions to pool resources, share knowledge, and collaborate on joint projects in alignment with S3 priorities, addressing cross-regional challenges and promoting sustainable growth. This has proven particularly valuable for regions that might lack critical mass or specialised resources individually, promoting space for policy experimentation through soft networks of cooperation.

Whilst funding through Interreg is more heavily allocated under PO2 Greener Europe and PO4 Social Europe, innovation is consistent in the operation and outcomes of funded projects. Whilst many initiatives may not be explicitly classified as "innovation," they nonetheless emphasise the adoption, piloting, and testing of innovative approaches.





i Challenges in engaging in interregional cooperation

Despite the emphasis on interregional cooperation for innovation, many regions have encountered significant challenges that have hindered full engagement:



Resource limitations (e.g. **BE, NL, PL**): lack of financial capacity and human resources have constrained regions from collaborating across regional boundaries within S3. In **BE (Vla)**, for example, the limited ERDF resources available are siphoned to local needs in their own region, where the MA argues there is sufficient demand for funding. Similarly, in **NL (West)**, a restricted budget and a well-functioning regional innovation ecosystem have meant there is less need for large-scale international consortia. In **PL (W-M)**, staff shortages and workload issues have also been a barrier, hindering the development of new interregional projects and participation in broader European networks.



Administrative and regulatory barriers (e.g. **PL, DK**): complex public procurement and eligibility rules have slowed down interregional cooperation efforts in some regions. For instance, **PL (W-M)** highlighted the challenges associated with navigating public procurement procedures and meeting State aid restrictions, which can slow project implementation and limit interregional involvement. Synchronizing calls and aligning governance structures between regions has also proven difficult.



Strategic misalignment (e.g. **CZ, BE, HU**): in some regions, the strategic focus of national and/or regional programmes differs from the priorities set out in interregional initiatives. In **CZ**, while some interregional cooperation has developed, regions have acted largely independently, resulting in fragmented approaches based on individual capacity and resources. The strategies are nonetheless determined significantly by national policy. Similarly, in **HU**, while the S3 strategy contains territorial objectives, it is a national-level document, limiting perspectives on interregional projects. Plans for the Hungarian S3 include increasing the territorial focus. In **BE (Vla)**, the regional programme's emphasis is on internal development, with little direct alignment with S3-related cross-border cooperation.



ii Successful outcomes and emerging initiatives

Notable outcomes are beginning to emerge from S3 interregional cooperation. In **DK**, there have been some **attempts to align calls between countries**. This has been the case, for example, through the Baltic network within the EU Strategy for the Baltic Sea Region and the Commission's expert group within the I3 instrument. These projects not only contribute to regional development but also foster valuable exchanges of knowledge and best practices between regions. In **PL (W-M)**, despite challenges for the implementation of interregional projects, the region has highlighted fruitful cooperation with other European regions in networks such as the Baltic Sea Region Smart Specialisation Directors' Network (Box 9), ERRIN and IQ-Net. The region is also a member of the Regional Smart Specialisations Forum, which provides a platform for the exchange of experience and knowledge in the management and implementation of Smart Specialisation.

Box 9: Warmińsko-Mazurskie's participation in S3 networks in the Baltic Sea region

PL (W-M) is an active participant of the international Baltic Sea Region Smart Specialisation Directors' Network (BSR S3 Directors' Network). The network brings together regions from the Baltic Sea area represented by smart specialisation policy makers. Its aim is to strengthen the regions' capacity to cooperate, share knowledge and experience on smart specialisation strategies and innovation.

The Network's cooperation has played a key advisory and decision-making role in supporting the development of the platform entitled Baltic Sea Region Smart Specialisation Ecosystem (BSR S3 Ecosystem), led by the Swedish region Västerbotten within the Interreg project.

The area of interest of the Network focuses, among others, on topics related to the European Commission's SS initiatives, e.g. 'Regional Innovation Valleys' (RIV), or competitions within the Interreg Baltic Sea Region 2021-27 (BSR) Transnational Cooperation Programme. The approach to smart specialisation in the future cohesion policy and joint initiatives of the regions within the Network are widely discussed.

In other areas, interregional cooperation has enabled regions to experiment with **innovative approaches** to common challenges. For instance, the **PL (Pom)** region has integrated sustainability and inclusiveness into its innovation strategy through interregional projects like Smart Green Progress, which focuses on green energy, and DEBUTING, which promotes inclusivity in the business sector. These initiatives are aligned with broader Cohesion Policy goals and have strengthened the region's capacity to implement S3. Another relevant initiative is that of the Vanguard Initiative. This is part of a 35-region European partnership focused on advancing "smart" manufacturing and industrial innovation, with South Netherlands prioritising High Tech Systems and Materials (HTSM), biobased industries, and maintenance. An expert committee linked to

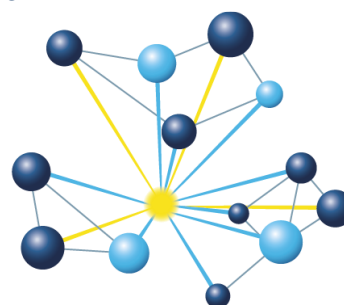


Figure 10: Vanguard initiative logo.

Source: <https://www.s3vanguardinitiative.eu/>



region's S3 currently oversees project selection for the Vanguard Initiative's Vinnovate call, which supports international innovation projects (TRL6-8). Participating regions include Wales (UK), Northeast Romania (RO), **East and South Netherlands**, Galicia (ES), **Lower Austria (AT)**, Lower Saxony (DE), **Flanders** and Wallonia (BE), Emilia Romagna (IT), and **Norte (PT)**.

3.1.4 Integration of new regional innovation approaches

When considering the integration of new Smart Specialisation concepts into regional innovation strategies, various countries approach the challenge differently, reflecting their unique priorities, different governance approaches and levels of institutional readiness. While some countries have fully embraced new concepts and priorities like sustainability, or mission-orientation as part of their innovation strategies, others remain in a phase of consideration or partial implementation.

i Sustainability and Inclusiveness (S4+)

Verifying progress towards systemic change is particularly relevant as we consider the **increased importance of the twin transition** as a key growth driver in the new period, closely intertwined with innovation.³² Sustainability has become a central focus in the post-2020 landscape, with the **European Green Deal (EGD) serving as not just a growth model but a broader EU 'smart specialisation'** in the just transition agenda.³³ Given the large scale of this transformation, the EGD needs widespread resource mobilisation and alignment, a strong strategic governance mechanism and coordinated efforts, and significant investments in green transformation. Smart Specialisation can as a key delivery mechanism for the EGD, complementing the growth model's directionality with a place-based approach, and a proven framework and methodology for facilitating partnerships and value-chains, leveraging regional strengths, and coordinating and targeting investments in innovation and transformation across EU regions.³⁴

Associated with this increasing sustainability and green transition focus, an evolution of Smart Specialisation has emerged in the discourse. This has been introduced in a JRC report and dubbed S4+, i.e. **Smart Specialisation Strategies for Sustainable and Inclusive Growth**.³⁵ It maintains the core elements of S3 but shifts the focus. The key aspects of the new concept are:



Explicit Focus on Sustainability and Inclusiveness: Regional development strategies to place sustainability and inclusiveness at the forefront, aligning with the EGD and the United Nations' (UN) Sustainable Development Goals (SDGs). Climate neutrality, tackling environmental challenges through innovative solutions, ensuring all regions and communities benefit from development policies, and addressing potential trade-offs to create equitable opportunities for societal groups, are all aims of the S4+ framework.



Systemic and Transformative Changes: Strengthened focus of regional innovation policy. To achieve this, S4+ also shifts priority ordering by repositioning innovation to include systemic innovation and industrial transitions, focusing on the development, testing and deployment of innovative solutions for sustainability. Innovation in S4+ is considered an intermediate step towards the longer-term goals of fostering sustainability and inclusiveness, rather than being an end in itself.³⁶



Challenge-Oriented Approaches: A focus on identifying and tackling specific societal, environmental, or economic challenges that a region faces, emphasising problem-solving of complex issues with multiple stakeholders. S4+ emphasises societal challenges and just transition as the main issues to address.³⁷



Mission-Driven Strategies: Targeted and goal-oriented, and involving setting clear, ambitious objectives (or missions) to guide innovation and policy efforts. This would also assume coordinated efforts across policy areas, sectors and stakeholders to achieve transformative change. The EGD is considered to have a mission-oriented approach, and Horizon Europe has also defined five missions for Europe. Coupled with the ongoing crises and the policy alignment with the UN SDGs, these set a directionality of sustainability, innovation, and inclusiveness for European policies.³⁸



Multi-Level Governance and Increased Emphasis on the EDP: S4+ fosters a comprehensive and coordinated approach towards the EGD objectives across multiple fronts and at various decision-making levels, integrating various areas such as infrastructure, skills, and local leadership. It also aims to structure incentives at local and sub-national scales to make engagement with the EGD attractive to private sector, civil society, and public sector actors. The subsidiarity principle is emphasised as a need to achieve the desired transformative outcomes, and to ensure the inclusiveness component of S4+.



Flexibility, Adaptability, Evaluation and Policy Learning: Continuous policy learning, with particular attention given to early detection of trade-offs between sustainable, smart, and inclusive growth, and development of responsive strategies. Evaluation criteria are also emphasised, with innovation-led and enterprise-led activities assessed based on their potential contributions to promoting sustainable and inclusive growth.

While S4+ is not officially part of the guidelines yet, sustainability is woven throughout the CPR.³⁹ Regions have the option to voluntarily incorporate and consider S4+ principles in their strategies. Indeed, before the report's publication, during the 2014-20 programme period several regions had already implemented these concepts to varying degrees, often without explicitly labelling them as S4.



A smart specialization strategy will focus more on sustainability. Experts from the Czech Republic, Ukraine and Serbia discussed the new focus of RIS3 strategies at the MIT



Figure 11: Title and image from an article on Czechia's peer-to-peer engagement on sustainability in RIS3.

While there is no formal evolution of S3 to S4+ in IQ-Net countries and regions, sustainability has been recognised as a central element of many regional innovation strategies, with a varying degree of integration. In a previous IQ-Net report,⁴⁰ **BE (VIa)** and **IE (SRA)** have suggested that their 2014-20 RIS3 promoted sustainable approaches to economic development. In **IE (SRA)**, several projects funded under Priority 1 of the ERDF SEM Regional Programme are in support of this theme. This round of research indicates that in **DK**, **CZ**

and **PL (W-M)** sustainability is also already embedded within the strategic frameworks. **DK** treats sustainability as a cross-cutting concern across sectors, and social inclusion is prioritised in the Danish ESF+ programme. Similarly, **CZ** has launched alignment of its S3 with the European Green Deal and the United Nations' 2030 Agenda, demonstrating the start of a clear commitment to sustainability through emphasis on smart city initiatives and the low-carbon economy (Figure 11).⁴¹ **PL (W-M)** also takes an ambitious approach by actively aligning its S3 with EU green initiatives. It promotes projects related to energy efficiency, green technologies, and the circular economy, demonstrating an integrated approach to both sustainability and inclusiveness. Inclusiveness, in this case, is manifested in additional points awarded to projects that contribute to equality and social inclusion, showing that **PL (W-M)** is linking economic innovation to social outcomes. In **FI**, there is overall continuity in the priorities of the regional smart specialisation strategies, but it is also notable that certain aspects have gained more visibility and focus, namely green and digital transition and sustainable development as cross-cutting themes.

On the other hand, **HU** exhibits a more tentative approach. In **HU**, inclusiveness is being considered but remains under review, with discussions about how to strengthen this dimension in the future. **BE (VIa)** remains open to the idea of integrating new concepts, like sustainability and inclusiveness, but has yet to make formal plans to do so. Both countries highlight the importance of ongoing evaluation in determining the future direction of their strategies.

