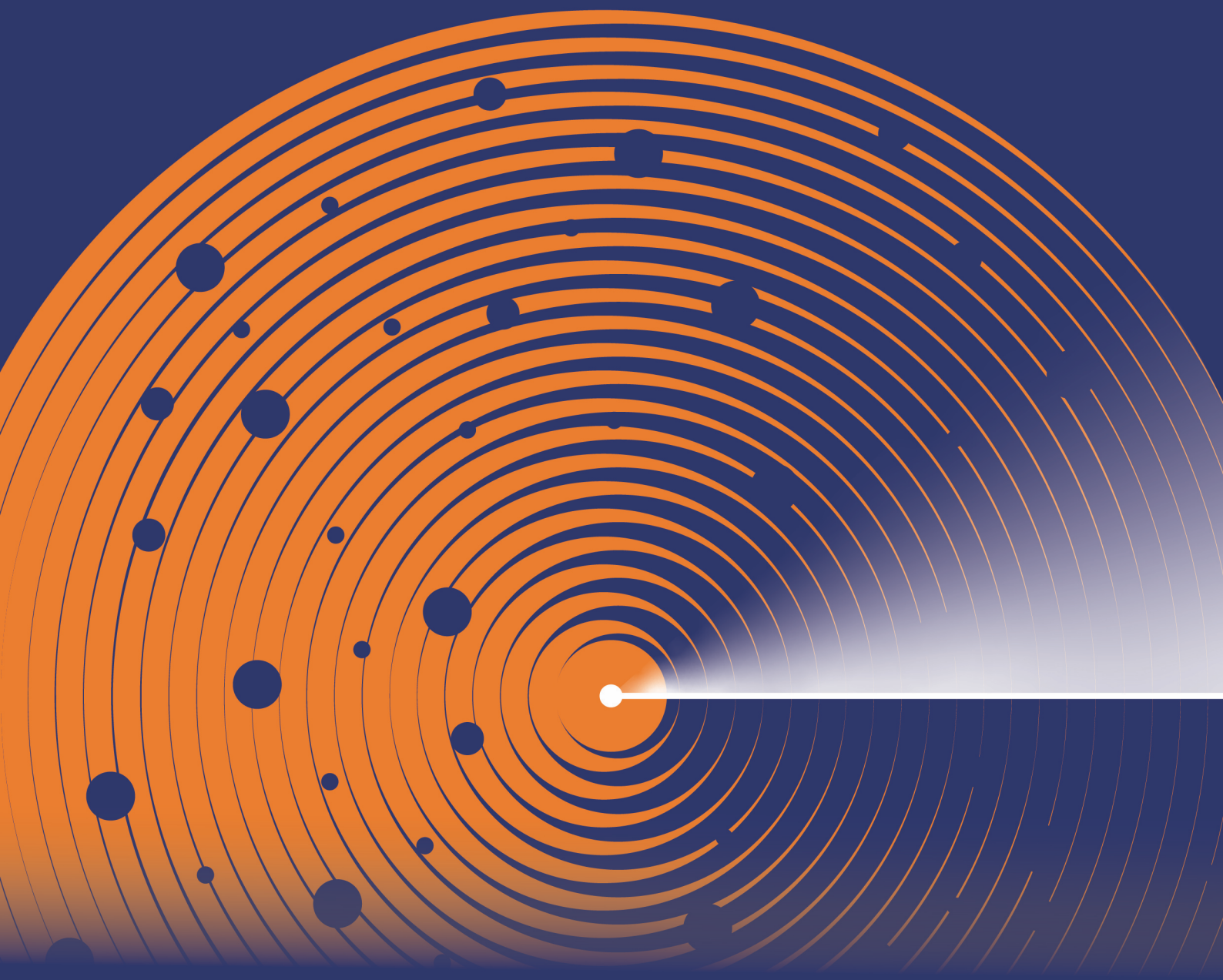
European Commission

Interregional Innovation Investments for EU Cohesion and Competitiveness

I3 Instrument Observatory Report 2025



I3 Interregional Innovation Investments Instrument

EUROPEAN COMMISSION

European Innovation Council and SMEs Executive Agency (EISMEA)

I.01 - EU and Place-based Innovation Ecosystems

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Interregional Innovation Investments for EU Cohesion and Competitiveness

I3 Instrument Observatory Report 2025

European Innovation Council and SMEs Executive Agency (EISMEA)

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List of Abbreviations

CORDIS	Community Research and Development Information Service
COSME	EU Programme for the Competitiveness of Enterprises and SMEs
DR REGIO	Directorate-General for Regional and Urban Policy
EIC	European Innovation Council
EISMEA	European Innovation Council and SMEs Executive Agency
EIT RIS	European Institute of Innovation and Technology Regional Innovation Scheme
ERDF	European Regional Development Fund
EU	European Union
FSTP	Financial Support to Third Parties
I3	Interregional Innovation Investments
I3SF	I3 Support Facility
LDR	Less Developed Regions
MDR	More Developed Regions
NUTS	Nomenclature of Territorial Units for Statistics
OECD	Organisation for Economic Co-operation and Development
PATSTAT	Patent Statistical Database
RIS	Regional Statistical Scoreboard
S3	Smart Specialisation Strategy
SME	Small and Medium-sized Enterprise
STEP	Strategic Technologies for Europe Platform
TR	Transition regions
TRL	Technology Readiness Level

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Executive Summary

This report represents the first Annual Observatory Report on the Interregional Innovation Investments (I3) Instrument. The objective of this report is to provide a comprehensive overview of the implementation of the Interregional Innovation Investments (I3) Instrument. It summarises the funded projects, assesses their current outputs and outcomes, and identifies both successes and challenges encountered. The analysis presented in this report will be updated and expanded annually.

The study relies on an extensive analysis of I3 project data, incorporating qualitative insights from a survey and project descriptions, along with pertinent literature and secondary data.

As a directly managed instrument under the European Regional Development Fund (ERDF), the I3 Instrument operationalises Cohesion Policy objectives by supporting interregional innovation investments that strengthen EU competitiveness while reducing regional innovation disparities.

The report is structured along the three dimensions of the I3 Instrument with the following **key findings**:

INTERREGIONAL

- I3 Instrument funding successfully reaches beyond traditional innovation centres. Strong I3 project involvement can be found across all types of Cohesion regions.
- The I3 Instrument simultaneously attracts Europe's capital cities and innovation hubs (e.g., Brussels, Madrid, Milan) alongside Less Developed Regions.
- I3 projects build on prior collaborations: Nearly all I3 consortia have a background in previous project collaborations.
- I3 projects are strongly business-driven: 63% of projects initiated by cluster organisations or SMEs.
- Over the past I3 calls, engagement from Less Developed Regions has increased, also among SMEs.

These findings confirm the Cohesion Policy logic of the I3 Instrument: enabling regions with different levels of development to participate in shared interregional innovation and value chain activities.

INNOVATION

- Investment projects have made significant progress in their Technology Readiness Levels (TRLs), advancing from over 80% of projects initially

estimating themselves at TRL 6 to more than 75% now at TRL 7 and approximately 20% at TRL 8 as of the data collection period in Q3 2025. Furthermore, 90% of surveyed project coordinators anticipate that pilots and demonstrators will reach TRLs 8 or 9 by the end of the project. Capacity-building projects are preparing further actions with 90% targeting next I3 calls and developing business cases accordingly.

- Mentioned challenges to implementation include varying regional capacities (both business and institutional).
- S3 provides a framework for interregional collaboration as around 50% of the I3 projects are aligned with S3 Platforms.
- Around 41% of projects directly interact with ERDF authorities, representing a slight increase compared to the 2024 survey (33%).
- Cluster organisations are becoming more important, being involved in 84% of the projects surveyed.

Under DG REGIO's policy framework, the I3 Instrument translates place-based smart specialisation strategies into concrete interregional innovation and investment projects that support market deployment and scale-up.

INVESTMENT

- I3 projects support and connect diverse organisations that contribute their expertise along the value chain, with LDR private companies receiving funding comparable to other regions despite a lower overall share.
- FSTP provides flexible funding to SMEs and third parties: Around half of surveyed investment projects use it to lower SME participation barriers, accelerating knowledge transfer and value chain integration.
- I3 fosters stable collaboration: 53% of the surveyed consortia plan to expand collaborations, 31% continue current project activities.
- Form of collaboration post-I3 determines relevant EU funding programmes: Horizon, INTERREG and EIT RIS are particularly prominent among projects planning new initiatives, and close-to-market programmes like VInnovate are also relevant for sustaining project activities.
- Shift from public to private funding: Consortia that want to sustain current project activities are planning on relying less on public grant funding.

This investment logic reflects Cohesion Policy objectives by combining EU support with private investment and by promoting lasting interregional partnerships beyond the lifetime of individual projects.

Since its introduction, the I3 Instrument has become increasingly visible and experienced a surge in application numbers. Overall, the analysis shows that the I3 Instrument integrates Less Developed Regions with established innovation networks in core regions. The I3 Instrument shows its potential to further integrate

the European innovation system and bridge innovation and cohesion policy at a continental level. It prepares the ground for EU-wide scaling of innovation commercialisation and aligns with the agenda to capitalise on regional strengths for European competitiveness.

1. Introduction

1.1. The Interregional Innovation Investments (I3) Instrument and its objectives

Europe is facing a variety of challenges arising from the rapid advancement of new technologies, digitalisation, shifting global trade dynamics, and the urgent need to transition to a climate-neutral economy – all while safeguarding quality employment, public health, and citizens' well-being. These developments are shaping the landscape of global technological leadership in crucial areas such as batteries, hydrogen, photovoltaics, wind energy, quantum computing, and semiconductors. The Draghi report[1] shows that innovation must be at the heart of European renewal, while removing other constraints holding back growth. In this context, the intertwined challenges of enhancing competitiveness and expediting green and digital transitions highlight the importance of the EU remaining a hub of growth and innovation by uniting key actors in the innovation ecosystem.[2]

The EU plays a vital role in helping all Member States and regions unlock their potential for innovation, competitiveness, and sustainable jobs and growth through Smart Specialisation Strategies (S3). Within the framework of Cohesion Policy programmes, Member States and regions have defined priorities that build on their strengths in business, innovation, and research – aiming to move up the value chain and enhance the competitiveness of their territories. In addition, EU regions and cities need to create new value chains that will allow them to scale up their good ideas in the EU single market.

In order to achieve these ambitious objectives, it is vital that the S3 approach is strengthened through interregional collaboration. The 2021-2027 programming period signals a marked shift in approach towards a more outward-looking design and implementation of S3. The current strategies are required to prioritise international collaboration in innovation to meet the enabling condition for the good governance of national or regional smart specialisation strategies. This entails fulfilling seven criteria, including the identification of

[1] Draghi, M. (2024). The Future of European Competitiveness—A Competitiveness Strategy for Europe. Available at: https://commission.europa.eu/document/download/97e481fd-2dc3-412d-be4c-f152a8232961_en?filename=The%20future%20of%20European%20competitiveness%20_%20A%20competitiveness%20strategy%20for%20Europe.pdf.

[2] European Commission (2024). New European innovation agenda on the move. Report on the state of play of the new European innovation agenda. Available at: https://op.europa.eu/en/publication-detail/-/publication/a879719c-e4ec-11ee-8b2b-01aa75ed71a1/language-en.

measures to improve collaboration with partners outside a given Member State in the priority areas supported by the S3.[3]

The European Commission's High Level Group Report on the Future of Cohesion Policy (2024)[4] emphasises the essential role of interregional investments as a driving force for innovation throughout the EU.[5] In this context, **the Interregional Innovation Investments (I3) Instrument** is a pivotal funding mechanism under **the European Regional Development Fund (ERDF)** regulation (article 13).[6] Its objective is to support the scaling up and commercialisation of interregional innovation projects, encouraging the development of European value chains[7] within shared smart specialisation areas and aligning with the Cohesion Policy's objectives of promoting economic, social, and territorial cohesion across regions. The I3 Instrument is designed to facilitate collaboration among innovation actors by creating conditions that favour the uptake and scale-up of innovations, thereby enabling projects to progress to the investment stage. It supports interregional innovation projects at high technology readiness levels (TRL 6-9). This represents a valuable opportunity to support interregional portfolios of companies' investments, thereby facilitating the introduction of innovation to the market and enhancing the competitiveness of EU interregional value chains.

The Instrument places particular emphasis on the promotion of value chain development in Less Developed Regions, bridging the gaps between regions and fostering a more inclusive and balanced economic growth across the EU. This is achieved by enhancing their capacity to participate in value chains, establishing connections with More Developed and transition regions, and leveraging the potential of S3.

Thematically, the I3 Instrument addresses challenges linked to the digital and green transitions and smart manufacturing, while encouraging synergies with the key challenges identified in the **New European Innovation Agenda**[8]

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[3] European Commission (2022). The role of Smart Specialisation in the cohesion policy 2021-2027, Available at: https://ec.europa.eu/regional_policy/sources/policy/communities-and-networks/s3-community-of practice/The_role_of_the_Smart_Specialisation_in_the_cohesion_policy_2021_2027.pdf.

[4] European Commission (2024). Forging a sustainable future together. Cohesion for a competitive and inclusive Europe: report of the High-Level Group on the Future of Cohesion Policy. Available at: https://op.europa.eu/en/publication-detail/-/publication/c6e97287-cee3-11ee-b9d9-01aa75ed71a1/language-en.

[5] This perspective is echoed in recent publications that stress the importance of interregional collaboration for improving industrial competitiveness, particularly in the creation and expansion of European value chains. See: Trippl, M. et al (2024) & Bachtrögler-Unger, J. et al (2023).

[6] European Union (2021). Regulation (EU) 2021/1058 of the European Parliament and of the Council of 24 June 2021 on the European Regional Development Fund and on the Cohesion Fund. Available at : https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32021R1058.

[7] Value chain stands for combination of activities, actors, strategic networking and companies, interconnected across sectors and borders. Source: Call document for the call "Capacity Building Strand 2b under the Interregional Innovation Investments (I3) Instrument".

[8] European Union (2022). COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS A

and the **critical technologies** outlined in the **Strategic Technologies for Europe Platform (STEP)**[9]. The policy focus of the I3 also extends to areas connected to the EU's broader strategic priorities, as set out in the Clean Industrial Deal[10] and the Competitiveness Compass[11] that establishes competitiveness as one of the EU's overarching principles for action. By concentrating on existing interregional partnerships formed around specific smart specialisation strategies – such as those in the S3 Thematic Smart Specialisation Platform[12] – the I3 Instrument effectively merges the grassroots S3 approach with investment support for essential EU strategic priorities. Aiming to tap into underutilised regional innovation potential, the I3 initiative seeks to foster synergies and complementarities with other EU funding programmes and initiatives, including Horizon Europe (particularly the European Innovation Ecosystems), the Digital Europe Programme, the Single Market Programme, and Interreg Europe.

New European Innovation Agenda. Available at : https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022DC0332.

[9] European Union. Strategic Technologies for Europe Platform (STEP). About the initiative. Available at: Strategic Technologies for Europe Platform (STEP) | European Union.

[10] European Union (2025). COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS The Clean Industrial Deal: A joint roadmap for competitiveness and decarbonisation. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52025DC0085.

[11] European Commission (2025). COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE EUROPEAN COUNCIL, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS. A Competitiveness Compass for the EU. Available at: https://commission.europa.eu/document/download/10017eb1-4722-4333-add2-e0ed18105a34_en.

[12] Inforegio - Thematic Smart Specialisation Platforms. Available at: https://ec.europa.eu/regional_policy/policy/communities-and-networks/s3-community-of-practice/thematic_platforms_en.

The box below outlines **key figures and features** of the I3 Instrument.

Box 1: The I3 Instrument at a glance

- **Legal base:** European Regional Development Fund (ERDF) regulation (article 13).
- **Budget** in the 2021-2027 programming period: over 490 million EUR.
- **Implementation:** DG REGIO supported by EISMEA.
- **Other EC DGs involved:** RTD, MARE, AGRI, GROW, JUST, CNECT and others.
- **General objectives:** Support innovation, competitiveness and growth.
- **Specific objectives:** Support an interregional portfolio of investments to scale up innovation projects (TRL6-9) for the development of European Value Chains.
- **Targeted beneficiaries:** Interregional Q-Helix Ecosystems, linked to S3's, including research institutions, clusters, SMEs and public authorities.
- **Dimensions:**
  - **INTERREGIONAL**: Creating links between EU regions around shared or complementary smart specialisation areas and involving all components of the regional or national innovation ecosystems.
  - **INNOVATION**: Testing, demonstration, piloting, large-scale product validation and market replication, adaptation of existing prototypes. Accelerating innovation, bringing solutions and new products supporting Digital and Green transitions and smart manufacturing
  - **INVESTMENTS**: Financial and advisory support for joint innovation projects, advancing from ideas to implementation, direct investment in companies
- **Thematic Areas under shared S3:**
  - Digital transition
  - Green transition
  - Smart manufacturing

Source: European Commission. Interregional Innovation Investments (I3) Instrument.

The I3 Instrument is divided into two principal strands:

- **Strand 1 (also referred to as INV1)** provides financial and advisory support for investments in interregional innovation projects. It targets mature partnerships to help them accelerate market uptake and scale-up of innovative solutions in shared smart specialisation priority areas, as well as to develop a portfolio of investment projects.

- **Strand 2**, focused on Less Developed Regions, has two branches:
    - **Strand 2a (also INV2a)** focuses on supporting interregional innovation investments aiming at developing value chains in LDR and reinforcing the integration of innovation actors in EU value chains.
    - **Strand 2b (also Cap2b)** aims to support regional innovation ecosystems in LDR and build their capacity to develop business cases for interregional innovation projects. It supports targeted actions that enable SMEs to collaborate, expand, strengthen their competitiveness, and reinforce their contribution to Europe's economy, while also enhancing the ability of public authorities and innovation intermediaries (such as clusters) to assist companies in identifying interregional investment portfolios.

Box 2: Non-exhaustive examples of capacity building actions funded through the I3 Strand 2b Capacity building call

- Mobilising innovation intermediaries (e.g., development agencies, clusters, business organisations) to activate and connect regional stakeholders.
- Strengthening interregional and regional innovation ecosystems by improving coordination and reducing fragmentation.
- Enhancing cooperation with industry associations, Technology Transfer Offices, research institutions, and other actors to reinforce quadruple-helix collaboration.
- Developing practical tools and expertise that help ecosystem actors participate in European and global alliances and networks.
- Designing policy mixes that support SME innovation, internationalisation, and integration into EU and global value chains.
- Creating and implementing structured knowledge-transfer and mutual-learning activities across regions.
- Piloting new ecosystem support schemes, cooperation models, or innovation initiatives to prepare for future interregional investments.
- Developing and testing talent-attraction and retention measures aligned with regional smart specialisation priorities.
- Identifying and shaping industry-driven interregional value chains aligned with S3 strengths and complementarities.
- Assessing feasibility, financing options, and legal/technical requirements for early-stage investment project ideas.

Source: Call document for the call "Capacity Building Strand 2b under the Interregional Innovation Investments (I3) Instrument"

1.2. The Benefits of Interregional Collaboration for Smart Specialisation

There is broad consensus that interregional collaboration fosters innovation and regional development by enabling knowledge diffusion and new technological opportunities.[13] The creation of scientific and technological knowledge has increasingly become a collective process and is considered a key prerequisite for strengthening regional innovation capacity[14]. This requires collaboration across regions to mobilise complementary capacities and critical mass. Strengthening external connectivity not only broadens the knowledge base available to firms but also enhances the pool of resources for innovation, allowing for the operation of specialised facilities and services while avoiding duplication and fragmentation of investments.[15] The relevance of interregional collaborations is also reflected in European policy programmes, which increasingly consider the establishment and utilisation of interregional knowledge networks as a strategic lever for innovation, diversification and structural change.

