

# Smart specialisation 2021-2027:

Europe's Regional Framework for Research, Innovation and  
Transformative Change

SUMMARY OF KEY FINDINGS

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Directorate-General for Regional and Urban Policy  
Directorate REGIO G  
Unit G1 – Smart and Sustainable Growth

E-mail: [REGIO-G1-HEAD-OF-UNIT@ec.europa.eu](mailto:REGIO-G1-HEAD-OF-UNIT@ec.europa.eu)  
European Commission  
B-1049 Brussels

# **Smart specialisation 2021-2027:**

a strategic framework for enhancing research and innovation capacities and for driving innovative and smart economic transformation in EU regions

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SUMMARY OF KEY FINDINGS

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# 1. Background of the Study and Core Objectives

Smart Specialisation Strategies (S3) were introduced as a strategic policy concept for enhancing place-based innovation and supporting structural economic transformation at regional level. Key features of S3 are that they are developed in close cooperation between public authorities, higher education and research institutions, the private sector, and civil society. S3 are geared towards enhancing local (i.e. national and regional) research and innovation capacities in a targeted way and leveraging them towards smart and sustainable economic transformation.

Starting in the 2014-2020 programming period, S3 became a requirement (“ex ante conditionality” and the “enabling condition”) for ERDF funding for enhancing research and innovation capacities and for the development of specific skills linked to entrepreneurship and R&I priorities.

In 2025, the European Commission, Directorate-General for Regional and Urban Policy (DG REGIO), launched a study that would yield an overview of S3 design and implementation in the current funding period.

The study draws on a comprehensive methodology which combines stakeholder survey with over 240 responses from S3 authorities and stakeholders from across the EU; a review of over 420 documents, including 171 strategies and 183 European Regional Development Fund (ERDF) programmes using artificial intelligence enabled tools; nearly 30 semi-structured interviews; and 14 case studies.

The analytical framework of the study centred around **six topics**:

1. S3 priority setting and R&I investments;
2. The role of S3 in industrial transformation and regional competitiveness;
3. Governance and stakeholder management;
4. Interregional cooperation in S3 design and implementation;
5. Links between S3 and regulatory/administrative reforms;
6. Monitoring and evaluation systems.

This paper presents key findings from the study.

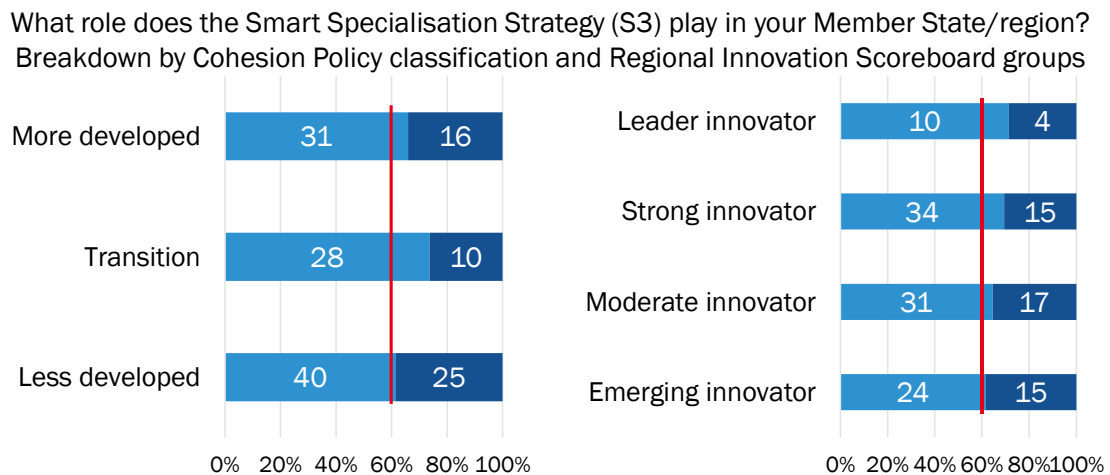
## 2. Key Findings

### 2.1. S3 is the main framework for R&I support in many EU Member States and regions

**Smart Specialisation Strategies are the primary place-based framework for research and innovation support in the EU.** In the comprehensive stakeholder survey, 66% of the 150 respondents said that S3 provides the main framework for R&I policy in their Member State or region. These respondents were from 126 national or regional strategies. They were drawn from the bodies responsible for coordinating the S3, ERDF programming and JTF implementation.

Remarkably, the perception of the important role for S3 does not vary much across regions of different levels of economic development and innovation performance, confirming that S3 has become a systemic policy instrument (Figure 1).

**Figure 1 – Role of S3 in regional/national R&I strategy**  
by type of Member States(MSs)/region



- S3 provides the main framework for the Member State & region's R&I policy, with a scope going beyond ERDF-funded activities
- S3 is limited to providing a framework for allocating ERDF funds for R&I

*Source:* Prognos AG/CSIL (2025), based on EU-wide online survey among S3 authorities, Managing Authorities and stakeholders. Note: Type of survey respondents: Actors tasked with S3 coordination, ERDF programming and/or JTF implementation. Number of valid responses: 150 referring to 126 different national/regional strategies.

