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HEI Innovation capacity and knowledge triangle integration: the role of the EIT's HEI Initiative

Esparza Masana, R., Woolford, J.

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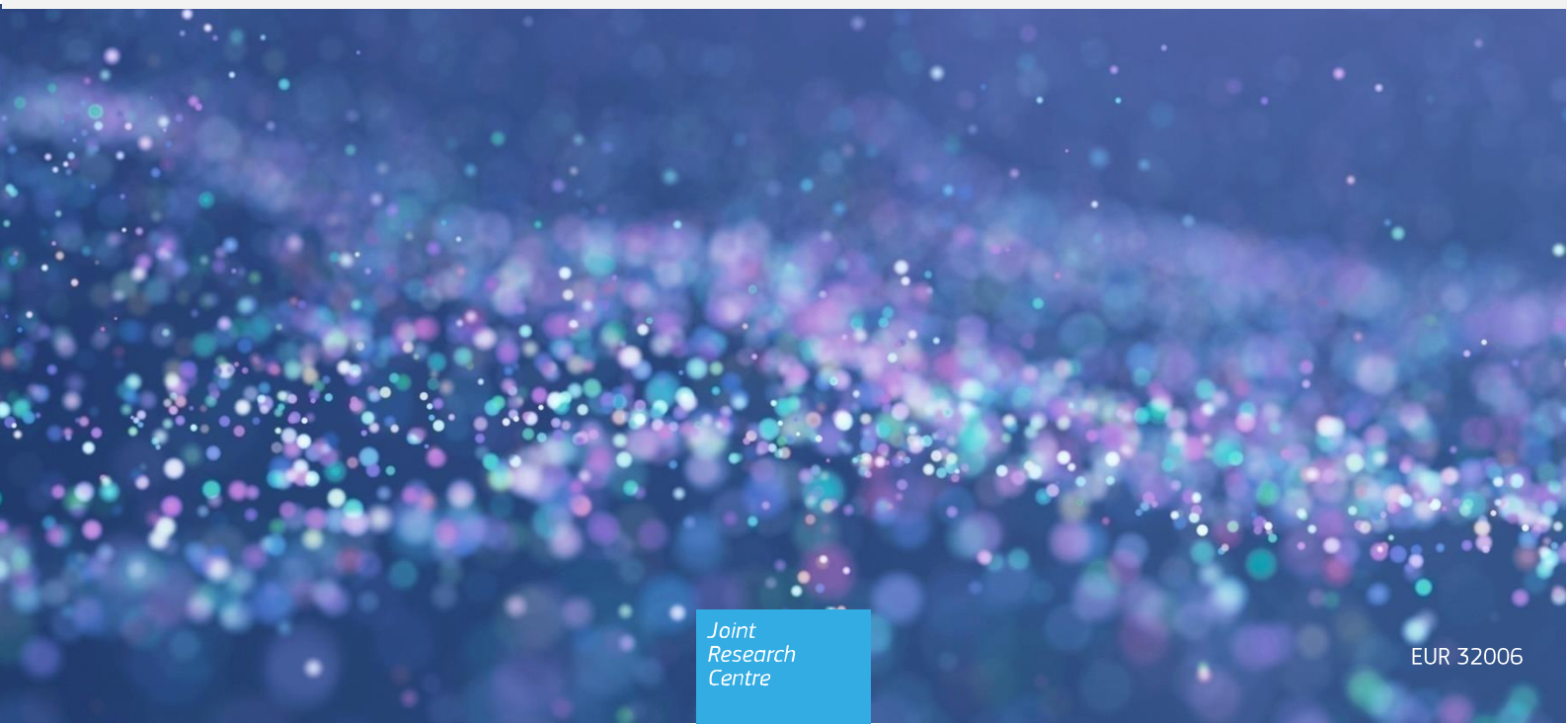

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Contents

Abstract

Higher education institutions (HEIs) are increasingly expected to contribute to regional development and transformative innovation and a diversity of EU funding initiatives look to translate this strategic agenda across diverse institutional and territorial contexts. The European Institute of Innovation and Technology (EIT) has as an objective to increasingly capture the regional dimension through developing links to Smart Specialisation Strategies (RIS3), and, through its pilot HEI Initiative, to increase the innovation and entrepreneurial capacity of HEIs and better integrate them into with their innovation ecosystems. This report explores the varying role of, or approach to, this initiative in strengthening HEI's contribution to and participation in territorial transformation, and aligning the different university missions to connect HEI entrepreneurship and innovation to the territory.

Foreword

The Higher Education in Smart Specialisation (HESS) project has been developed in collaboration with DG Education, Youth, Sport and Culture (EAC) since 2016 and seeks to engage stakeholders from Higher Education in regional development processes and regional innovation ecosystems to ensure places contribute to local and broader European growth and transformation.

Acknowledgements

Please see Annex 1 for a list of participants in the research. Our thanks and gratitude to them for their participation and engagement in our research.

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Authors

Dr Ricard Esparza Masana, Universitat Autònoma de Barcelona.

Dr Jayne Woolford, DG JRC.

Executive summary

Current debates increasingly highlight the role and purpose of universities in the rapid transformation of society and their contribution to the resilience and adaptation of regional economies. As a vital component of the quadruple helix, universities are becoming key actors in addressing societal challenges, promoting civic engagement to become engines of development and innovation for their territories, and integrating innovative entrepreneurial activities within their teaching and research environments.

This research aims to provide an analysis of projects funded under the first two calls of the EIT's HEI Initiative and the extent to which they reflect territorial needs, specificities and innovation ecosystems and link to wider RIS3 processes and regional development. It seeks to identify good practice in the reinforcement and anchoring of universities in their regions and connectivity with their local ecosystem as well as in alignment of the different HEI missions and between teaching, research, innovation and knowledge transfer. The specific interaction and engagement of stakeholders and the types of learning outcomes sought are also examined, as well as the synergies and complementarities of HEI Initiative activities with other EU funding initiatives, taking into account the heterogeneity of European higher education and the diversity of institutional, policy and socio-economic settings.

Policy context

The *Commission Communication of 18th January 2022 on a European Strategy for Universities*[1] presented higher education institutions as potential engines of innovation and actors of change in the twin green and digital transitions. HEIs could ensure their contribution to Europe's resilience and recovery through more effective partnership and cooperation *locally*, with their industrial ecosystems, as well as *transnationally*. The *Commission Communication on A New European Innovation Agenda*[2] recognised unexploited potential in higher education, research and training organisations to engage with territorial partners and contribute to regional innovation ecosystems and cohesion. HEIs should engage in and contribute to the development of their regions and cities: integrating local, regional and societal issues into their curricula, cooperating with businesses, building links with the local community and involving them in teaching, research and lifelong learning.[3] The *Communication on achieving the European Education Area by 2025*[4] focused upon connectivity, inclusion, addressing digital and green readiness and resilience, and innovation as means to accelerate the transformation of higher education institutions.