This is particularly relevant for rural or peripheral regions, which are characterised by insufficient local innovative capacities and limited knowledge spillovers, a smaller pool of stakeholders and networks[16], but also weak but essential (research) institutions[17]. Here, extra-regional collaboration can help build and strengthen networks, facilitate knowledge and technology transfer, and offers the potential for enhancing capabilities. Such collaboration not only promotes the entrepreneurial discovery processes and fosters regional diversification but can also substitute for the benefits typically associated with agglomeration externalities.[18]

More generally, regions that are more strongly embedded and central in EU-funded R&D networks demonstrate higher levels of knowledge production. The study of Wanzenböck & Piribauer[19] reveals that interregional networks facilitate access to external knowledge and increase opportunities for technological upgrading. Similarly, collaborations with knowledge-intensive or technologically advanced regions have been shown to improve the innovation

[13] Rodriguez-Pose, A. (2025); De Noni, I. et al (2017); Grillitsch, M., & Nilsson, M. (2015).

[14] Varga, A. et al (2020) & Woolford, J. et al (2021).

[15] Uyarra, E., Marzocchi, C., & Sorvik, J. (2018). How outward looking is smart specialisation? Rationales, drivers and barriers. *European Planning Studies*, *26*(12), 2344-2363.

[16] Mccann, P. & Ortega-Argilés, R. (2019); Barzotto, M. et al (2019a); Grillitsch, M., & Nilsson, M. (2015).

[17] Vallance, P. et al (2018) & Papamichail, G. et al (2022).

[18] Barzotto, M. et al (2019a) & Barzotto, M. et al (2019b).

[19] Wanzenböck, I. & Piribauer, P. (2018). R&D networks and regional knowledge production in Europe: Evidence from a space-time model. Papers in Regional Science, 97: S1-S25.

performance of regions lagging behind by enabling knowledge transfer and capability building. Yet, this potential is often limited by regional preferences for domestic partnerships and by the tendency of advanced regions to collaborate mainly within their own group and by different incentives in participating interregional collaboration[20]. In this regard, Amoroso et al.[21] observed a strong persistence of collaboration among geographically proximate and technologically similar regions, and that the share of collaborations involving lagging regions has remained largely unchanged compared to the previous Framework Programme.

Interregional collaboration networks created through the I3 instrument have the potential to continue beyond the usual funding period, which helps to disrupt established network structures and reduce the path-dependent patterns of a few geographically close regions with similar technological profiles repeatedly collaborate and form exclusive knowledge networks.[22]

1.3. Methodology

The objective of this report is to provide a comprehensive overview of the implementation of the Interregional Innovation Investments (I3) Instrument. It summarises the funded projects, assesses their current outputs and outcomes, and identifies both successes and challenges encountered. The report has been prepared by the I3 Support Facility (I3SF).

Covering the period from the launch of the I3 Instrument in 2021 until September 2025, the report analyses how the programme has supported innovation and interregional collaboration across the European Union. The analysis builds on a mixed-methods approach, combining quantitative and qualitative evidence. The empirical basis is provided by indicators compiled in the I3 Observatory Dashboard, complemented by additional secondary data. Key project statistics are further enriched through a survey among project coordinators and a review of individual project fiches, offering a comprehensive perspective on implementation dynamics and emerging impacts.

1.3.1. The I3 observatory dashboard and additional secondary data

The main database is I3 project data, provided by EISMEA, expanded by information on the cohesion classification of the supported regions. The analysis

[20] De Noni, I. et al (2018); Barzotto, M. et al (2019b); Woolford, J. et al (2020).

[21] Amoroso, S., Coad, A., & Grassano, N. (2020). European R&D networks: a snapshot from the 7th EU Framework Programme. In *Assessing Technology and Innovation Policies* (pp. 8-23). Routledge.

[22] Barzotto, M. et al (2019a); Barzotto, M. et al (019b); Tóth, G. et al (2021).

of collaborative activities is supplemented by secondary data such as the CORDIS dataset for Horizon Europe projects and the OECD REGPAT database for patent applications. The data from the Horizon Europe programme provides details on research projects funded under the Horizon Europe Framework Programme for Research and Innovation from 2021 to 2027, thus offering valuable insights into existing patterns of interregional collaborations initiated by the European Union. The patent applications, on the other hand, allow for a deeper exploration of actual collaborative innovation activities and knowledge transfers between regions in Europe. The OECD REGPAT database (May 2025) used fully derives the European Patent Office's (EPO) Worldwide Statistical Patent Database (PATSTAT Global, Autumn 2024).

1.3.2. Targeted survey

The targeted survey was a key empirical source for various tasks of this project. The purpose of the stakeholder consultation was to gather specific input directly from the I3 project coordinators. The survey was shared with the project coordinators from 53 I3 projects via EISMEA and the respective project supervisors.

The survey was launched on June 12th and has been open until mid-September 2025. During this time, it received 36 responses from 53 I3 project coordinators. In Annex, we provide the survey questionnaire that was circulated among the project coordinators.

1.3.3. Project descriptions

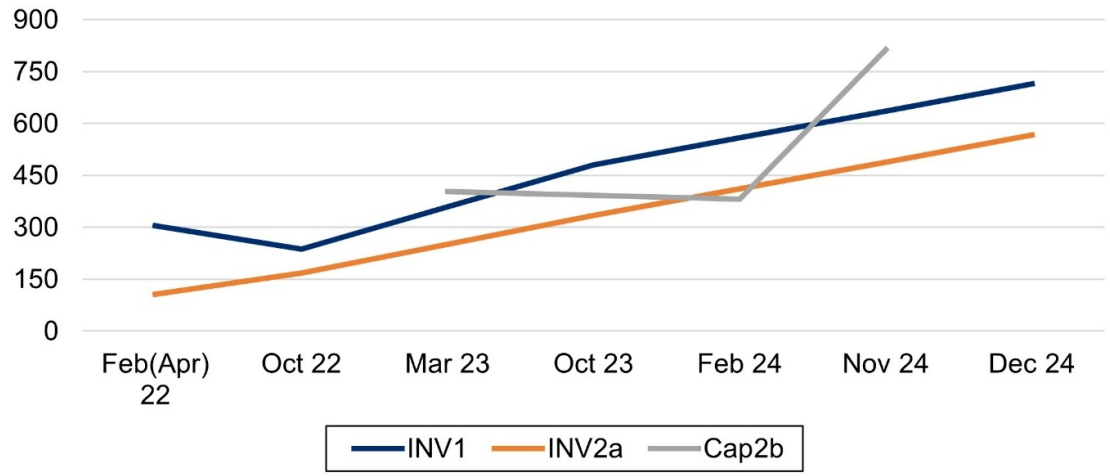
Next to the targeted survey, inputs on the I3 projects were collected from the project coordinators. These inputs are collected in the so-called project descriptions and present the goals and activities in each I3 project. The project descriptions delivered additional qualitative input to the analysis.

2. Achievements and outcomes of the I3 Instrument

This chapter presents the first achievements and outcomes of the I3 instrument since its inception in 2021 looking at the interregional, innovation and investment dimensions. It relies on comprehensive data from the various I3 projects, survey data, secondary data and qualitative insights from on-the-ground experiences.

Overall, the I3 instrument has been experiencing substantial and increased demand over the past two years. Across all three strands the number of applicants has steadily increased, as is reflected in Figure 1.

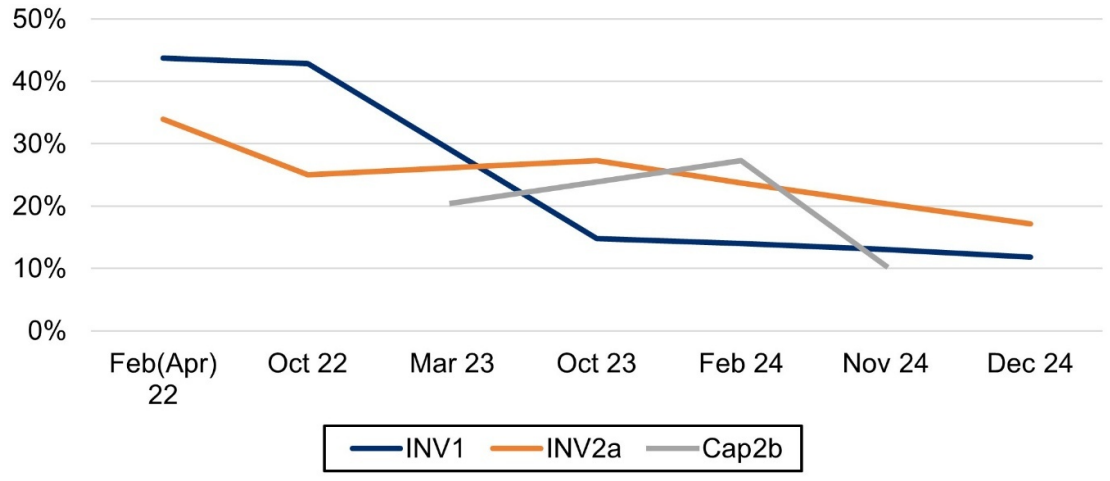
Figure 1: Evolution of the number of applicants to the I3 Instrument



Source: I3SF (2025) based on I3 proposal data, EISMEA (last updated: 31.12.2024).

The rising number of applicants correlates with sinking success rates across all three strands with the success rates for the INV1-strand and Cap2b-strand hovering around 10% in recent calls of November and December 2024.

Figure 2: Evolution of the success rates of the I3 Instrument

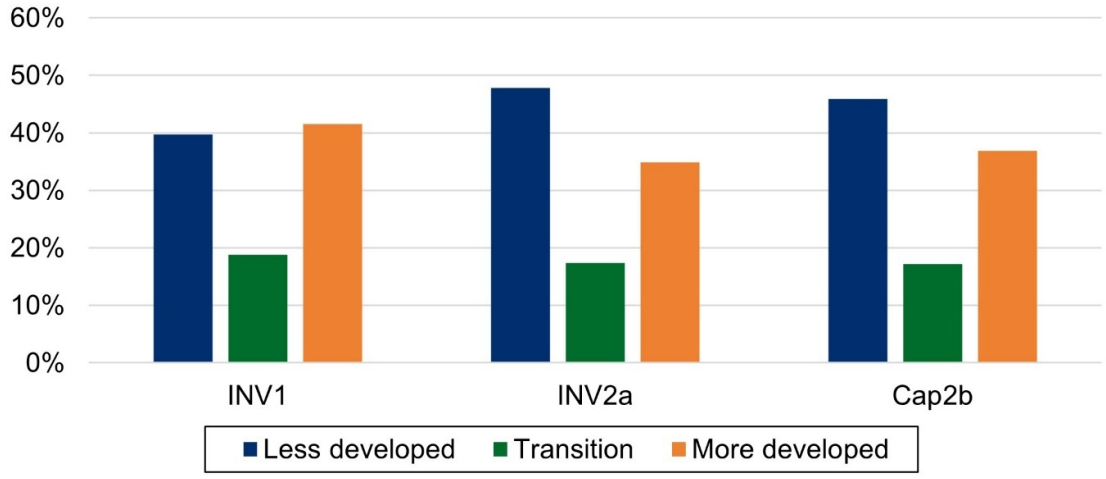


Source: I3SF (2025) based I3 proposal data, EISMEA (last updated: 31.12.2024).

Overall, the data indicates a high demand for the type of funding provided by the I3 instrument. At the same time, the instrument has gained visibility and traction.

Looking at the share of applicants in each strand by cohesion group reflects the **strong orientation of the I3 Instrument towards Less Developed Regions**. While both LDRs and MDRs make up a similar share of applicants in the INV1-strand, LDRs are the dominant group of applicants in INV2a and Cap2. Therefore, the applicants reflect the anticipated target groups for each strand. The I3 instrument's role in cohesion policy is hence already visible in the application stage.

Figure 3: Share of applicants in each strand by cohesion group



Source: I3SF (2025) based I3 proposal data, EISMEA (last updated: 31.12.2024).

The following section will focus on the awarded projects based on the **three dimensions covered by I3: Interregional, Innovation, Investment**.

2.1. Interregional dimension

Key findings on the interregional dimension of I3

- **Strong I3 project involvement can be found across all types of cohesion regions.** More Developed regions remain central in interregional collaborations (47%) while Less developed regions represent nearly 32% of all connections (Horizon Europe: 12%; patent activities: 5%).
- **The cohesion policy of the I3 instrument** had clearly been strengthened through changes in the call structure in favour of Less Developed Regions.
- **More Developed regions remain central in interregional collaborations (47%)** while Less Developed Regions represent nearly 32% of all connections (Horizon Europe: 12%, patent activities: 5%)
- **I3 projects build on prior collaboration:** Nearly all I3 consortia have a background in previous project collaborations, e. g. through Horizon or Interreg projects. 38% of the surveyed I3 projects resulted from collaborations through a S3 Thematic Platform.
- **I3 Instrument funding successfully reaches beyond traditional innovation centres.** The I3 Instrument simultaneously attracts Europe's capital cities and innovation hubs (e.g., Brussels, Madrid, Milan) alongside Less Developed Regions.

2.1.1. Involved actors and regions

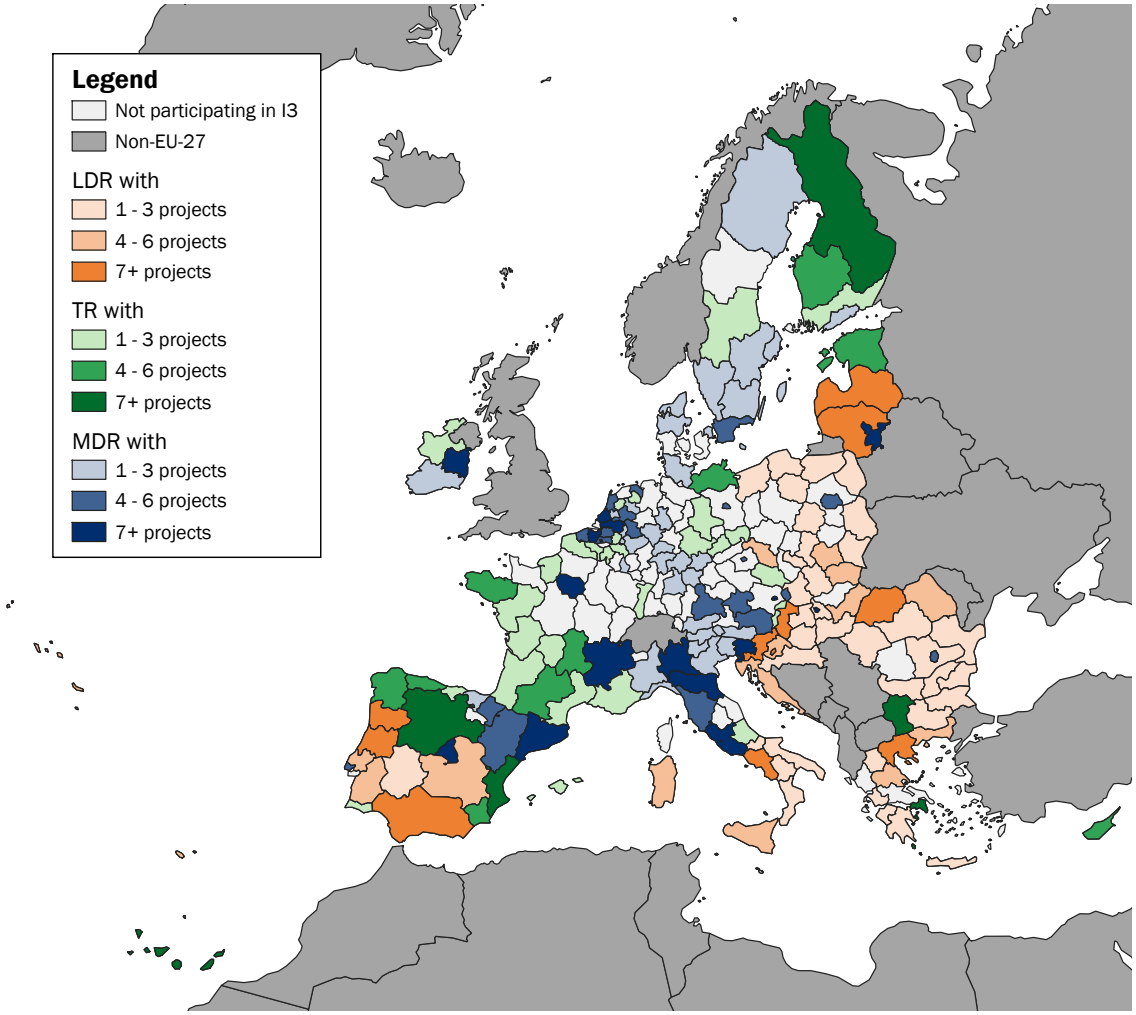
The I3 Instrument funding successfully reaches beyond traditional innovation centres. The analysis of I3 projects demonstrates widespread involvement, with a total of 1,257 individual participants spread across 177 regions within the 27 Member States of the EU. The number of participants per region is calculated by aggregating the participations of all entities involved in I3 projects within that region. In total, 592 project participants (47.1%) are located in More Developed Regions, while transition regions account for 251 project participants (20.0%) and Less Developed Regions comprise 414 project participations (32.9%).[23]

The regional distribution of I3 projects is cartographically illustrated in Figure 4, highlighting the number of projects represented in each region based on participating actors. Among the MDRs, “innovation engines” such as Lombardia (Italy), Catalonia (Spain), Auvergne-Rhone-Alpes (France) and Oberbayern (Germany) show strong involvement with more than seven projects. Also, many Less Developed Regions demonstrate high project activity, for example, Centro

[23] It is important to note that some participating organisations are assigned to their headquarters, particularly in the case of Brussels (BE10), where 25 projects with 30 different actors alone can be assigned geographically. This assignment may lead to disproportionate representation of project allocations, which could distort the actual distribution and obscure a higher degree of decentralisation of project participation.

(Portugal), Campania (Italy), Kentriki Makedonia (Greece), Latvia and Lithuania. These regions share a dynamic SME landscape, strong skills and education. The regional profiles further emphasise “absorptive” innovation (adapting external knowledge) over "generative" (creating new IP).[24]

Figure 4: Involvement in I3-projects across regions, by cohesion group



Source: I3SF (2025) based on I3 project data set (last updated September 1st, 2025).