## 2.2. S3 fosters an integrated approach to priority setting

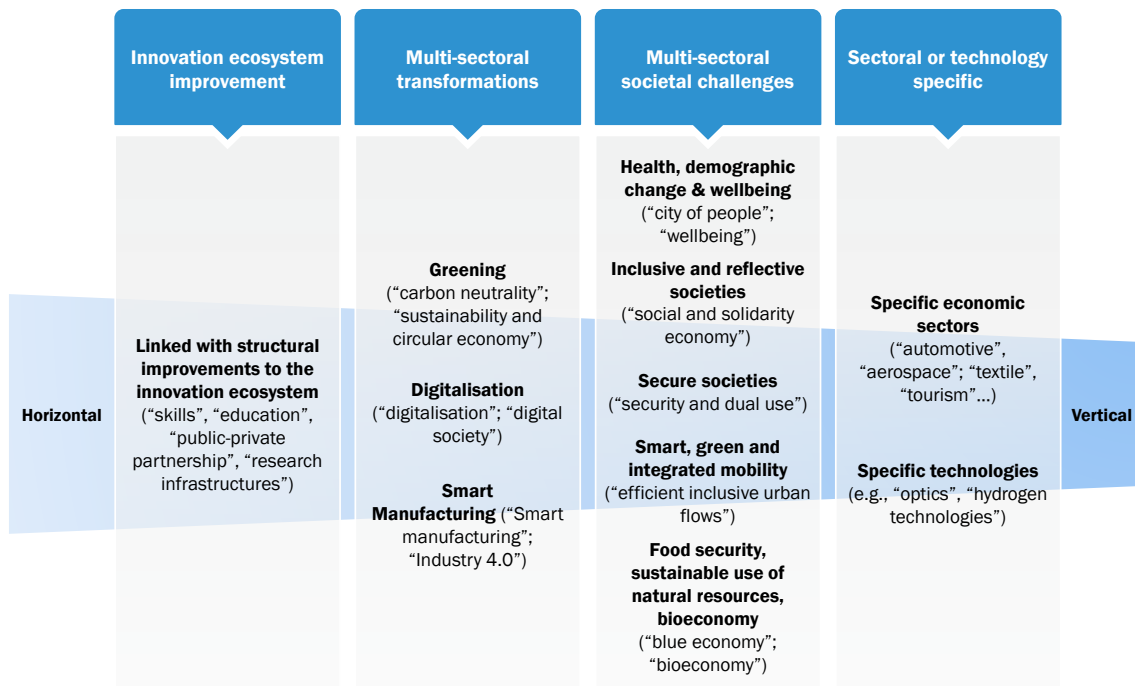
**Analysis of the 171 Smart Specialisation Strategies covering the EU shows that S3 authorities take an integrated approach to setting priorities.** These include 'priority portfolios' that blend different types of priorities in a complementary and cross-cutting manner. Priority setting under the S3 is diverse.

A semi-automated review identified 1,064 distinct priorities in the 171 strategies investigated, an average of six per strategy (range 2–15). An analysis of these priorities revealed that these priorities can be categorised as follows (Figure 2):

- **Sector- or technology-specific** initiatives, such as automotive, aerospace or optics, hydrogen technologies etc. (45% of the total priorities, with 74% of strategies including at least one priority of this type),
- multi-sectoral **economic transformations** such as Industry 4.0 or the twin transition (26% of the total priorities, included in 81% of strategies),
- multi-sectoral **societal challenges**, such as health, security, and inclusive mobility (26% of the total priorities, found in 79% of strategies), and
- innovation **ecosystem improvements**, such as skills, infrastructure, and collaborative platforms (4% of the total priorities, included in 8% of strategies).

Importantly, 88% of strategies combine priorities from at least two of these categories. The most common combination (42% of cases) is the fusion of vertical sector/technology strengths with transformational themes and/or societal challenges. This signals a conscious effort to couple endogenous capabilities with broader, mission-oriented goals.

**Figure 2 – Types of S3 prioritisation approaches 2021-2027**



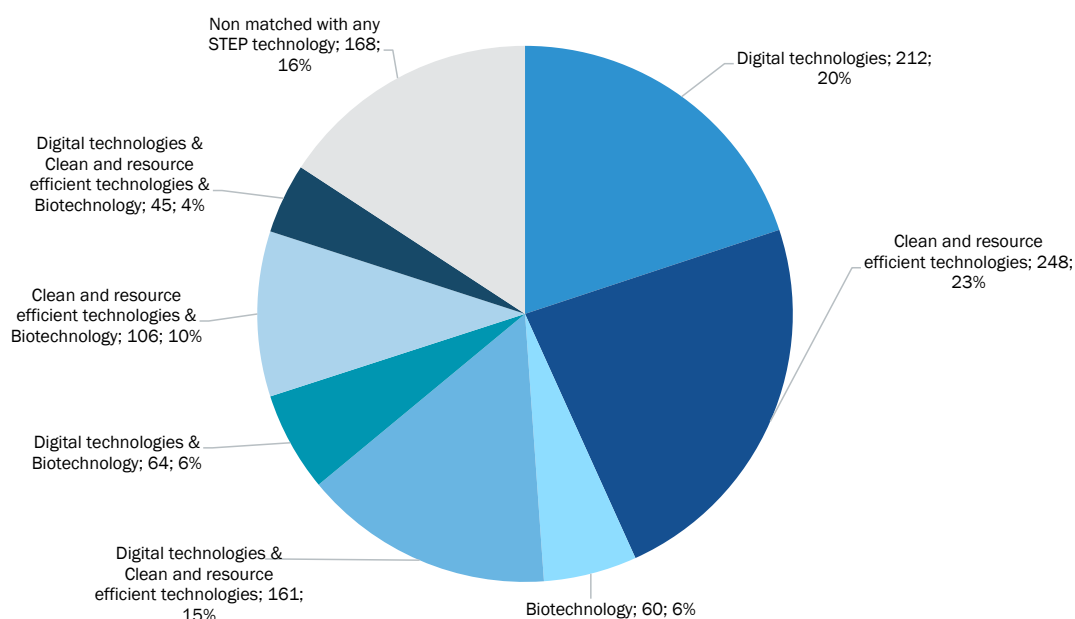
Source: Prognos AG/CSIL (2025), based on a semi-automated analysis of S3 documents. Number of priorities and share over the total (1,064) are presented in brackets.

Priority patterns vary by regional context. Regions with a more diverse economy tend to emphasise transformational and societal-challenge agendas, whereas less diverse regions favour specialisation linked to specific sectors or technologies. Transformational priorities appear most frequently in transition regions, while the small cohort of ecosystem-improvement priorities (found in only 14 strategies) are present across different types of regions, regardless of economic diversification or development status.

### 2.3. S3 aligns regional strengths with EU critical technologies

**S3 priorities primarily emerge from a regional assessment of strengths and opportunities but also demonstrate a strong orientation towards EU priorities and an awareness of global trends. For example,** a systematic mapping of the 1,064 priorities adopted for the period 2021-2027 reveals that 84% of these priorities align with technology areas of the Strategic Technologies for Europe Platform (STEP), demonstrating a very high degree of alignment between national, regional and EU priorities even before STEP became operational (Figure 3).