Further, **AT** reflects an emerging shift in discourse from innovation to transformation, suggesting that while sustainability is not formally part of its S3 framework yet, it may become more relevant in the future as the national focus pivots towards broader, transformative goals.⁴²

ii Open Discovery Process

The **Open Discovery Process (ODP)** builds on the EDP, which is seen as a key element of Smart Specialisation, encouraging the participation of a broad range of stakeholders in the



innovation process. This is a concept utilised in the new Partnerships for Regional Innovation (PRI) initiative. ODP introduces the idea of organising discovery processes driven by multi-stakeholder partnerships and policy mixes to tackle local missions or territorial challenges.⁴³ This concept is already partially in place in most IQ-Net countries and regions, albeit with different levels of institutionalisation. A few examples include:



BE (Vla)'s existing Smart Specialisation approach includes elements of the ODP, with room for further expansion to new concepts based on future evaluations.



The EDP in **PL (W-M)** is actively supported through structured workshops and consultation meetings that bring together stakeholders from science, business, and public administration. The Regional Development Strategy has been updated to allow for a more ODP-like collaborative approach and open exchange of knowledge and ideas, allowing for the identification of new areas of innovation and linking regional development goals with entrepreneurial input.



PT has also been integrating the ODP in its new RIS3. In particular, the Norte Region is developing the new cross-border smart specialisation strategies with Galicia and Castilla y León for 2021-27 based on an open discovery process involving actors from the regions. Given the country's emphasis on a flexible and adaptive approach to the S3 governance model, there is a noted potential to further incorporate such processes as its RIS3 evolves.

Other MAs do not explicitly highlight the ODP in their strategies. This may suggest that the discovery process approach currently in place requires more consideration to be updated, being highly embedded within broader innovation governance structures.

iii Mission- or Challenge-Oriented Strategies (CORIS)

Another model that could significantly influence Smart Specialisation and regional innovation policy discourse in Europe is that of **Challenge-Oriented Regional Innovation Systems (CORIS)**. This model was introduced in academic literature in 2021⁴⁴ and integrated into policy discourse in 2023 in a JRC report.⁴⁵ CORIS shifts the focus from pure economic growth to addressing territorial sustainability challenges, broadening the scope for innovation to include social, user-driven and institutional innovations. It also highlighted the **importance of 'exnovation' – dismantling unsustainable technologies and practices** – and maintains a place-based, multi-level governance approach, acknowledging the influence of users, translocal linkages and regulatory arrangements to develop and scale innovations and address territorial challenges.⁴⁶ CORIS can evolve through two distinct pathways: (i) a reorientation route, in which current RIS structures and assets are adapted or redirected to address territorial



sustainability challenges; (ii) a transformation route, which entails the creation of entirely new challenge-oriented structures.

Mission- or challenge-oriented strategies are gaining traction in several regions, with a growing emphasis on addressing specific societal and economic challenges through innovation. **CZ** appears as a frontrunner in this area, pioneering a mission-oriented approach that strengthens the directionality of its strategy.⁴⁷ By linking innovation efforts to specific sustainability challenges and aligning with broader global agendas like the EGD, **CZ** demonstrates a clear focus on innovation that serves both economic and societal needs. This type of missions-led approach is also very much embedded in many regions in **FI**. For example, in the Tampere region (West), the regional development strategy is mission-led, setting out five joint development tasks/missions for the regional actors. The purpose of the S3 priorities, in turn, is to specify these tasks/missions.

PL (W-M) also integrates CORIS into its S3 by emphasising mission-oriented projects in public health (within the Healthy Living specialisation), energy efficiency, and social innovation. This approach is supported through governance mechanisms that reward projects aligning with key regional challenges such as digital transformation, sustainable agriculture, and water conservation. This is reflected in the ROP 2021-27, whose scoring system for project selection in the region further ensures that mission-oriented initiatives addressing these pressing regional needs are prioritised. For example, in the area of R&D, additional points are awarded to projects in key enabling technologies (KETs), digital transformation and/or green deal policy. Additional points are also awarded to projects creating innovative solutions contributing to equality, social inclusion and non-discrimination. A separate envelope has also been set aside for business R&D activities in the areas of the green economy, including the circular economy.

In contrast, **NL** already integrates mission-oriented strategies but does not plan further revisions at this stage. The Dutch regions (namely **South NL**) have long focused on challenge-driven innovation, emphasising alignment with societal goals. This indicates that while **NL** is not formally adopting new frameworks, mission-oriented strategies have become integral to its innovation landscape.

Evidence demonstrates different degrees of openness and readiness to adopt these new Smart Specialisation concepts. Countries like **CZ**, **PL (W-M)**, and **DK** are leading in the integration of sustainability and mission-oriented strategies into their regional innovation policies. Their governance structures are either already aligned with these objectives or are in the process of refining and strengthening them further.

Meanwhile, **BE (Vla)**, **HU**, and **AT** represent more evaluative or exploratory approaches. Programme authorities in these countries and region are either awaiting the results of assessments, or in the early stages of incorporating inclusiveness, sustainability, and mission-oriented strategies into their S3 frameworks. For example, while **HU** and **BE (Vla)** may not yet have fully defined strategies for inclusiveness or sustainability, they are engaging in discussions



and evaluations that could lead to future integration. However, most programme authorities are open to adapting their strategies as new challenges and priorities emerge, ensuring that Smart Specialisation continues to evolve in response to both regional and global needs.

3.2 Financial implementation

'Good governance of S3' is an enabling condition for access to ERDF resources under PO1 Smarter Europe. This ensures that S3 acts not only as a planning exercise, but as a foundational requirement for achieving tangible outcomes in regional growth and innovation. Though tightly correlated with the allocation of ERDF (see Figure 6 above), the financial implementation of S3 can utilise other funding streams and initiatives to maximise effectiveness. This varies across MS, influenced by domestic funding mechanisms, level of S3 integration, and mobilisation of OPs.

Only a minority of regions incorporate formal financial tables within their S3 documentation. Countries and regions like **CZ**, **EL**, and **ES (PV)** have opted to include comprehensive financial tables or frameworks that detail the sources and intended uses of funds. These tables typically list specific allocations from EU sources like the ERDF and ESF+, as well as national programmes dedicated to enterprise development, innovation, and local cluster policies.

While some programme authorities forego formal financial tables, research indicates multiple funding streams are utilised for regional S3 implementation, mainly under ERDF, JTF, and ESF+. The decentralised structure of regional strategies has also mobilised domestic funding sources, such as those allocated for regional growth and development. The accessibility of multiple funding sources aims to create synergies between financial instruments through application and utilisation, and at the same time improve the developmental capacity and size of the applicants. However, there persists the issue of regional disparities when it comes to resources and capacity to participate. For example, **Finnish** regions participating in the Regional Innovation Valleys face disparities in available funding for co-financing, as larger regions have greater financial capacity than smaller ones, which may limit smaller regions' ability to partake in these initiatives. To address such challenges, **FI** utilises a mix of ERDF and JTF co-financing, though the distribution of funds remains uneven across regions. Additionally, there are some challenges related to funding mobilisation. For example, **PL** has the largest PO1 allocation (see Figure 6). However, **PL (Pom)** noted difficulties in mobilising funding with Cohesion Policy allocations for the implementation of S3. This can impact the utilisation of/synergising with other initiatives, and the integration of S3 into the wider policy landscape. Moreover, there are regions who choose to no longer fund R&I projects through ERDF, as is the case of **ES (PV)**, posing interesting questions regarding their financial implementation approach.

Funding mobilisation and attribution for S3 varies significantly across regions, ranging from dedicated allocations within specific objectives to more integrated approaches within broader research and innovation frameworks. The role of S3 also differs in some countries and



regions, it serves as a high-level framework (**BE, NL**); in others, it is embedded within broader policy strategies or sectoral policy (**AT, HU**). Programme authorities in **EL** and **ES (PV)** link S3 to a defined set of specific objectives, influencing how the financial implementation and impact of S3 are perceived and structured.

3.2.1 Diversity of funding sources and thematic allocation

The inclusion of a broad array of funding sources in support of S3 objectives is a common thread, with **most countries and regions drawing heavily from ERDF and ESF**. However, regional **variations in co-financing and complementary funding** reflect diverse local priorities and capabilities. For instance, **PT**'s S3 framework leverages the PT 2030 funds as the primary resource, particularly through SOs 1.1, 1.3, and 1.4 under the ESIF, each aligned with the country's strategic focus on smart specialisation. The ENEI (the national RIS3 strategy) is a guiding element for the development of the national R&D and Innovation policy, contributing to it from various sources of public and private funding, such as the State budget, European funds (namely, the Cohesion Policy Funds, the Recovery and Resilience Plan and the Horizon Europe Programme) and private investment.

On the other hand, **EL** highlights a multifaceted use of ERDF, integrating it into both national and regional objectives through specific OPs dedicated to competitiveness, skills development, and the JTF. In addition, **EL** applies the '**seal of excellence**' framework to select projects for potential funding under the 'Research – Innovate' action, although concerns have been raised about time lags that may impact project relevance by the time funds become available. **CZ** and **ES (PV)** similarly draw on a combination of ERDF, ESF, and national programmes. **CZ** supplements these with **sources from regional and local self-governments** if this support is required in OPs, or if interest arises in a specific S3 area. **ES (PV)** also includes **private business funding** as a unique contribution to S3, which underlines the role of public-private partnerships in advancing regional innovation.

Certain regions display strong reliance on domestic programmes to complement EU funding, reflecting a mixed funding approach that ensures alignment with national innovation priorities while pursuing EU goals. For example, **HU**'s S3 references domestic R&D funding schemes alongside its EU allocations, along with economic development (GINOP+) and digitalisation (DINOP+) initiatives. **FI** also incorporates domestic financing through its AKKE funding, aimed at supporting sustainable regional growth and vitality, albeit on a limited scale.

Alignment with S3 priorities can act as a pre-condition for funding access or structure calls and tenders to fulfil S3 specific objectives. For example:



In **CZ**, the objectives of the National RIS3 and regional specifications are addressed through a combination of OP calls (OP TAC, OP JAC, IROP, OP JT) and public tenders mobilised for national support programmes (i.e. DELTA 2). S3 interventions are prepared from specific



OP priorities with an indicative allocation from EU funds. Domestic financing of national support programmes relevant to RIS3 is proposed based on previous S3 implementation experience and expected national allocations. External/private funding sources are also under consideration for mobilisation in the co-financing of projects as supported by the EDP.



In **EL**, the national component of S3 implementation will be financed through OP specific objectives, with the 'Competitiveness' OP acting as the principal financial instrument to support R&I. The implementation of S3 at the national and regional level is directly attached to RTI funding of €2.1 billion operationalised through OPs and the NRRP, with an additional €3.4 billion expected to be mobilised through specific SME policy objectives.⁴⁸



In **PL (Pom)**, the creation of Regional Research Agendas requires applicants to form multi-stakeholder partnerships and submit competitive applications. The agenda, which encompasses S3 priority topics, grants preferential weighting to projects aligned with regional innovation goals. While this encourages high-quality projects aligned with S3, it also means that actual funding can vary depending on the number and quality of applications, introducing an element of unpredictability.



In **BE (Vla)**, funding under Policy Objective 1 (PO1) is similarly conditional on alignment with S3, ensuring that selected projects advance competitiveness and innovation within the S3 framework. This conditional funding model is generally effective, as the alignment between project calls and S3 has attracted a substantial number of projects; however, it requires robust monitoring to ensure that funds are directed to the most impactful projects.

3.2.2 S3 funding models: pre-allocation versus ex-post

The responses from managing authorities illustrate a mix of **pre-allocated (ex ante) budgets** for S3 activities and **flexible, ex post allocation models**, each with distinct strengths and challenges:

- **Pre-allocated S3 funding** (e.g. **EL, PV**): some programme authorities have earmarked specific funds for S3 initiatives at the outset, integrating these funds directly into their operational programmes. For example, **EL** has allocated funding within SOs 1.1 and 1.4 explicitly for S3, while objective 1.3 has a recommendation from the European Commission to prioritise S3 and is being addressed at the regional level. This



arrangement provides clarity and a targeted flow of funds, facilitating direct support for S3 activities. However, some areas of the Greek programme, such as objective 1.3, have encountered issues in defining what constitutes an S3-relevant project, which may impact effective fund utilisation. In **ES (PV)**, the strategy is also implemented with clear earmarking. Here, specific funding under objective 1.1 of the OP (€58 million from ERDF) supports RDI in alignment with S3, with structured aid for business-led projects.