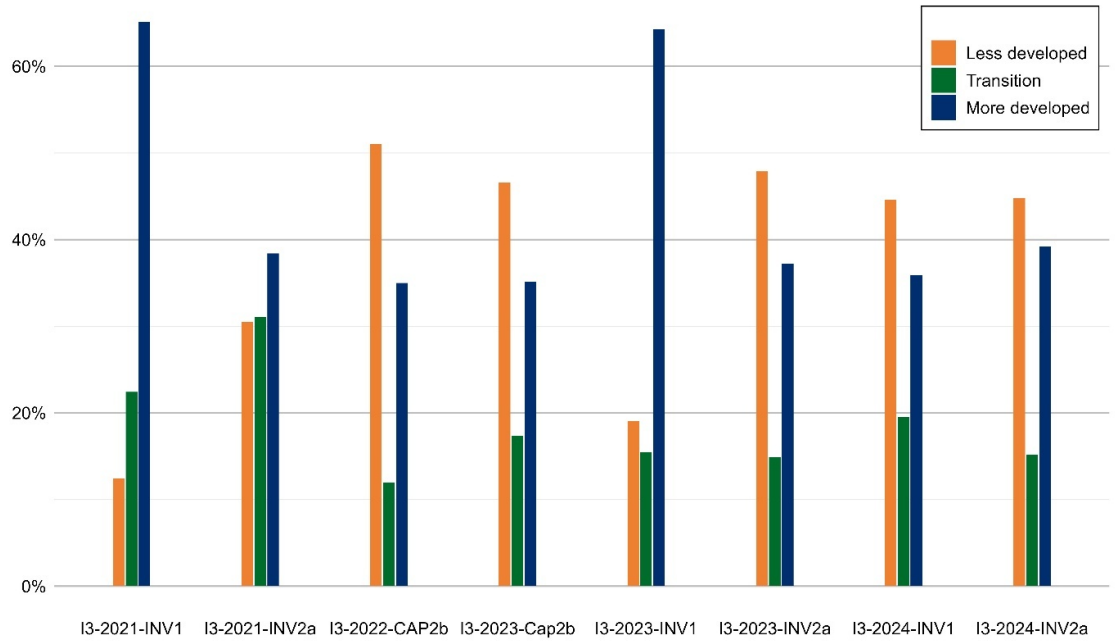
The cohesion policy role of the I3 instrument has clearly been strengthened through changes in the call structure in favour of Less Developed Regions. Figure 5 shows the general distribution of I3 participants across cohesion groups per call, which is aligned with the intention of the different strands. For strand INV1, the calls for proposals attract a very high proportion of over 60% of participants from More Developed Regions. This is not surprising due to the strands logic of strengthening European competitiveness by supporting innovation in commercialisation and scale-up. In this regard, advanced regions with greater capacities have more products, services, or production and processes exploit und thus better chance in receiving funding. Nevertheless, it

[24] See European Innovation Scoreboard (2025): Regional Innovation Scoreboard, EIS interactive tool 2025 | Research and Innovation.

should be highlighted that across the past INV1-calls the share of Less Developed Regions has significantly increased.

As anticipated, the Strand INV2a call reveals an overall more equal participation of MDRs, TRs and LDRs. In the INV2a strand, the pattern shifted significantly from a mix that still privileged More Developed Regions in 2021 to one that has a very high participation from LDRs that resembles CAP2b levels. However, the increase in LDR participation is primarily due to the focus on innovation diffusion and increasing the capacity of regional innovation ecosystems in LDRs by connecting them with regions where such capacity is more advanced. Likewise, this is evident in Strand Cap2b, which produced also high participation from LDRs (around 45%), although this is slightly lower in favour of a higher proportion of TRs.

Figure 5: Distribution of I3 participants by call strand and cohesion group



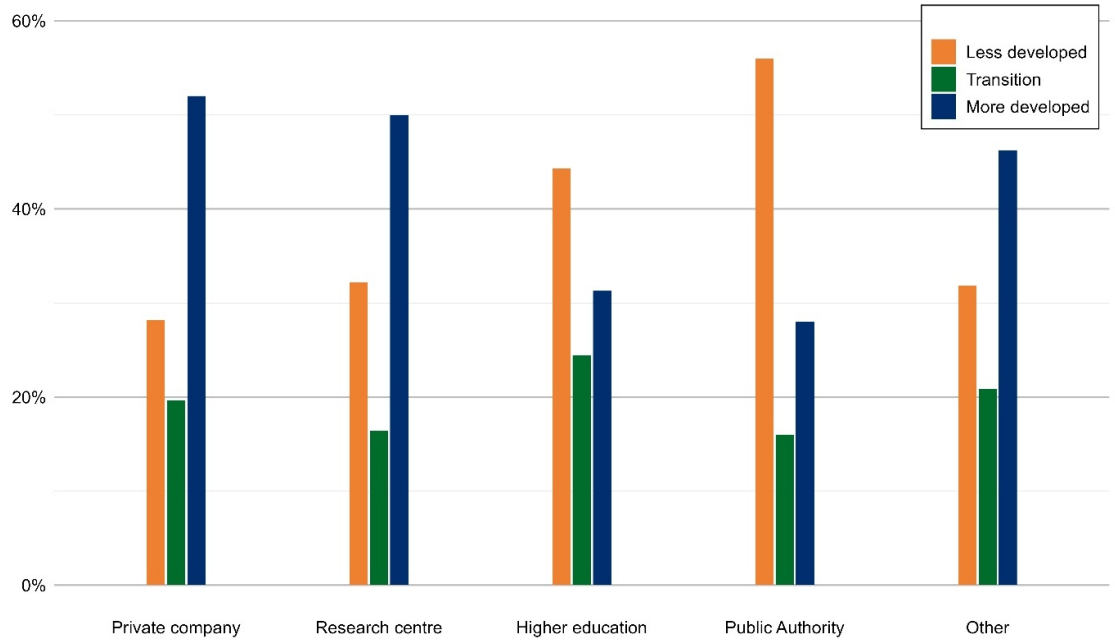
Source: I3SF (2025) based on I3 project data set (last updated September 1st, 2025).

I3 projects include a variety of actors, ranging from private companies to research centres and higher education as well as public authorities and intermediary organisations. Figure 6 shows the distribution of I3 participants by type of organisation indicating a clear distinction between More Developed and Less Developed Regions. In contrast, transition regions are equally represented in all types of organisations but account the smallest share for all organisational types.

More Developed Regions are significantly more represented in private companies and research institutions, with over 40% in each case, as well as in the 'Other' category, which mainly includes trade associations and cluster

organisations. On the other hand, LDRs mainly participate in I3 consortia through public authorities and higher education institutions.

Figure 6: Distribution of I3 participants by type of organisation and cohesion group



Source: I3SF (2025) based on I3 project data set (last updated September 1st, 2025).

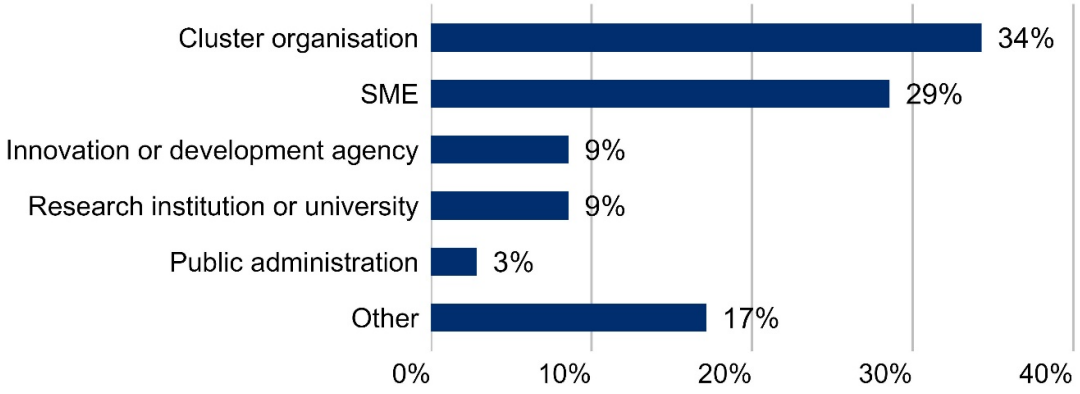
The distribution by type of organisation across cohesion group reflects structural differences between Less Developed and More Developed Regions. MDRs typically have stronger industrial bases equipping them to take over leading coordination roles and fostering SME engagement. This is because they often host larger, more resourceful firms with established networks, making it easier for them to orchestrate partnerships, secure funding, and drive value chain integration. The innovation capacity of LDRs remains anchored in higher education institutions which may have more institutional capacities, especially relative to the private sector in these kinds of regions. LDRs have fewer and smaller private companies with capacities to engage in interregional partnerships, often due to resource constraints, risk aversion, and insufficient digitisation strategies, leading to lower participation in collaborative initiatives and a focus on absorptive rather than generative innovation (see also section 2.2.1).

This pattern is not unique to the I3 Instrument but mirrors broader EU trends in regional innovation disparities. Nevertheless, when looking the engagement of private companies across call strands, it should be noted that share or private companies from LDRs has increased over the past calls, particularly, in strand 1. This indicates that adjustments of the call structure have contributed to improved SME engagement.

2.1.2. Prior collaboration patterns and project inception

The I3 projects are largely business-driven with nearly two-thirds being initiated by SMEs or cluster organisations and build upon prior collaboration, therefore, EU networks are essential. The origins of the projects (Figure 7) reveal the relevance of cluster organisations, which were responsible for initiating the collaboration processes that led to I3 projects in 34% of cases. SMEs are also key initiators accounting for 29% of surveyed I3 projects, hence underlining, the importance of SMEs as key actors in Europe's industrial transformation. Research institutions and innovation and development agencies contributed 9% and 6%, respectively, to the collaboration processes that led to the I3 projects. Among the actors mentioned under the category “Other” are networks such as the Blue Economy Network, EDIH, the Circular Economy Hub and business support organisations.

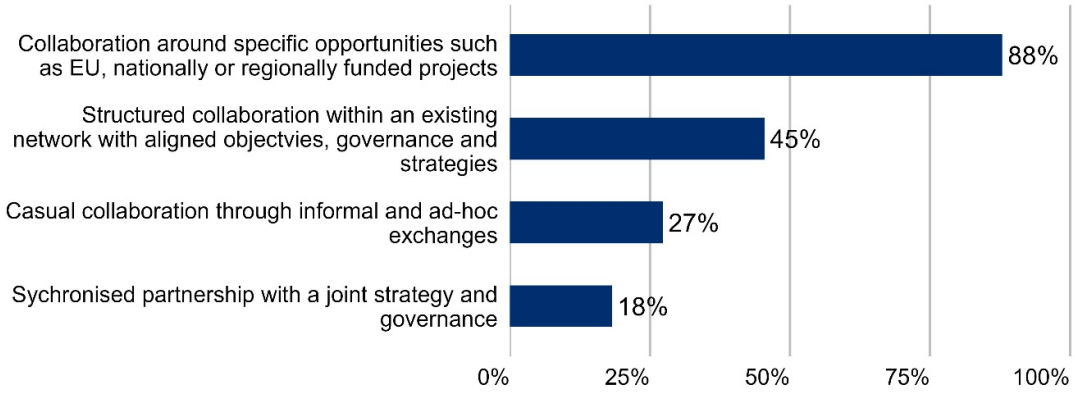
Figure 7: Type of organisation that initiated the collaboration process leading to the I3 project



Source: I3SF (2025) based on I3 Survey 2025, latest results: 15.09.2025, n = 36.

The I3 projects largely emerge from existing collaboration as Figure 7 reflects. In total, 91% of the surveyed project coordinators (n = 36) indicate that at least some of the consortium members had collaborated previously. These collaborations took various forms, with most focusing on specific opportunities such as EU, nationally or regionally funded projects (Figure 8). Nearly all I3 consortia (90%) have a background in previous project collaborations with public funding (EU, national or regional). Almost half (45%) had been previously collaborating through institutionalised networks. Other, less relevant formats included informal and ad hoc exchanges as well as synchronised partnerships with a common strategy and governance.

Figure 8: Format of previous collaboration



Source: I3SF (2025) based on I3 Survey 2025, latest results: 15.09.2025, n = 36 (multiple answers possible).

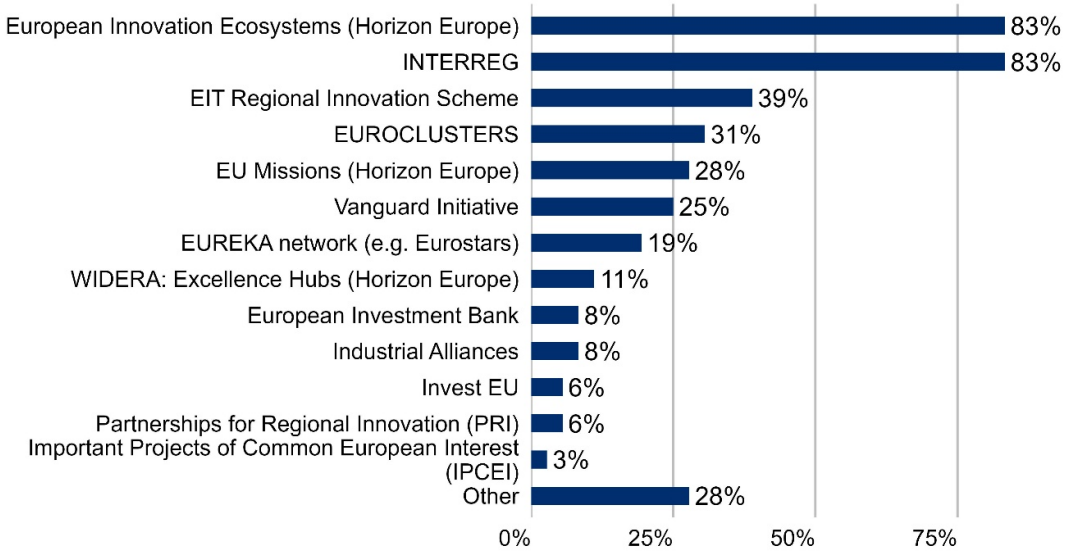
The findings on previous collaboration patterns underline that long-term interregional innovation and value chains build on established and tested collaboration. This is linked to the high resource investments required for initiating EU collaboration, for example, in terms of coordination efforts.[25] While these established collaboration patterns contribute to reducing fragmentation and barriers, this trend may limit access to applicants without a large network and less connections.

In terms of previous involvement with EU programmes (both central programmes managed by the EU and regional programmes under shared management), the majority of partners (80%) have previous experience with EU programmes. Specifically, 58% of respondents reported that most partners in their consortium already have such experience, while a further 22% indicated that all partners are experienced participants.

When examining the specific EU programmes that partners have experience with, the results reveal a strong preference for European Innovation Ecosystems (Horizon Europe) and INTERREG, both of which were referred to by 83% of the respondents. Further relevant programmes include the EIT Regional Innovation Scheme (39%), EUROCLUSTERS (31%), and EU Missions under Horizon Europe (28%). Additionally, 25% of respondents already participated in the Vanguard Initiative. Overall, these programmes widely cover the funding landscape for innovation activities, ranging from capacity-building, research and development collaboration to support to close-to-market projects.

[25] See for example TNO et al. (2024) Interregional innovation corridors, Primer Series.

Figure 9: EU Programmes that the partners have previously participated in



Source: I3SF (2025) based on I3 Survey 2025, latest results: 15.09.2025, n = 36 (multiple answers possible)

The survey demonstrates that 38% of the I3 projects both investment and capacity-building projects - emerged from a previous project, particularly funded under Horizon 2020. For instance, DIGIT-PRE was developed from the Horizon 2020 project Cross4Health, while NACHIP stemmed from the Horizon project NAHV. The capacity-building initiative SmartVitiNet was built upon the Oenobotics project, another Horizon 2020 endeavour. Furthermore, several partners from the I3 BRIDGE project, particularly through EIT Health and cluster collaborations, have cooperated before, ensuring a solid foundation. Relevant experiences include EIT Jumpstarter and InnoStars Connect, 'which serve as proven models now being extended to Campania and Silesia'.[26] More examples can be found in the box below.

[26] Source: I3SF (2025) based on Project description of the BRIDGE I3 project, see Biomanufacturing Regions for Integrated Development and Growth in the Ecosystems | I3 Instrument Support Facility

Box 3: Links between I3 projects and previous collaboration under Horizon programme

The HEALTHCHAIN I3 builds upon the outcomes from the previous Horizon 2020 project, inDEMAND, along with its associated spin-out projects that established a strong network of partners. With a proven methodology in place, the identification of key profiles was streamlined through this prior collaboration. As demonstrated in earlier experiences, effective teamwork in co-creation activities often requires a considerable amount of time to develop. To mitigate this, extensive preparatory work for HEALTHCHAIN was conducted during the proposal stage, enabling the team to commence development immediately upon project initiation.

The AGRI PET MRI I3 project was launched at the Otto von Guericke University of Magdeburg in Germany. The collaboration was facilitated by the prior experience of 2 of the 4 partners who had worked together on the H2020 project PETAL, laying a solid foundation for a successful I3 application. These partners initially developed their research under Horizon and are now expanding it with support from the I3 Instrument.

Source: Analysis of the implementation of the I3 Instrument as perceived by the first generation of I3 consortia. Insight report. June 2024.

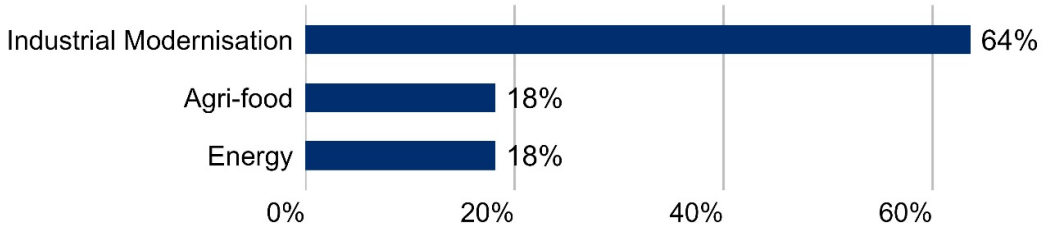
Other surveyed I3 projects were initiated through Interreg projects, such as INSHAPE (Inno4Sport) and Baltic MUPPETS (Interreg Baltic Blue Growth). For instance, Baltic MUPPETS is the result of many collaborations over the last decade, including the Baltic Blue Growth Interreg project to promote innovative and sustainable use of marine resources. Three of the current Baltic Muppets partners were involved in the Baltic Growth project.[27] The Interreg project was instrumental in promoting the first generation of blue mussel farming in the Baltic Sea. The research institutions and universities involved in these previous projects played a key role in synthesising state-of-the-art mapping and identifying gaps (market, legislation, research/knowledge), thereby laying the foundation for the Baltic MUPPETS project. Additionally, the capacity-building initiative GreenStep was created from the Euroclusters project INGENIOUS, while another capacity-building project, InnoMedCatalyst, originated from MEDIC NEST (COSME).

Furthermore, the I3 projects are integrated into the Smart Specialisation Strategies (S3), notably through collaboration within their Thematic Platforms and Partnerships. In this respect, 38% of the I3 projects covered in this survey resulted from collaborations via an S3 thematic platform. As shown in Figure 10, two-thirds of previous S3 Thematic Platform experiences being realm of Industrial Modernisation (e.g., REGIOGREENTEX, SMART-Growth, 3DoP, INSHAPE, InnoMedCatalyst, AMBITIOUS projects), followed by the Agri-food (e.g.,

[27] Analysis of the implementation of the I3 Instrument as perceived by the first generation of I3 consortia. Insight report. June 2024.

Biotech4Food and HIGHFIVE projects) and Energy (Hy2Market and NACHIP projects), each with 18.2%.

Figure 10: S3 Thematic Platforms that preceded the I3 project



Source: I3SF (2025) based on I3 Survey 2025, latest results: 15.09.2025, n = 11.

Overall, these examples reinforce the addressed importance of establishing collaboration pattern over time. They furthermore indicate synergies between the I3 instrument and programmes positioned earlier on the interregional innovation journey such as Horizon.

2.1.3. Involvement of LDR in innovation networks

This section expands the analysis of collaborative activities by including secondary data such as the CORDIS dataset for Horizon Europe projects and the OECD REGPAT database for patent application. While data from the Horizon Europe programme provides valuable insights into the interregional collaborations induced by the European Union, patent applications allow for a deeper investigation of the actual innovation activities and knowledge transfers between regions. By contrasting these datasets with I3 projects and their resulting collaboration networks, the analysis highlights how the I3 instrument created additional and new connectivity for regions that are otherwise less involved in Horizon Europe or patent-based networks. This **comparative perspective underlines the cohesion function of I3**, demonstrating that the instrument actively **strengthens the integration of Less Developed Regions into European value chains and innovation ecosystems**.

The analysis of these collaboration networks is based on the construction of interregional linkages that arise when actors from different regions participate jointly in a project or patent application.