**Figure 3 – Distribution of S3 priorities across STEP technology areas**



*Source:* Prognos AG/CSIL (2025), elaboration S3 documents and COM 2024/795 establishing the Strategic Technologies for Europe Platform (2025). The total number of distinct S3 priorities found across 171 strategies is 1,064. Each S3 priority can be associated with none, one, or multiple STEP technology areas. The chart represents the number and shares of S3 priorities associated with each specific category or combination of STEP technology area. The cases of no matches (168) are largely linked to priorities associated to ecosystem improvements or sectors (see Section 2.2).

The distribution of these alignments provides further insight into how regions are developing solutions for the twin transition. Digital technologies account for 20% of all priorities, while clean and resource-efficient technologies represent 23%. Biotechnology represents 6%. However, the most striking finding is the prevalence of cross-domain combinations, where priorities blend different technology fields, such as digital and clean technologies or clean technologies and biotechnology. This indicates a growing focus on priorities that integrate multiple areas of innovation to address complex, interrelated challenges.

Policy adoption is gathering pace. By January 2025, 21 ERDF programmes had incorporated specific STEP-related objectives. However, the widespread alignment of S3 priorities suggests that many regions were oriented towards relevant technology even prior to the adoption of STEP. This demonstrates that the S3 can provide regional and national R&I stakeholders with a valuable tool for accessing and leveraging the opportunities offered by future STEP instruments, thereby promoting alignment between S3 priorities and European strategic investments.

## Case study findings on balancing EU and regional objectives

### **S3 priorities Lombardy (Italy), Austria, Lower Silesia (Poland):**

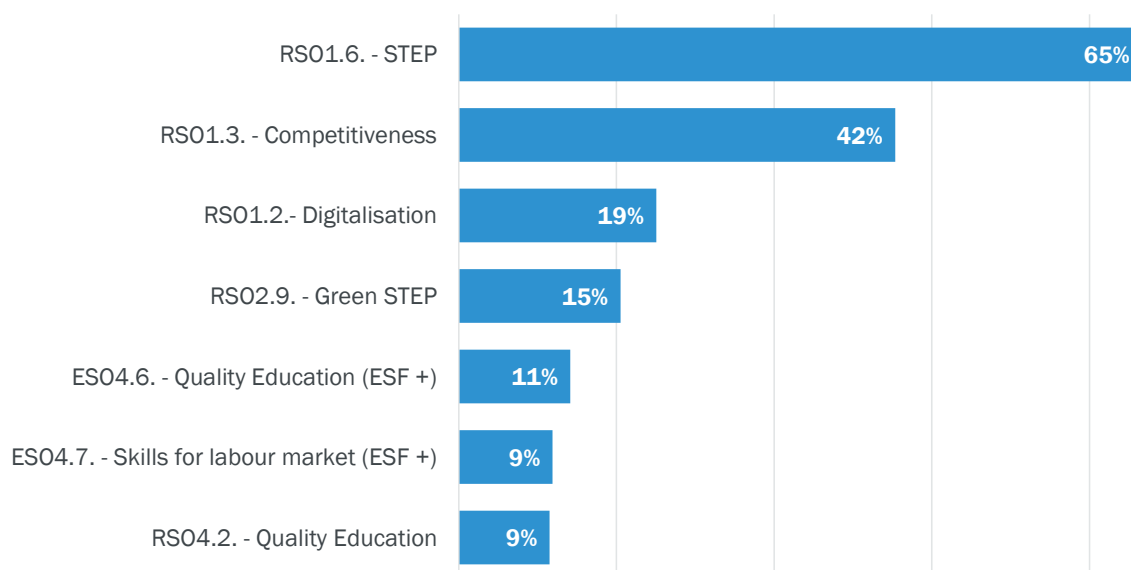
Examples from Lombardy, Austria and Lower Silesia during the 2021-2027 period illustrates how regions balance EU-level and regional objectives within their S3. As EU policy has increasingly prioritised green and digital transitions, regions have adapted their S3 frameworks to ensure coherence with European agendas while maintaining territorial relevance. Lombardy aligned its S3 priorities with the thematic 'destinations' of Horizon Europe, enabling synergies between regional and EU funding instruments. Meanwhile, Lower Silesia integrated cross-cutting themes such as the Green Deal and Industry 4.0 in order to align with national recovery and transition plans. Yet, Austria's experience highlights the risks of the top-down adoption of EU priorities – an earlier emphasis on life sciences underperformed due to insufficient local capacity, demonstrating that alignment must be based on regional strengths. Overall, the study concludes the most effective strategies selectively integrate EU priorities in a way that complements local ecosystems, ensuring that the S3 remains strategically coherent with EU goals while remaining firmly rooted in regional realities.

## 2.4. S3 can support an integrated approach to innovation and competitiveness in EU regions

**Many Smart Specialisation Strategies have an impact and scope that extends beyond enhancing research and innovation capacity, providing a framework also for support to productive investment in companies or digitalisation.** Consequently, S3s are emerging as the EU's primary territorial instrument for innovation-driven industrial policy.

A systematic text-mining exercise involving 183 ERDF programmes revealed 1,607 distinct policy actions aligned with S3. Almost 60% of these measures fall under Specific Objectives 1.1 (Research and Innovation Capacities) and 1.4 (Innovation Uptake by SMEs), while the remaining 40% are distributed across a broader set of objectives that explicitly cite S3 (see Figure 4). The most common spillovers appear in RSO1.6 (STEP technologies, referenced by 65% of programmes), RSO1.3 (competitiveness, referenced by 42% of programmes), digitalisation (RSO1.2, referenced by 19% of programmes), and the green STEP objective (RSO2.9, referenced by 15% of programmes). Human-capital links are evident as well: 11% of programmes referencing S3 do so under ESO4.6 (quality education), while a further 9% do so under ESO4.7 (skills for the labour market).