- **Flexible ex-post funding** (e.g. **PT, IE**): many countries/regions, however, operate under a more flexible model, where funds are allocated to S3 projects as they emerge, without an initial earmarking. **PT** exemplifies this approach, where over €1.7 billion from Cohesion Policy Funds is anticipated for S3, but specific allocations are confirmed only upon project selection and execution. While this model allows for responsiveness to evolving regional needs, it can complicate long-term planning and prioritisation. **IE** follows a similar ex post approach, implementing S3 through a range of national initiatives with regional components. National agencies like Enterprise Ireland and Science Foundation Ireland oversee programme-specific funding streams, such as the Regional Technology Clustering Fund and the Smart Region Enterprise Innovation Scheme. This setup allows Ireland to align S3 with broader economic goals, though the lack of formal pre-allocations may affect the predictability of available funding for region-specific S3 needs.

4 OPTIMISING REGIONAL INNOVATION: MONITORING, CAPACITY ENHANCEMENT, AND POLICY SYNERGIES

4.1 Monitoring and evaluation

S3 monitoring and evaluation (M&E) is crucial for the continuous adaptation and effectiveness of innovation policies. Across various regions and countries, the systems for M&E exhibit reflect local governance structures, capacity, and historical development of policy frameworks. This section explores key thematic aspects of M&E practices, including the use of indicators, feedback mechanisms, and the role of stakeholder engagement.

4.1.1 Monitoring systems

IQ-Net regions and countries employ a variety of monitoring systems, designing and adapting them to reflect broader governance structures:

- **Centralised model:** countries like **CZ** and **HU** follow more centralised approaches, with national governments playing a strong role in shaping the indicators and ensuring compliance with overarching EU frameworks. These systems emphasise national coherence, where the need for consistency in reporting to the European Commission



often takes precedence over regional specificity. In **PL**, monitoring S3 is a component of the Regional Development Strategy and the Regional Operational programme.

- **Decentralised model:** in **PT**, **PL** and **NL**, the indicator systems are marked by high levels of regional flexibility, where regional authorities have the autonomy to develop and modify their own indicators to reflect local priorities. In **NL**, all four regions cooperate in terms of monitoring of S3. Each one has their own specific monitoring tailored to their local needs. For example, **NL (North)** employ region-specific data collection systems to monitor S3-related themes. The Northern Netherlands Innovation Monitor, an annual survey, collects data on SMEs' innovation performance, reflecting the region's focus on fostering technological and non-technological innovation. The decentralised nature of this system allows for greater alignment with regional innovation dynamics, although it can sometimes lead to variability in the robustness and comparability of indicators across regions.

This is also reflected in the complex sets of indicators for S3 monitoring. The use of indicators is fundamental to M&E systems, providing the tools to measure progress and adapt strategies in response to shifting needs and outcomes. However, the design and application of these indicators can vary significantly across countries and regions to align with their overarching S3 goals. Some regions have adopted **standardised indicators** that align closely with European Commission guidelines (e.g. **HU**, **BE**, **EL**), echoing a more centralised model, while others have developed more tailored, **context-specific indicators** to reflect their unique national and regional challenges (e.g. **PT**). It is expected that **most countries will fall somewhere in between** (e.g. **FI**, **CZ**, **NL**). For example, in **FI**, monitoring in the context of Structural Funds (including smart specialisation) relies largely on the central-level EURA2021 digitalised management system developed for the 2021-27 programme period. In addition to the central level monitoring system, the regions have also their own specific/complementary data collection systems for their S3 (see below). The case of **CZ** is in a similar vein (Box 10). Moreover, in **NL**, the Central Statistics Office (CBS) is responsible for the monitoring of the four S3 (North, East, South, West), with a set of indicators evaluated in each region, but also, as mentioned, tailored monitoring for local needs.

Box 10: Czechia's 'hybrid' monitoring system

The **CZ** monitoring system is centralised for national coherence and has adapted standard EU indicators, it also includes a structured set of both context and project-specific indicators to track progress, focusing on fund absorption and the achievement of horizontal and vertical objectives of S3. Various regional-specific indicators may be used for evaluation of S3 implementation depending on regional S3 strategies and their evaluation framework.

An important role in monitoring is attributed to meetings of regional innovation platforms or regional councils for innovations, and regional RIS3 platforms in the last report. Regions also participate in the preparation of their profiles on the RIS3 portal.⁴⁹ A complete monitoring of regional RIS3 strategies is the responsibility of individual regions, and thus regional differences may exist.



Regarding standardised indicators, in **BE (Via)**, the absence of a distinct S3-specific monitoring system means that indicators are integrated into the broader ERDF evaluation framework. This reflects a less targeted approach to tracking S3 outcomes, though it allows for coherence across funding streams. **EL** relies on Partnership Agreement indicators for annual tracking, focusing primarily on physical and financial progress. **PL** also has S3-relevant indicators, although these are collected in the central system (e.g. number of companies in specialisation areas, exports in specialisation fields, increase in number of innovative firms).

FI and **PT** are good examples of the development of context-specific indicators that cater to national and regional S3 priorities. In **FI**, some regional authorities have designed supplementary indicators specific to their strategic focus areas. In **FI**, regions like Helsinki-Uusimaa and Satakunta have developed bespoke indicators tailored to their unique S3 priorities, such as digitalisation and the environmental impacts of resource use. For example, Satakunta's cluster analysis includes qualitative indicators assessing the innovation needs arising from industry changes, while Helsinki-Uusimaa uses **thematic indicators** tailored to their unique S3 priorities, such as greenhouse gas emissions, environmental impacts of resource use, digitalisation and employment rates to track progress toward its goal of "resource wisdom." These tailored indicators allow regions to address specific local challenges, while maintaining alignment with broader national and European goals. In **PT**, the updated monitoring system will combine **qualitative and quantitative indicators** to track short-term outputs and long-term impacts. Its four-pillar M&E system integrates specific indicators that assess implementation, first level results, structural change, and long-term impacts like job creation and sustainability. This system will allow for a more nuanced understanding of progress, focusing on transformation within sectors aligned with national and European priorities.

IQ-Net countries and regions have also revised and improved their indicator systems over time, learning from previous cycles. **ES (PV)**, **PT**, and **HU** have all strengthened their monitoring frameworks in the 2021-27 period, introducing more relevant indicators. In **HU**, the 2021-27 cycle introduced a more detailed methodology for monitoring, reflecting an increased focus on indicator quality and frequency. In **ES (PV)**, the RIS3 2030 strategy builds on the successes of the previous period by consolidating and simplifying its indicators, while introducing intermediate reviews to ensure ongoing alignment with strategic goals. The Basque system emphasises both goal achievement and the effectiveness of instruments used, ensuring that progress is assessed in both quantitative and qualitative terms (Box 11). **PT** has addressed earlier challenges of complexity, data collection and overlap. The updated system will now integrate indicators from official statistical sources and network analyses, enabling a more streamlined approach that reduces redundancy while improving the accuracy of tracking long-term impacts like economic growth and sustainability.



Box 11: Bizkaia's RIS3 monitoring and evaluation system

According to the Biz RIS3 plan, the previous M&E system provided positive results, and the goal is to maintain, consolidate, improve, and simplify the system for the new RIS3 2030. This has two complementary levels:

- **Evaluation of the Strategy:** This level monitors progress toward the objectives, comparing results to the targets set. It includes both quantitative and qualitative analysis of goal achievement within the European context. Annual reports describe the progress on each objective, including the effectiveness of the instruments and programmes used. Recommendations for improvements will follow these reports, allowing for better alignment of programmes to achieve strategic objectives. Intermediate reviews of the plan are planned for 2023 and 2026, with a final evaluation to be conducted before the preparation of the next Science, Technology, and Innovation Plan. These evaluations will be approved by the Basque Council of Science, Technology, and Innovation and shared with the Governing Council and Basque Parliament.
- **Evaluation of the Basque Science, Technology, and Innovation System:** This level assesses the overall performance of the Basque R&D&I system in comparison with Europe, taking into account the European Innovation Scoreboard (EIS) and Regional Innovation Scoreboard (RIS). Biannual reports will be issued, covering key R&D&I indicators, supplemented by qualitative evaluations from professionals within the system. External evaluations from international experts will also be conducted as needed.

The Commissioner for Science, Technology, and Innovation will coordinate the M&E process, supported by a technical secretariat led by Innobasque (Basque Innovation Agency). Innobasque's role includes producing the biannual report on the status of the Basque Science, Technology, and Innovation System and promoting innovation evaluation, socialisation, and improvement.

Discussions on S3 in the 2021-27 programme period have posited the introduction of elements such as 'diagnostic monitoring', also known as problem-solving monitoring. This type of monitoring is designed to systematically evaluate a portfolio of projects or programmes to detect errors and correct them as each of them evolve. Unlike conventional monitoring, which focuses on whether actions are performed correctly, diagnostic monitoring asks whether the right actions are being taken.⁵⁰ It is argued as a potential concurrent form of **assessment of transformation**, with new indicators on investment behaviour.⁵¹ The research has not identified the implementation of diagnostic monitoring approach by any of the IQ-Net programme authorities, though this may have different designations in different settings. Given that it is not a mandatory requirement for this period, this may still be under discussion for MS.

i Monitoring frequency and feedback integration

Countries and regions also differ in the mechanisms and frequency of data collection for M&E purposes:

- **Annual:** cases like **EL**, **PL (W-M)** and **HU** implement indicator systems of data collection and broader scope on an annual basis. In **HU**, there is an increased focus on reporting



frequency for the 2021-27 period, with annual reports ensuring that up-to-date data supports continuous feedback loops. This reporting frequency aims to resolve previous gaps in data timeliness, enabling more agile strategy refinement, but still potentially carrying some limits if rapid adjustments are required. The MA in **PL (W-M)** produces annual reports on S3 in the region, which present detailed data on the specialisation areas (water economy, high-quality food, wood and furniture), supported by analyses and statistics included in the report.

- **Multi-layered:** more complex indicator systems are found, for example, in **ES (PV)**, where multi-layered evaluations are employed. The region employs a multi-tiered system of both annual and biannual reports to assess the specific goals of the RIS3 strategy and the overall performance of the regional RDI system. This dual approach enables a comprehensive assessment of progress, combining regional innovation scoreboard indicators with qualitative inputs from professionals and international experts. In **IE**, S3 will be an item in the mid-term and final Regional Enterprise Plans progress reports. In addition to these reports, an update will be provided by DETE's Regional Enterprise Plans and Initiatives Unit to the S3 national implementation group.

Box 12: Monitoring S3 in the Netherlands

In **NL**, the Central Statistics Office (CBS) monitors the four regional S3 – North, East, South, and West – by tracking innovation indicators such as private and SME R&D expenditures, technological and non-technological innovations, and collaboration with universities and research institutions. Data collection began in 2014, with reports published every two years starting in 2020.

Additionally, Boschma is developing more specific monitoring using the "relatedness model" to identify diversification opportunities in **NL**, focusing on complementary technological and sectoral competencies across regions. This analysis, initially planned for every two years, is now published every four years due to slow-changing trends.

In **NL (North)**, the Northern Netherlands Innovation Monitor, a collaboration between the University of Groningen and the Northern Netherlands Alliance, annually tracks SME innovation activities. Though not directly linked to the S3, this data influences regional programme decisions. Additionally, to periodically foster dialogue about the Northern Netherlands economy, the "Stand van het Noorden" (State of the North) is compiled annually. The "Stand van het Noorden" presents the socio-economic situation of the North using a fixed set of key figures and the latest (scientific) insights from recently published reports on the (northern) economy. Monitoring in the Netherlands provides valuable insights, allowing for flexible adjustments to the S3 as needed.

One of the most important aspects of S3 M&E is ensuring that findings feed back into strategy refinement. **DK**, **ES (PV)**, **HU** and **IE** exemplify indicator frameworks that are part of dynamic systems where data is frequently collected and quickly fed back into decision-making processes:



In **HU**, the establishment of cross-sectoral working groups ensures that feedback from indicator monitoring is systematically fed into strategy refinement.