Particularly in research on quantifying and mapping interregional knowledge flows, co-involvement analyses, where regions are linked through joint participation, represent the most common approach,[28] and are widely applied in

[28] Kruse, M. (2024). Inter-organisational sustainability cooperation among european regions and the role of smart specialisation. *Journal of the Knowledge Economy*, *15*(4), 16735-16779.

studies of collaborative research and EU programmes initiatives [29]. Box 4 illustrates more detailed information on the operationalisation of interregional linkages.

The interregional linkages are subsequently assigned to the categories of regions[30] ("Less Developed Regions", "Transition regions" and "More Developed Regions") corresponding to the regions involved. It is therefore important to emphasise that this approach does not include interregional linkages to regions that are not classified by the categories of the regions such as regions from non-EU member states as Switzerland.

Box 4: Operationalisation of interregional linkages from I3, Horizon Europe and patent applications

Interregional linkages are defined as pair-wise collaborative relationships between two regions that occur when at least one actor from each region jointly participates in the same project. For patent applications, an interregional linkage is created through co-inventorship, meaning inventors from different regions appear in the same patent document. Since the underlying entities are organisations or inventors, their locations serve as proxies for assigning collaborations to NUTS 2 regions. All entities within the same region are aggregated so that each region appears only once per project or patent.

To illustrate the operationalisation of interregional linkages described above, the NUTS 2 region Prov. Limburg (BE22) participates in two I3 projects: HeatInvest (via WONEN IN LIMBURG) and CLOSER (via OUT OF USE and SOLTECH). The HeatInvest consortium includes 18 other EU27 regions, while CLOSER involves 13 additional regions. Since each project creates one connection between Prov. Limburg (BE22) and every other participating region, these two project involvements result in a total of 32 interregional linkages for Prov. Limburg (BE22).

The same counting principle applies at consortium level: In the project "Closer", 19 unique NUTS-2 regions are represented (excluding regions from non-EU member). Here, an interregional linkage is created between every pair of regions participating in this project. For instance, the region BE22 forms 18 linkages to the other regions in this consortium. Summing this across all 19 regions results in 19 × 18 = 342 linkages.

Table 1 presents the descriptive analysis of interregional linkages created through I3 projects, projects in Horizon Europe and co-inventorship in patent

[29] Amoroso, S., Coad, A., & Grassano, N. (2020). & Balland, P. A., Boschma, R., & Ravet, J. (2019). Network dynamics in collaborative research in the EU, 2003–2017. *European Planning Studies*, *27*(9), 1811-1837 & Peñalosa, P., & Castaldi, C. (2024). Horizon Europe: a green window of opportunity for european peripheral regions?. *Review of Regional Research*, *44*(3), 251-285. Wanzenboeck, I., Scherngell, T., & Brenner, T. (2014). Embeddedness of regions in European knowledge networks: a comparative analysis of inter-regional R&D collaborations, co-patents and co-publications. *The Annals of Regional Science*, *53*(2), 337-368

[30] Used, for instance, to determine the extent to which regions are eligible for support from the Cohesion Fund in the period 2021-2027.

applications, subdivided according to the different cohesion groups. **In total, 9,768 pair-wise interregional linkages were identified, each representing a connection between two regions where actors located therein jointly participate and thus collaborate in the same I3 project[31]. The majority of those collaboration linkages are cross-border[32] (89.5%), while only 10.5% remain within the same country.** This highlights the overarching outward-perspective of collaboration in I3 across national borders, which potentially strengthens innovation capacity and knowledge exchange in the EU. The analysis further illustrates that More Developed Regions take a focal point in the collaborations within I3 projects. **Around 47% of interregional collaborations between two regions (Total of 4,617) involve at least one actor from a More Developed Region.** The most frequent collaborations take place between MDRs (23.36%), which underscores the importance of these regions as hubs for interregional exchange and collaboration (cell in blue). With regard to LDR, there are a total of 3,082 interregional linkages by the I3 projects, accounting for 31.55% of all connections(cell in orange). LDRs collaborate most with MDRs, but also to a considerable extent within the same cohesion group (11.28%). In total there are 1,102 interregional linkages from a LDR to another LDR (cell in green). Transition regions, on the other hand, account for the fewest collaborations within the I3 and are involved in only 21.18% of collaborations that arise between two regions.

Table 1: Interregional linkages through I3 projects, projects in Horizon Europe and co-inventorship in patent applications

Interregional Linkages						
Originating from	Total	Within country	Cross-border	To other Less Developed Regions	To other Transition regions	To other More Developed Region
Interregional Innovation Investment (I3) Instrument						
Less Developed Regions	3,082 (31.55 %)	285 (2.92 %)	2,797 (28.63 %)	1,102 (11.28 %)	625 (6.40 %)	1,355 (13.87 %)
Transition regions	2,069 (21.18 %)	235 (2.41 %)	1,834 (18.78 %)	625 (6.40 %)	464 (4.75 %)	980 (10.03 %)
More Developed Region	4,617 (47.27 %)	506 (5.18 %)	4,111 (42.09 %)	1,355 (13.87 %)	980 (10.03 %)	2,282 (23.36 %)

[31] This figure results from summing all values in the "Total" column within « Interregional Innovation Investment (I3) Instrument » across the three originating regional types (Less Developed, Transition, and More Developed Regions).

[32] "Cross-border" indicates that these linkages involve organisations from different countries. This figure results from summing all values in the "Cross-border" column across the three originating regional types (Less Developed, Transition, and More Developed Regions).

Interregional Linkages						
Horizon Europe						
Less Developed Regions	83,942 (12.30 %)	6,063 (0.89 %)	77,879 (11.41 %)	12,268 (1.80 %)	16,426 (2.41 %)	55,248 (8.10 %)
Transition regions	124,048 (18.18 %)	11,778 (1.73 %)	112,270 (16.45 %)	16,426 (2.41 %)	23,088 (3.38 %)	84,534 (12.39 %)
More Developed Regions	474,430 (69.52 %)	44,809 (6.57 %)	429,621 (62.96 %)	55,248 (8.10 %)	84,534 (12.39 %)	334,648 (49.04 %)
Patent applications						
Less Developed Regions	3,285 (5.30 %)	2,120 (3.42 %)	1,165 (1.88 %)	1,116 (1.80 %)	421 (0.68 %)	1,748 (2.82 %)
Transition regions	9,322 (15.04 %)	6,792 (10.96 %)	2,530 (4.08 %)	421 (0.68 %)	2,366 (3.82 %)	6,535 (10.54 %)
More Developed Region	49,375 (79.66 %)	36,758 (59.30 %)	1,2617 (20.36 %)	1,748 (2.82 %)	6,535 (10.54 %)	41,092 (66.30 %)

Note: The respective cells indicate the number of linkages and their share relative to the total number of linkages by I3, Horizon Europe or patent applications in parentheses. The table should be read as follows: the rows provide information about the regional type from which the interregional linkages originate, while the columns show their total number of linkages, their distribution by type of collaboration (within the country, between countries) and by regional type of the collaborating regions.

Source: I3SF (2025) based on I3 project data, last updated September 1st, 2025, n = 70; CORDIS - EU research projects under HORIZON EUROPE (2021-2027), Publications Office of the European Union, last updated August 12th, 2025, n = 16,878; OECD REGPAT database, latest update May 2025, n = 78,280

Based on the Horizon Europe programme[33], a total of 682,420 collaborative linkages[34] were identified. Similar to the I3, with a focus on cross-border collaborations, which account for 90.82% of total linkages. However, the distribution across cohesion groups differs from I3. LDRs are involved in 83,942 interregional linkages, which represents only 12.30% of all connections within Horizon Europe projects. While the share of collaborations between two LDRs account for more than 11% in I3 projects, they represent only 1.8% of all interregional linkages in Horizon Europe (cell in blue). In contrast to I3, the participation of transition regions in Horizon Europe is stronger than that of Less Developed Regions. Furthermore, the participation of MDRs is much more dominant, as almost 70% of all interregional linkages created through joint Horizon Europe projects involve at least one More Developed Region.

[33] The CORDIS (Community Research and Development Information Service) database provides details on research projects funded Horizon Europe framework programme for research and innovation from 2021 to 2027. In this regard, collaboration between participating organisations is considered as a proxy for the respective regions, with each unique project being assigned to the region only once. The geographical location of these organisations in different NUTS-2 regions allows the same approach to be used for I3 to capture patterns of collaboration between regions.

[34] This figure results from summing all values in the “Total” column within « Horizon Europe» across the three originating regional types (Less Developed, Transition, and More Developed Regions).

Finally, the descriptive statistics of the collaboration pattern in patent activities[35] in European regions clearly show that the MDRs are key drivers of patent collaboration, accounting for nearly 80% of all interregional collaboration linkages. In contrast, the participation of LDRs in these activities is marginal, with only around 5,3% of collaborations involving at least one LDR. This indicates a significant discrepancy in activity between LDRs and the other regional types. With less than 1% of all collaborative activities, the connectivity between Less Developed Regions (LDR) and transition regions (TR) is minimal. Furthermore, the analysis shows that the majority of interregional collaborations take place within the same countries, which contrasts with the I3 and Horizon Europe projects, where cross-border collaborations are more relevant.

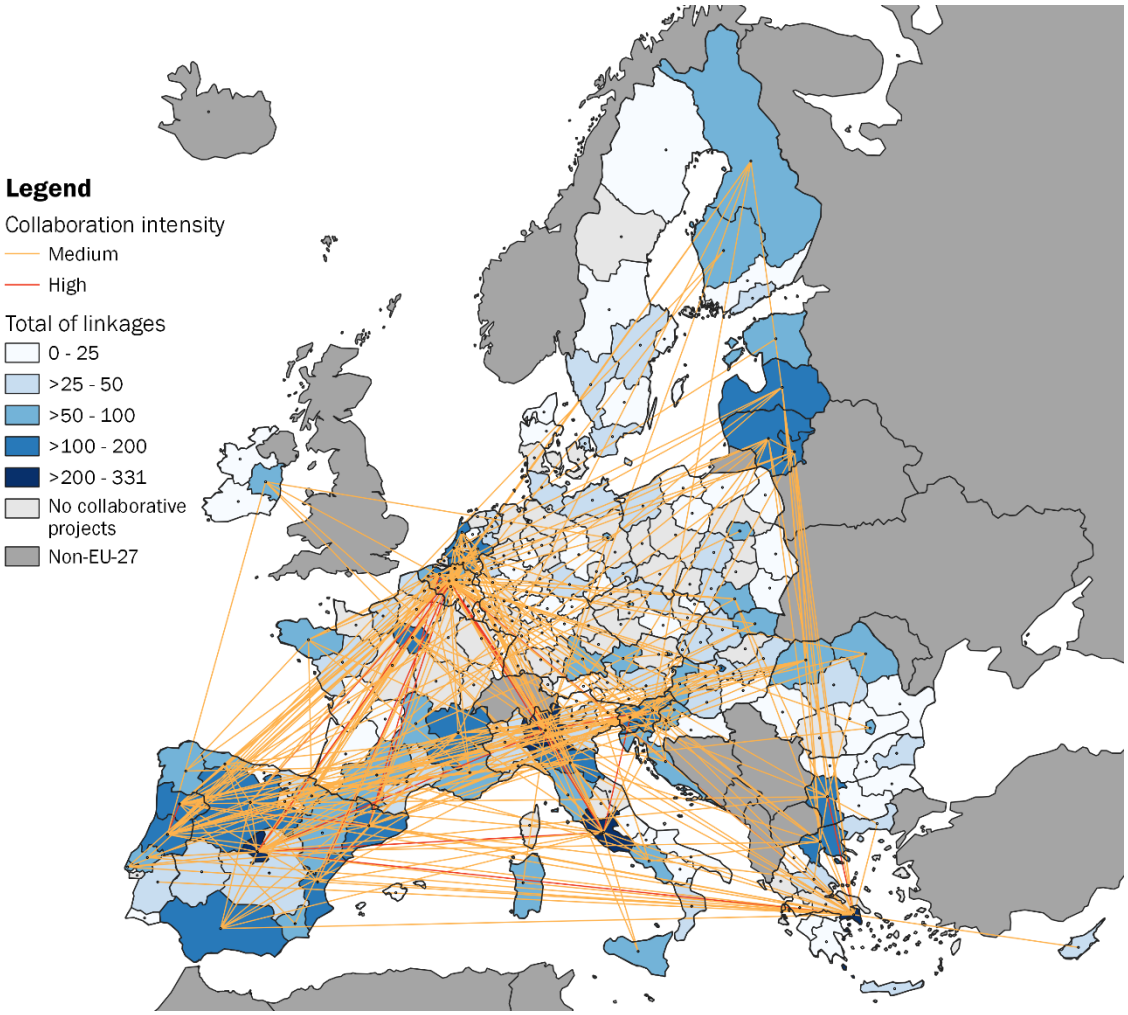
Taken together, the analysis of interregional collaboration patterns across the different datasets shows that the I3 initiative does not reproduce existing collaboration pattern but makes a significant contribution to the integration of Less Developed Regions (LDRs). **From this perspective, a major success of the I3 projects is that they provide the LDRs with a platform to become more involved in the interregional collaboration networks of the European Union, which are in many cases more strongly influenced by the More Developed Regions (MDRs).**

The I3 Instrument simultaneously attracts Europe's capital cities and innovation hubs (e.g., Brussels, Madrid, Milan) alongside Less Developed Regions. Figure 11 visualises the interregional collaboration networks through I3 between the various NUTS 2 regions within the European Union.[36] Lombardia (ITC4) and Lazio (ITI4) have the highest number of linkages between regions through I3, with 11 common I3 projects.

[35] To analyse the collaboration network constructed through regionalised patent applications, the inventor's residence in each patent document were used to determine how often inventors living in different NUTS-2 regions collaborated in the development of patents between 2021-2024. For this purpose, the OECD REGPAT database (May 2025) is used that fully derives the European Patent Office's (EPO) Worldwide Statistical Patent Database (PATSTAT Global, Autumn 2024). Patents may involve multiple inventors also from different regions. However, they are considered indivisible assets that are fully allocated to individual regions, with each patent being accounted only once per region.

[36] Figure 11 provides a useful visualisation of the structure and geographical distribution of the collaboration networks. However, the network representation is a simplification of the full network for reasons of visual clarity. Linkages between two regions are excluded if they fall below the 20th percentile of the total number of collaborations. Linkages between two regions with a medium collaboration intensity (4-7 linkages), covering the range up to the 50th percentile, are represented in orange. Linkages exceeding the 50th percentile are highlighted in red as strong collaboration intensity. Further, the respective regions are coloured in blue according to the total number of collaborations. This approach is also applied to Figures 12 and 13.

Figure 11: Interregional linkages between I3 projects



Source: I3SF (2025) based on I3 project data set, last updated September 1st, 2025.

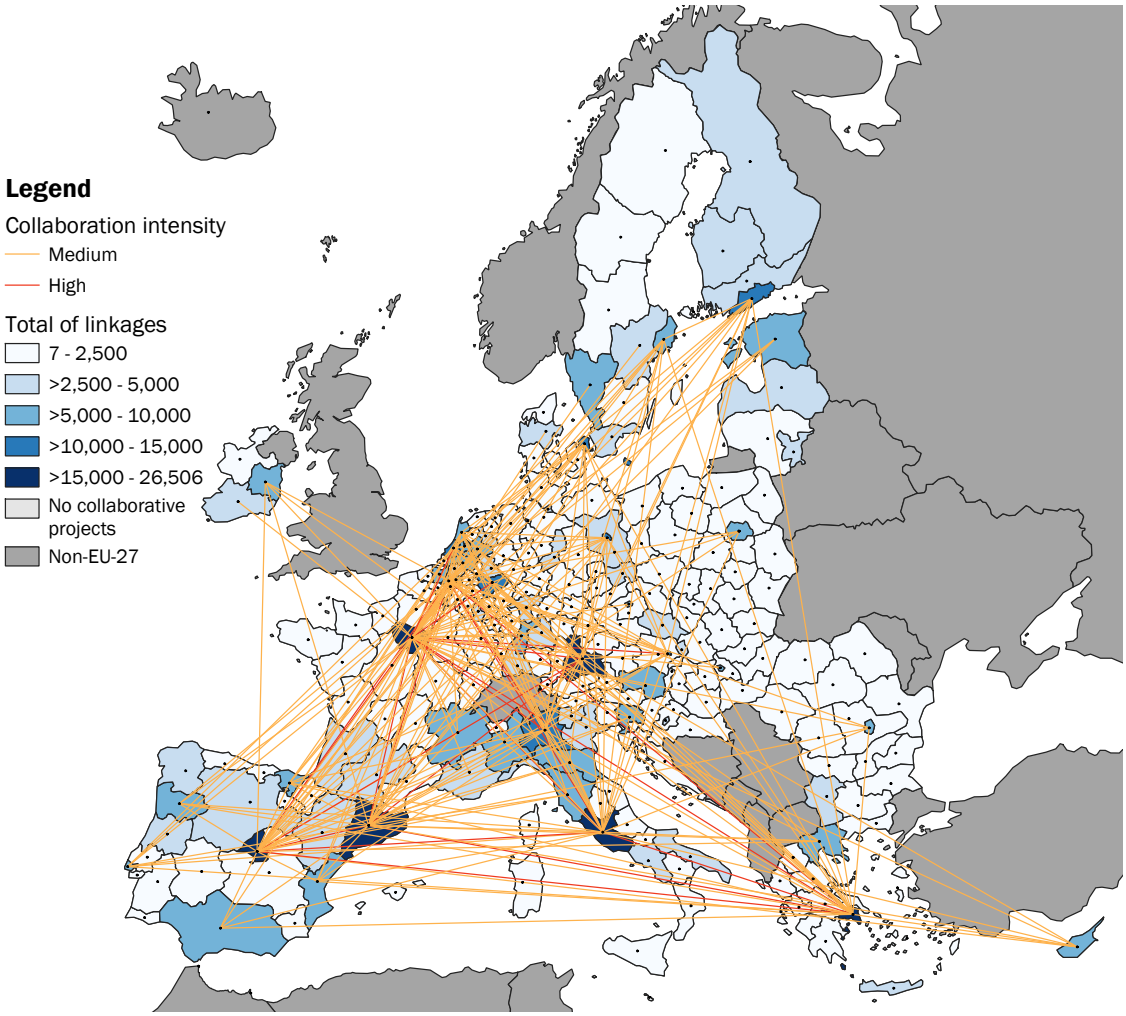
Focusing on the Less Developed Regions, Vzhodna Slovenija (SI03) has a total of 9 linkages to the More Developed Region Zahodna Slovenija (SI04). The map shows an interesting distribution of interregional connections across European regions. The low participation of Eastern European regions and some German regions is particularly striking. In contrast, a strong axis has formed between Belgium, Italy and Spain. Portuguese and French regions, as well as regions in the western Mediterranean in general, are also strongly involved. Large parts of the Netherlands also have numerous connections, but the frequency of the number of linkages to their collaboration partners is comparatively low and therefore not visualised. The most important hubs in the collaboration network in terms of the number of total linkages include Brussels (BE10)[37], Lombardia (ITC4), Comunidad de Madrid (ES30) and Lazio (ITI4), which are all More Developed Regions with more than 200 linkages. The only region that is not a More Developed region with over 200 linkages is the transition region Attiki

[37] In this context, however, it is again important to note that many organisations have their headquarters in Brussels (BE10), which leads to numerous projects being attributed to this region.

(EL30), followed by the Less Developed Regions Vzhodna Slovenija (SI03) and Norte (PT11) with respectively 187 and 181 linkages to other regions through joint I3 projects.