**Figure 4 – Share of ERDF programmes referencing S3 by Specific Objectives**



Source: Prognos AG/CSIL (2025), text analysis of ERDF programme documents (cut-off date: 01/2025).

**Coherence with the Just Transition agenda is also pronounced.** 80% of Territorial Just Transition Plans reference S3 priorities or target related sectors, suggesting that regions systematically utilise existing priority portfolios to guide investments in decarbonisation. While the extent to which S3 is referenced varies between programmes – some list only a few aligned actions, while others list more than fifty – the overall evidence suggests that S3 now serves as an overarching policy framework, directing industrial modernisation across various ERDF objectives and supplementing other EU, national, and regional instruments.

## Case study findings on S3 and industrial transition

### **S3 linked to EU industrial transition pathways – the case of Campania:**

The case of Campania demonstrates how a region can strategically link its S3 to the EU's industrial transition pathways. In revising its 2021-2027 S3, Campania adopted an ecosystem-based approach aligned with the 14 EU industrial ecosystems and their associated transition pathways, thus shifting from a traditional sectoral model towards a systemic framework for industrial transformation. The strategy organises regional priorities into nine thematic innovation ecosystems and one transversal ecosystem for enabling technologies, all benchmarked against EU industrial policy goals for the green and digital transition.

The approach builds on dynamic innovation ecosystems - explicitly connected to groups of EU industrial ecosystems - that are designed to evolve over time through stakeholder co-creation processes. Such adaptability also enables regional strategies to remain aligned with the evolving EU Transition Pathways. This model may also facilitate the identification of specific local needs and inform the design and implementation of ERDF-funded interventions.

Overall, Campania offers a transferable model for regions seeking to embed industrial transformation objectives into S3, aligning local innovation ecosystems with EU-wide pathways to strengthen competitiveness and strategic coherence.

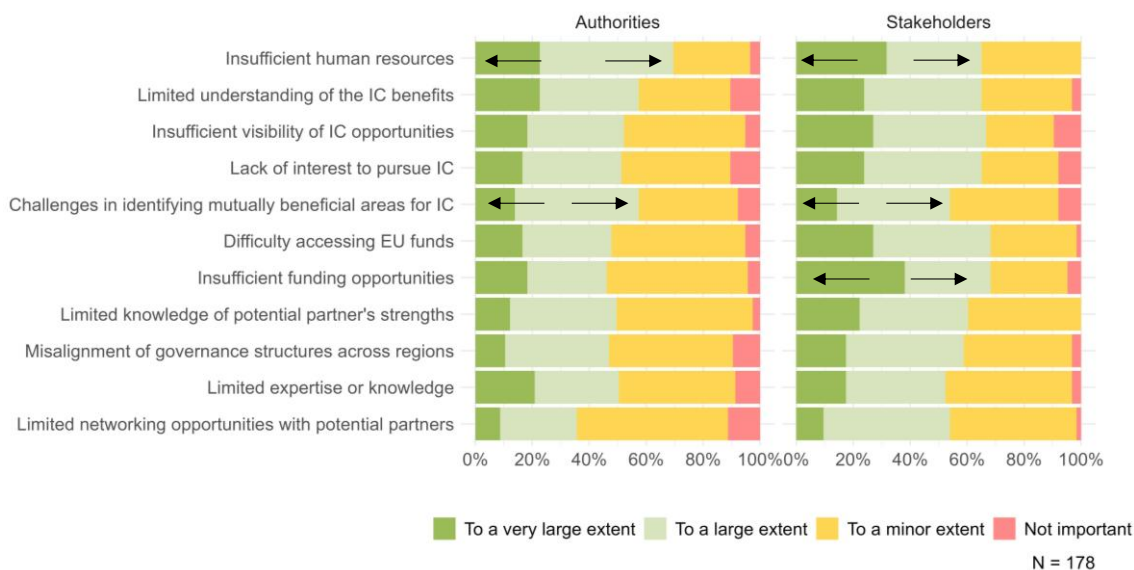
## 2.5. Interregional collaboration is firmly embedded in S3 and holds untapped potential

**Smart Specialisation Strategies aim to boost regional innovation capacity by taking targeted action.** They also provide a starting point for connecting regional innovation ecosystems across the EU based on shared priorities or complementary capabilities. Therefore, interregional collaboration has become an integral component of S3. However, gaps in design, capacity and funding continue to hinder the realisation of S3's full potential.

Evidence from the document analysis indicates that 98% of S3 strategies and 97% of ERDF programmes incorporate cross-border value chain or joint investment activities. Of these, 74% explicitly specify a funding source – typically their own ERDF programme – to finance such initiatives. However, the specifics of these strategies vary widely: many documents are vague, providing only generic references to networks and rarely indicating specific measures or allocating specific budgets. EU schemes such as the I3 Instrument are popular in less developed regions, but they offer limited aggregate funding. As shown in [Figure 5](#), the implementation deficit is further compounded by capacity constraints. The most frequently cited barrier is a shortage of human resources, mentioned by 63% of public authorities and 60% of private stakeholders. Other

challenges for authorities include a limited understanding of the benefits of collaboration (51%), difficulty in identifying mutually advantageous areas of cooperation (51%), and insufficient visibility of existing opportunities (47%). Stakeholders also identified a number of funding-related obstacles: the majority of respondents deemed overall funding levels to be inadequate, 62% experienced difficulties accessing available funds, and 60% criticised the poor promotion of calls for proposals.

**Figure 5 – Challenges affecting the implementation of interregional investments of S3 authorities and stakeholders in EU regions**



Source: Prognos AG/CSIL (2025), based on EU-wide online survey among S3 authorities, Managing Authorities and stakeholders. N refers to the valid responses.