Smart specialisation was introduced under Cohesion Policy in the 2014-2020 programming period as a place-based approach to fostering innovation that required territorial innovation actors to work together in an open, collaborative, bottom-up manner to prioritise funding in areas where territories could have a competitive advantage. Smart specialisation therefore links higher education institutions to their territories, with HEIs increasingly informing and participating in RIS3 processes and outputs[5].

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[1] https://education.ec.europa.eu/sites/default/files/2022-01/communication-european-strategy-for-universities.pdf; COM(2022) 16 final

[2] A New European Innovation Agenda, COM(2022)332

[3] The EU Renewed Agenda for Higher Education COM (2017)247 / OJ C 429, 14.12.2017

[4] https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1743

[5] COMMISSION STAFF WORKING DOCUMENT Accompanying the documents Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on a

In line with the global need for systemic societal transformations, experimentation has taken place recently with more transformative place-based innovation approaches under the pilot Partnerships for Regional Innovation initiative[6]. The approach supports new multi-actor, multi-fund and multi-sector approaches and synergies, empowering territories and actors to identify local challenges and recognise 'other' or wider stakeholders (such as educators, academics and students) and policies in defining a tailor made set of responses and pathways for territorial transformation.

Within the broader framework of innovation instruments, the European Institute of Innovation and Technology (EIT) has a distinctive remit, focusing on integrating higher education activities into the innovation value chain and addressing global and societal challenges through the integration of the knowledge triangle. The Strategic Innovation Agenda 2021-2027 of the EIT[7] incorporates this objective of increasing the innovation and entrepreneurial capacity of HEIs and their integration into their innovation ecosystems specifically through the development of links to RIS3, complementing the place-based approach taken by the EIT RIS Hubs[8]. The EIT community works on the basis of the Knowledge Triangle Integration approach which can be seen to correspond roughly to the entrepreneurial discovery process (EDP) within the quadruple helix approach developed under RIS3 (Ozbolat et al, 2019).

The "EIT HEI Initiative: Innovation Capacity Building for Higher Education"[9] aims at institutional transformation and increased HEI entrepreneurial and innovation capacity to ensure this integration within territorial innovation ecosystems and to empower HEIs to become regional engines of innovation, growth and jobs and contribute to the twin transitions[10]. A prerequisite for receiving funding under the HEI Initiative is the production of an Innovation Vision Action Plan (IVAP) to improve the innovation and entrepreneurial capacity of the HEIs as well as take into consideration territorial needs and other innovation actors in the territorial innovation ecosystem. The projects would therefore, ideally, reflect and respond to *not only institutional but also territorial capacities, strengths, opportunities and weaknesses*.

Whilst the HEI Initiative had a broader set of goals and objectives than strengthening the regional dimension,[11] the present report analyses the first two cohorts of projects funded under the HEI Initiative in relation to this aspect[12]. An evaluation of the extent to which early projects funded under the first two calls reflected a place-based approach can inform future calls for proposals and development of selection criteria. It can also guide HEIs and other territorial actors in ensuring HEI contribution to RIS3 and territorial transformation more widely.

European strategy for universities and the Commission Proposal for a Council Recommendation on building bridges for effective European higher education cooperation, SWD/2022/6 final

[6] https://s3platform.jrc.ec.europa.eu/actionbook

[7] https://eit.europa.eu/news-events/news/european-commission-proposes-eit-strategy-2021-2027

[8] The objective of an EIT RIS hub "is to mobilise and involve local knowledge triangle actors in the KICs' activities, establishing synergies at local level, identifying funding and collaboration opportunities and promoting their active integration in ecosystems" (EIT Strategic Agenda, section 3.2).

[9] https://eit-hei.eu/

[10] https://eit-hei.eu/about/about-eit-hei-initiative/

[11] Strengthen innovation and entrepreneurial capacity of HEIs at institutional level, engaging all actors of the education value chain; enable meaningful engagement with innovation ecosystems; empower people to transform ideas and expertise into tangible, societal value and to create an entrepreneurial culture.

[12] The analysis of any subsequent calls was impossible within the timeframe of the HESS project.

Main findings

Whilst early calls under the HEI Initiative specified that applications should look to strengthen the integration of HEIs into regional innovation ecosystems and their innovation and entrepreneurial capacity, smart specialisation was not included as a formal selection criterion that would influence scoring and potential success under the initiative. Nevertheless, the research identified a very significant reflection of territorial needs and challenges within the project approaches under cohorts 1 and 2, not only during project and consortium development but also an increasing and evolving consideration throughout project implementation. Those projects which had undertaken a more comprehensive analysis and mapping of territorial needs prior to developing project activities appeared to elaborate more strategic approaches towards challenges within their industrial ecosystems and it was arguably more likely that participating HEIs would be able to become actors of change and transformation. Partners from smaller member states tended to be more likely to consider both regional and national needs and challenges recognising the benefit of reflecting the broader framework of territorial strategies.

There is still room however, to better connect HEI Initiative projects with RIS3. Whilst collaboration with local innovation ecosystem stakeholders differed across the projects in terms of both the types of participants and the nature of the collaboration, there are very few examples of public authorities acting as a partner under the HEI Initiative. Similarly, informal collaboration with public sector actors and RIS3 contact points also needs to be strengthened, with few projects incorporating their territorial policy-makers within the project and activity design. Improved collaboration with public sector innovation actors would enable a better reflection of territorial analyses/mapping and strategies in suitably tailored territorially-relevant project activity. Conversely, it would also enable policy learning from the HEI Initiative projects to be better incorporated into territorial strategy and policy making.

Alongside HEI integration within local innovation ecosystems, the HEI Initiative has also further enabled HEI engagement and participation in international ecosystems and transnational networks to support and facilitate innovation and entrepreneurship. Many projects funded under the first two cohorts of the HEI Initiative demonstrated added value through building upon and furthering previous collaboration under other complementary EU funded initiatives. There was also a tendency within the projects to focus on scaling up or improving current practices, support structures and training and mentoring, improving HEI capacities and, to varying degrees, instigating or acting as a catalyst for institutional changes and a transformation of HE's role.

HEI Initiative projects are highly effective in enhancing staff and student entrepreneurial skills and competences through a range of innovation and entrepreneurial education activities incorporating: training and mentoring, supporting services for start-ups, research application and knowledge transfer, cross-cutting curriculum enhancement, industrial involvement in entrepreneurial education, developing educational materials and developing innovation capacity. Nevertheless, the extent to which this relates to regional development, RIS3 and the specific context of the region, industry, and market demands varies. Similarly, HEI Initiative projects variably support and enable the alignment of university missions and hence the extent to which a rethinking of the role and organisation of the university as an institution and a territorial actor is possible.