In **DK**, the monitoring system is deeply integrated into the decision-making processes of the Danish Board of Business Development, where continuous feedback is used to shape both strategic priorities and individual project decisions.



In **IE**, a multi-level monitoring process, involving both national and regional stakeholders, is intended to ensure that changes in regional needs are reflected in national-level S3 policies. This system should be responsive to regional dynamics while maintaining coherence with the overarching national strategy.



In **ES (PV)**, the M&E system explicitly incorporates recommendations for improvement following annual reports, ensuring that the strategy remains aligned with both regional and European objectives. Intermediate reviews, planned for 2023 and 2026, are key mechanisms for making mid-course corrections, reflecting a commitment to adaptability.



EL has introduced an innovative policy initiative in the Innovation Business Observatory (IBO) in the region of Crete. This has the purpose of monitoring business needs and inform policy actions and is the first such structure operating in a Greek region.

ii Monitoring challenges

Despite the improvements, several regions face ongoing challenges in their monitoring systems. **FI**, for instance, has struggled with delays in the finalisation of the central EURA2021 digital management system, which has hindered the timely extraction of indicator data. In response, regional authorities have adopted temporary workarounds, but the reliance on fragmented data sources highlights the importance of robust digital infrastructure for effective monitoring. Yet it is widely acknowledged that despite the delays with EURA2021, the overall approach to monitoring has seen improvements in 2021-27. For example, the new EURA2021 has functions that enable the extraction of various type of S3-related data, which was not available in 2014-20.

Similarly, **BE (Vla)** and **EL** face challenges related to the integration of S3-specific indicators into broader frameworks. In **BE (Vla)**, the reliance on ERDF evaluation frameworks limits the ability to track region-specific innovation outcomes, while in **EL**, there are concerns that the focus on physical and financial indicators may not fully capture the dynamic nature of S3-driven innovation.



4.1.2 Evaluations

Evaluations play a crucial role in shaping the trajectory of S3, offering insights into their effectiveness and areas for improvement. Across IQ-Net programme authorities, the status of S3 evaluations for the 2021-27 period varies, with some regions already conducting comprehensive assessments while others are still in the planning stages. This section compares the approaches to evaluations, focusing on the scope, methods, and key findings where available, while also considering the broader implications for policy refinement and implementation.

i Early and ongoing evaluations

CZ and **PT** stand out for their early and structured approaches to S3 evaluations. In **CZ**, a 2023 evaluation report on the National RIS3 Strategy has been published,⁵² assessing the implementation of projects under the 2021-27 programme period. This evaluation highlights the successful launch of the systemic project "Smart Accelerator+", aimed at strengthening national and regional RDI systems and enhancing industrial transformation and digitalisation. Key findings from this early evaluation emphasise increased support for public research, particularly through national programmes like TREND, and improved cooperation between national and regional stakeholders. The evaluation also points to the growing role of RIS3 missions and the use of foresight activities, which are expected to guide future strategy updates and improve mission-oriented approaches.

PT has adopted a comprehensive evaluation strategy for S3. Evaluations conducted in the previous cycle offer valuable insights. A 2019 evaluation⁵³ of the operationalisation of RIS3 emphasised the uneven maturity of regional S3 but also highlighted the strong collaborative dynamics fostered during the S3 preparation processes. The focus in 2021-27 is on assessing the contribution of the 2014-20 regional S3s to the consolidation of the Regional Innovation Systems. Seven regional impact evaluations are planned to be carried out (scheduled for 2025), which will assess the effects of the 2014-20 regional S3 for each of the NUTS2 regions. Madeira will act as a pilot for developing a theory of change for RIS3 impact evaluations. As in 2014-20, other thematic evaluations, although not focused specifically on RIS3, will also include this dimension, namely the assessment of the "Change in the specialisation profile of the Portuguese economy".

ii Thematic and regional evaluations



Figure 12: Cover of the PT 2019 evaluation of the implementation of RIS3.

Source: AD&C (2019)



In some cases, regions have opted for thematic or programme-specific evaluations rather than directly assessing their S3 strategies. For example, **DK** has not conducted a formal evaluation of its S3 strategy but has instead carried out a thematic evaluation of the 14 national cluster organisations, which form a key component of its innovation policy. The evaluation found that private firms were generally satisfied with the new, 'deregionalised' cluster setup, though knowledge institutions expressed reservations. This thematic approach reflects **DK**'s broader innovation priorities, focusing on business potential in specific fields, such as industrial transformation and digitisation.

NL (West) provides another example of a thematic approach. An evaluation of the S3 in West Netherlands, published in 2024, focused on identifying opportunities for collaboration across Europe in key areas such as CO₂-free electricity and plastic reuse. This evaluation emphasised the need for the region to develop a clearer vision of how other regions in the Netherlands and Europe could contribute to its S3 goals. It also stressed the importance of regional prioritisation, guided by evidence-based decision-making and local stakeholder consultations, including businesses, universities, and regional politicians.

Box 13: Pomorskie's assessment of the development dynamics of S3 areas

In **PL (Pom)**, no evaluation from 2021-27 could be identified. However, an analysis of development dynamics of Smart Specialisations in the region was carried out in 2021.⁵⁴ It revealed that companies in these areas performed better than their counterparts outside the S3 framework. Nearly 60 percent of firms in S3 areas reported improvements in their overall situation between 2015 and 2019, compared to less than 53 percent for non-S3 companies. Key findings include that S3 companies were more advanced in adopting automation and digitisation, with 22.5 percent using automation and 58.3 percent employing digital technologies, compared to 14.6 percent and 35.1 percent for non-S3 firms, respectively. They were also more active in international markets, with 24 percent of S3 firms engaged in exports, versus 10.6 percent for non-S3 businesses. Additionally, S3 firms were significantly more engaged in R&D activities (20 percent vs. 4 percent) and innovation efforts, with over 33 percent introducing new innovations during the study period. Cooperation between S3 firms and business environment institutions was more dynamic, with 31.3 percent of S3 companies collaborating with these institutions, compared to 20.6 percent of non-S3 firms. However, the study highlighted the need for stronger engagement with local government, as less than 20 percent of businesses took advantage of municipal support. Recommendations include:

- Clearer promotion of S3 and enhanced communication between regional authorities and businesses;
- Strengthening networks and increasing interaction and knowledge exchange among S3-related companies to foster innovation;
- Supporting S3 leadership, including resources and operational coordination;
- Generating demand for R&D through innovative procurement practices;
- Addressing labour shortages through appropriate labour market policies.

Source: PBS et al (2021)⁵⁵



iii Progress and planning

For many programme authorities, **evaluations of the 2021-27 S3 strategies are still forthcoming**. **HU** is amid its first interim evaluation, which is expected to be completed by early 2025. This evaluation will provide critical feedback on the initial implementation of the strategy and is likely to shape mid-term adjustments. Similarly, **EL** has scheduled an evaluation of its national S3 for the mid-point of the programme period, linked to the fulfilment of enabling conditions. This forthcoming evaluation is expected to provide both a strategic overview of progress and a more operational assessment of the effectiveness of S3 interventions. **PL (W-M)** does not yet have an evaluation for the 2021-27 period. Nonetheless, the ex-post of the 2014-20 ROP does have some S3 related findings. Notably, it concluded that S3 helped concentrate funding on key sectors lifting innovation and competitiveness of the regional economy. Making mandatory that all projects under specific priorities support S3 as well as giving preferences for projects belonging to specialisations in priorities where it was not required obligatory supported this beneficial targeting and concentration on key sectors. A basic conclusion for 2021-17 was to increase the focus on support of S3, beyond the minimum that is required by regulations.

Some regions have experienced delays in initiating their evaluations. This has led **BE (Via)**, for instance, to adjust the S3 in 2023 not based on any formal evaluation but rather on stakeholder discussions within the steering committee. The absence of formal evaluations limits the ability of the region to assess the full impact of its S3 interventions and risks slowing the adaptation process.

FI have yet to undertake formal evaluations of the S3 strategies for the 2021-27 period, though these are planned in a fixed timeframe. In **FI**, the responsibility for S3 evaluations rests with the Regional Councils, with, for example, the Regional Council of Helsinki-Uusimaa planning to conduct a broader evaluation of the strategy and its impacts every two years. Coordination among regions is facilitated by a national-level RIS network, which ensures that regional evaluations are aligned with broader national objectives. In contrast, **IE** has no explicit evaluation plan outlined in its national S3 document, though the country's multi-level governance structure suggests that regional evaluations will play a role in tracking progress. Each of the nine Regional Assemblies is expected to feed into the national monitoring process, potentially contributing to an overall evaluation in the future.

Box 14: Czechia's evaluation system

Requirements on evaluation in **CZ** have been revised according to the last evaluation report.⁵⁶ Regions are required to prepare mid-year reports in which they are required to cover their continuous strategic activities related to regional implementation structures, regional strategic documents, EDP, or regional areas of specialisation (from the Smart Accelerator project or other sources regions usually established an analyst/evaluator).



The last evaluation report informs that in 2023, an online tool – a web form situated on the RIS3 portal - was used for the first time for this reporting to support regions in their evaluation).

The evaluations of S3 strategies across programme authorities are at different stages, with some countries and regions demonstrating a proactive approach to learning from past cycles while others are still in the process of formalising their evaluation frameworks. Early findings from **CZ** and **PT** highlight the importance of robust coordination and evidence-based decision-making, while thematic evaluations in **DK** and **NL (West)** offer valuable insights into the specific challenges faced by businesses and innovation ecosystems. Overall, ensuring evaluation processes are timely and reflective of the evolving innovation landscape allows for strategic refinements that can drive more effective outcomes.

4.1.3 Stakeholder involvement in M&E

In the 2021-27 period, there has been a noticeable effort across regions to enhance stakeholder involvement in M&E processes of S3. Stakeholder participation is important to ensuring that these strategies are responsive to local needs and that insights from a variety of actors – ranging from business and academia to government and civil society – are integrated into decision-making.

The involvement of stakeholders in the M&E process of S3 varies across IQ-Net countries and regions, ranging from **highly structured, institutionalised approaches** to more **thematic or project-level engagement**. Programme authorities in **PL (W-M)**, **CZ**, **NL**, **IE** and **PT** exemplify comprehensive models where stakeholder participation is deeply embedded in the governance framework, while others, like **BE (Vla)** and **DK** rely on a case-by-case engagement. Regardless of the approach, enhancing stakeholder involvement remains a key objective for many regions as they seek to create more adaptive, responsive, and effective S3 strategies for the 2021-27 period.

- **Institutionalised stakeholder platforms** (e.g. **PL**, **PT**, **DK**, **NL**): this includes formal structures for stakeholder involvement in the M&E process. For instance, in **PL (W-M)** stakeholders participate through two key advisory bodies: the Regional Steering Committee for the Regional Innovation Strategy, which focuses on monitoring S3, and the Warmia and Mazury Territorial Forum, which monitors broader regional development strategies. These bodies bring together representatives from diverse stakeholder groups (science, business, civil society, and the public sector) ensuring a comprehensive approach to S3 monitoring. In **PT**, the involvement of stakeholders is built into the evaluation processes through Monitoring Groups. These groups, formed for each evaluation, include relevant stakeholders who meet at key stages of the evaluation cycle, such as when Evaluation Reports are submitted. Stakeholders also contribute through interviews, surveys, and workshops, ensuring their input is systematically gathered and considered. Additionally, the involvement of quadruple helix actors is embedded in PT's



governance model, with National Thematic Platforms responsible for generating critical assessments on priority themes. In **NL (West)**, a partnership between eight triple-helix regions and three provinces was created, with stakeholders actively involved in periodic reassessments of the RIS3. This collaborative structure ensures that signals from the economic community are integrated into S3 updates, keeping the strategy aligned with evolving local and regional needs. In **DK**, the Danish Board of Business Development continues to involve stakeholders in discussions on monitoring data flows, particularly in relation to the 12 KPIs introduced to track regional development investments. This thematic focus allows for targeted engagement with stakeholders, especially in areas of national and EU-funded regional development projects, ensuring that data-driven decision-making remains a priority.