**At the same time, Regulation (EU) 2021/1060 offers solutions to some of the above-outlined challenges that have not yet been utilised to their full potential.** Article 63(4) allows ERDF resources to be spent beyond the designated programme territory, provided operations contribute to advancing programme objectives. However, this provision is hardly used and rarely referenced in strategic or operational documents. A notable exception is the case of Norte (Portugal), where interregional collaboration is explicitly incentivised through follow-up grants for joint R&I projects and enabling joint investments with partner regions such as Galicia (Spain) using ERDF funds, coordinated via a dedicated Joint Financial Committee. Furthermore, there are a number of examples of successful implementation of interregional incentives, such as in North-East Romania, where projects receiving support from the European Regional Development Fund (ERDF) and aiming at external collaboration receive additional points. An additional illustration of this phenomenon is provided by the AKKE programme in Pääjät-Häme, Finland. This programme encompasses an interregional collaboration incentive in the funding sources for projects, as well as the possibility to apply for funding for the preparation of interregional collaboration projects. Utilising this clause more comprehensively, particularly in the context of large, shared pilot lines or demonstration corridors, could facilitate rapid progress.

## Case study findings on financing interregional collaboration

### **S3 fostering interregional investments – the Joint Investment Plan Galicia and Norte**

The Joint Investment Plan between Galicia (Spain) and Norte (Portugal) is a prime example of how smart specialisation can stimulate effective interregional investment and cooperation across borders. Anchored in a shared RIS3T strategy, the initiative integrates regional dynamics into joint policy design and funding, supported by strong political commitment and multi-level governance through the GNP-EGTC, the Cross-Border Innovation Council, and a Joint Financial Committee. These bodies facilitate coordinated investment in sectors such as health, agri-food, creative industries and the sea economy, while also linking regional priorities to European programmes such as Horizon Europe. The innovative use of ERDF instruments for cross-border financing further demonstrates the practical alignment of policy and funding. However, differences in governance models between Spain and Portugal, administrative asymmetries and fragmented access to funding remain significant challenges. Nevertheless, the model is highly transferable, particularly in regions with cultural and institutional affinities, and offers a scalable template for other EU regions seeking to bolster cross-border innovation. Ultimately, this case study highlights that sustained political will, coherent governance and a shared strategic vision are crucial for integrating interregional cooperation into the EU's innovation landscape.

### **The use of national/regional ERDF funding to support interregional innovation investments – the Innovation Express Scheme**

The Innovation Express Scheme<sup>1</sup> is an interregional funding mechanism linking Salzburg and Upper Austria (Austria), Bavaria and Brandenburg (Germany), and the Canton of Fribourg (Switzerland), implemented under the Interreg Alpine Space programme; it demonstrates how coordinated national and regional ERDF funding can effectively support interregional innovation investments at advanced technology readiness levels (TRLs).

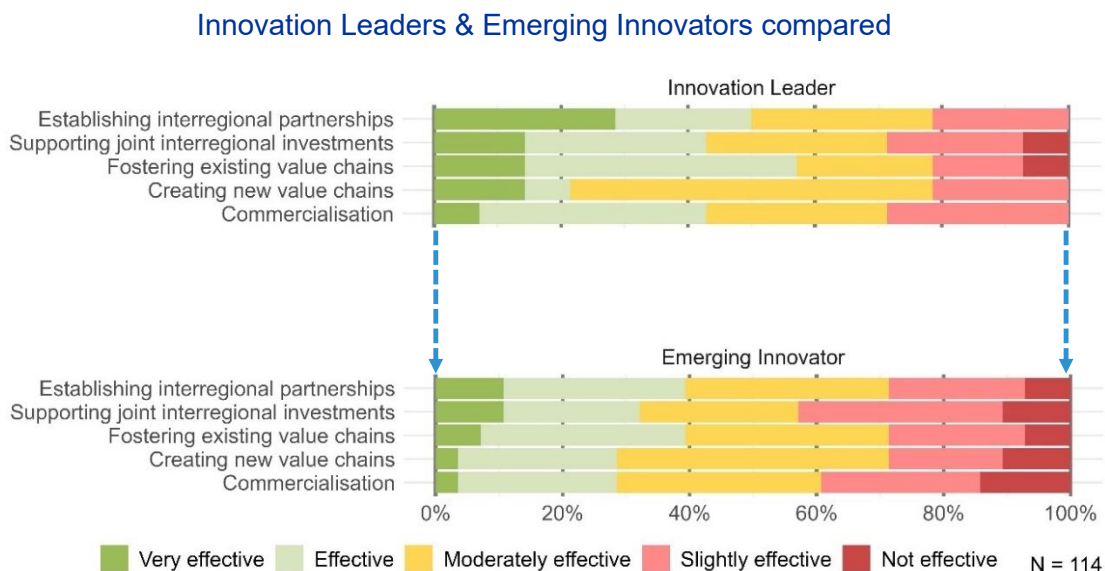
For instance, Bavaria and Brandenburg are regions which have successfully fostered cross-border collaboration and accelerated the scale-up of innovations towards market entry by synchronising regional funding calls and aligning them with smart specialisation priorities. Key success factors include the adaptability of regional programmes, intermediaries playing an active role in coordinating funding, and initiatives such as Bavaria's bioeconomy scale-up<sup>2</sup>, a funding scheme targeted a scaling up young companies in the bioeconomy sector, and Brandenburg's Phoenix Calls being integrated. However, administrative complexity, limited political willingness to permit the cross-border use of ERDF funds and fragmented governance remain major obstacles. While the approach is transferable, it requires open funding policies, administrative flexibility and a shared commitment to interregional cooperation. Overall, this case study shows that adaptive governance, synchronised calls and strong networks can make the ERDF a powerful tool for developing high-TRL innovations and strengthening Europe's interconnected innovation ecosystems.

## 2.6. Regional innovation maturity shapes interregional collaboration within the S3 framework

**The effectiveness of interregional collaboration measures under S3 is closely linked to regional innovation maturity. Innovation leader regions consistently report higher benefits** (see Figure 6).

These regions derive the greatest value from early-stage networking, with around a third of officials considering establishing interregional partnerships to be 'very effective'. They also derive comparatively greater benefits from downstream activities, such as creating new value chains and commercialisation. While the absolute ratings are lower than those for early-stage measures, innovation leaders still assess these instruments more positively than emerging innovators do. In contrast, officials in emerging innovator regions have more concerns: 43% judge joint interregional investments to be slightly or not effective, and 39% reach the same conclusion for commercialisation support. This suggests that more advanced ecosystems are better positioned to leverage collaborative tools along the entire innovation chain, whereas less mature regions encounter persistent structural barriers.