Key conclusions

The HEI Initiative enables the increasing integration of HEIs into territorial policy-making and their strengthened contribution to, and participation in, territorial transformation, reinforcing and anchoring

them in their regions and local innovation ecosystems. Nevertheless, their level of territorial embeddedness and ability to engage with a range of actors and the type of activities undertaken locally, and hence the impact of the initiative, reflects distinct territorial, institutional, policy and sectoral contexts across the EU. Participating universities and partners have varying capacities to initiate collaboration, navigate funding streams and develop joint activities, structures and qualifications for example.

The initiative supports systemic transformations in universities, steering HEI entrepreneurship, research and innovation towards addressing global societal challenges and local territorial needs and strengthening institutional capacity and the alignment of the different HEI missions. Nevertheless, the extension of the HEI Initiative until 2027 should seek to further integrate an analysis of territorial ecosystems and actors into the project development process and ensure policy learning from the initiative is able to feed back into and inform local policy and strategy-making. The synergies with other funding streams and initiatives is widely recognised, yet the sustainability of the collaboration could be further explored, both at programme level and at the level of individual projects.

Related and future JRC work

The report builds on and complements other work under the HESS project, including published work on HEI participation in the Knowledge Alliances and European Universities initiatives and their territorial innovation ecosystems, which considered the varying role and integration of HEIs within innovation ecosystems under two ERASMUS+ funded schemes.[13]

A further piece of work aims to understand the role of HEIs and education and skills policy in transformative place-based innovation which demands a more systemic i.e. whole-of-government and multi-level approach and the extent to which HEIs can become agents of change in linking various green, digital and other societal transformations to increasing competitiveness and a better quality of life for all EU citizens.

[13] Esparza Masana, R and Woolford, J, European Universities and Knowledge Alliances within their territorial innovation ecosystems, Publications Office of the European Union, Luxembourg, 2023. doi:10.2760/429140, JRC135388.

1 Introduction

Universities are increasingly expected to play a role and contribute to regional innovation and development, and specifically in the context of global and societal challenges such as the twin green and digital transitions and European recovery and resilience. The European Strategy for Universities[14] heralds higher education institutions as engines of innovation, that can become actors of change and transformation through more effective partnership and cooperation within their industrial ecosystems and transnationally. HEIs can contribute to the challenges facing society, both locally and globally, through a transdisciplinary co-creation of knowledge with citizens and other actors in the quadruple helix, linking education, research, innovation, and service to society[15] to contribute to economic, social and environmental place-based development.

The introduction of smart specialisation (RIS3) has facilitated the emergence of 'quadruple helix' partnerships that embrace HEIs, business, public authorities and civil society. RIS3 gave increasing prominence to the role of universities not only on the supply-side (research and skills) but also on the demand side (capacity building and supporting the governance of regional innovation) (Harrison and Turok, 2017).

Within this context, the European Institute of Innovation and Technology (EIT) pioneers a competitive, knowledge-based economy through the integration of education, research and innovation achieved by industry - the three sides of the so-called Knowledge Triangle. The EIT's new Strategic Innovation Agenda 2021-2027 includes the objective to increase the innovation and entrepreneurial capacity of HEIs and better integrate them into their innovation ecosystems. The EIT and its Knowledge and Innovation Communities (KICs)[16] are expected to have a greater regional impact, increasingly capturing the regional dimension through developing links to smart specialisation.

The "EIT HEI Initiative: Innovation Capacity Building for Higher Education" [17] was piloted across the EU in 2021-2023 through three funding cohorts. It aimed to enhance the innovation and entrepreneurial capacity of HEIs and strengthen their links with their local/regional ecosystems and value chains based on the Knowledge Triangle Model. Tools such as the Regional Innovation Impact Assessment (RIIA) Framework would better incorporate them into the process of design and implementation of RIS3. HEIs would develop and implement specific innovation and entrepreneurship (I&E) actions leading to institutional transformation, increased entrepreneurial and innovation capacity, and integration within territorial innovation ecosystems[18].

[14] https://education.ec.europa.eu/sites/default/files/2022-01/communication-european-strategy-for-universities.pdf; COM(2022) 16 final

[15] Commission Staff Working Document Accompanying the European Strategy for Universities and the Council Recommendation on building bridges for effective European higher education cooperation, SWD(2022), 6

[16] Knowledge and Innovation Communities (KICs) are Europe-wide networks or communities consisting of higher education institutions, research centres, businesses and investors, and public and non-profit organisations. Each addresses a specific societal challenge: climate change, digitisation, sustainable energy, health innovation, raw materials, future of food, added-value manufacturing, urban mobility and cultural and creative sectors and industries.

[17] https://eit-hei.eu/

[18] https://eit-hei.eu/about/about-eit-hei-initiative/

The present report analyses the first two cohorts of the HEI Initiative in order to identify and develop understanding of good practice approaches of linking HEI entrepreneurship and innovation to smart specialisation and territorial transformation, and the evolving entrepreneurial transformation of EU universities as they increasingly integrate innovation into their education. It attempts to reflect the varying articulation of the regional dimension, of the interaction and engagement of stakeholders, as well as the types of learning outcomes sought, in order to inform future calls for proposals and development of selection criteria under the initiative, as well as guide HEIs and regions to develop and enhance the HE contribution to RIS3 and territorial transformation.

2 The EIT's Strategic Innovation Agenda and the HEI Initiative

The EIT Strategic Innovation Agenda (SIA) 2021-2027 sets the strategic direction, priorities and objectives of the European Institute of Innovation and Technology (EIT) and its Knowledge and Innovation Communities (EIT KICs). It includes, as an objective, the creation of systemic impact in higher education at the institutional level, supporting higher education institutions (HEIs) to a) strengthen their innovation and entrepreneurial capacity by promoting and supporting institutional change and b) integrate into, contribute and engage with innovation ecosystems.

In March 2020, a Pilot Call for Proposals was launched under the HEI initiative for consortia formed by HEIs and their partners (industry, research institutions, public authorities and governmental organisations) to design collaborative projects that improve HEI entrepreneurial and innovation capacity. The initiative looks to embed innovation and entrepreneurship across the missions of HE, improving their capacity to teach and research innovation and entrepreneurship and to themselves engage with business and wider innovation actors and become regional engines of innovation[19].

The HEI initiative specifically encourages HEIs to look at their own practices, opportunities and weaknesses, and to develop concrete actions to increase their impact on their innovation ecosystems. The inclusion of a range of territorial stakeholders, such as civil society, public institutions, regional authorities, and third sector organisations is designed to encourage HEIs to foster tailored practices and actions that have maximum impact in their territorial innovation ecosystems. Whilst projects are led by a HEI, other stakeholder organisations can be full or associated partners: the former actively participate in the project and receive funding, whilst the latter contribute to project tasks/activities but do not receive any funding[20]. The HEI Initiative also aims to capitalise on the EIT's role as Europe's largest innovation ecosystem through the creation of collaborative relationships between the HEI Initiative projects and EIT KICs[21].