- **Thematic and project-level stakeholder involvement** (e.g. **BE**): stakeholder engagement is less formalised but still significant, often revolving around thematic evaluations or project-level input. **BE (Vla)** involves stakeholders primarily through evaluation case studies, which offer opportunities for actors across sectors to contribute insights on specific projects or thematic areas. However, this involvement remains ad hoc and is yet to be fully organised and institutionalised within a broader framework for S3 monitoring and evaluation.
- **Non-targeted engagement structures** (e.g. **AT, IE**): some programme authorities highlight the existence of formal structures for engagement that are nonetheless not purposely directed to S3 M&E. **AT** relies on interministerial coordination through the Federal-Länder-Dialogue, which facilitates information exchange between national and regional governments. This ensures a cohesive approach to research and innovation policies, though it lacks specific cohesion policy indicators for S3. **IE**'s Regional Enterprise Plans (REPs) provide a structure for gathering EDP feedback from quadruple helix agents, which may influence future approaches to S3 monitoring. The S3 will be monitored and implemented through a multi-level governance model involving both national and regional stakeholders. This marks a departure from the approach taken in the previous funding cycle which took a top-down approach with limited stakeholder engagement.

A bottom-up approach to stakeholder engagement in M&E is also a central feature in certain countries and regions. In **CZ**, national and regional stakeholders, particularly the regional RIS3 teams, play an active role in M&E activities. Each region is responsible for preparing mid-year reports on their strategic activities, including EDP and regional specialisation areas. Meetings of regional innovation platforms and councils serve as key venues for stakeholder engagement, ensuring that regional innovation priorities are closely aligned with S3 objectives. An online tool on the RIS3 portal for reporting purposes is also being used to facilitate stakeholder input and streamline the evaluation process (Box 14). **FI** similarly emphasises regional stakeholder engagement, with the MYR/MYRS regional fora playing a key role in monitoring S3. These fora not only track the use of funds but also foster collaboration between



local quadruple helix actors, supporting the development of synergies between projects and the creation of larger regional development entities. In addition to the MYR/MYRS structures, and as has been noted earlier in the paper, regions may have their own specific fora, as illustrated by the example of Satakunta (Box 15).

Box 15: RDI forum in the region of Satakunta, West of Finland

The regional RDI forum (TKI-foorumi) are embedded in the strategic RDI operating model in the region of Satakunta in the West of Finland. There are four RDI forums which are convened two to three times a year. The themes of the forums are linked to the priorities of the domestic regional strategic programme of Satakunta for 2022-25 (the priorities of the strategy have been divided between the four forums). As such the forums are also connected to the S3 priorities of the region.

The forums are continuously evolving and growing as they represent the key RDI project actors. They also serve as important platforms for the project actors in terms of fostering synergies and providing peer support.

These forums have now also a stronger connection to the secretariat of the MYRS, which is invited to take part in the RDI forum discussions.

While similar structures may be in place in other regions, the RDI forums are unique to the region of Satakunta.

On the other hand, there are also examples of the absence of formal mechanisms for stakeholder engagement in S3 M&E. For instance, in **ES (PV)** and **IE** there are no recognised mechanisms currently in place for stakeholder engagement in S3 evaluations. Nonetheless, and as noted previously, in **ES (PV)** SMEs, cluster associations and universities are playing a more active role through their participation in working groups and projects, allowing for an external evaluation of their innovation strategy.



In several regions, **efforts to enhance stakeholder engagement are closely tied to improving feedback loops and communication.** **HU**, for example, is focusing on strengthening communication between policy actors and enhancing feedback mechanisms through the PO1 working group. This group will facilitate continuous exchanges between stakeholders and policymakers

throughout the programming cycle, ensuring that insights from the field are incorporated into both strategic decisions and the broader S3 monitoring framework. In **EL**, although stakeholder engagement is less integrated into the formal evaluation process, efforts have been made to ensure transparency and accessibility. Stakeholders are regularly informed of monitoring and evaluation results, which are published on the national PA website and presented in meetings. These practices support the dissemination of findings and facilitate broader discussions among stakeholders about the effectiveness of S3 interventions.

While there is no one-size-fits-all approach, several common themes emerge: the increasing sophistication of indicators, the need for frequent and robust feedback loops, and the importance of stakeholder engagement. The evolution of M&E systems in regions like **FI**, **CZ**, and **HU** demonstrates that these mechanisms are becoming more dynamic and adaptive,



fostering continuous improvement in innovation policy implementation. However, the ongoing challenges in data systems and feedback integration suggest that further refinements will be needed to fully realise the potential of these strategies in driving regional innovation.

4.2 Capacity-building efforts in S3 operationalisation

The diverse approaches to capacity-building in S3 across IQ-Net countries and regions for 2021–27 reflect a mixture of external expertise, and internal organisational efforts. The use of digital platforms, training, and thematic workshops, along with sustained cooperation with EU bodies like the JRC and other collaborative platforms, has created a comprehensive framework for capacity development, ensuring that regions are well-equipped to implement their S3 effectively. MAs and regional bodies have implemented capacity-building efforts to meet specific regional needs, from strengthening internal capacities and address gaps in knowledge and skills, to fostering collaboration across the innovation ecosystem. Below, we explore the key themes in these capacity-building efforts, the gaps they aim to address, and the target groups involved.



Studies and targeted support (e.g. **CZ**, **IE**, **FI**, **NL**): several IQ-Net countries and regions have pursued external studies to build capacity and improve their S3 implementation strategies. For example, in **CZ**, cooperation with the JRC led to the publication of a JRC Science for Policy Report, which was seen as particularly beneficial due to its specific and targeted focus, contrasting with more general capacity-building initiatives. The targeted nature of this cooperation provided concrete outcomes, enhancing the MA's ability to navigate the complexities of Smart Specialisation. This helped address internal capacity deficits (e.g. insufficient personnel) with external expert advice. In **FI**, the Regional Council of Helsinki-Uusimaa has also commissioned studies to support S3 and allocated dedicated staff to manage these activities, showcasing an embedded capacity-building effort at the regional level. Similarly, in **IE (NWRA)**, the MA commissioned an external expert to develop a position paper on smart specialisation, a foundational document that shaped subsequent stakeholder consultations. This strategic use of external studies and expert consultations aligns with broader efforts to enhance technical know-how, stakeholder engagement and strategic foresight in S3 implementation. Moreover, in **NL (North)** the JRC's HESS report has contributed to building capacity within managing authorities, offering insights on how higher education institutions can play a more significant role in regional innovation strategies.



Training, workshops and skills' development (e.g. **PT, PL, NL, DK**): in **PL (W-M and Pom)**, numerous activities have been undertaken aimed at enhancing the competencies of stakeholders involved in S3 implementation. **PL (W-M and Pom)** faced several barriers, including low awareness of S3 concepts among SMEs and the lack of cooperation between companies and research institutions, a vital element for fostering innovation. Thematic meetings, training sessions, and conferences, often tailored to the needs of smart specialisation areas, were designed to tackle these gaps and improve regional innovation ecosystem integration. The focus on skill development extends to institutional capacities as well. **NL (North)** has integrated a specific objective (SO1.4 on developing skills for smart specialisation, industrial transition, and entrepreneurship) into its programme to foster a shift in thinking among SMEs, although in practice the SO remains underused. Similarly, in **DK**, the capacity-building activities within the Danish Business Authority (DBA) focused on developing domain expertise to maintain strategic dialogue with 14 national cluster organisations. The main gap identified was a lack of knowledge in specific business domains like digitalisation, energy, and robotics. To address this, the DBA focused its capacity-building efforts on internal staff training, ensuring that their expertise extended beyond administrative skills to include sector-specific knowledge. In **PT**, capacity-building efforts are being structured through the creation of digital platforms for collaboration, annual knowledge-sharing events, and specialised training, such as summer schools for S3 practitioners.



Staffing and organisational resources (e.g. **FI, PT**): Several regions have taken steps to bolster their internal capacity through dedicated staffing and organisational resources linked to S3. In **FI**, two staff members in the Regional Council of Helsinki-Uusimaa have roles specifically tied to the delivery of S3-related activities, ensuring sustained focus and expertise. This allocation helps address the gap of insufficient internal capacity to manage the complex tasks of innovation strategy and communication. Additionally, other staff members contribute to S3 work as needed, ensuring the flexibility and responsiveness of the region's approach. This approach is echoed in **PT**, where capacity-building efforts aim to overcome gaps related to the complexity and fragmentation of actor networks involved in S3, and there is a need for more integrated and qualified resources to reduce disparities in innovation performance between regions and sectors. Multiple public bodies such as the National Innovation Agency (ANI) and regional coordination commissions will be involved in structured capacity-building projects that include post-graduate and master's-level training for actors involved in S3. These efforts



demonstrate a shift from ad hoc capacity-building towards more institutionalised and formalised systems, ensuring that knowledge is retained and continually developed within organisations. This long-term view is crucial for ensuring that regions can not only implement but also sustain S3 strategies effectively.



EDP and thematic groups (e.g. **PL**, **PT**): EDPs play a central role in the operationalisation of S3, and capacity-building efforts often target the development of competencies related to these processes. In **PL (Pom)**, there is a recognised gap in the collaborative culture necessary for EDP. To address this, the Smart Green Progress project includes thematic task groups designed to foster interaction between various stakeholders within specific specialisations. These groups hold regular meetings and prepare reports, such as quarterly barometers, to monitor progress and market conditions, ensuring a dynamic and responsive approach to smart specialisation. **PT** has also placed a significant emphasis on EDP within its capacity-building roadmap, seeking to overcome fragmentation and build stronger partnerships between regional actors. The key action under structuring project 3 of the Roadmap for Capacity Building (“Capacity-building for the operationalisation of smart specialisation strategies”) focuses on mobilising stakeholders through collaborative digital platforms. In addition, SO 1.4 is mobilised to enhance capacities of actors to the relevance of the EDP and R&I investment in S3 priority areas. These platforms act as hubs for knowledge exchange and project development, enabling regions to leverage synergies, enhance ecosystems, and align investments with S3 priorities.

4.2.1 Use of EU-level platforms and partnerships

A dominant theme in capacity-building is participation in EU-level platforms such as the JRC and S3-specific networks. These platforms offer structured environments for knowledge exchange, best practice sharing, and collaboration, providing training, expertise, and peer learning opportunities. These have been argued as particularly valuable for those aiming to strengthen their S3 capacities, particularly in the face of the 2021-27 CPR requirements. The S3 CoP has helped align regional strategies with EU-wide objectives and emerging innovation trends. Below, we examine how IQ-Net programme authorities have leveraged the S3 CoP and other platforms, focusing on the benefits and new approaches resulting from their participation.

i Capacity-building through the S3 Community of Practice



For some programme authorities, participation in S3 CoP is still in its early stages (e.g. **EL**). On the other hand, several authorities have considered these communities to have been



The Smart Specialisation Community of Practice (S3 CoP)

instrumental in fostering cross-border learning and introducing new tools for managing S3. For instance, **PL (W-M)** has been involved in JRC's S3 platform since 2012 and now participates actively in the S3 CoP. The region has highlighted several benefits, such as the exchange of good practices and the opportunity to learn

from other European regions. Participation in workshops and meetings has enabled regional authorities to acquire new methodologies for monitoring and evaluating their S3 strategies. The region's collaboration with the JRC under the "Lagging Regions" project has also refined its monitoring mechanisms, significantly enhancing its S3 management and governance.

In **CZ**, although participation in the S3 CoP is relatively recent, members of the RIS3 managing committee have actively engaged in events like the 2023 kick-off meeting in Barcelona, and further participation is expected in 2024. Czech regions have used the CoP to gather insights that inform the future framework of EU Cohesion Policy. The focus of their involvement has been on gaining information that helps develop mission-oriented strategies and fosters innovation at both regional and national levels. Czech regions have also appreciated the CoP's emphasis on regional engagement, as it aligns with their goals of better understanding and utilising S3 within regional innovation ecosystems.