To compare, the visualisation of the interregional collaboration patterns in Horizon Europe projects in Figure 12 reveals Europe's capital cities and innovative centres including Paris (FR10), Brussels (BE10), Comunidad de Madrid (ES30), Lazio (ITI4), Cataluña (ES51), Attiki (EL30) and Oberbayern (DE21) as central hubs with over 15,000 linkages. As with the I3 projects, strong agglomerations can be found in Belgium and the Netherlands. In addition, there are numerous connections in Spanish and Italian regions as well as in the Alpine region. Similar to the I3 projects, there is a widespread lower participation of German and eastern European regions in collaborative activities in Horizon Europe. In these regions, as well as in France, Denmark and Finland, there is a centralisation of Horizon Europe projects carried out in collaboration with other regions in the respective capitals. In terms of single linkages, the MDRs dominate with the highest number of linkages, in particular the connection between Paris (FR10) and Brussels (BE10), which are represented in 863 joint Horizon Europe projects. As the first LDR, Kentriki Makedonia (EL52) appears with 351 linkages to Attiki (EL30). Kentriki Makedonia (EL52) is the LDR with the highest collaborative activity, with 7,221 linkages in total.

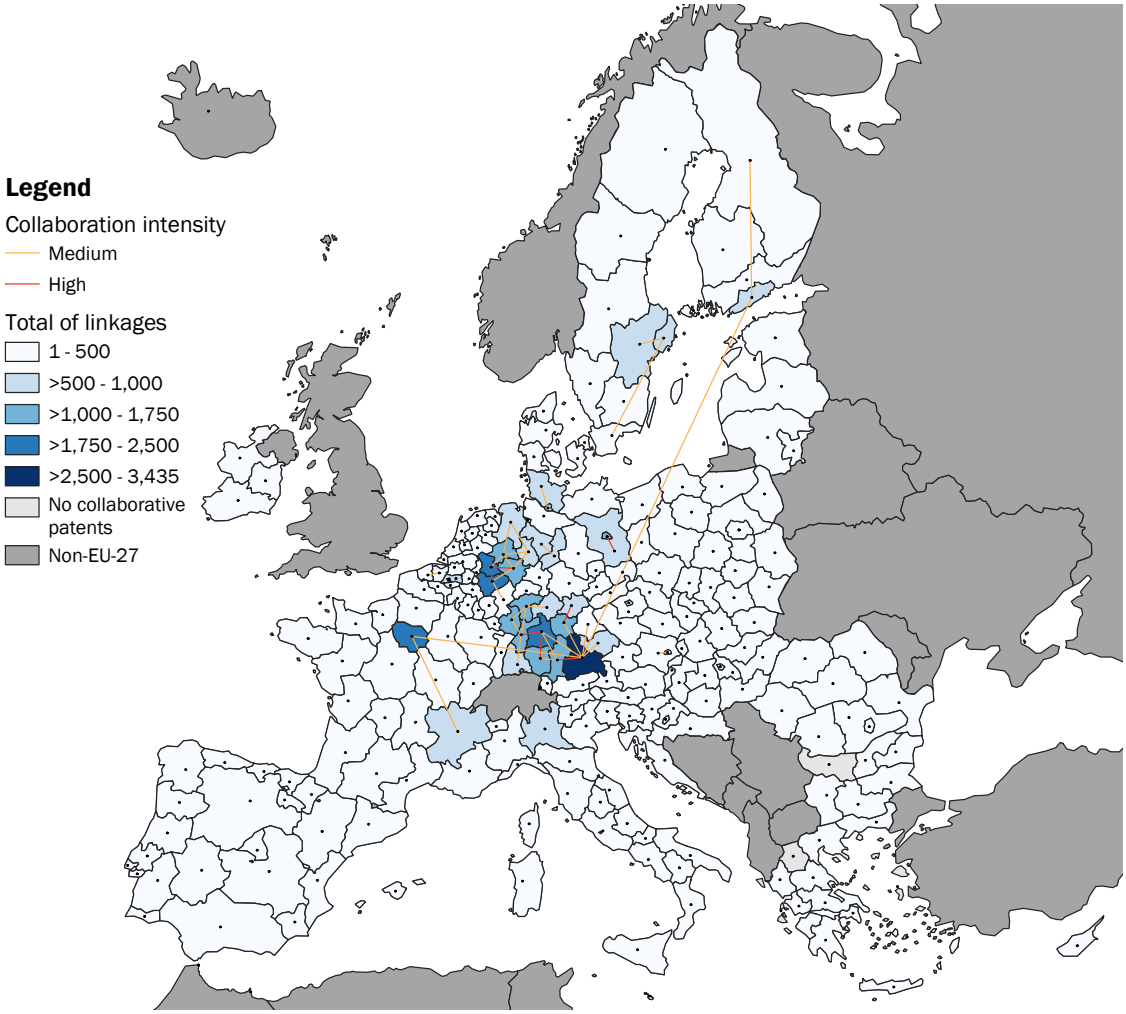
Figure 12: Interregional linkages between Horizon Europe projects



Source: I3SF (2025) based on CORDIS - EU research projects under HORIZON EUROPE (2021-2027), Publications Office of the European Union, last updated August 12th, 2025.

Figure 13 illustrates the most important interregional collaboration linkages based on patent applications, shows a clear concentration in a small number of regions, particularly in Central Europe, with Germany playing a prominent role. Oberbayern (DE21) has the most linkages through co-inventorship in patent applications, with 3,435, followed by Düsseldorf (DEA1), Stuttgart (DE11) and Köln (DEA2), each with slightly over 2,000 linkages. Among the transition regions (TR), Brandenburg (DE40) has the most collaborations with 621 linkages. For the LDRs, Dél-Alföld (HU33) has the most collaborations with a total of 242 linkages. Other important regions in the network of collaborative patent applications include Paris (FR10), Rhône-Alpes (FRK2), Lombardia (ITC4), Stockholm (SE11) and Helsinki-Uusimaa (FI1B).

Figure 13: Interregional linkages through co-inventorship in patent applications



Source: I3SF (2025) based on OECD REGPAT database, latest update May 2025.

The construction of interregional linkages implies that region participating in a larger number of I3 or Horizon Europe projects, or in more patent collaborations, tend to have more interregional linkages. Regions with a higher number of linkages therefore tend to be more central and thus take a more important role in the collaboration network.[38] Deepened insights to the collaboration networks, can be gained from network analyses and centrality measures[39], as shown in Table 2. Here, the average values of the regions in the respective cohesion groups are presented. The centrality measures allow conclusions to be drawn about improved integration of Less Developed Regions in comparison, for example, to collaboration networks that result from joint Horizon Europe projects or patent applications between two regions.

[38] Balland, P. A., Boschma, R., & Ravet, J. (2019). & Peñalosa, P., & Castaldi, C. (2024).

[39] Similar network-based approaches have been widely applied in empirical studies analysing collaboration patterns in EU research programmes, including FP7, Horizon 2020 and Horizon Europe (see e.g. Amoroso et al., 2020; Balland et al., 2019; Wanzenböck et al., 2014; Kruse, 2024; Peñalosa & Castaldi, 2024).

Table 2: Centrality measures of collaboration networks

Regional Type	Linkages	Degree Centrality	Eigenvector Centrality	Closeness Centrality
I3 Collaboration Network				
Less Developed	49.71	36.9	0.16	0.89
Transition	44.98	34.07	0.15	0.86
More Developed	66.91	46.07	0.21	0.94
Horizon Europe Collaboration Network				
Less Developed	1,062.56	145	0.04	9.4
Transition	1,851.46	173.21	0.07	12.28
More Developed	4,994	199.37	0.2	14.42
Patent Application Network				
Less Developed	43.22	12.99	-	-
Transition	139.13	28.06	-	-
More Developed	519.74	54.41	-	-

Source: I3SF (2025) based on I3 project data, CORDIS Horizon Europe data, and OECD REGPAT patent data.[40]

The descriptive centrality measures reveal a pronounced hierarchy in the collaboration network, with More Developed Regions representing the most important hubs of collaborative activities for all three datasets. However, **the gap between the Less Developed Regions and the transition regions in the integration of the collaboration network in I3 appears rather small, especially in comparison to the networks constructed by joint Horizon Europe projects or patent applications.** The centrality measures within the I3 collaboration networks shows that Less Developed Regions are relatively well integrated with and even exceeds that of transition regions. This is reflected both in the average number of linkages and in the number of unique collaboration regions. In addition, LDRs have, on average, potentially greater influence than TRs, which arises from connections to well-networked regions, as well as greater reachability within the entire collaboration network. Also in this context, the centrality measures identify the MDRs as central hubs in the network. Although

[40] The column Linkages indicates the average number of connections that a region in this cohesion group has. The degree centrality quantifies the average number of unique partner regions connected to regions in this cohesion group through joint projects or co-inventorships, indicating the connectivity level within the network. Eigenvector centrality reflects how central each region is in the network by taking into account the centrality of the regions it is connected to. The value shown represents the average eigenvector centrality of all regions within the corresponding cohesion group. In this regard, regions that are strongly connected to other influential regions receive higher values. Eigenvector centrality is scaled between 0 and 1. The closeness centrality, on the other hand, measures how close a region of this regional type is on average to all other regions within the collaboration network. The closeness is defined as the inverse of the sum of distances to all other regions in the collaboration network, with many joint projects counting as shorter connections. However, it is important to emphasise that the centrality values across the three networks (I3, Horizon Europe, and Patent applications) are not directly comparable, as each dataset represents a different network graph with varying node coverage and connectivity. Instead, comparisons should focus on the relative positions and gaps of the regional types within each network and only then contrast these within-network patterns across datasets.

the gaps between the LDRs and TRs are small, the role of the MDRs remains decisive when it comes to participation in collaboration.[41]

The findings underline that I3 clearly fulfils its cohesion role. The I3 instrument succeeds in integrating Less Developed Regions to EU innovation networks. It simultaneously attracts Europe's capital cities and innovation hubs contributing to a higher level of connectivity between Less Developed and More Reveloped Regions.

[41] In contrast to the I3 collaboration networks, the differences in centrality measures are pronounced in Horizon Europe projects, showing a significant dominance of More Developed Regions. This is particularly evident in the mere number of linkages, but also in the connections with central regions themselves. The TRs has surpassed the LDRs and demonstrate on average a better integration within the Horizon Europe project network. The strong hierarchy in collaborations is even more evident in patent applications, where the central position of MDRs is much more pronounced and LDRs lag far behind. Compared to TRs, LDRs also have significantly fewer connections in general and to unique regions. In addition, the average value of the eigenvector suggests that regions in the LDR have barely any connections to regions that themselves have a high degree of centrality in the collaboration network. In the case of patent applications, the value of closeness centrality has been omitted due to the lack of a fully connected network.

2.2. Innovation dimention

Key findings on the interregional dimension of I3

- **Investments projects have made significant progress in the Technology Readiness Levels (TRLs)** advancing from over 80% of projects initially estimating themselves at TRL 6 to more than 75% now (Q3 2025) at TRL 7 and approximately 20% at TRL 8. Furthermore, 90% of surveyed project coordinators anticipate that pilots and demonstrators will reach TRLs 8 or 9 by the end of the project.
- **I3 projects are strongly business-driven:** 63% of projects initiated by cluster organisation of SMEs**.**
- **Capacity-building projects are preparing further action:** 90% target next I3 calls and are developing business cases accordingly.
- **Mentioned challenges** to implementation include varying regional capacities (both business and institutional).
- **S3 provides a strategic framework for interregional collaboration** as around 50% of the I3 projects are aligned with S3 Platforms.
- **Around 41% of projects directly interact with ERDF authorities**, representing a slight increase compared to the 2024 survey (33%).
- **Cluster organisation** are becoming more important, being involved in 84% of the suveryed projects.

Innovation is the ultimate goal of the I3 instrument and the raison d'être of its other two components, interregional collaboration and investment. This subchapter shows, however, how innovation projects are deeply embedded in the processes of network creation and management by looking, first, at factors of project implementation, second, overall value chain and ecosystem development, and, finally, the outputs and outcomes that emerge from I3 collaborations.

2.2.1. Project implementation

Project implementation can, on the most abstract level, be observed in terms of progress made along the Technology Readiness Levels (TRLs). TRLs are a metric widely used to measure the maturity of technologies from early concept to full operational implementation. It provides a standardised, technology-neutral framework to assess technological progress and is used in the EU context, for example under the Horizon Europe programme, as a tracking

tool for monitoring and evaluation[42]. Being focussed on commercialisation and deployment, the relevant TRLs for the I3 instrument are TRLs 6-9 (Table 3).

Table 3: Technology Readiness Levels

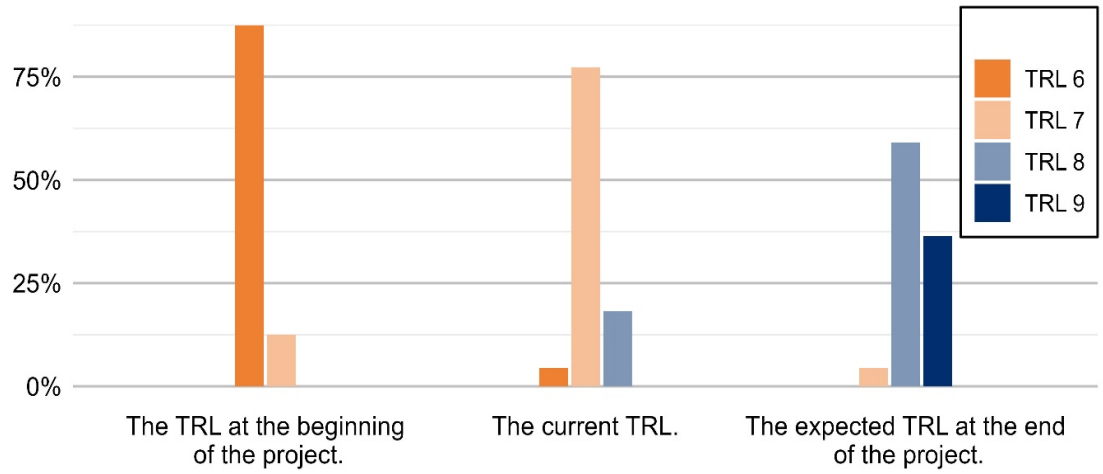
TRL	Description	Stages
1	Basic principles observed	Research
2	Technology concept formulated	
3	Experimental proof of concept	
4	Technology validated in a lab	Development
5	Technology validated in a relevant environment	
6	Technology demonstrated in a relevant environment	
7	System prototype demonstration in an operational environment	Deployment
8	System completed and qualified	
9	Actual system proven in an operational environment	

Source: I3SF (2025) based on DG RTD (2025): Scaling up ideas. Relevant TRLs for I3 projects in blue.

The survey results (Figure 14) show that most I3 projects have made noticeable progress since their inception. Compared to the beginning, where over 80% of projects estimated themselves at TRL 6, the projects have moved ahead by roughly one TRL to attain over 75% TRL 7 and around 20% TRL 8 at the time of data collection (Q3, 2025). Finally, 90% of the surveyed project coordinators expect pilots and demonstrators to reach TRLs 8 or 9 by the end of the project. The numbers therefore show that the projects are estimating themselves to be on track to fulfil the goal of the I3 instrument to support innovation ideas to attain market readiness.

[42] DG RTD (2025): Scaling up ideas. Using Technology Readiness Levels to analyse technology progression in Horizon Europe.

Figure 14: Progress regarding technological readiness levels (TRLs) (only investment projects)



Source: I3SF (2025) based on I3 Survey 2025, latest results: 15.09.2025, n = 22-24.

An example of progress made in I3 projects is given in the box below, showcasing the collaborative process between the partners to develop and test products.

Box 5: Example of project implementation in the CESAM I3 project

CESAM (2023–2026) invests in the scale up of innovative solutions in the agrifood value chain focusing on circular economy and sustainability. Partners are collaborating on four investment and demonstration sectors. For example, Asclepios Tech has developed an innovative farm 2 fork sustainable light signaling treatments solution for fruits and vegetables. Based on this technology, a prototype, a mobile lamp, has been designed. This prototype is now being tested by another partner. Terracor sustainably produces fruits and vegetables in the Balearic Islands and has an ideal profile for testing Asclepios Tech's technology.

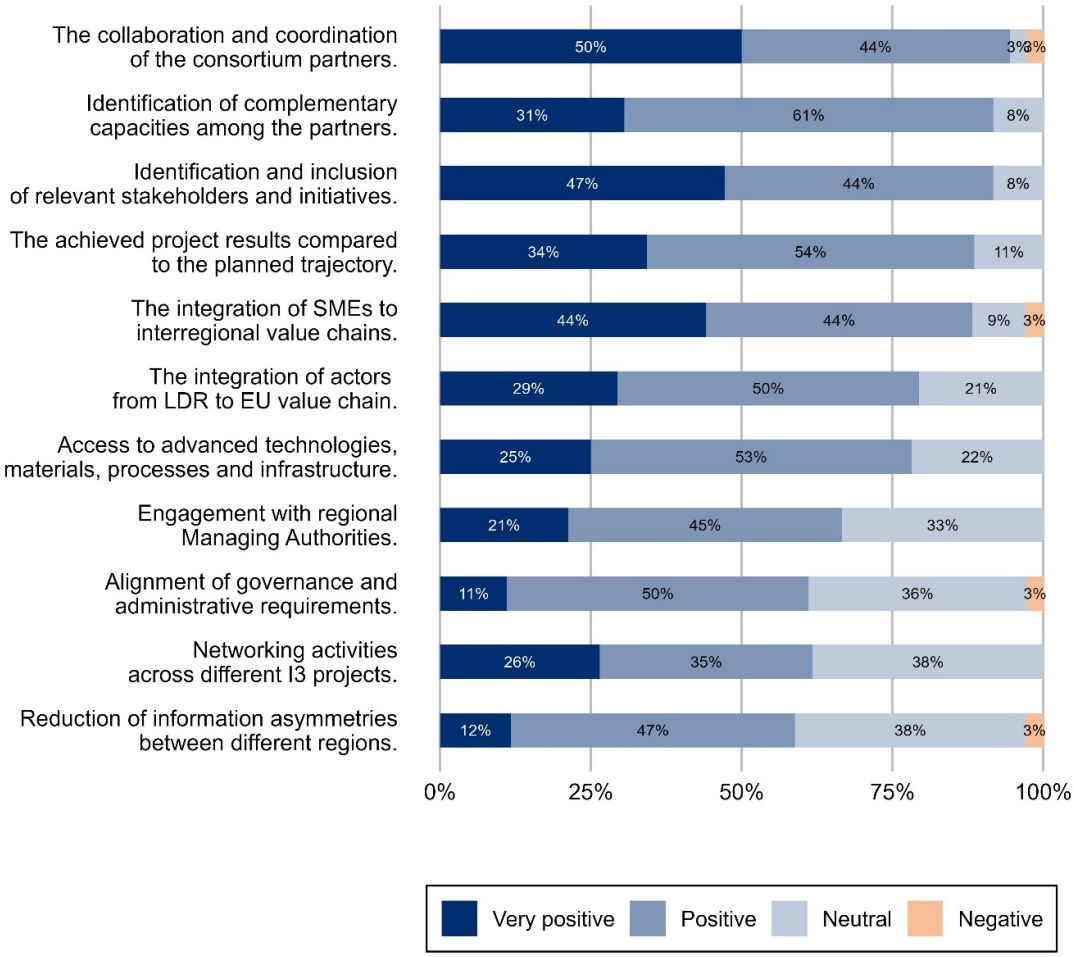
Source: I3SF (2025) based on Project description of the CESAM I3 project, see https://interregional-innovation-investments.ec.europa.eu/projects/CESAM.

An assessment of different aspects of project implementation is overall positive, with differences in the details (Figure 15). Survey participants are most positive about the initiative's success in fostering strong collaboration and coordination among consortium partners, effectively engaging relevant stakeholders, and integrating SMEs into interregional value chains. This suggests that the core objectives of building partnerships and enhancing economic integration are reached. Furthermore, the I3 instruments seems also to be rather effective at identifying complementary capacities and achieving project results compared to the planned trajectory.