As a prerequisite for receiving funding under the HEI Initiative, all HEI projects were required to formulate an **Innovation Vision Action Plan (IVAP)** with a focus on the horizon of 2030. The IVAP would outline actions proposed for funding that would enhance the innovation and entrepreneurial capacity of the respective HEIs at the institutional level, and be based upon the results of a HEInnovate self-assessment (see Figure 1)[22] (undertaken either at the level of each individual HEI or as a consortium). The IVAP would demonstrate fit with regional priorities, specifically RIS3, and elaborate how members would engage with other innovation actors in their territorial innovation ecosystems. The IVAP was therefore expected to reflect on capacities, strengths, opportunities and weaknesses of the local territory and innovation ecosystem, as well as of the individual HEIs, and identify initiatives to foster innovative capacity development at institutional-level through the integration of the knowledge triangle to address specific territorial needs. The range of eligible actions were organised

[19] Later calls incorporated other dimensions of strategic interest for Europe, such as deep tech.

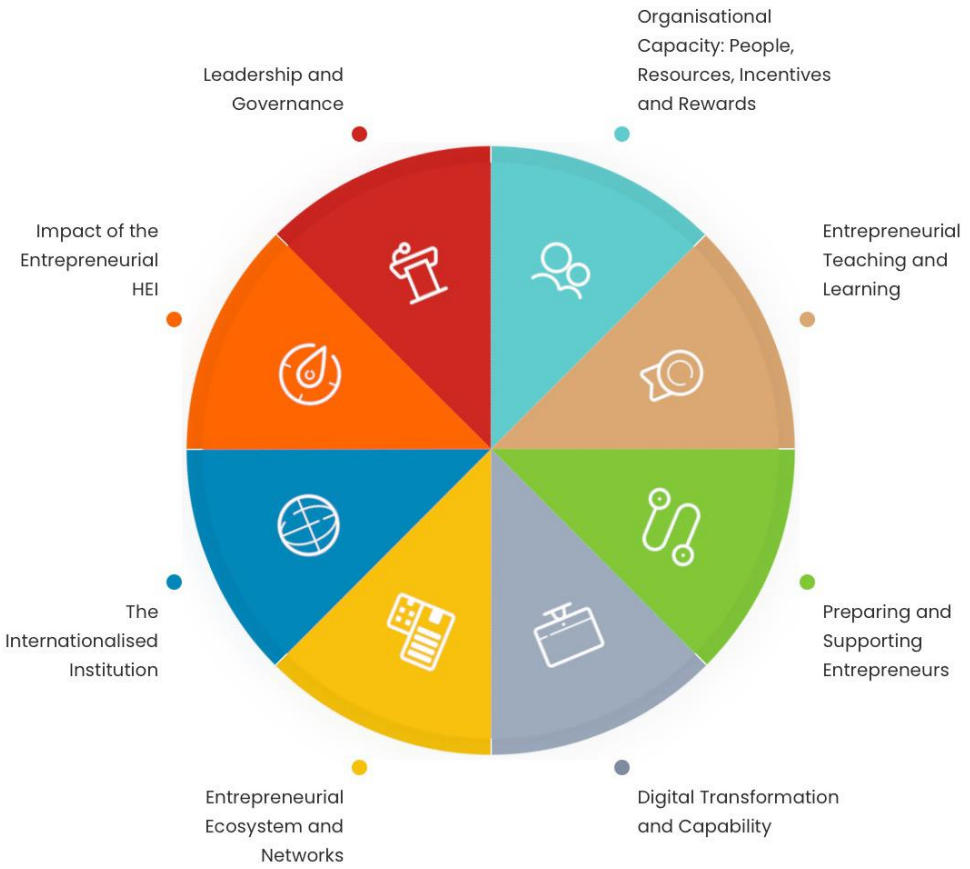
[20] A detailed description on eligibility and roles can be found in the calls for proposals: https://eit-hei.eu/calls/previous-calls/pilot-call-march-2021/ and https://eit-hei.eu/calls/call-for-proposals-november-2021/

[21] There are currently nine KICs that operate in the areas of climate change, cultural heritage, digital transformation, energy, food, health, raw materials, urban mobility and added-value manufacturing. They are made up of partnerships between: higher education institutions, research centres, businesses and investors, public and non-profit organisations.

[22] https://www.heinnovate.eu/en

thematically under four domains, with HEI projects expected to select and implement six actions 'in a constellation that best suits their needs', including at least one from each domain (see Box 1)[23].

Figure 1: The eight dimensions of HEInnovate



(Source: https://heinnovate.eu/en/about/heinnovate)

Box 1: Type of funded actions (calls 1 and 2)

— Domain 1 – Fostering institutional engagement and change.

Secure and maintain institutional engagement for the implementation of the IVAP, including departments and other units of HEI(s) as well as the leadership of HEI(s).

Enhance the scale and scope of student engagement activities, including improving student support offices to advise on innovation and entrepreneurship.

Infrastructure development (incl. digital infrastructure).

Develop inter- and multi-disciplinary support structures, testbeds, and other structures to foster innovation.

[23] https://eit-hei.eu/app/uploads/2021/11/HEI-Initiative-Pilot-Call-for-Proposals-FINAL.pdf and https://eit-hei.eu/app/uploads/2021/11/HEI-Call-2.pdf

Set up or improve organisational units and/or entities, such as technology transfer offices, to develop collaborations for technology transfer.

— Domain 2 – Strengthening partnerships (knowledge triangle integration)

Establish new collaborations and enhance the nature, content, and types of collaborations with external partners, including businesses, regional authorities, research organisations, governmental bodies, NGOs and other societal partners.

Exchange good practices through enhanced networking and mutual learning.

Collaborate with the EIT KICs, e.g. through peer-to-peer collaboration.

— Domain 3 – Contributing to developing innovations and businesses.

Develop structures, conditions, and incentives for people to create or develop their businesses and start-ups.

Create structures, conditions, and incentives for innovation-driven research.

Utilise testbeds and other types of platforms.

— Domain 4 – Enhancing the quality of innovation and entrepreneurial education.

Develop or improve innovation and entrepreneurial curricula.

Assessment of teaching and learning practices.

Develop innovation and entrepreneurial training programmes and mentoring schemes for staff and students.