**Figure 6 – Perceived effectiveness of national/regional measures planned under the current S3 in facilitating interregional cooperation**



Source: Prognos AG/CSIL (2025), based on EU-wide online survey among S3 authorities, Managing Authorities and stakeholders. N refers to the valid responses. Respondent type: Public Authorities. By RIS Performance Group.

<sup>1</sup> Innovation Express Call. Interreg Alpine Space. More information at: <https://www.iec24.info/regions.html>.

<sup>2</sup> More information about the Bioeconomy Scale-up initiative available here: <https://www.stmwi.bayern.de/foerderungen/biooekonomie-scale-up/>

This divergence shows how maturity levels affect potential. Innovation leader regions primarily face operational challenges, such as refining partner coordination, aligning instruments with different points of the value chain, and synchronising timelines. In contrast, emerging innovator regions face structural barriers, such as limited human resources (identified by 63% of surveyed authorities in the stakeholder survey), funding shortages, and difficulties accessing EU-level schemes. The survey also revealed that stronger regions explicitly integrate interregional cooperation into their S3 priorities. The proportion of collaborative actions directly linked to priority domains increases with regional performance, indicating that absorptive capacity is essential for converting cross-border partnerships into joint investments and new value chains.

**The S3 Thematic Platforms are widely regarded as a practical response to the challenges outlined above:** 68% of authorities consider them supportive, with domain-specific ratings of 34.5% for Industrial Modernisation, 26.9% for Agri-food, 23.5% for Energy, and 15.2% for the Sustainable Blue Economy. Embedding these platforms and their underlying partnerships, including their intelligence on complementary strengths, into future action plans and funding calls for interregional collaboration would strengthen strategic coherence, reduce search costs, and concentrate scarce administrative capacity on building high-impact, trans-regional investment pipelines.

## 2.7. Strong role of regions in S3 governance in most Member States

**Regions play a central role in S3 governance across most Member States: of 171 S3 strategies, 150 are fully regional (across six Member States), while a further 11 Member States operate mixed national-regional arrangements.** To realise additional benefits – such as closer alignment of priorities, more coherent use of funding, and stronger interregional cooperation – it is essential to strengthen both vertical coordination between EU, national and regional levels and horizontal coordination across policies and territories.

A comparative review of S3 documents, survey responses and interviews confirm marked heterogeneity in the level of S3 governance and implementation. Three operational models were identified (Figure 7):

1. **National-only strategies**, adopted by ten Member States;
2. **Mixed national-regional strategies** with different designs (e.g., national strategies with regional chapters, combinations of national and regional S3), adopted by 11 Member States; and
3. **Regional-only strategies**, adopted by six Member States.

Of the 27 Member States, 17 (63%) have either a mixed or a regional governance model, which gives their innovation policy a strong regional focus. Federal and larger countries, such as Germany and France, typically fall into the regional-only category. Across the 171 S3 strategies analysed, 150 (88%) are regional strategies, while the mixed model is the most frequently adopted arrangement at the level of individual Member States (used by 11). The mixed model combines

a national framework to ensure strategic coherence with regional tailoring of priorities. Greece illustrates this approach with a national strategy structured around regional chapters, whereas Austria incorporates S3 into its national Research, Technology and Innovation strategy, relying on multiannual pacts with the federal states for implementation. Together, these examples point to a shift towards closer national–regional coordination compared to the 2014–2020 period.

**Figure 7 – Operational governance levels of S3 strategies 2021-2027**  
by Member States and Innovation Performance Group

... by Innovation Performance (EIS)					
Operational Governance Levels of S3 Strategies	Innovation Leader	Strong Innovator	Moderate Innovator	Modest Innovator	Total
Primarily or only at <b>national</b> level	0	3 (CY, EE, LU)	4 (HU, LT, SL, MT)	3 (HR, SK, LV)	10
National <b>and</b> regional level	1 (DK)	2 (AT, IE)	5 (CZ, EL, IT, PT, ES)	3 (BG, PL, RO)	11
Primarily or only at <b>regional</b> level	4 (BE, FI, NL, SE)	2 (FR, DE)	0	0	6
<b>Total</b>	<b>5</b>	<b>7</b>	<b>9</b>	<b>6</b>	<b>27</b>

*Source:* Prognos AG/CSIL (2025), Data from the EU-wide survey, interviews and S3 strategy documents. Adapted from Kelchtermans et al. (2021). Note on methodology: National strategies define priorities only at the national level. Hybrid national/regional strategies define priorities at both national and regional level either within one consolidated S3 document or in separate national and various forms of regional documents. Countries classified as 'regional' do not have an S3 strategy at the national level, relying instead solely on regional-level strategies.

**However, stronger coordination mechanisms are required for more effective S3 governance, both in national-only and in mixed national-regional strategies.** While most strategies acknowledged multi-level governance, practical instruments for EU-national and regional-national coordination remain scarce, as this study showed. There was also a lack of horizontal coordination, suggesting that the next programming period must prioritise inter-ministerial collaboration, funding alignment and coherent policy mixes to ensure strategies fulfil their transformative potential.

### Case study findings on multi-level governance

**Greece – a national strategy with regional chapters** – illustrates the mixed model in practice. The Ministry of Economy and Finance oversees a three-tier system, comprising national and regional councils that establish the overarching direction; the Hellenic Confederation of Commerce & Entrepreneurship (MON ESEE) and regional economic directorates that provide strategic guidance and oversight; and Managing Authorities that are responsible for the execution of projects. It is noteworthy that all thirteen regions, including Crete, are responsible for the preparation of their own S3 chapters, with guidance provided by the Regional Scientific Council for Research and Innovation (PSEK) and with support from the Innovation Business Observatory. It is the responsibility of the National S3 Coordination Network and the Council for Monitoring Development Interventions to ensure coherence. However, as a key challenge to highlight in the case of Greece, the uneven administrative capacity and procedural complexity can result in a re-centralisation of decisions.