In **DK**, while the DBA has primarily focused on maintaining expertise in national clusters, the S3 CoP has been helpful in identifying international partners for collaborative projects. Cluster organisations in the country, often connected to the DBA, actively use the S3 CoP to establish partnerships and advance their smart specialisation objectives. This has helped them bridge gaps in sectoral knowledge, particularly in emerging domains such as digitalisation and robotics. In **IE**, the Regional Assemblies attended the S3 CoP conference with a focus on measuring impact, arguing that it provided a good level of insight into how to address this challenge.

ii Implementing new approaches and practices

Several regions have implemented innovative approaches as a direct result of their involvement in S3 CoP (e.g. **PL, NL**). For instance, **PL (W-M)** noted that its participation in the S3 CoP enabled it to implement new mechanisms for monitoring smart specialisation strategies. The regions benefitted from consultations and insights gained through cooperation with the JRC, leading to more effective evaluation frameworks. These new approaches have enhanced the region's ability to track progress, assess innovation outcomes, and adjust their strategies accordingly. Additionally, **PL (W-M)** has identified a need for further integration of innovative projects with sustainability and green transformation goals, themes that are actively



discussed within the CoP. This ongoing collaboration with the CoP is expected to deepen the region's understanding of sustainability in the context of digitalisation and smart specialisations.

NL (South and North) participate in the S3 CoP, and see it as a vibrant and active network, providing a platform that many Dutch policymakers are not fully aware of but could benefit from. The CoP's activities have introduced new insights, particularly around innovation diffusion. For example, the community's recent publication on innovation diffusion has provided Dutch regions with a deeper understanding of how to spread innovative practices more effectively across different sectors. These insights are expected to shape future policy directions and capacity-building activities in **NL**.

HU has also made strides through the 2023 S3 CoP Flagship Action, which offers tailored strategic services for S3 professionals. By working with external experts and the S3 CoP Secretariat, **HU** has advanced its monitoring and reporting processes, especially in areas such as the EDP and internationalisation. This demonstrates how EU-level initiatives provide both technical support and structured learning opportunities for regional and national bodies.

iii Collaborative networks and thematic focus

FI perceives the S3 CoP as working effectively, particularly in fostering collaboration across regions and providing a platform for sharing successful practices. Finnish regions have been able to engage in meaningful discussions about their challenges, such as innovation diffusion, and have used the insights gained from the CoP to refine their strategies. **FI**'s involvement in these platforms has helped strengthen inter-regional cooperation, aligning their regional innovation activities with broader EU goals. Similarly, **PT** and **BE (Vla)** have leveraged their long-standing involvement in EU-level initiatives like the Vanguard Initiative alongside the S3 CoP. By co-leading pilot actions, the regions have not only strengthened their regional expertise in specific sectors but also contributed to the broader EU smart specialisation agenda. This experience allowed regions like **BE (Vla)** to shape new thematic areas while benefiting from the knowledge of other participating regions.

Box 16: Austria's RTI partnerships and IPCEI involvement

AT actively engages in European RTI partnerships under Horizon Europe, focusing on international cooperation and addressing global challenges through joint innovation efforts. **AT** participates in 13 RTI partnerships, aiming to leverage its strengths in sectors like life sciences and low-carbon industries. It also contributes to key initiatives such as IPCEI (Important Projects of Common European Interest) in Microelectronics, Batteries (EuBatIn), and Hydrogen (H2).

To support these goals, **AT** developed the "Austrian Implementation Plan" for EU missions, with five "Mission Action Groups" involving various stakeholders from research, business, and society. These groups, supported by expert advisory boards, propose concrete measures for mission-oriented innovation within the country.



iv Challenges and areas for further development

While the benefits of participation in the S3 CoP are widely acknowledged, some regions have highlighted potential areas for improvement. **PL (W-M)** has identified the need to further integrate innovative projects with sustainability and green transformation goals. This thematic area is increasingly relevant as the EU moves towards a green transition, and the region sees the CoP as a valuable platform for advancing its understanding and practice in this area.

Similarly, in **AT**, while a colleague in the MA has been nominated for the S3 CoP, participation has been limited so far. This suggests that greater engagement from regional actors is needed to fully realise the platform's potential.

v Other platforms

In addition to the JRC and S3 CoP, several regions have been actively engaging with other EU-level platforms to support capacity-building and collaboration in S3.

Interreg programmes and **Horizon** have been key tools for countries and regions like **IE** and **BE (Vla)**, which use these EU frameworks to build transnational cooperation and fund innovation initiatives aligned with S3 goals (see section 3.1.3). Alongside this, the **European Cluster Collaboration Platform (ECCP)** has been highlighted by **DK**. The DBA uses the ECCP to identify international partners and enhance domain-specific expertise in clusters like digitalisation and energy, thus reinforcing the strategic dialogue with national cluster organisations.

PT, NL (East and South) and **BE (Vla)** have taken an important role in their involvement in the **Vanguard Initiative**. **PT**'s Norte region is one of the founding partners, and **BE (Vla)** co-leads projects such as "Smart Health" and "3D Printing." This platform has been crucial for their role in cross-border industrial innovation, allowing them to align S3 efforts with European priorities.



The European Regions Research and Innovation Network (**ERRIN**) network has provided regions such as **PL (Pom)** with opportunities to exchange best practices and build new partnerships. This has strengthened their capacity to manage innovation through cross-regional learning on smart specialisation. **IQ-Net** has also been highlighted as a key collaborative network for this purpose.

These platforms collectively offer regions across Europe vital opportunities to strengthen their S3 strategies through targeted advice, cross-regional collaboration, and access to best practices, contributing to their innovation capacity-building efforts.



4.3 Synergies

Programme authorities have adopted diverse approaches to integrating S3 with other domestic and international initiatives. These synergies serve to align innovation efforts with broader goals, leverage additional funding sources, and enhance regional competitiveness. This section explores how different countries and regions engage in and manage these interactions.

- **Integration with domestic programmes** (e.g. **AT, CZ, HU, NL, ES**): the alignment of S3 with national innovation frameworks is a central feature for several MS. For instance, in **AT**, S3 is closely embedded within the national RTI Strategy, which subsumes ERDF resources into broader Austrian RDI schemes. Similarly, **HU** has made S3 alignment a mandatory criterion in many national RDI programmes, ensuring that the smart specialisation principles guide interventions. This integration has been particularly effective in enhancing the reach of the I3 initiative, with the Hungarian innovation agency providing comprehensive support services, including proposal follow-up and consultation. In **NL**, connection of the S3 with other initiatives is mostly with programmes like Common Agricultural Policy (GLB), SME Innovation Stimulus for Regions and Top Sectors (MIT).
- **Collaboration with European programmes**: several programme authorities seek to connect their S3 strategies with EU-wide programmes (e.g. **PT, PL, BE, NL, HU**), although the depth of engagement varies. In some cases, regions have more reactive participation. For instance, in **BE (Vla)** and **NL (West)**, MAs sign support letters for projects within European programmes such as JTF, Horizon Europe or I3 to confirm their alignment with S3. However, there is no proactive strategy for integration, and participation tends to be driven by external requirements. One important example for **NL (North)** is the European Innovation Ecosystems.

Box 17: Northern Netherlands' participation in Eciv Horizon project.

The Northern Netherlands Alliance (SNN) has taken part in a consortium with 19 partners divided over nine EU regions for the Horizon Europe project European Circular Innovation Valley (Eciv). The project will create an **interregional ecosystem** within the EU to transform value chains with the aim of developing and delivering new circular solutions to the market with a mission-oriented approach. The ecosystem will be based on Analysis of regional contexts and challenges, including policies, strategic planning and actors. It includes **mission-oriented plans**: specific missions and sub-missions to address objectives and it will connect ecosystems by facilitating contact and collaboration between stakeholders from different regions. And by the creation of spaces for dialogue, sharing of challenges and development of solutions to specific challenges that mobilise, involve and connect regional actors. The system will solve specific challenges by implementing deep-tech projects selected in the waterfall funding call (addressing the missions) and transferring the knowledge to other regions.

The logic and thought behind this Horizon project are in line with the S3 of **NL (North)**. It is the first project that has been successful in getting ERDF co-financing for a Horizon



project. Besides this successful approach, there is still room for improvement. For example, there is a lack of coordination of the S3 in **NL (North)**, which leads to a lack of direction in what Interreg or Horizon programmes the region will participate in.

It is worth noting that several of these linkages are either mandatory at either EU or national level or highly promoted. As **CZ** notes, S3 implementation inevitably relies on cooperation with managing bodies of some operational programmes, as some objectives overlap. Several countries and regions have also started engaging with new innovation instruments introduced in recent years, such as PRI (e.g. **PT**) and I3 (**EL, HU**). **PT** and **EL** have also denoted the use of the Seal of Excellence. **EL** has done so since the previous programme period through the flagship action 'Research-Create-Innovate' of the Competitiveness, Entrepreneurship Innovation OP (EPANEK).

Box 18: Portugal's expected synergies between S3 and Horizon Europe

In **PT**, expected synergy types between S3 and Horizon Europe include:

- Sequential combination (upstream/downstream): use of ESIF to support actions that build R&I capabilities necessary to compete in Horizon Europe and participate in international networks or to disseminate results from projects financed by Horizon Europe (in Portugal 2020, for instance, several tenders were launched with these objectives);
- Alternative financing: use of ESIF for applications that were positively evaluated under Horizon Europe, but were not funded due to insufficient budget (the most emblematic initiative in this field being the Seals of Excellence); and
- Combined use of funds: combination of funding from Horizon Europe and ESIF in integrated R&I projects, with the ERDF being responsible for financing the national counterpart or components of the project (this includes e.g. European Partnerships and Teaming). The participation in Horizon Europe European Partnerships by the Centro Region is one example of this kind of synergies. Currently, Centro is participating in four European partnerships: Driving Urban Transition (DUT); Transforming Health Care Systems (THCS); Sustainable Blue Economy Partnership (SBEP) and Personalised Medicine (PerMed).

4.3.1 Drivers for linking S3 with other programmes

From the fieldwork research, IQ-Net programme authorities have highlighted different drivers for aligning or integrating S3 in other national or EU funding programmes:



Access to funding: in **PT**, regions like Alentejo and Centro are developing synergies with programmes such as Horizon Europe or other national programmes to access alternative funding streams. These regions have successfully implemented circular economy projects that align with smart specialisation domains, such as in Alentejo's project on "Enhancing EU Mining Regional Ecosystems to Support the Green Transition and Secure Mineral Raw



Materials Supply" (OECD and DG Reform initiative). Both Alentejo and Norte regions have also been among pilot territories participating in JRC's PRI. **PT's** participation in initiatives like the Vanguard Initiative highlights the need for transnational collaboration to overcome funding shortfalls, particularly in less-funded regions. By joining networks that focus on joint funding mechanisms, Portuguese regions are finding alternative means to implement their S3 strategies effectively.



Enhancing regional capacities and R&I ecosystems: **PL (Pom)** is involved in multiple international initiatives under the I3 framework. For example, the I3HIES project aims to create a health innovation ecosystem that connects partners from various European countries to foster medical device innovation and regional capacities. A Horizon project called "One Health, One Responsibility, One Future" also furthers these aims, and seeks to develop and facilitate the implementation of a long-term cross-border R&I strategy that is aligned with their regional RIS3 and European policy priorities.



Expanding or joining networks: **PL (W-M)** has tapped into ERRIN to enhance regional R&I ecosystems. The MA argues that ERRIN brings a regional perspective to European research and innovation policy and funding programmes, and through a bottom-up approach the regions involved in the network's work have a say in shaping this policy. Working group meetings and other events organised within the network are attended by representatives of the universities involved, employees of the Marshal's Office and other regional government organisational units. Through projects like "RECIPROCITY" and others in urban mobility and climate resilience, **PL (W-M)** has established cooperation with other units in the region, exchanged experience at the local level and created connections with European partners, increased the visibility of the university and the region, and established a presence in EU-funded research initiatives (e.g. WAMA project funded by Horizon Europe as a result of ERRIN participation).



Knowledge sharing: **PL (W-M)**'s cooperation in the BSR S3 Director's Network has enabled it to engage in knowledge-sharing and experience on S3 and innovation in general (see Box 9). For **IE (SRA)**, knowledge sharing was also one of the main benefits from integrating Horizon projects more closely with their innovation-related activities under the programme.