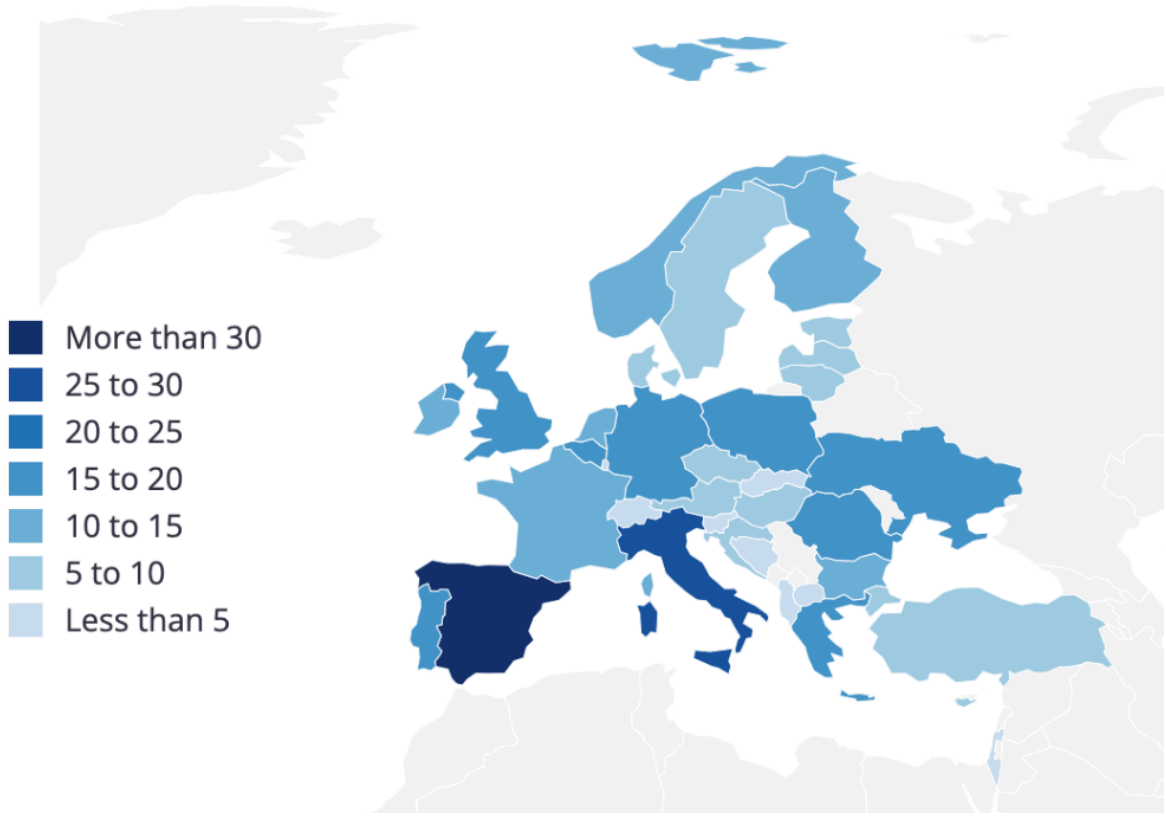
Organise internships in businesses.

Figure 2 depicts the intensity of participating organisations per country for the HEI Initiative projects over the first two cohorts (23 project applications were successful under cohort 1 and 26 under cohort 2), and figures 3 and 4 the specific number of participant organisations for EU and non-EU countries respectively[24]. NB these figures refer to full partners i.e. participant organisations receiving funding from the programme to implement actions/activities. Associated partners (advisors, supporters, or eventual collaborators in some specific actions) are excluded from the analysis[25].

[24] According to the calls for proposals, to be eligible for participation and funding, consortium members must be established in one of the Horizon Europe eligible countries. The list is available at https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/programme-guide_horizon_en.pdf

[25] Cohorts 1 and 2 include the following type (number) of associated partners according to the EIT's classification: Business-related entities including social enterprises and similar (90), public or private enterprises (37), public bodies (28), HEIs (25), intermediaries/bodies representing HEIs (17), research institutes (10).

Figure 2. Participation intensity (number of full participant organisations) in HEI Initiative projects; cohorts 1 and 2



(Source: EIT)

Figure 3. Number of full participant organisations per EU member state (cohort 1 and 2).

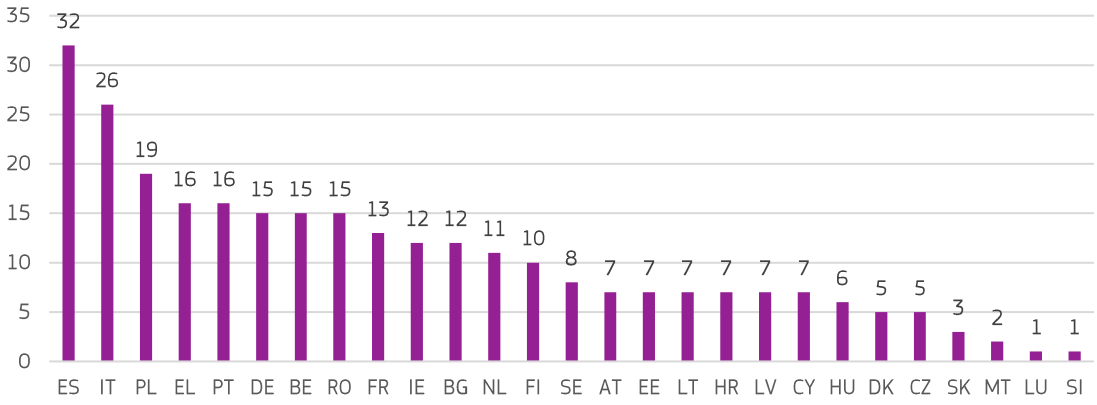
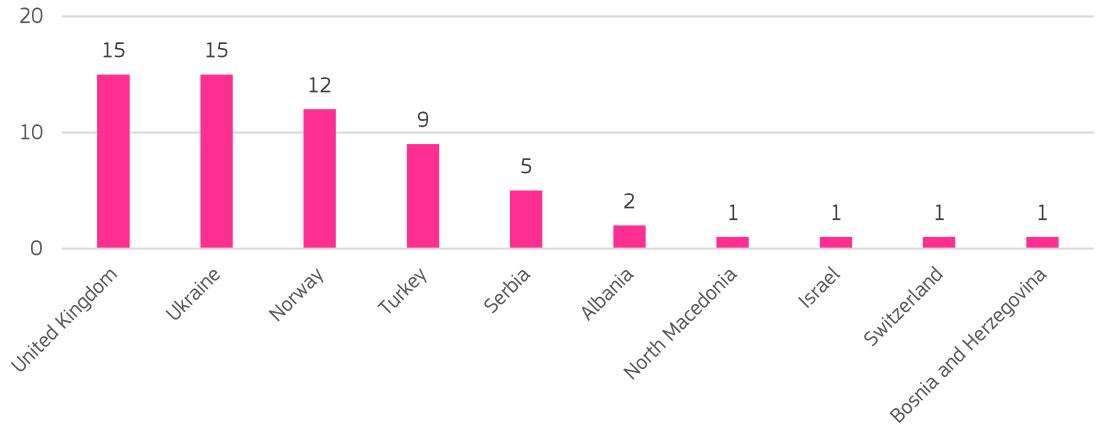
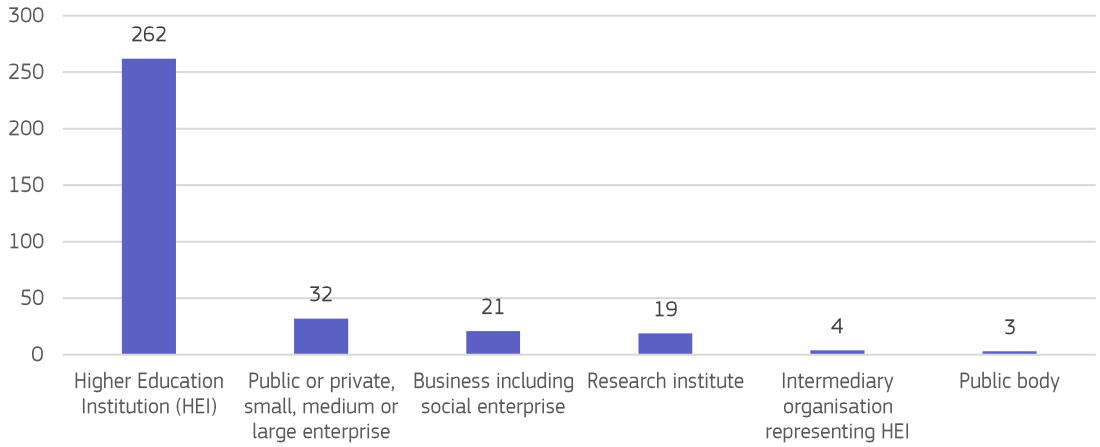