**Austria operates a national S3 with close, flexible coordination.** Smart specialisation is embedded in the national Research, Technology and Innovation strategy and executed through multi-annual pacts between the federal government and the Länder. The alignment of these interests is facilitated by the Austrian Conference on Spatial Planning and thematic platforms, while regions such as Upper Austria undertake iterative processes to refine their priorities. The maintenance of effective federal–regional coordination and systematic stakeholder engagement is imperative in ensuring the responsiveness of strategies. However, the synchronisation of funding envelopes and thematic focus with the diverse regional needs remains an ongoing challenge.

## 2.8. Engagement of public authorities and academic institutions in S3 process strong, less engagement of business and citizens

**The S3 policy cycle and governance structures are characterised by the pivotal roles played by public authorities and academic institutions.** Data from the EU-wide stakeholder survey revealed a consistent hierarchy of engagement that extends throughout the entire S3 policy cycle and across all development categories (Figure 8):

- Government and public-sector bodies are found to be the most involved, followed by academia and research institutions.
- The middle tier of engagement comprises cluster organisations, industry associations and chambers of commerce. However, in more developed regions, cluster organisations are visibly more engaged.

- In contrast, civil society actors occupy a marginal position in all types of regions.

**Figure 8 – S3 stakeholder engagement patterns by actor group & type of region**

	Less developed	Transition	More developed
Government and public sector	3,26	3,46	3,46
Academia and research institutions	3,24	3,23	3,06
Cluster organisations	2,30	2,67	3,10
Industry associations	2,46	2,38	2,68
Chambers of commerce	2,51	2,60	2,38
SMEs	2,43	2,11	2,29
Large enterprises	2,25	2,31	2,45
Civil society	1,68	1,75	1,65

n = 233

Source: Prognos AG/CSIL (2025), based on EU-wide survey among S3 authorities and stakeholders. Note: Likert-scale responses were converted into numerical scores, and the figure displays the averaged values for each stakeholder group, policy phase, and development category.

**Stakeholder engagement has also seen a significant decrease in intensity.**

While 85% of strategies reported active participation of the various stakeholders during priority-setting, only 54% maintained it through implementation and 32% during monitoring and evaluation. This decline can be partly explained by the cooperation formats used. The analysis revealed that thematic working groups and workshops were employed by 85% of MAs, but concerns were raised about the depth and impact of these methodologies. Furthermore, the survey revealed that 85% of authorities and 70% of other stakeholders considered pilot initiatives to be the most effective tool. However, only 17% had actually implemented one. Living labs have received much praise but have not been utilised to their full potential. Taken together, these findings emphasise the importance of holding S3 authorities and MAs accountable for establishing balanced and in-depth engagement mechanisms that endure beyond the initial agenda-setting phase, particularly in less developed regions.

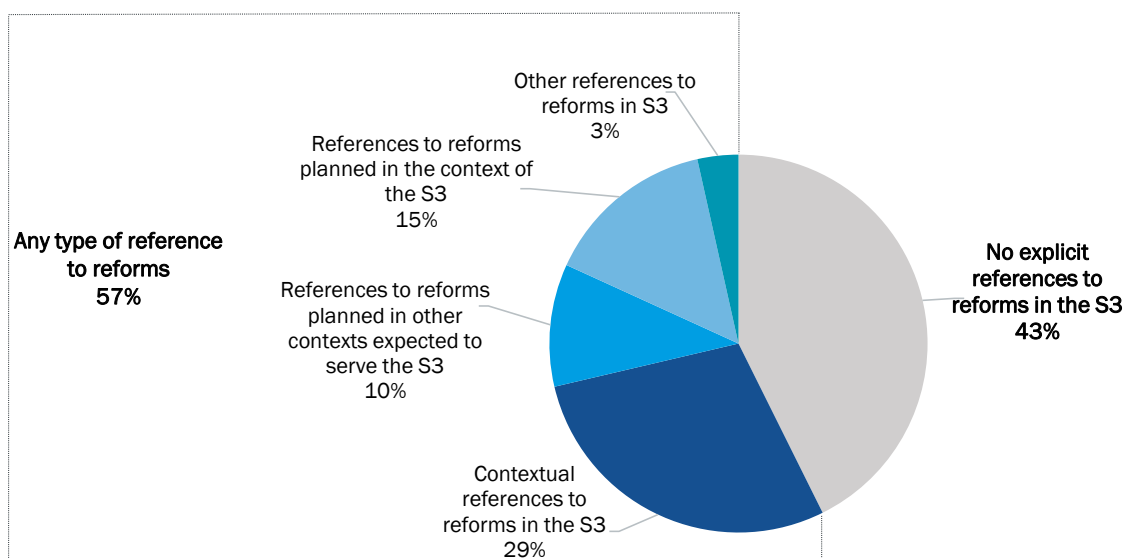
## 2.9. Majority of S3 strategies include a reform element

**The majority of S3s incorporate or provide a link to reforms as a component of their strategy, albeit with differing underlying rationales.** According to the stakeholder consultation, approximately 57% of S3 bodies/Managing Authorities incorporated reforms within their 2021-27 Smart Specialisation Strategies (Figure 9), thereby signifying that S3 has already emerged as a pivotal catalyst for structural transformation, despite the absence of significant institutional mandates for reform.

**However, the underlying reform logic of the various strategies differed significantly.** Around 29% of survey respondents referred to *contextual reforms*, which provide the broader policy background against which S3 priorities are

substantiated. These reforms typically build on existing national, or EU initiatives rather than changes initiated within the S3 itself. For instance, Hungary’s S3 refers to the National Digitalisation Strategy to justify ICT investments, whereas Molise’s S3 is aligned with the EU Green Deal to support its green transition priorities. A further 15% mentioned *catalysed reforms*, whereby the S3 triggers legislative or organisational changes that coincide with investment calls. For example, Slovenia’s S3 launched new Strategic Research and Innovation Partnerships (SRIPs) as long-term public–private platforms, and Emilia-Romagna reformed its training and apprenticeship systems to ensure skills matched S3 areas. Finally, around 10% of reforms were categorised as *‘enabling’*. Although these originated in other policy domains, they were expected to unlock or accelerate S3 investments. Examples include Bulgaria’s national model for developing research universities and strengthening the role of higher education in innovation, as well as Lazio’s simplification of environmental authorisations to speed up green economy projects.