Survey feedback from project coordinators suggests remaining challenges concerning inclusivity and governance. Inclusivity here encounters barriers

regarding the effective integration of LDRs into EU value chains, access to advanced technologies and resources, and reducing the information asymmetries between regions. Furthermore, governance issues could be improved regarding administrative requirements, the engagement with regional Managing Authorities and networking between different I3 projects.

Figure 15: Assessment of project implementation



Source: I3SF (2025) based on I3 Survey 2025, latest results: 15.09.2025, n = 36.

According to open text feedback from the survey participants successful implementation of I3 projects hinges on several key **facilitating factors**:

- **Established relationships from previous collaborations** and alignment with regional priorities, particularly within an S3 Partnership, have expedited the adoption of digital solutions in sectors like agri-food.
- **A strong network of ecosystem partners**, including clusters and public authorities, has been crucial in supporting SMEs by connecting them with regional systems and end-users, thereby enhancing knowledge diffusion and impact. Effective communication and coordination have fostered trust and ensured alignment among partners.

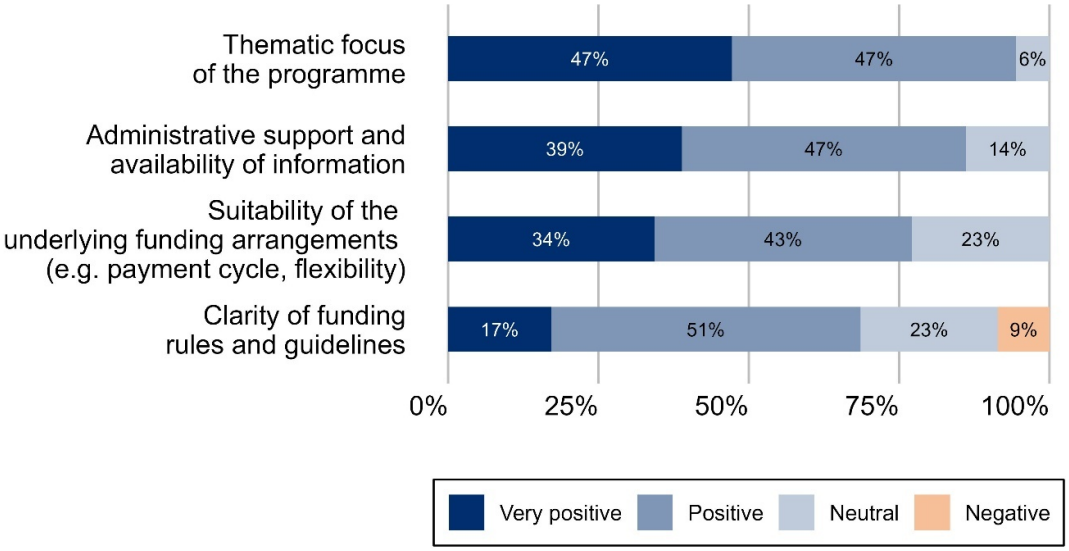
- **Active SME engagement** through structured regular meetings, dedicated workshops, and targeted support has improved their networking and collaboration and their ability to exploit business opportunities within the context of the project.
- **Budget flexibility and FSTP** has allowed for adaptive responses to the challenges of innovation.
- **Strategic alignment with S3 priorities** has provided a coherent framework for collaboration, and the commitment of project participants, supported by EISMEA's clear guidance and flexible program setup, has further driven project success.

On the other hand, survey respondents also highlighted a range of **barriers** to effective I3 project implementation:

- **Varying regional capacities** create challenges due to disparities in innovation infrastructure, digital readiness, and access to resources, leading to uneven stakeholder involvement and project experience.
- **Communication and coordination** are hindered by the time-intensive nature of management, cultural and language differences, and misaligned expectations and priorities, causing strategic delays.
- **Limited capacities in SMEs** result from balancing daily operations with innovation efforts, navigating complex EU funding regulations, and overcoming trust issues from past funding experiences.
- **Limited collaboration with other projects** arises from insufficient networking opportunities and a focus on thematically aligned projects rather than specifically I3 projects.
- **External factors and regulations** pose barriers through sector-specific regulations, shifting political priorities, and geopolitical changes that affect sustainability and investor behaviour.

Linking these free text responses to the previous findings of Figure 15 reveals interesting patterns of the strengths and challenges of the I3 project implementation framework. While, for example, SME integration largely seems to work well according to the chart, limited capacities in SMEs to participate in complex cross-border innovation projects can be a challenge. However, active engagement of SMEs in dedicated, regular meeting and workshop formats can enable them to benefit from the business opportunities opened up by the I3 project. Moreover, information asymmetries, cultural barriers and differing actor capacities can be overcome by having a strong core network of stakeholders who can effectively communicate and liaise with local ecosystem partners and fully integrate them into the I3 project.

Figure 16: Assessment of the programme design and administration



Source: I3SF (2025) based on I3 Survey 2025, latest results: 15.09.2025, n = 36.

Programme design and administration of the I3 instrument is assessed positively by the project coordinators while funding rules, programme guidelines, and payment cycles remain challenging. Figure 16 reveals that survey participants have a very positive view of the thematic focus of the programme and also underscore the significance of administrative support and the monthly update meetings with policy officers. While the clarity of funding rules and guidelines still appears as a point of concern, respondents welcome recent improvements. This is also true for improvements on the 70% FSTP co-funding rate and cascade funding rules. However, particularly smaller consortium partners can face pre-finance and liquidity issues due to the design of payment cycles.

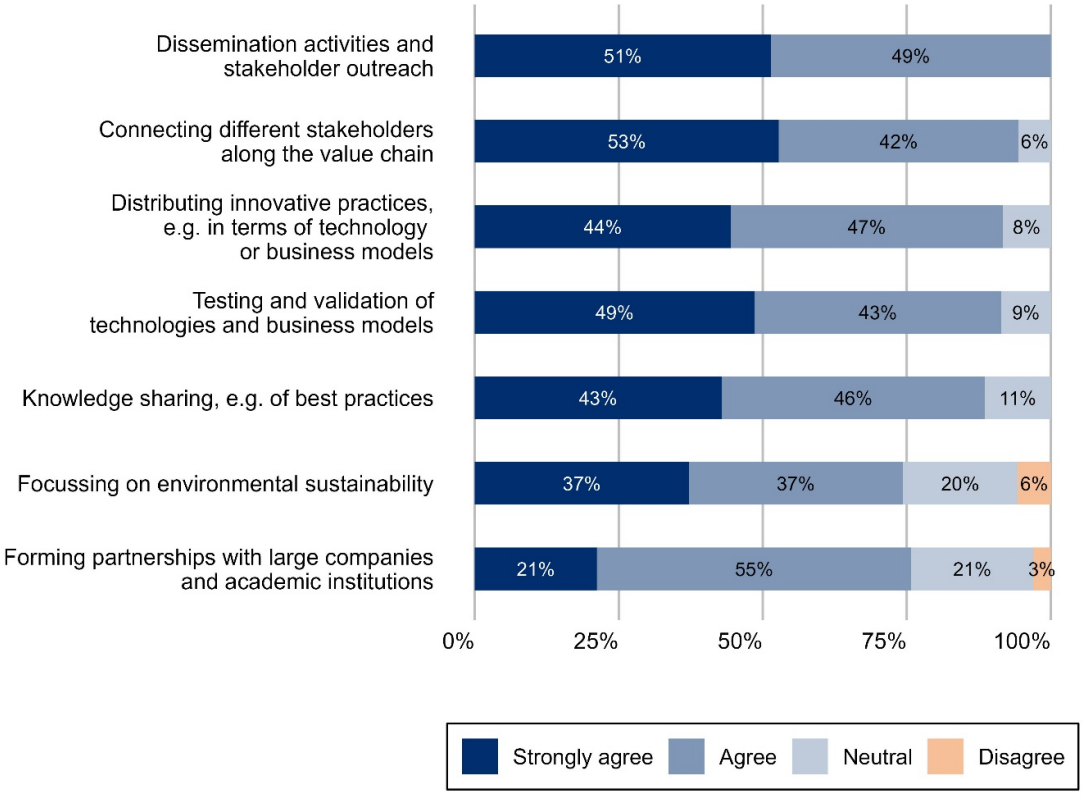
2.2.2. Value chain and ecosystem development

This subchapter focusses on the consortium dynamics and hence on the contribution of the I3 instrument to interregional learning and collaboration as well as the establishment of and innovation along interregional value chains. Most projects operate within a strategic value chain framework, with 73% of the projects having an explicit value chain strategy in place and 25% at least partially. While alignment with S3 Platforms and cluster organisations significantly supports project implementation, challenges persist in engaging regional authorities and larger companies.

Figure 17 shows that I3 projects have undertaken a range of activities to strengthen the value chain, with the most consistently strong results in dissemination and stakeholder outreach and connecting different stakeholders

along the value chain. These findings indicate that projects are particularly effective at fostering collaboration and communication across sectors and actors, contributing to innovation diffusion and technology transfer. Similarly, testing and validating technologies and business models and distributing innovative practices also receive broad agreement, reflecting a strong emphasis on innovation diffusion and knowledge transfer. In contrast, activities such as focusing on environmental sustainability and forming partnerships with large companies and academic institutions show more mixed results suggesting these areas face more structural or strategic challenges.

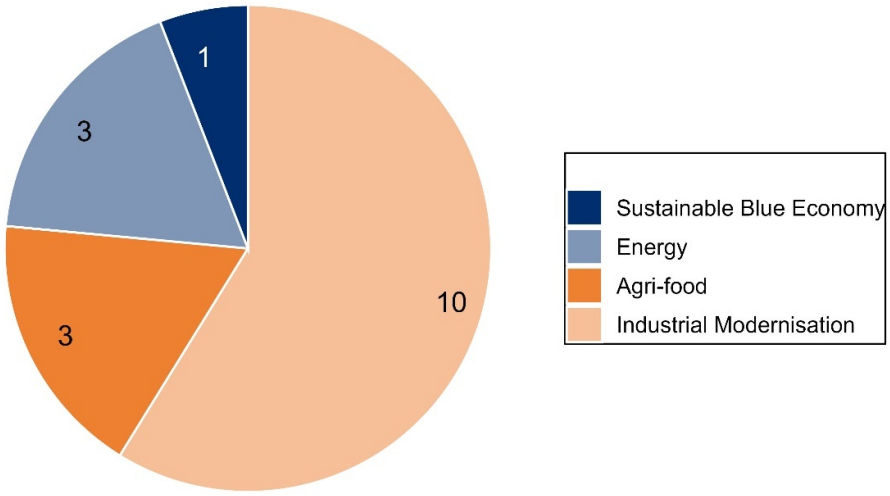
Figure 17: Activities to strengthen the value chain implemented in I3 projects



Source: I3SF (2025) based on I3 Survey 2025, latest results: 15.09.2025, n = 36.

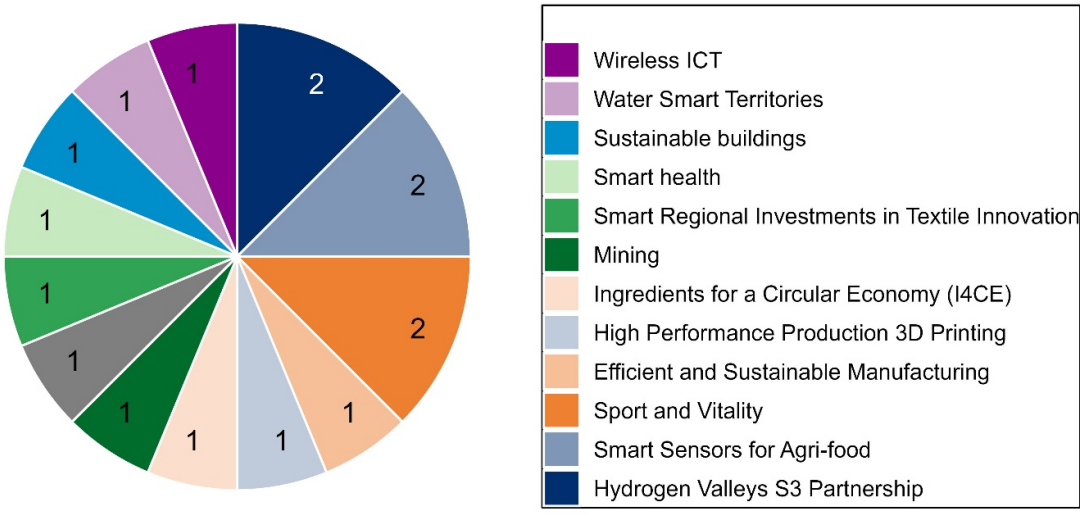
Around 50% of the I3 projects are aligned with an S3 Platform and the respective Thematic Partnerships. It shows how these institutionalised collaboration networks are an important starting point and anchor for interregional innovation projects in general and I3 instruments in particular. Figure 18 below shows that all four S3 Platforms are covered but that a strong bias towards industrial modernisation exists. The further break down into Thematic Partnerships in Figure 19, by contrast, reveals a very broad thematic distribution with no significant concentrations.

Figure 18: Alignment with an S3 Platform



Source: I3SF (2025) based on I3 Survey 2025, latest results: 15.09.2025, n = 16.

Figure 19: Alignment with a Thematic Smart Specialisation Partnership (TSSP)



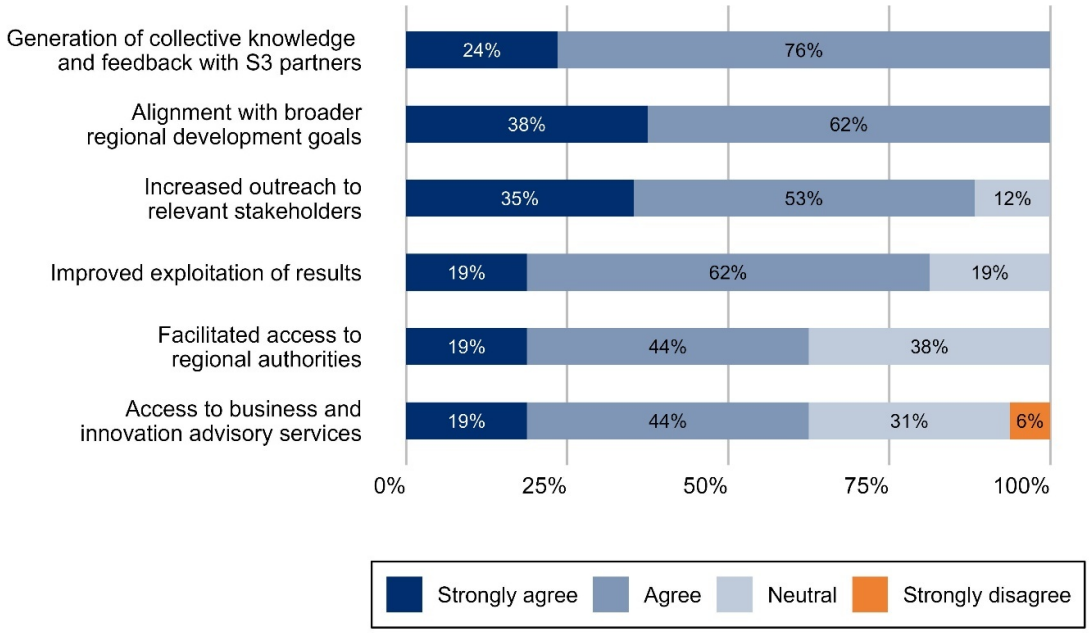
Source: I3SF (2025) based on I3 Survey 2025, latest results: 15.09.2025, n = 15.

S3 Partnerships are the basis for many I3 project consortia and facilitate implementation considerably. Figure 20 indicates that S3 partnerships add substantial value to I3 project implementation, particularly in building and exchanging collective knowledge as well as strategic alignment with regional

development goals. The enhanced coordination and shared vision also make it easier to communicate with relevant stakeholders.

This strength in aligning partners and building collective vision and knowledge is also linked to cluster organisations as institutionalised fora of collaboration. In around 67% of the projects cluster organisations are part of the consortia. Further 15% of the projects interact with cluster organisations in the regions. 18% of the projects do not interact with cluster organisations at all. Compared to the survey conducted in 2024, where 38% of the consortia stated that they do not interact with clusters, the share of consortia with established connections to clusters has significantly increased.[43]

Figure 20: Added value of S3 Partnership to I3 project implementation



Source: I3SF (2025) based on I3 Survey 2025, latest results: 15.09.2025, n = 16-17.

However, the benefits appear less pronounced in coordinating with regional authorities and services. A notable share of respondents expressed neutrality or mild disagreement regarding access to regional authorities and business or innovation advisory services. This contrast suggests that while S3 partnerships excel in bringing together and coordinating committed innovation actors, they not always be as effective in translating networking strengths into support from regional authorities and business services. Around 41% (n=34) of the I3 projects interact with ERDF managing authorities. This represents a slight increase compared to the 2024 survey (33% with n=21).[44]

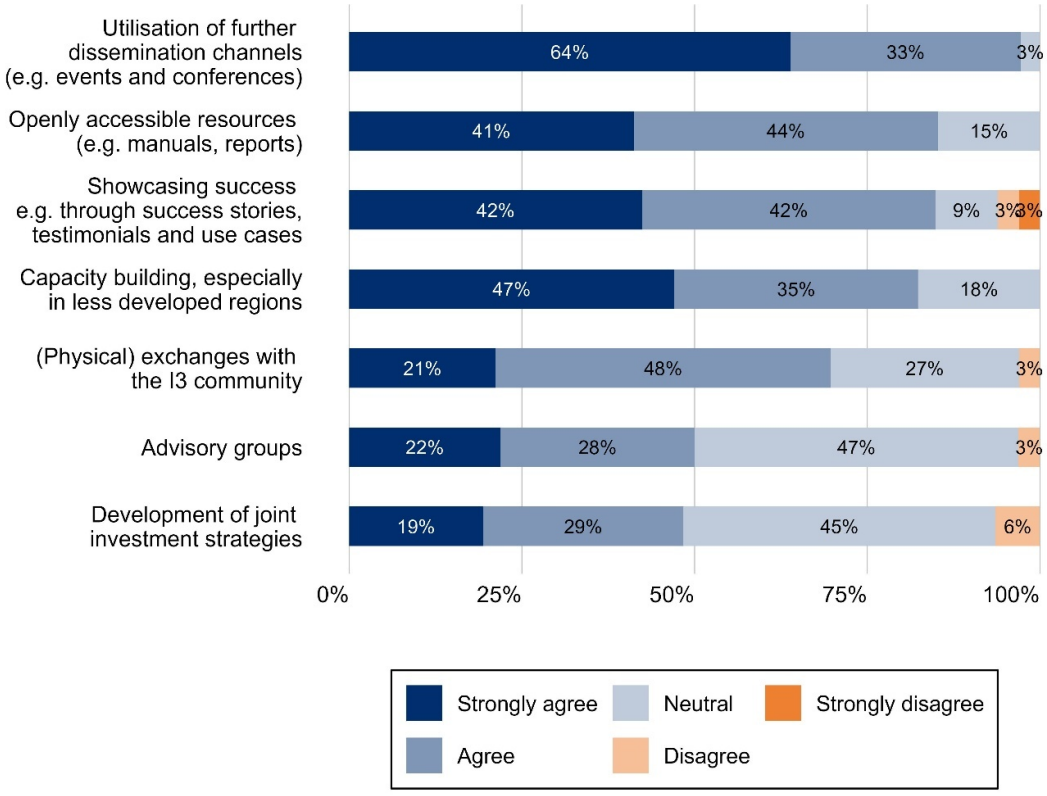
[43] See Analysis of the implementation of the I3 Instrument as perceived by the first generation of I3 consortia. Insight report. June 2024.