Figure 4: Number of non-EU full participant organisations (cohorts 1 and 2)



Of the EU-27, Spain and Italy have the highest number of participating organisations with 32 and 26 organisations respectively. Nonetheless, in relation to the relative size of their populations, student figures and number of HEIs, Greece, Portugal and the Baltic states demonstrate very active levels of participation and Germany and France would appear to be under-represented. Of third country participants the UK, Ukraine[26], Norway, and Türkiye are most active.

Figure 5: Type of participant organisation (cohort 1 and 2)



(Source: EIT)

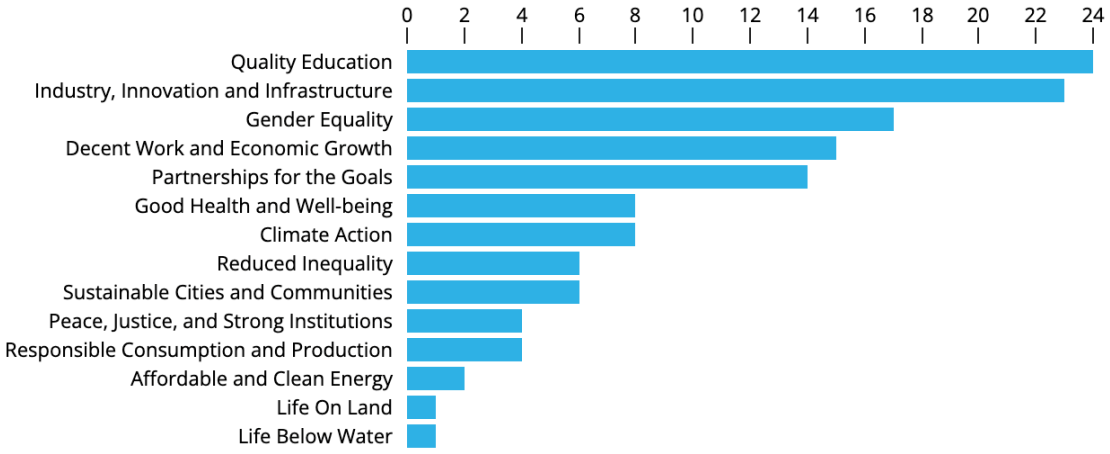
[26] Ukraine was however specifically supported under the HEI Initiative programme following Russia's invasion, see https://eit-hei.eu/get-inspired/how-the-eit-hei-initiative-decided-to-support-ukrainian-higher-education/

Figure 5 offers information on the type of organisation participating in projects of both cohorts 1 and 2. HEIs are, by far, the most represented, unsurprisingly since they are the target institution to be full partner of the funded projects; in a very few cases, HEIs are represented in the project by an intermediary organisation[27]. In many projects they cooperate with other types of partner organisation: the most common is with enterprises/business and research and innovation centres/institutes. It is very uncommon to find public entities, like sectorial agencies, included in the partnership: there are only 3 overall across the first two calls: 1 in cohort 1 and 2 in cohort 2[28], although it should be noted that 28 public bodies participate as associate partners (see footnote 21).

Figure 6 connects projects to the UN's Sustainable Development Goals (SDGs). In their application, beneficiaries are required to specify which SDGs they target. The most common ones are 'quality education' and 'industry, innovation and infrastructure' which directly align to the logic and goals of the HEI Instrument, followed by 'gender equality', 'decent work and economic growth', and 'partnerships for the goals'. Other SDGs included are more sectorial and only projects addressing specific domains expect to have a direct impact on them.

Figure 6. Number of projects addressing specific SGDs; cohorts 1 and 2

(Source: EIT)



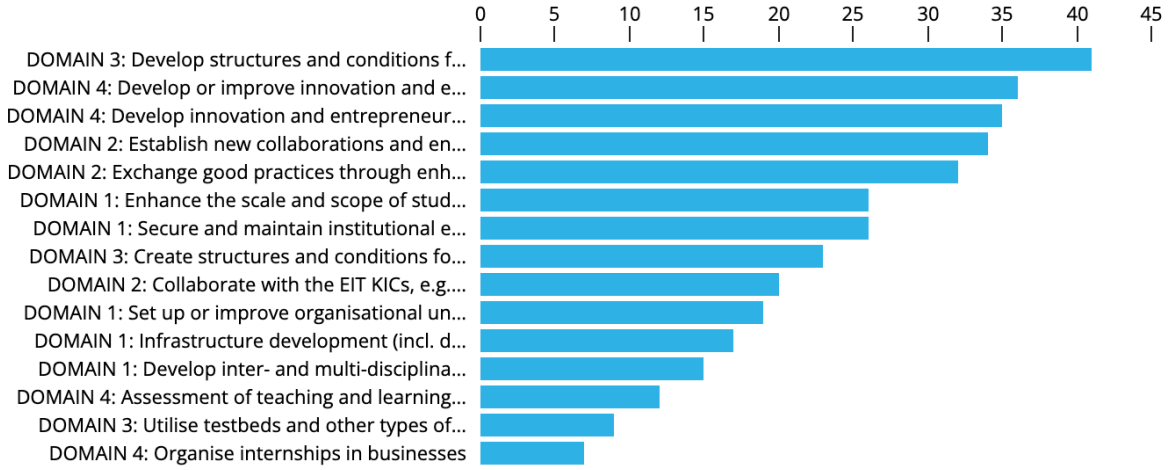
Finally, figure 7 gives an overview of the most often selected actions by the consortium and the number of projects including them within the IVAP. 'Developing structures, conditions and incentives for people to create or develop their businesses and start-ups' (Domain: *Contributing to developing innovations and businesses*) is the most common action selected, followed by 'developing or improving innovation and entrepreneurial curricula' and 'developing innovation and entrepreneurial training programmes and mentoring schemes for staff and students', both under the domain *Enhancing the quality of innovation and entrepreneurial education*.