**Figure 9 – Reference to reforms explicitly mentioned in S3**



*Source:* Prognos AG/CSIL (2025), based on EU-wide online survey among S3 authorities, Managing Authorities and stakeholders. Type of responses: Actors tasked with S3 coordination, ERDF programming and/or JTF implementation type. Number of valid responses: 143, referring to 114 national/regional strategies.

An in-depth review of a sample of 32 individual S3 strategies showed that reforms ranged from minor administrative adjustments to far-reaching strategies targeting multiple components of the ecosystems. In general, reforms tend to focus on specific parts of the ecosystem, particularly the business environment, governance, and education and research systems. In terms of delivery modalities, reforms are often implemented through strategies, organisational changes, and legislation and regulation. The review reveals no clear geographical or economic development patterns.

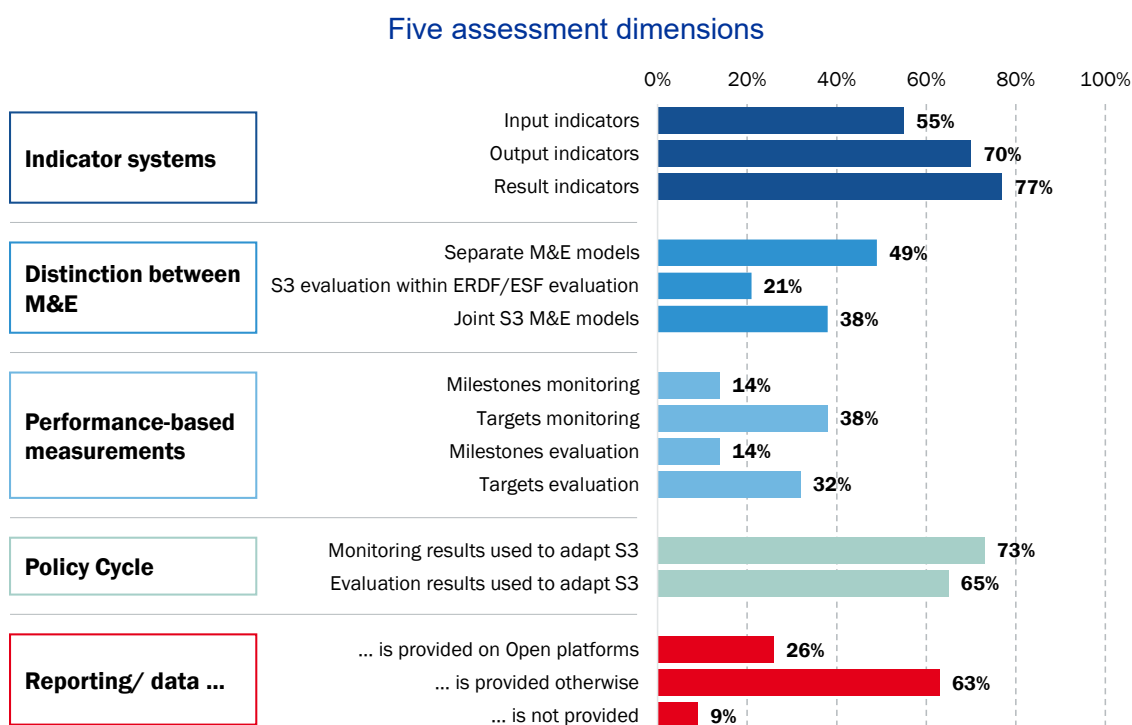
Experience from the Recovery and Resilience Facility, together with case studies from this research, suggests that establishing milestones and targets is only appropriate in the context of catalysed reforms where there is a clear owner and

a linear implementation pathway. Incremental or experimental reforms, which are characteristic of many contextual or enabling cases, necessitate softer learning frameworks as opposed to hard conditionality. Consequently, integrating explicit reform typologies into future S3 guidance would enable authorities to select realistic instruments, ensuring greater alignment of expectations and progress monitoring.

## 2.10. S3 monitoring and evaluation frameworks remain fragmented, with further capacity building needed

The adoption of M&E frameworks in S3 is becoming more prevalent, but further capacity is required for the establishment of evaluation systems. M&E practices are now an integral part of S3; all 168 strategies reviewed for this purpose include some form of M&E provision. Furthermore, 73% use monitoring findings to adapt priorities and 65% cite evaluation evidence in strategic revisions (Figure 10). However, the underlying systems differ significantly and often fail to meet the requirements at strategy level.

Figure 10 – Assessment of S3 M&E models 2021-2027



Source: Prognos AG/CSIL (2025), based on EU-wide online survey among S3 authorities, Managing Authorities and stakeholders. Type of responses: Actors tasked with S3 coordination, ERDF programming and/or JTF implementation type. Number of valid responses: 143, referring to 114 national/regional strategies.

There is a clear indication of a significant proportion of strategies failing to adequately address the fundamental principles of a comprehensive Theory of Change or intervention logic. Specifically, only 55% of strategies effectively track inputs, 70% track outputs, and 77% track results. These figures highlight considerable gaps in the input-output-impact chain. Target-based and

performance-oriented approaches are even rarer. Just 14% of cases use milestone or result-based monitoring, and 32% use target evaluation. This limits the scope for real-time course corrections.

This diversity is reflected in institutional arrangements. The data indicates that 49% of S3 authorities run separate S3-specific M&E models, 38% rely on joint systems shared with other funds and 21% embed evaluation in ERDF and/or ESF procedures only. While separating data has been shown to improve focus, it has also been demonstrated to increase data requirements and transaction costs. This issue is exacerbated by the limited availability of human resources and IT capacity, a problem emphasised during the interviews conducted for this study. These constraints explain why open S3 data platforms are operational in only 26% of territories, while 63% still disseminate results through static monitoring reports and 9% publish nothing at all.