[44] See Analysis of the implementation of the I3 Instrument as perceived by the first generation of I3 consortia. Insight report. June 2024.

2.2.3. Outputs and outcomes

The I3 projects engage in various activities to foster broader replication and dissemination. As Figure 21 shows, consortia rely strongly on events and conferences as well as openly accessible resources in the form of manuals, reports, success stories, testimonials and use cases. For LDRs, these broader measures are re-enforced in targeted capacity building exercises. Less used formats include physical exchanges within the I3 community and, in particular, engagement through advisory groups or the development of joint investment strategies. Overall, this shows a reliance on more classical forms of knowledge dissemination like event participation and written materials, while more active modes like advisory groups and joint investment strategies show room for improvement.

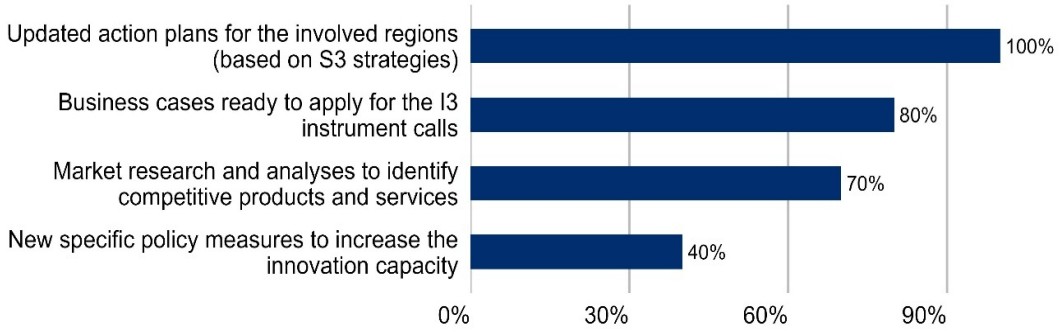
Figure 21: Implemented replication and dissemination activities



Source: I3SF (2025) based on I3 Survey 2025, latest results: 15.09.2025, n = 34

Turning to capacity-building projects (Strand 2b), activities focus strongly on S3-based action plans, business case development and market research. While only a minority of 40% of capacity-building projects have generated new specific policy measures aimed at increasing innovation capacity, this shows that I3 can have a positive impact on the policy environment. Looking forward, nine out of the ten capacity-building projects surveyed already have concrete plans to participate in an upcoming I3 call.

Figure 22: Outputs developed in capacity-building projects (capacity-building projects only)



Source: I3SF (2025) based on I3 Survey 2025, latest results: 15.09.2025, n = 10

The following box illustrates outputs developed in capacity-building projects and their contribution to strengthened value chains based on the example of the I3HIES I3 project.

Box 6: Outputs developed in the I3HIES I3 project

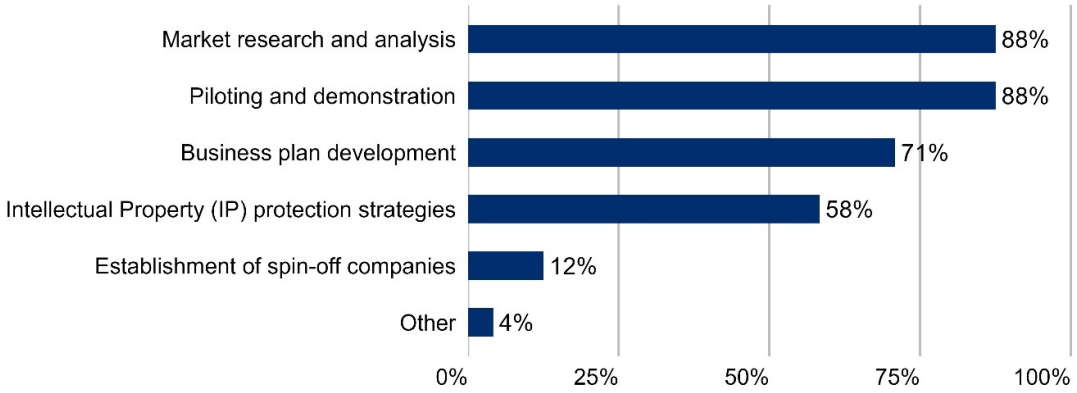
The I3HIES project brings together nine partners from seven European countries, representing both Less Developed and more advanced regions, in a balanced and collaborative effort to enhance innovation in the medical and health technology sectors. Innovation ideas and initiatives identified within the I3HIES project are directly linked to its three thematic focus areas: the development of medical devices, emergency equipment, and compliance with the Medical Device Regulation (MDR 745). The project collected investment project ideas through two main channels: formal open calls launched under the project framework and direct submissions to consortium partners. The open calls attracted both business ideas at lower TRL levels and business cases at more advanced stages. In total, 39 business ideas and six business cases were received, all of which benefitted from tailored technical support. Among them, 16 promising business ideas were further developed into mini business cases.

Ideas submitted directly to partners were often linked to specific European calls for proposals and provided a solid foundation for preparing interregional investment projects. Across these activities, the consortium supported applicants with partner search, value chain design, feasibility and financing assessments, as well as legal and technical guidance.

Source: I3SF (2025) based on Project description of the I3HIES I3 project, see https://interregional-innovation-investments.ec.europa.eu/projects/I3HIES.

In the case of investment projects (Strands 1 and 2a), activities focus on market research and piloting and demonstration. To a lesser but still significant extent, these go along with the development of business plans and IP protection strategies. A small but significant minority of projects succeeded in establishing spin-off companies.

Figure 23: Activities to develop commercially viable solutions (investment projects only)



Source: I3SF (2025) based on I3 Survey 2025, latest results: 15.09.2025, n = 24 (multiple answers possible)

Box 7 below shows how the Baltic MUPPETS project went even further by making it to market-ready products and the prototyping of new machinery.

Box 7: Project outputs of the Baltic MUPPETS I3 project

Baltic MUPPETS (2023-2026) aims to strengthen interregional collaboration and create new value chains for small Baltic Sea Mussels, focusing on their use in pet food and on innovative technologies for framing, harvesting and processing. In terms of outputs, it has already released two pet treats to the market with further market-ready products to be expected. In the course of the project a remote monitoring system has been developed using under water robotics. Project participants have also prototyped a harvesting machine, while optimisation processes are planned for the remaining project period.

Source: I3SF (2025) based on Project description Baltic MUPPETS, see https://interregional-innovation-investments.ec.europa.eu/projects/Baltic-MUPPETS

2.3. Investment dimension

Key findings on the interregional dimension of I3

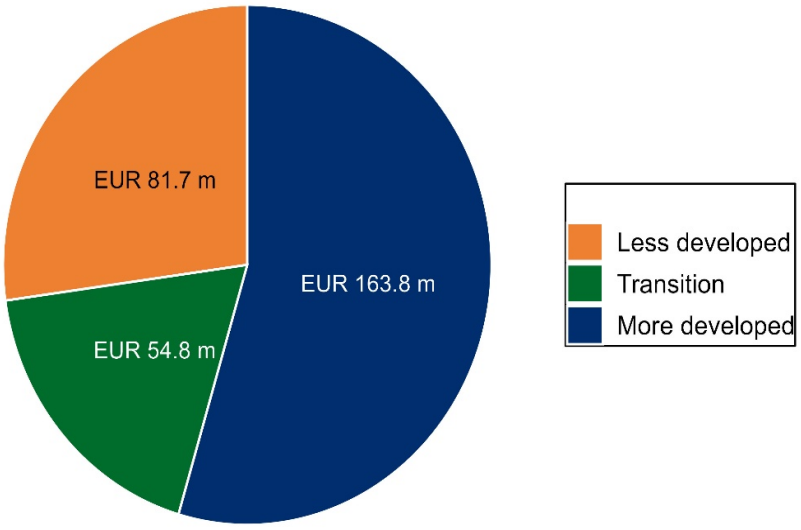
- **I3 projects support and connect diverse organisations** that contribute their expertise along the value chain, with LDR private companies receiving funding comparable to other regions despite a lower overall share.
- **FSTP provides flexible funding to SMEs and third parties:** Around half of surveyed investment projects use it to lower SME participation barriers, accelerating knowledge transfer and value chain integration
- **I3 fosters stable collaboration:** 53% of the surveyed consortia plan to expand collaborations, 31% continue current project activities.
- **Form of collaboration post-I3 determines relevant EU funding programmes**: Horizon, INTERREG and EIT RIS are particularly prominent among projects planning new initiatives and close-to-market programmes like VInnovate are also relevant for sustaining project activities.
- **Shifts from public to private funding:** Consortia that want to sustain current project activities are planning on relying less on public grant funding.

2.3.1. Allocated funding

This subchapter deals with the financing of I3 projects and presents the distribution of total funding by cohesion group and by the actors involved. Further, the relationship to subsequent financing opportunities is outlined.

The analysis of I3 project financing reveals that funding effectively extends beyond traditional innovation hubs. Figure 24 indicates significant differences in the distribution of funding between the various categories, with a total funding amount of EUR 301 million. With EUR 163.8 million (54%), the largest share goes to MDRs, followed by LDRs with EUR 81.7 million (27%) and TR with EUR 54.8 million (18%). This variation in funding is further illustrated by the average allocation per participant. MDRs receive an average of EUR 280,479 per participant, while LDRs and TRs receive averages of EUR 197,458 and EUR 221,261, respectively. These ratios illustrate not only the probable varying project scale and ambition, but also the different capacities for the respective projects and in acquiring fundings. In these terms, the higher average requested EU contribution for MDRs can primarily be attributed to the greater proportion of private entities within this group, which tend to request larger budgets due to higher operational costs, co-financing leverage, and focus on market-ready innovations.

Figure 24: Total funding allocated by cohesion group

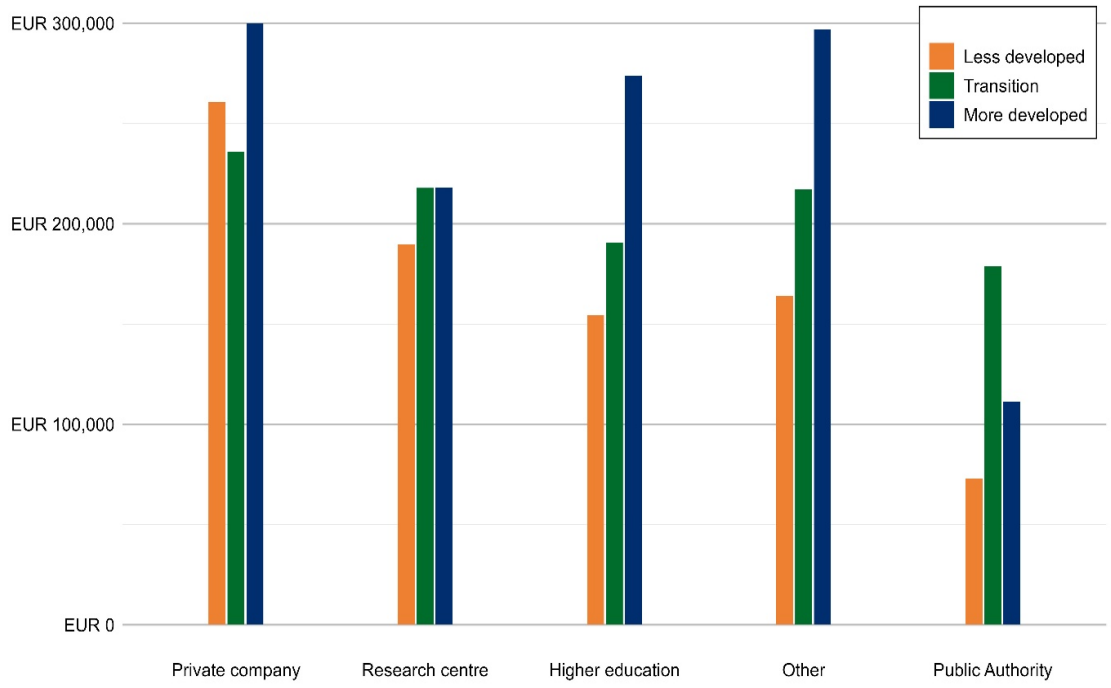


Source: I3SF (2025) based on Participant Requested EU Contribution, I3 project data set (last updated November 11th, 2025).

Figure 25 provides more detailed insights into the recipients of funding, differentiated by type of organisation, such as private for-profit companies, public institutions, research organisations, higher education institutions and others.

MDRs have the highest funding volumes for all types of participants, particularly for private companies, also reflecting their robust industrial ecosystem. The sole exception is public institutions which also receive the lowest average funding across all cohesion groups, underscoring their limited absorption capacity or smaller project scope. For this type of organisation, transition regions receive the highest average amount, with overall funding for these regions remaining relatively constant across the various types of organisations at around EUR 200,000 per project, while maintaining relatively consistent funding levels across all organisation types.

Figure 25: Average funding received by type of organisation and cohesion group



PRC = Private for-profit entities (excluding Higher or Secondary Education Establishments), PUB = public bodies (excluding Higher or Secondary Education Establishments), REC = Research organisations, HES = Higher or Secondary Education Establishments, OTH = Other.

Source: I3SF (2025) based on Participant Requested EU Contribution, I3 project data set (last updated November 11th, 2025).

For all cohesion groups, private for-profit entities are the main recipients of funding. Research institutions also play a significant role at a similar funding level in all cohesion groups. Strikingly, even in LDRs, where the participation of private companies and research institutions is relatively low, these institutions still receive the most funding, underscoring their role in driving fund absorption despite limited presence.

The underfunding of public institutions, which especially affects LDRs, risks weakening regional coordination and knowledge infrastructure, key for long-term innovation diffusion. Meanwhile, MDRs dominance in private companies accelerates commercialisation but may marginalise public-led initiatives in less developed areas.

2.3.2. Role of Financial Support to Third Parties (FSTP) in I3

Within I3 projects, Financial Support to Third Parties (FSTP) emerges as a crucial funding mechanism. This mechanism allows funds to be made available to small and medium-sized enterprises (SMEs) who are not identified in the Grant Agreement as members of the eligible consortium. FSTP is offered in the form of

‘cascade funding’ and gives applicants the opportunity to select SMEs to participate in investment projects during the implementation phase. This funding is intended to help fulfil necessary tasks that complete a specific value chain or provide the necessary basis for testing and optimising products and production processes.

Among the surveyed investment projects, half of the respondents (48%) stated that small and medium-sized enterprises were involved in the project through financial support to third parties (FSTP). Examples of the implementation of FSTP are given in Box 8 and Box 9 below.

Box 8: Use of FSTP in the HIGHFIVE I3 project

The HIGHFIVE project allocated a total budget of €1.4 million for Financial Support to Third Parties (FSTP), fully distributed through two completed open calls. In total, 16 projects were funded, implemented by 27 SMEs across Europe. These projects integrate advanced technologies such as AI, sensor systems, and predictive algorithms, focusing on improving food quality, operational efficiency, and sustainability. Several initiatives target waste reduction, energy efficiency, and real-time production monitoring, supporting the green and digital transition. SMEs played a key role in testing and adopting these solutions, driving market uptake and strengthening innovation in the agri-food sector.

Source: I3SF (2025) based on Project description of the HIGHFIVE project, see https://interregional-innovation-investments.ec.europa.eu/projects/HIGHFIVE.

Box 9: Use of FSTP in the I4-GREEN I3 project

The I4-GREEN project allocated a total budget of around €356,000 for Financial Support to Third Parties (FSTP), divided between Pilot 1 and Pilot 2. Through this instrument, 12 SMEs were selected and supported via an Open Call. These SMEs successfully completed their activities within the planned timeline and submitted final reports, which were validated by the pilot leaders for final payment.

SMEs played a key role by delivering innovative technologies, services, and solutions that enhanced the performance and value of the two pilot projects. Examples of market uptake include environmental monitoring tools, hydrological assessments, and mineral valorisation processes. The FSTP mechanism thus fostered cross-regional cooperation and accelerated the integration of SME-driven innovation into the green extractive value chain, strengthening both pilot outcomes and SME market positioning.

Source: I3SF (2025) based on Project description of the I4-GREEN I3 project, see https://interregional-innovation-investments.ec.europa.eu/projects/I4-GREEN.

Thus far, EUR 28.2 million have been allocated to FSTP across 24 I3 projects as preliminary data indicates. For five I3 investment projects, data on

the beneficiary regions is available. The number of beneficiary regions is distributed evenly across the three cohesion groups. Among the five projects, 12% of the allocated FSTP funds was received by SMEs in LDRs, 41% in TRs and 47% in MDRs. Compared to the total funding allocated to private companies across these five projects, the FSTP allocation marks a shift towards transition regions. Within in the five projects, there is a large variance of the FSTP allocated indicating different strategies to use the tool. There are projects only allocating FSTP two LDRs and TRs, while others allocate the support more towards MDRs. Given the small sample size, it is not possible to draw generalised conclusions on the allocation of FSTP at this stage.

According to the surveyed project coordinators, FSTP has several advantages making it a viable option to flexibly provide funding to SMEs. First, FSTP enables direct and flexible financing for small and medium-sized enterprises without requiring a high level of administrative effort. This also places a managing authority closer to SMEs, which is reassuring for local businesses. In addition, FSTP facilitates access for SMEs to partners in other regions, clusters and innovation centres. The rapid provision of resources for high-potential projects supports a dynamic innovation environment and accelerates interregional knowledge transfer and the integration of value chains. In addition, FSTP enables the involvement of additional SMEs in line with the thematic priorities of the I3 projects. Finally, it offers the opportunity to experiment in areas where the consortium does not have specific expertise.

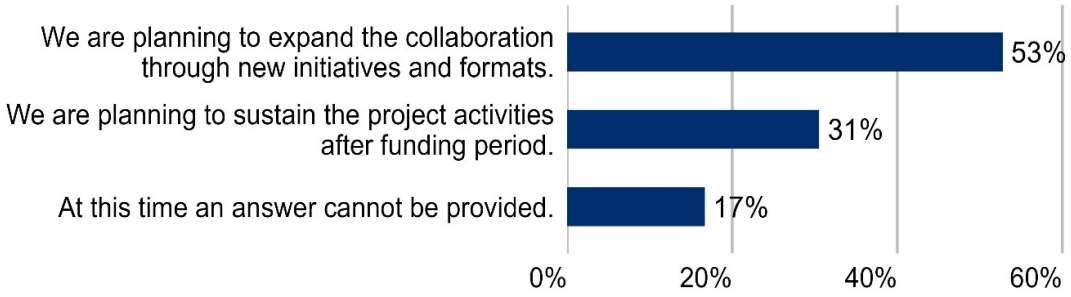
Reasons for not using FSTP include prevalence of SMEs with larger budgets within the consortium, putting the focus on supporting their innovation activities. Moreover, administrative reasons also play a role, such as the previously applicable 70% funding rate, which has since been changed. Finally, some respondents pointed out that FSTP programmes are planned but not yet implemented.

2.3.3. Follow-up activities and funding

The data suggests a promising forecast for the long-term viability of I3 partnerships.

Figure 26 suggests strong outlook for the long-term sustainability of these partnerships, as more than half of current projects plan to expand the collaboration after the project is completed through new initiatives and formats. Meanwhile, 31% intend to continue the project activities currently implanted in the project, ensuring continuity. While the remaining 17% cannot provide an answer due to an early stage of implementation, it is noteworthy that none of the respondents believe that the collaboration will cease, a clear indication that I3 partnerships tend to create enduring, trust-based networks that outlast the project's formal lifecycle and embed lasting interregional linkages.