[27] For example, the Fondazione Politecnico de Milano participates in the HEI4Future project. It acts as an intermediary organisation fostering projects between the University of Milan and companies and public authorities.

[28] The public institutions (following the EIT's classification) involved as partners are: the Ministry of Foreign Affairs of Denmark (EntreUnity), the Bulgarian Chamber of Commerce and Industry (HIVE), and the Ternopil Regional Council in Ukraine (DISCO).

Figure 7. Number of projects undertaking specific activities/actions* (cohorts 1 and 2)

*(*Full name of activities/actions available in box 1)*



(Source: EIT)

Three calls were launched under the pilot phase of the HEI Initiative covering 2021-2023 (N.B the third call was not included in this research due to the timeframe of the call vis-à-vis the HESS project). Following the evaluation of the pilot phase's outcomes, the continuation of the HEI Initiative under Horizon Europe for the remainder of the MFF programming period (2024-2027) was confirmed.

3 Methodology

The research employed a qualitative approach to exploring the role of HEI Initiative projects in supporting innovation and entrepreneurship within their ecosystems.

An initial step involved the creation and dissemination of a survey to all HEI Initiative participant organisations regarding the logic of their projects, their objectives and expected impact on innovation and entrepreneurship in their ecosystems. Responses were received from 69 representatives from 69 organisations. As part of the survey process, organisations were asked if they were willing to share their project applications. A small number (9) were received and this enabled an in-depth analysis of those projects.

Subsequently, 12 interviews were undertaken with a sample of project participants selected on the basis of their responses to the survey or EIT recommendation. The list of organisations who responded to the survey as well as interviewed organisations/representatives can be found in Annex 1. The survey can be found in Annex 3 and the research questions for the interview and forming the framework for the research in Box 2.

The qualitative exercise has been complemented by desk-based research to analyse the project dissemination material such as project websites and project posters presented at the IVAP Workshop 2023 organised by the EIT, as well as reviews provided by the EIT-KICs.

Box 2: Research questions

Consideration of local needs and challenges: How have/do participant organisations address the needs and challenges in your territory when designing and implementing the project (including the consideration of policies and strategies such as RIS3)? How does project activity reflect regional needs and specificities and where could that be strengthened and how?

Collaboration with local stakeholders: What activities are undertaken to foster and enhance collaboration with stakeholders in your city/region?

Impact within the organisation and the ecosystem: What is the expected impact of the project at institutional level, when considering the aforementioned collaborations and the reflection of local needs/challenges? Is any impact foreseen or possible in relation to systemic/ecosystem level and policy level?

Project activities/initiatives: What activities and actions have been the most successful or relevant in this regard? What added value is apparent e.g. in the areas of thematic skill development, university-business cooperation and interregional cooperation?

Collaboration synergies, challenges, context: What have been the main challenges and lessons learnt in relation to embedding the project within its territory/ies? What synergies and complementarities does the project activity demonstrate or aim for with previous/ongoing /future initiatives?

Further/complementary actions: What other future actions could enhance impact and effectiveness, e.g. at project level? Initiative level? Institutional level? Territorial level? At EIT-KIC level?

3.1.Considerations and limitations

A limitation of the research relates to the data that was made available to us as researchers. The project applications and IVAPs were not provided to us *en masse* but instead we received this level of data from projects who, firstly, opted in to the research and secondly, followed up their interest by

sharing their application forms. Therefore research questions and elements such as the extent to which projects reflected local specificities and features and built upon or demonstrated synergy with previous or ongoing initiatives have been difficult to determine, especially across the entire project portfolio. Similarly, we wished to consider the extent to which HEI participation reflects and builds upon the results of the HEInnovate analysis and again that proved impossible from the data provided.

In terms of timing, at the point of approaching the participants, the majority of cohort 1 and 2 projects were not yet finalised or were in the process of closing, and cohort 3 had not been launched. This limited any discussion of impact to achievements at that point in time and/or the expected outcomes in the near future, and also limited our ability to gain a full picture of the pilot initiative in its entirety.

Additionally, and related to the above point, *quantifiable* key performance indicators such as 'number of start-ups that received support' or 'number of students who received training' have not been considered, yet could be argued to offer relevant input to the research. Similarly, the role of associate partners has not been analysed in depth and the varying participation of public authorities as full (only 3 in total across the two cohorts) versus associate partners (28 in total) could have provide interesting insight as to their role, contribution and impact as well as the challenges and limitations of their participation.

Finally, of course it must be acknowledged that the focus of our analysis does not lend itself perfectly to the approach taken under the initiative: HEI initiative projects may aim at impacting on their local innovation ecosystems, but were not specifically required as part of the application process to ensure alignment with territorial strategies, policies, and solutions or undertake actions to address local needs or challenges.

4 HEI Initiative projects and their territorial innovation ecosystems

3.1. Contribution to territorial needs and challenges

The research found considerable variation across the projects in terms of the extent to which they considered territorial needs and challenges in designing their projects and their IVAPs, or perceived that these had been taken into account. When asked if their projects reflect on or take into consideration local needs and challenges of the *different territories participating* (i.e. all consortium partners/territories), the majority of respondents stated that they had been considered to some extent or to a large extent (29 and 34 respondents respectively out of the total 69), indicating a positive perception of the project's alignment with the needs of the partner territories (see figure 8). Interestingly, under one project, partners gave diverse ratings against this criterion, ranging from 1 (to a small extent), to 5 (to a large extent). This different perception likely reflects different organisational experiences of interaction within their local ecosystem or the wider consortium and within specific project activities.

Nevertheless, the majority of respondents (94%) rated their projects as effectively, to a large or some extent, addressing the needs of *their respective territories* or regions (see figure 9), and taking into account the needs of local stakeholders, to a large or very large degree (82% of all respondents - see figure 10). Interestingly, partners from smaller member states tended to be more likely to consider both regional and national needs and challenges recognising the benefit of reflecting the broader framework of territorial strategies, e.g. Comenius University of Bratislava, Slovakia (i2i); University of Pardubice, Czechia (INVENTHEI). Whilst a number of projects focused on only one domain or thematic area, for instance: InnovAid (Increasing the entrepreneurial innovation capacity of higher education institutions in AI and data science in healthcare); EuroSpaceHub on space; and SMILE (Smart Manufacturing Innovation, Learning-labs, and Entrepreneurship) on smart manufacturing, a number considered more than one domain, for example, OASIS on ICT and sustainability.