Addressing regional challenges: **IE (SRA)** have highlighted a more active leveraging of Horizon Europe opportunities, enabled by the establishment of the EU projects unit in 2016. The region participates in several Horizon projects, including ROBIN, SMCNetZero, and COHES3ION, which seek to foster innovation and contribute to the territorial dimension of S3. This engagement



has allowed for addressing common regional challenges through collaboration.



Framework alignment: In **HU**, a key planning criterion of RDI development policy is the complementarity between national and EU resources. In this light, S3 alignment is a mandatory requirement for many domestic RDI programmes. This was also highlighted by **NL (West)**, in which projects under European programmes have the requirement of compatibility with the S3.

While many regions have established links between S3 and other programmes, gaps remain, particularly in terms of proactive engagement and capacity constraints. For instance, **IE (NWRA)**, **NL**, **PL (Pom)**, **ES (PV)** and **BE (Vla)** noted difficulties in connecting S3 with Horizon Europe due to resource limitations. **ES (PV)** suggests there is a need for greater involvement in European tractor-effect projects and initiatives such as Horizon Europe and the Knowledge and Innovation Communities (KIC). This highlights a broader challenge where regions with fewer administrative capacities struggle to engage fully in international innovation programmes and thus choose to prioritise domestic linkages. Regarding the Seal of Excellence, **EL** highlighted that results of its application were mixed. The main shortcoming of this approach in the view of respondents is the big lapse of time from the award of the seal of excellence to the issuing of a relevant call for funding which is regarded as detrimental to the innovative content of the action. Respondents stressed the need to reduce the response rate so that the necessary procedures for issuing calls are undertaken as rapidly as possible.

Box 19: Warmia and Mazury's synergy between Smart Specialisation and other EU funding programmes

The **PL (W-M)** joined ERRIN in 2019. Through this network, the region collaborates with EU programmes like Horizon Europe, enhancing links between local universities, such as the University of Warmia and Mazury, and European organisations. Key projects supported through these efforts include the Horizon 2020-funded RECIPROCALITY project, where Olsztyn's Intelligent Transport System (ITS) was identified as a best practice for urban mobility replication across Europe. As part of this initiative, the region gained expertise in eco-mobility and sustainable transport, strengthening collaboration with other European cities.

In February 2024, as a result of its activities in ERRIN, a project consortium consisting of the University of Warmia and Mazury and the Warmińsko-Mazurskie region, represented by the Department of Environmental Protection, received funding for the WAMA project (the winning project in the Pathways2Resilience competition funded by the Horizon Europe programme). The project's aim is to support the development of regional innovation pathways and plans to increase resilience to climate change.

The Marshal's Office also undertakes collaborations with other scientific research bodies operating in the region. The region partnered with the Polish Academy of Sciences in Olsztyn for the Circulex project, aimed at promoting circular economy solutions and health in the food chain, applying to the Excellence Hubs HORIZON-WIDERA-2023-ACCESS-07 competition (Horizon Europe). The main concept was to create an Excellence Hub to facilitate collaboration between academia, SMEs, technology providers, public authorities and societal actors. Despite scoring the required number of points, the consortium was not awarded funding. Nevertheless,



further participation of the Marshal's Office in competition initiatives dedicated to research and innovation is planned.

Through such collaborations, the **PL (W-M)** actively aligns S3 with EU R&I funding programmes, fostering regional development and innovation pathways.

5 LOOKING AHEAD

5.1 Future perspectives

Desk-based research and IQ-Net programme authorities have demonstrated concerns and expectations regarding the future of regulations for regional innovation policy in Europe. Reflecting on the current report, as we look toward the post-2027 period, the future of S3 will likely reflect the evolving needs of European regions facing complex economic, environmental, and social challenges. With the increasing emphasis on digital and green transitions and the growing demand for cross-border collaboration, S3 could benefit from expanded thematic and operational flexibility in the next programming period.

One anticipated shift involves the alignment of S3 with the EU's Green Deal and digital transition goals, encouraging regions to orient their strategies more strongly around sustainable and digital innovation. This alignment would require targeted funding mechanisms to support green and digital projects and to enhance infrastructure for these transitions, especially in regions with lower capacity for specialised innovation.

Governance structures will also need to adapt. The trend toward decentralisation and regional empowerment may expand further, with regions potentially gaining more autonomy in managing S3 frameworks. This shift could allow regions with distinct innovation capacities and needs to shape their strategies more effectively and responsively, especially within interregional contexts. The national level could thus cement a role in providing strategic guidance, support for capacity-building, and the facilitation of interregional cooperation, particularly through instruments like Interreg or the I3 instrument (or future iterations of these).

To maximise these opportunities, post-2027 S3 will need to emphasise adaptability in funding and governance models, supporting both bottom-up innovation and strategic coherence across regions. Enhanced monitoring and evaluation will also be crucial, as regions strive to improve their responsiveness to evolving needs and enhance accountability.

IQ-net programme authorities have emphasised the following future perspectives related to S3 governance and implementation:

- **Flexibility and regional adaptation:** a recurring theme is the call for greater flexibility in the regulatory framework to accommodate the diverse economic landscapes of regions. **PL (W-M)**, **BE (Via)** and **NL** highlight how current regulations can be overly rigid,



limiting regions' ability to adapt strategies to local contexts. They advocate for more autonomy in allocating Cohesion Policy funds, allowing regions to balance S3 investments with other innovation projects. This approach would support regions with different economic profiles – whether tourism-driven, agricultural, or technology-focused. Moreover, **NL (South)** point out the need for less prescriptive frameworks, arguing that instruments like the I3 Instrument could be made more accessible without overly complex requirements. On the other hand, **NL (West)** argues for reducing administrative burden, especially critical for smaller programmes where overly complex rules (e.g. regarding EDP) can hinder innovation efforts. **AT** echoes this, suggesting that organising Cohesion Policy around EU Missions (as seen in Horizon Europe) could give MS more room to tailor actions to regional realities. This is something under discussion in an ongoing ÖROK project on regional innovation and transformation (RIT).⁵⁷

- **Improved national and international coordination:** programme authorities emphasise the importance of national-level coordination (e.g. **AT, FI**). **FI** suggests that while S3 is continuously evolving, the absence of formal national coordination mechanisms limits its integration with other instruments, such as Horizon Europe. A more structured national approach could strengthen both domestic and international linkages, making S3 more effective.
- **Clarity and timeliness in guidance:** regions consistently highlight the need for clear, timely guidance from the European Commission. **CZ** and **NL (South)** express concerns about the lack of clarity on future regulatory frameworks, with delays caused by excessive conditionalities. They argue that clearer regulations introduced well in advance would help regions target support more effectively, streamlining the implementation of S3 strategies. Somewhat related is the argued need for the use of more qualitative data in measuring impact, highlighted by **IE (SRA)**.
- **Focus on practical implementation:** beyond flexibility and coordination, several regions call for a more practical focus in future regulations. **HU** and **NL (North)** stress that while many S3 strategies present ambitious plans, insufficient attention is given to the "how" of implementation. They argue that future frameworks should offer more practical examples and support for overcoming real-world challenges, such as translating strategic goals into actionable projects. Simplifying these processes could allow regions to focus on achieving tangible innovation outcomes rather than being bogged down by bureaucratic hurdles. **IE (NWRA)** adds that foundational infrastructure investment must be ensured before innovation strategies can fully take off, reflecting the need to link innovation policies with broader regional development goals.
- **Strategic autonomy and long-term innovation goals:** countries and regions like **BE (Vla)** reaffirm the importance of S3 in fostering long-term innovation, particularly in light of strategic independence post-2027. They advocate for continued use of the ERDF and



CF to support regional innovation but caution against overly prescriptive frameworks. Instead, regions should have autonomy to define their own S3 priorities without being constrained by rigid checklists. **PT** underscore the importance of evaluations in understanding what aspects of the revised RIS3 framework are working and what needs adjustment. These evaluations will be crucial for aligning S3 strategies with emerging economic challenges, ensuring their continued relevance and effectiveness both in the short-term and long-term.

5.2 Questions for discussion

Reflecting on the governance and implementation challenges and successes of S3 in the 2021-27 programme period, and the overall discussion presented throughout this report, the following questions aim to prompt further dialogue among IQ-Net programme authorities:

1. **Governance and alignment:** How can governance models be optimised to balance regional autonomy with national strategic coherence in S3 implementation? What role should national authorities play in supporting the governance of regional S3 strategies?
2. **Future funding models:** What funding mechanisms could be introduced or adapted post-2027 to support regional resilience and the twin transitions? Should S3 incorporate more flexible funding to accommodate green and digital innovation needs?
3. **Interregional cooperation:** How can the EU facilitate more effective interregional cooperation to support S3, particularly for regions with limited capacity? What role could an expanded I3 instrument play in the 2021-27 and following periods?
4. **Monitoring and evaluation:** How can the M&E framework for S3 evolve to ensure real-time feedback and greater stakeholder involvement? Could a more iterative approach to monitoring improve responsiveness to shifting regional needs?
5. **Capacity-building and inclusivity:** What measures can be taken to strengthen S3 capacity-building in regions with lower R&D capacity? How can regions engage a broader array of stakeholders in the S3 process, including SMEs and civil society, particularly in less-developed areas?

Further and more specific questions for discussion are included in the Annex to this report, accompanying the good practice case studies in Annex 1.



Notes

¹ Boschma, R. (2023) *Cohesion Policy and its Contribution to Enhancing Regional Resilience against Emerging Challenges* (Contract No. 2022CE16BAT089; p. 18). European Commission, Directorate-General Regional and Urban Policy.

² Polverari, L. (2016) 'Implementing Smart Specialisation in 2014-2020 ESIF programmes', IQ-Net Thematic Paper 39(2), European Policies Research Centre, University of Strathclyde, Glasgow.

³ Polverari, L. and Dozhdeva, V. (2018) *From Smart Growth to Smarter Europe: Learning from Smart Specialisation Delivery*, IQ-Net Thematic Paper 43(2), European Policies Research Centre Delft.

⁴ See <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52022DC0332&from=EN>

⁵ European Commission. (2024). The future of European competitiveness. Part A, A competitiveness strategy for Europe. September. https://commission.europa.eu/document/download/97e481fd-2dc3-412d-be4c-f152a8232961_en [Accessed on 29/10/2024]

⁶ Fonseca, L.; van der Valk, O., and Bachtler, J. (2023) *Closing the Innovation Gap: Background Paper for the MEZ Policy Dialogue*, EoRPA Research Briefing

⁷ European Commission: Directorate-General for Research and Innovation (2024) *Science, research and innovation performance of the EU : a competitive Europe for a sustainable future*. Publications Office of the European Union. <https://data.europa.eu/doi/10.2777/965670>. [Accessed on 29/10/2024]

⁸ Presidency Conclusions, Barcelona 15 and 16 March 2002, SN 100/1/02 REV 1

⁹ European Commission: Directorate-General for Research and Innovation (2024) *Science, research and innovation performance of the EU : a competitive Europe for a sustainable future*. Publications Office of the European Union. <https://data.europa.eu/doi/10.2777/965670>. [Accessed on 29/10/2024]

¹⁰ Bello, M., Ravanos, P. and Smallenbroek, O., *Tracking country innovation performance: The Innovation Output Indicator 2023*, Publications Office of the European Union, Luxembourg, 2024, doi:10.2760/27979, JRC137117.