Figure 26: Current prospects for continuation after the end of the project period



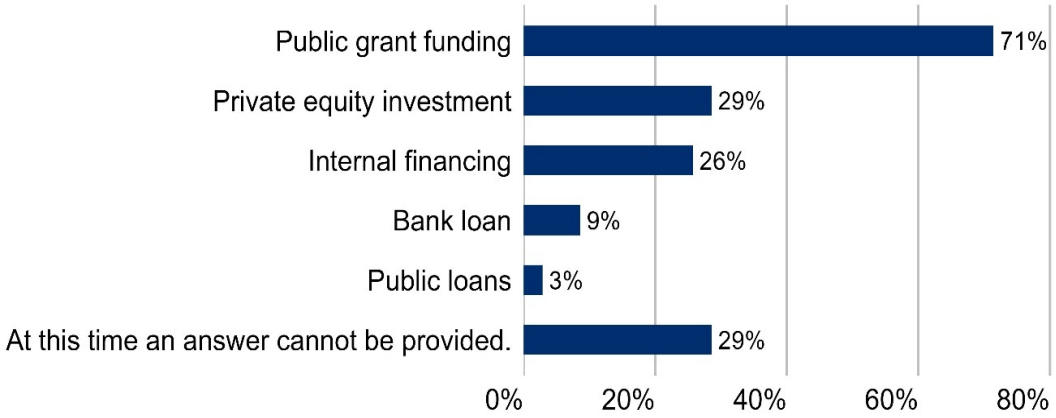
Source: I3SF (2025) based on I3 Survey 2025, latest results: 15.09.2025, n = 36.

In terms of future funding opportunities being envisaged by the consortia to secure the continuation of the activities, public grant funding remains the most relevant funding option, with 71% considering this. This dominance reflects the structural realities of the I3 Instrument ecosystem, where public grants serve as default anchor for innovation activities, especially in LDRs and for consortia still in early to mid-project phases. As public funding is perceived as low risk, it is particularly attractive to participants such as higher education institutions, public research organisations and SMEs with limited liquidity.

Further, reveal that over 20% of consortia consider private equity investment (29%) and internal financing (26%) to be an opportunity, marking a critical inflection point in funding maturity. This subset largely comprises consortia focussed on sustaining mature project strands, where tangible assets enable access to private capital

Bank loans (9%) and public loans (3%), on the other hand, are only planned to a limited extent, revealing a clear hierarchy of preference and structural barriers, as bank loans might be constrained by high perceived risk, stringent collateral requirements and limited familiarity of banks with innovation financing, while public loans are underutilised due to bureaucratic complexity, slower disbursement and overlap with grant availability.

Figure 27: Funding opportunities the consortium is planning to explore (multiple answers possible)



Source: I3 Survey 2025, latest results: 15.09.2025, n = 35.

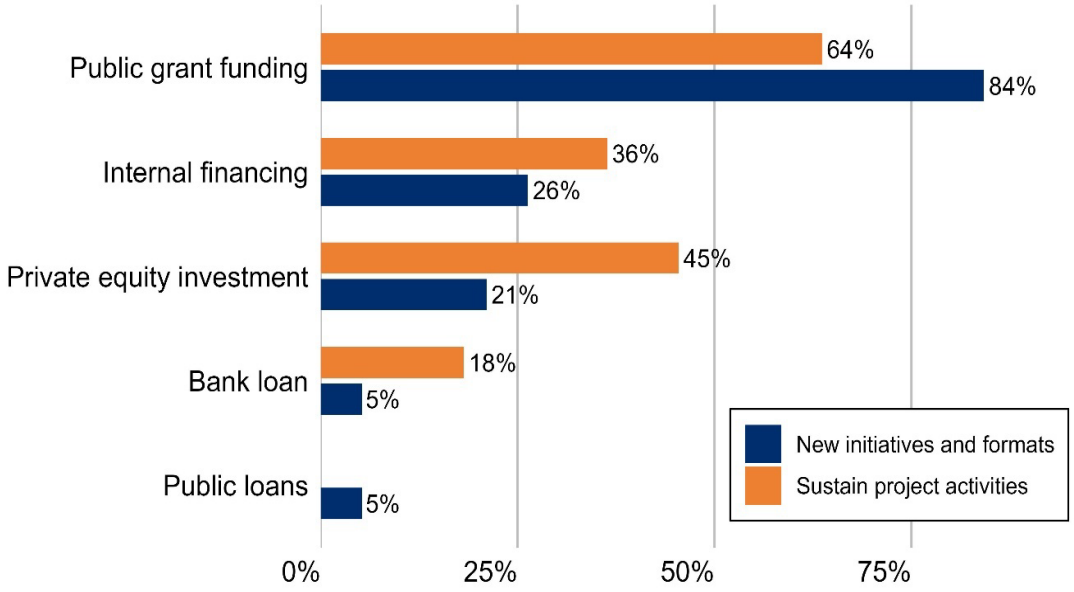
There is a notable shift from public to private funding for consortia sustaining current projects. In this regard, the survey results in Figure 28 indicate a shift from public to private funding sources, with private funding instruments reaching higher shares compared to the consortia that want to develop new initiatives and formats, see Figure 28. Especially internal financing and private equity investment seem to emerge as viable options.

This shift towards private funding stems from the maturation stage of these projects. By the time consortia seek to maintain established initiative they often have demonstrable experience, proof of concept, market traction, and/or revenue streams, which make them attractive to private investors. On the other hand, new initiatives still typically require more exploratory funding, where public sources dominate due to higher risks and unproven viability. Internal financing becomes viable as projects generate their own cash flows through commercialisation, while private equity appeals because it provides not just capital but also strategic expertise for scaling.

This shift may have significant implications for how consortia operate, as it encourages a focus on business-oriented outcomes, which can lead to faster commercialisation and greater SME involvement in value chains. However, it may also pose challenges for Less Developed Regions, where private equity access is limited due to weaker investor networks.

These initial survey results indicate that the dynamic intended in the 2025-2027 Work Programme and in the latest I3 calls is reflected in the I3 projects. As projects mature under initial public support, they are likely to attract private funds, freeing up public resources for nascent innovations and contributing to EU-wide competitiveness. Nevertheless, it remains to be seen how the project results are deployed in the post-project phase.

Figure 28: Funding opportunities the consortium is planning to explore (multiple answers possible), by type of planned continuation



Source: I3SF (2025) based on I3 Survey 2025, latest results: 15.09.2023, n = 19 for new project activities, n = 11 for sustain project activities.

The selection of suitable public funding programmes for additional financing follow-up activities depends on the way the consortia want to continue their collaboration. Along the innovation chain there are various programmes (Figure 29), depending on the positioning in the innovation landscape these programmes have different characteristics. Capacity-building projects, for example, can support ecosystem mapping and networking activities. Interregional research and development collaboration covers joint research and development, pilots or living labs. Closer-to-market programmes aim to fostering demonstrator development through a stronger role of SMEs. A (non-exhaustive) overview of relevant programmes on the European level is given in Figure 29.

Figure 29: Overview of relevant funding instruments for interregional collaboration

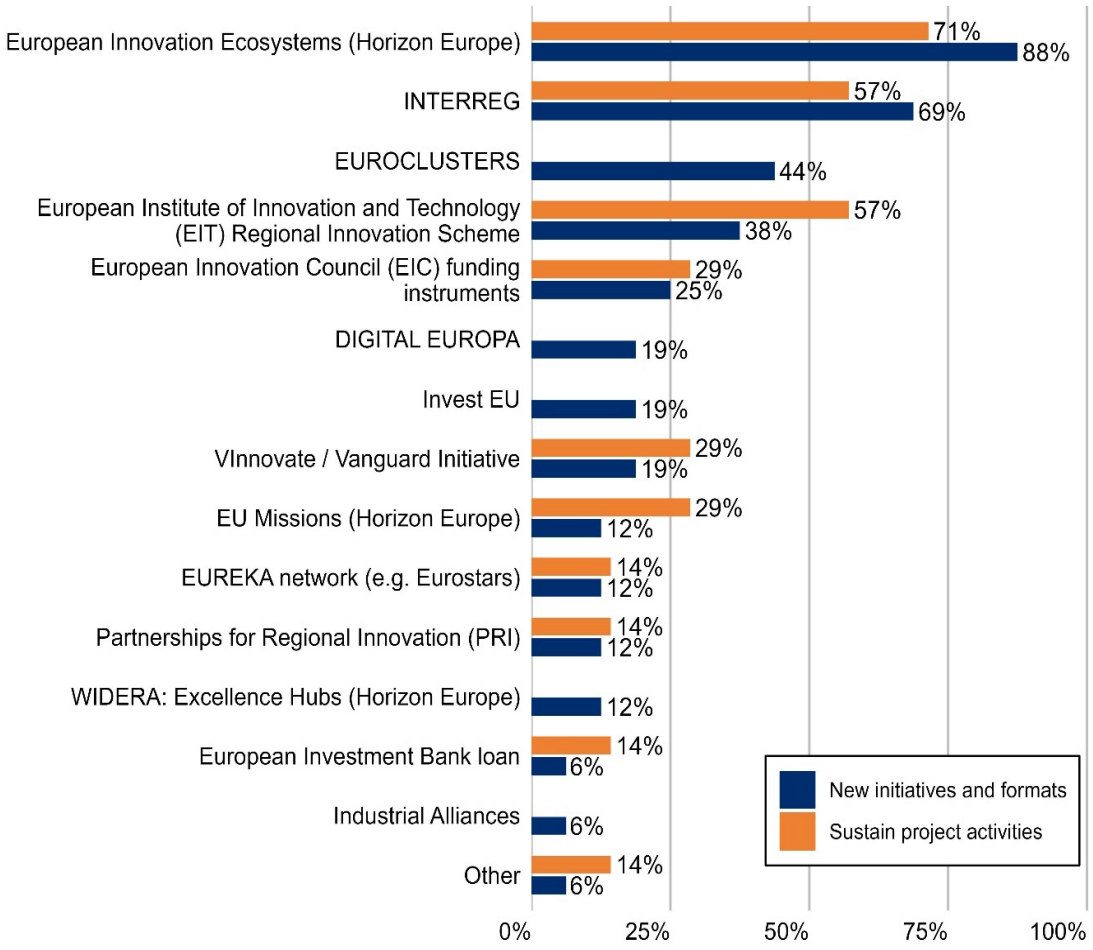
Source: I3 Support facility (2025).

The form of collaboration post-I3 determines relevant EU funding programmes, as Figure 30 highlights. The chart reveals a bifurcation in funding preferences that aligns closely with the consortia's strategic intent: whether to launch new initiatives and formats or sustain existing project activities.

Horizon, INTERREG and EIT RIS dominate especially among projects planning new initiatives. These programmes are particularly well-suited to consortia with a stronger focus on capacity building and research and development, offering flexible, cross-thematic platforms for networking, policy learning, entrepreneurial training, and early-stage interregional collaboration. Their prominence may underscore a desire to replicate or expand the I3 partnership model into new thematic areas or regions, leveraging low-TRL environments where territorial collaboration and ecosystem animation take priority.

By contrast, close-to-market programmes like VInnovate and the European Innovation Council (EIC) gain more relevance for sustaining project activities, as these kinds of instruments are designed for industrial scale up and value chain integration, making them natural successors for I3 projects that have already achieved pilot validation or proof-of-concept.

Figure 30: Funding opportunities the consortium is planning to explore (multiple answers possible), by type of planned continuation



Source: I3SF (2025) based on I3 Survey 2025, latest results: 15.09.2025, n = 16 for new initiatives and formats, n = 7 for sustain project activities.

3. Conclusions

The analysis of the Interregional Innovation Investments (I3) Instrument shows that it successfully extends beyond Europe's traditional innovation centres, strengthening the participation of Less Developed Regions (LDRs) in interregional collaboration networks. With 1,257 participants in 70 projects from 177 regions across all EU Member States, the instrument demonstrates broad territorial coverage and growing involvement of LDRs, particularly in the capacity-building (Cap2b) and diffusion-oriented (INV2a) strands. The composition of project consortia reflects structural differences between regions: while More Developed Regions tend to lead projects through private firms and research institutions, LDRs mainly participate via public authorities and universities. Nevertheless, recent adjustments to call structures, particularly in the INV1-strand, have increased the engagement of SMEs from LDRs, helping to balance participation across cohesion groups. The findings further underline that long-term interregional innovation and value chains builds on established and tested relationships. I3 projects largely emerge from existing collaboration indicating synergies with programmes such as Horizon.

A major success of the I3 Instrument is that it provides Less Developed Regions with a platform to become more involved in the interregional collaboration networks of the EU, which are otherwise heavily dominated by More Developed Regions. Nearly one-third of all I3 linkages involve LDRs. Moreover, I3 promotes a distinctly cross-border orientation, with almost 90% of all linkages being cross-border. Hence, the I3 instrument, effectively reduces regional innovation asymmetries by providing LDRs with a structured entry point into Europe's innovation ecosystem and value chains. It strengthens their connectivity with advanced regions, enhances knowledge diffusion and absorptive capacity, and contributes to a more cohesive and balanced European innovation space, thereby translating the principles of Smart Specialisation with a focus on green and digital transition as well as smart manufacturing into interregional practice.

These findings confirm the Cohesion Policy logic of the I3 Instrument: enabling regions with different levels of development to participate in shared interregional innovation and value chain activities.

Under DG REGIO's policy framework, the I3 Instrument translates place-based smart specialisation strategies into concrete interregional innovation and investment projects. The I3 instrument is successfully advancing innovation projects closer to market readiness and commercialisation, supporting their transition from development to deployment. While some barriers like limited SME capacities or information asymmetries persist, these can be effectively overcome by active and structured stakeholder engagement and strong networking and communication. In this vein, value chain and ecosystem building is particularly effectively supported by strong

involvement from cluster organisations and links to S3 Platforms. Activities in project and capacity building are helping to pool and disseminate knowledge, define action plans and explore business cases. There is potential for more institutionalised and strategic formats like developing joint investment strategies, establishing standing advisory boards and aligning policy measures. Such an approach would resonate with the innovation corridors concept[45] and, as some projects show, the I3 instrument offers the possibilities to advance on this avenue.

The investment dimension reveals a cohesive yet stratified funding landscape that effectively extends innovation support beyond traditional hubs while showing continuing structural asymmetries. MDRs leads in funding, driven by strong private-sector ecosystems and larger projects while LDRs and TRs receive less, reflecting smaller industrial bases and greater reliance on public institutions. FTSP stands out as a vital mechanism, enabling flexible SME integration through cascade funding, despite underuse in some cases due to strategic focus or past funding constraints. Public grants remain the cornerstone for project continuity, particularly in early stages and less developed areas, but a shift towards private capital is evident as consortia leverage market traction to attract investment. EIC programmes and complementary instruments like VInnovate are key for scaling mature outcomes, while Horizon Ecosystems and INTERREG support new capacity-building initiatives. No consortium anticipates ending collaboration, signalling the formation of durable interregional networks that outlast project lifecycles. However, challenges persist, as underinvestment in public institutions in Less Developed Regions risks weakening long-term knowledge infrastructure, while private-sector dominance in core regions may deepen imbalances. This investment logic reflects Cohesion Policy objectives by combining EU support with private investment and by promoting lasting interregional partnerships beyond the lifetime of individual projects.

All in all, the I3 instrument is contributing substantially to the integration of Less Developed Regions with established innovation networks in core regions confirming the Cohesion Policy logic of the I3 Instrument. The collected data indicates the I3 Instrument's potential to further integrate the European innovation system and bridge innovation and cohesion policy at a continental level.

3.1. Policy feedback and recommendations

Collaboration between regions is an important driver for, knowledge productivity, regional diversification and smart specialisation. However, the effects also depend on the balance of collaborative activities within and between regions, as well as the level of regional development and technological diversity.

[45] Netherlands Organisation for Applied Scientific Research et al. (2024). Interregional innovation corridors. Primer Series.

In Less Developed Regions, external collaborations only contribute to regional diversification and new specialisations if local actors are strongly interconnected, allowing external knowledge to circulate within the regions[46]. Thus, strengthening interregional collaboration should go hand in hand with building strong local innovation networks to ensure that external knowledge can be effectively absorbed and transformed into regional innovation and diversification.

Studies highlight the relevance of interregional linkages that enable access to complementary capabilities for new specialisations in S3 or green and digital innovation[47]. Accordingly, it is not being connected per se with other regions, but rather with whom, particularly whether these linkages might provide complementary knowledge. Moreover, complementary interregional value chain linkages increase the likelihood of functional upgrades in global value chains (GVCs) and specialising into more complex functions while reducing the risk of functional downgrades. However, it is important to note that interregional linkages do not replace missing local capabilities but rather reinforce existing regional capacities for regional diversification processes.

Thus, when promoting interregional collaboration, future policies should consider both similarity and complementarity. While collaborations among similar regions are more frequent, partnerships based on horizontal complementarity, the combination of related but distinct technologies, can generate higher innovation and diversification potential. Such partnerships, however, often require policy support to overcome coordination costs and uncertainty. Smart Specialisation policies should therefore actively incentivise complementary collaborations, for instance by supporting matchmaking, capacity-building, and governance mechanisms that enable trust and balanced participation, particularly where vertical complementarities between technology leaders and adopters offer catching-up potential for Less Developed Regions. With the I3 Support Facility, EISMEA and DG REGIO have already established an initiative aimed contributing to the identification and reducing of these complementarities and information asymmetries. Tools and instruments to further develop strategic support should be explored and reflected with demands voiced in the innovation community.

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[46] De Noni, I., Ganzaroli, A., & Orsi, L. (2017). The impact of intra-and inter-regional knowledge collaboration and technological variety on the knowledge productivity of European regions. *Technological Forecasting and Social Change*, *117*, 108-118. & Santoalha, A. (2019). Technological diversification and smart specialisation: The role of cooperation. *Regional Studies*, *53*(9), 1269-1283.

[47] Balland, P. A., & Boschma, R. (2021). Complementary interregional linkages and Smart Specialisation: An empirical study on European regions. *Regional Studies*, *55*(6), 1059-1070. & Balland, P. A., Boschma, R., Schwab, T. (2023) & Corrocher, N., Grabner, S. M., & Morrison, A. (2024). Green technological diversification: The role of international linkages in leaders, followers and catching-up countries. *Research Policy*, *53*(4), 104972. & D'Adda, D., Iacobucci, D., & Perugini, F. (2025). Regional technological profiles and collaborations: An empirical analysis of joint patents and EU-funded projects. *Papers in Regional Science*, *104*(1), 100073. & Hernández-Rodríguez, E., Boschma, R., Morrison, A., & Ye, X. (2025). The role of complementary interregional linkages for functional upgrading and downgrading of global value chains in EU regions. *Industry and Innovation*, 1-35.

While interregional collaboration builds on established and tested relationships, it remains crucial to further enable the integration of actors and new knowledge sources outside established networks. The I3 Instrument already contributes through the involvement of LDR, but collaboration networks should continue to be evaluated regarding their openness to prevent path-dependencies and lock-ins.

To establish strong **EU value chains**, SME engagement across all cohesion groups is a vital factor. The I3 Instrument has made progress in this regard, nevertheless, SME engagement from Less Developed Regions needs to be strengthened. Tools, such as cascade funding through FSTP, show potential in this regard. Once more data on the FSTP allocation is available, the I3SF will explore this instrument and its added value in a dedicated analysis.

Value chain and ecosystem building is particularly effectively supported by strong involvement from cluster organisations and links to S3 Platforms. However, coordination is less pronounced with regional authorities and services. Further efforts to align with ERDF MAs, but also with governance and administrative requirements, should be made to strategically anchor interregional innovation in the regions.

The data suggests a promising forecast for the long-term viability of I3 partnerships. To fully capitalise on the achievements made in the I3 projects and securing follow-up activities, I3 should seek close alignment with other close-to-market instruments like the EIC Accelerators. Potential links will further be explored in a dedicated analysis by the I3 Support Facility.

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