¹¹ European Commission. (2024). The future of European competitiveness. Part A, A competitiveness strategy for Europe. September. https://commission.europa.eu/document/download/97e481fd-2dc3-412d-be4c-f152a8232961_en [Accessed on 29/10/2024]

¹² See https://commission.europa.eu/document/download/97e481fd-2dc3-412d-be4c-f152a8232961_en

¹³ European Commission: Directorate-General for Research and Innovation, *European Innovation Scoreboard 2024*, Publications Office of the European Union, 2024, <https://data.europa.eu/doi/10.2777/779689>

¹⁴ Eurostat (2024) *Statistics on Government Budget Allocations for R&D (GBARD)*. Available at: [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Government_budget_allocations_for_R%26D_\(GBARD\)#Evolution_of_GBARD_in_the_EU_during_the_2013_-_2023_decade](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Government_budget_allocations_for_R%26D_(GBARD)#Evolution_of_GBARD_in_the_EU_during_the_2013_-_2023_decade)

¹⁵ European Commission: Directorate-General for Research and Innovation (2024) *Science, research and innovation performance of the EU : a competitive Europe for a sustainable future*. Publications Office of the European Union. <https://data.europa.eu/doi/10.2777/965670>. [Accessed on 29/10/2024]

¹⁶ European Parliament (2024) *The Horizon Europe Programme: A strategic assessment of selected items*. Study, Panel for the Future of Science and Technology. European Parliamentary Research Service. Scientific Foresight Unit. PE 757.813. July. Available at [https://www.europarl.europa.eu/RegData/etudes/STUD/2024/757813/EPRS_STU\(2024\)757813_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2024/757813/EPRS_STU(2024)757813_EN.pdf). [Accessed on 29/10/2024]

¹⁷ See https://commission.europa.eu/document/download/5ac1ff20-d41e-4c10-9a05-048b7339292e_en



- ¹⁸ Boschma, R. (2023) Cohesion Policy and its Contribution to Enhancing Regional Resilience against Emerging Challenges (Contract No. 2022CE16BAT089; p. 18). European Commission, Directorate-General Regional and Urban Policy;
- ¹⁹ McMaster, I, Fonseca, L and Maguire, R (2024), Innovation Gaps, Bridges and Territorial Cooperation, EoRPA Briefing, EoRPA Regional Policy Research Consortium, European Policies Research Centre, University of Strathclyde, Glasgow and EPRC Delft
- ²⁰ Foray, D. (2015). Smart specialization: Opportunities and challenges for regional innovation policy. *Routledge*.
- ²¹ Roman, M., Varga, H., Cvijanovic, V., & Reid, A. (2020). Quadruple Helix Models for Sustainable Regional Innovation: Engaging and Facilitating Civil Society Participation. *Economies*, 8(2), 48
- ²² Marinelli, E., Bertamino, F., Fernandez, A.(2019), Layers, levels and coordination challenges: comparing S3 governance in Puglia and Extremadura, EUR 29735 EN, Publications Office of the European Union,
- ²³ Capello, R., & Kroll, H. (2016). From theory to practice in smart specialization strategy: Emerging limits and possible future trajectories. *European Planning Studies*, 24(8), 1393-1406.
- ²⁴ Gañán de Molina, C., Guerrero Ginel, J. E., & Sillero Illanes, C. (2022). S3 and Recovery and Resilience Funds: A Case Study Built on the Experience of 10 Spanish Regions. *Frontiers in research metrics and analytics*, 6, 801370.
- ²⁵ Larosse, J., Corpakis, D. and Tuffs, R. (2020) The Green Deal and Smart Specialisation. Friends of Smart Specialisation. 18 February 2020. Available at: <https://friendsofsmartspecialisation.eu/system/files?file=2021-01/The%20Green%20Deal%20and%20Smart%20Specialisation%20draft%202%20v3%20final.pdf>
- ²⁶ Adapted from Vironen H, Michie R and Fonseca L (2022) Implementing Innovation: Smarter and Greener Actions. IQ-Net Thematic Paper 53(2), European Policies Research Centre Delft ; and Fonseca et al., (2023) Closing the Innovation Gap. Background Paper for the MEZ Policy Dialogue. EoRPA Consortium. 13 November 2023. The Hague, The Netherlands.
- ²⁷ Larosse, J., Corpakis, D. and Tuffs, R. (2020) The Green Deal and Smart Specialisation. Friends of Smart Specialisation. 18 February 2020. Available at: <https://friendsofsmartspecialisation.eu/system/files?file=2021-01/The%20Green%20Deal%20and%20Smart%20Specialisation%20draft%202%20v3%20final.pdf>
- ²⁸ Hunter et.al (2024) How to enhance the fulfilment of the S3 enabling condition in European regions
- ²⁹ Available at <https://s3platform.jrc.ec.europa.eu/higher-education>. [Accessed on 16/10/2024].
- ³⁰ Balland, P.-A. and Boschma, R. (2024) Op zoek naar kansen in Zuid-Nederland. Report for South Netherlands. 19 May 2024.
- ³¹ See https://www.ccdr-n.pt/storage/app/media/2021/IMPACT_RIS3T_Relat%C3%B3rio_Tend%C3%A2ncias_RIS3T_final.pdf
- ³² Fazio, G., Maioli, S., & Rujimora, N. (2024). The twin innovation transitions of European regions. *Regional Studies*, 1–19. <https://doi.org/10.1080/00343404.2024.2309176>
- ³³ Larosse, J., Corpakis, D. and Tuffs, R. (2020) The Green Deal and Smart Specialisation. Friends of Smart Specialisation. 18 February 2020. Available at: <https://friendsofsmartspecialisation.eu/system/files?file=2021-01/The%20Green%20Deal%20and%20Smart%20Specialisation%20draft%202%20v3%20final.pdf> ; and European Commission, Joint Research Centre, McCann, P., Soete, L., *Place-based innovation for sustainability*, Publications Office, 2020, <https://data.europa.eu/doi/10.2760/250023>
- ³⁴ Larosse, J., Corpakis, D. and Tuffs, R. (2020) The Green Deal and Smart Specialisation. Friends of Smart Specialisation. 18 February 2020. Available at: <https://friendsofsmartspecialisation.eu/system/files?file=2021-01/The%20Green%20Deal%20and%20Smart%20Specialisation%20draft%202%20v3%20final.pdf>; and European Commission, Joint Research Centre, McCann, P., Soete, L., *Place-based innovation for sustainability*, Publications Office, 2020, <https://data.europa.eu/doi/10.2760/250023>



- ³⁵ European Commission, Joint Research Centre, McCann, P., Soete, L., *Place-based innovation for sustainability*, Publications Office, 2020, <https://data.europa.eu/doi/10.2760/250023>
- ³⁶ Pontikakis, D., González Vázquez, I., Bianchi, G., Ranga, M., Marques Santos, A., Reimeris, R., Mifsud, S., Morgan, K., Madrid, C., Stierna, J. *Partnerships for Regional Innovation – Playbook - Executive Brief*, EUR 31064 EN, Publications Office of the European Union, Luxembourg, 2022, ISBN 978-92-76-52335-2, doi:10.2760/348007, JRC129327
- ³⁷ Harding, R., Nauwelaers, C., Cohen, C. & Seigneur, I. (2021) *Fostering the Green Transition through Smart Specialisation Strategies*, EUR 30921 EN, Publications Office of the European Union, Luxembourg.
- ³⁸ See <https://www.interregeurope.eu/find-policy-solutions/stories/from-s3-to-s4-smart-specialisation-strategies-for-sustainable-and-inclusive-growth>
- ³⁹ For example, fulfilment criterion 6 for the thematic enabling condition on smart specialisation foresees actions supporting the industrial transition. Sustainability is also included in the other policy objectives, and it is stated in paragraph (6) that “the objectives of the Funds should be pursued in the framework of sustainable development (...), the UN Sustainable Development Goals and the Paris Agreement (...).” See also the previous IQ-Net thematic report for more information on green conditionalities in the 2021-27 period: Dozhdeva, V. and Bachtler, J. (2024) *Accelerating climate action in Cohesion Policy programmes: how are green conditionalities being applied?* IQ-Net Thematic Paper 56(2), European Policies Research Centre Delft.
- ⁴⁰ Dozhdeva V and Fonseca L (2021) *A Green Transition: Making the new programmes sustainable*. IQ-Net Thematic Paper 49(2), European Policies Research Centre Delft.
- ⁴¹ Web pages of the Ministry of Regional Development dedicated to related initiatives in Czechia are available at: <https://budtesmart.cz/> [Accessed on 16/09/2024]. Additionally, see <https://www.ris3.cz/en/news/a-smart-specialization-strategy-will-focus-more-on-sustainability-experts-from-the-czech-republic>
- ⁴² See ÖROK 2023-24 project on regional innovation and transformation (RIT), <https://www.oerok.gv.at/region/aktuelle-themen/regionale-innovation-transformation>
- ⁴³ Laranja, M., Perianez-Forte, I. and Reimeris, R. (2022) *Discovery processes for transformative innovation policy. Lessons learned from the entrepreneurial discovery process (EDP) practice*. JRC Science for Policy Report. European Commission. Available at: <https://s3platform.jrc.ec.europa.eu/en/w/discovery-processes-for-transformative-innovation-policy-lessons-learned-from-the-entrepreneurial-discovery-process-edp-practice>
- ⁴⁴ Tödttling, F., Tripl, M., & Desch, V. (2021). *New directions for RIS studies and policies in the face of grand societal challenges*. *European Planning Studies*, 30(11), 2139–2156. <https://doi.org/10.1080/09654313.2021.1951177>
- ⁴⁵ Schwaag Serger, S., Soete, L., & Stierna, J. (Eds.). (2023). *The Square: Putting place-based innovation policy for sustainability at the centre of policymaking*. Publications Office of the European Union. <https://doi.org/10.2760/135706>, JRC131244
- ⁴⁶ Tripl, M., Baumgartinger-Seiringer, S., & Kastrop, J. (2024). *Challenge-oriented regional innovation systems: Towards a research agenda* [Online]. *Investigaciones Regionales, Journal of Regional Studies*. Retrieved from <https://investigacionesregionales.org/wp-content/uploads/sites/3/2024/04/102603-Tripl-et-al-Online.pdf>
- ⁴⁷ Reid, A., Steward, F. and Miedzinski, M., *Aligning smart specialisation with transformative innovation policy*, Publications Office of the European Union, Luxembourg, 2023, doi:10.2760/359295, JRC134466.
- ⁴⁸ See <https://gsri.gov.gr/wp-content/uploads/2022/07/%CE%95%CE%A3%CE%95%CE%95-2021-2027-V.1.0.pdf> (accessed on 16.09.2024).
- ⁴⁹ Available at: <https://www.ris3.cz/o-ris3/krajaska-dimenze> (accessed on 16.09.2024).
- ⁵⁰ Kuznetsov, Y., & Sabel, C. (2017). *Managing Self-Discovery: Diagnostic Monitoring of a Portfolio of Projects and Programs*. In S. Radosevic, A. Curaj, R. Gheorghiu, L. Andreescu, & I. Wade (Eds.), *Advances in the Theory and Practice of Smart Specialization* (pp. 51-72). Academic Press. <https://doi.org/10.1016/B978-0-12-804137-6.00003-6>
- ⁵¹ Larosse, J., Corpakis, D. and Tuffs, R. (2020) *The Green Deal and Smart Specialisation*. Friends of Smart Specialisation. 18 February 2020. Available at:



<https://friendsofsmartspecialisation.eu/system/files?file=2021-01/The%20Green%20Deal%20and%20Smart%20Specialisation%20draft%202%20v3%20final.pdf>

⁵² Ministry of Industry and Trade (2024) Zpráva o realizaci Národní RIS3 strategie, 2023. Plán implementace. Sekce digitalizace a inovací.

⁵³ AD&C (2019) Avaliação da Implementação das Estratégias Nacional e Regionais de Investigação para uma Especialização Inteligente (RIS3): Rede, Realizações e Resultados Esperados. Relatório Final Vol. 1 – Relatório. 22 de Novembro de 2019. Available at: https://www.adcoesao.pt/wp-content/uploads/ava_ris3_final_25112019.pdf

⁵⁴ PBS et al (2021) *Analysis of development dynamics Smart Specializations of Pomerania (ISP) and competence needs economic entities entering in the areas of S3 operating in the Pomeranian Voivodeship*, Main Report.

⁵⁵ PBS et al (2021) *Analysis of development dynamics Smart Specializations of Pomerania (ISP) and competence needs economic entities entering in the areas of S3 operating in the Pomeranian Voivodeship*, Main Report

⁵⁶ All the evaluation reports (2015-2017 onwards) are available at: <https://www.ris3.cz/analyzy-a-dokumenty/zpravy-o-realizaci-a-implementaci-ris3> (accessed 16.09.2024)

⁵⁷ ÖROK 2023-24 project on regional innovation and transformation (RIT), <https://www.oerok.gv.at/region/aktuelle-themen/regionale-innovation-transformation>.