Figure 8: Questionnaire responses to question: To what extent do you feel your project as a whole considers and reflects on the needs of the territories/regions where the partner institutions are located (absolute number; percentage of total)

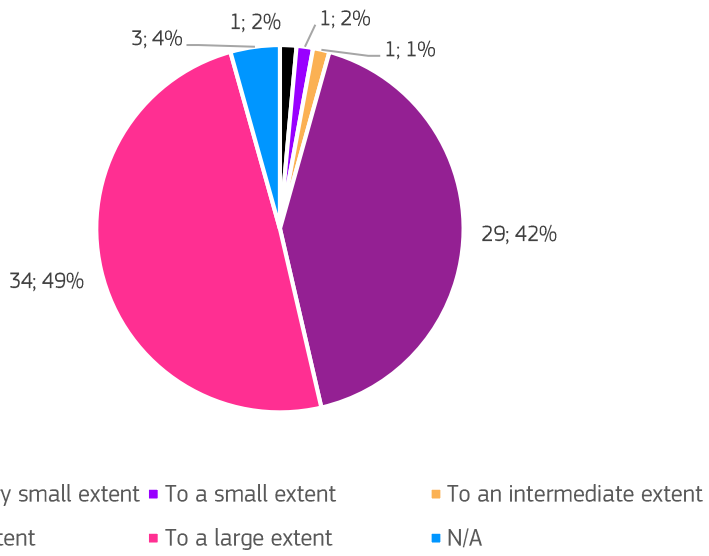


Figure 9: Questionnaire responses to question: To what extent do you feel your project addresses the needs of your institution's territory/region? (absolute number; percentage of total)

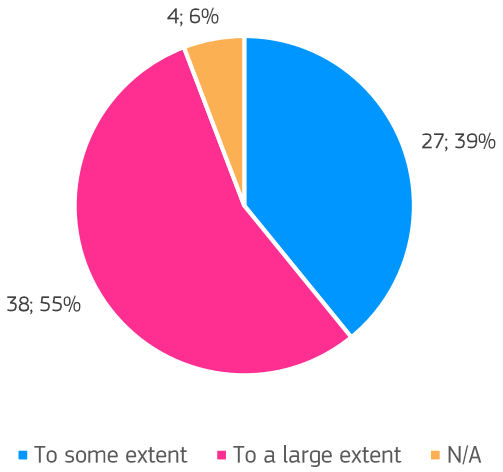


Figure 10: Questionnaire responses to question: To what extent do you feel your project as a whole considers and reflects on the needs of the local stakeholders of the innovation ecosystem (absolute number; percentage of total)

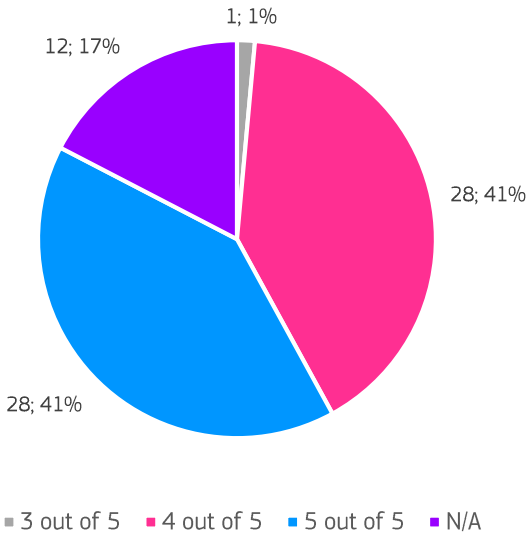


Figure 11: Questionnaire responses to question: Did your consortium undertake any type of formal analysis or assessment of smart specialisation and/or regional territorial development goals during the development of the project? (absolute number, percentage of total)

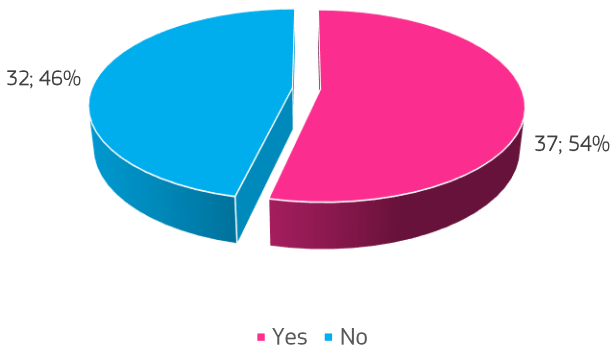
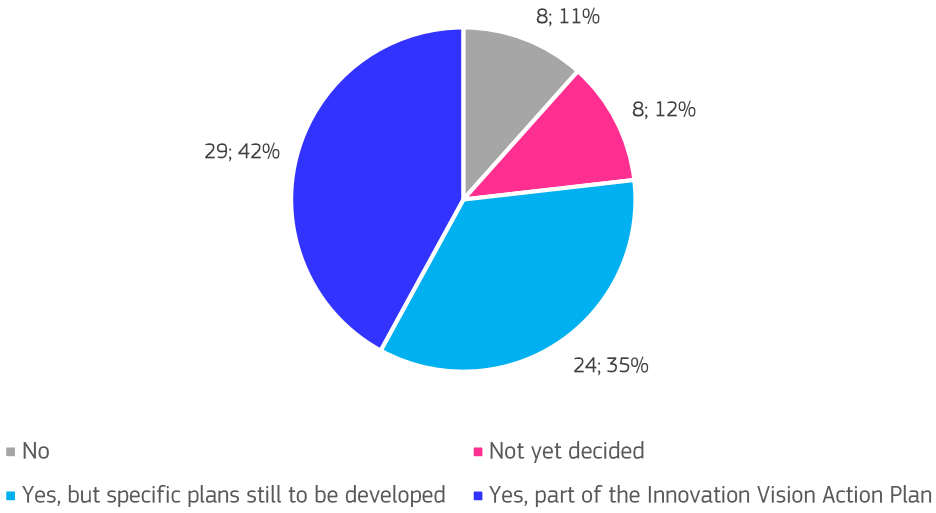


Figure 12: Questionnaire responses to the question: Has your consortium undertaken any type of formal analysis or assessment of smart specialisation and/or regional territorial development goals during project implementation?



A large share of respondents stated that their project considered or included elements related to RIS3: 54% of the respondents say that they undertook a formal analysis or assessment of regional territorial strategies and RIS3 when designing the project (application phase) (see figure 11) and 77% of respondents considered that the partnership considered RIS3 during project implementation. 42% of respondents stated that RIS3 was or would be explicitly present in their IVAPs.

Several projects undertook initial mapping activities to assess complementarities across RIS3 strategies (e.g. BOOGIE-U, i2i) and some focus specifically on RIS3 domains when developing I&E activities (e.g. KICstartH2: hydrogen technologies). A number of partner organisations undertook individual analyses of their regional innovation environment (strengths, potentials for development, and performance comparisons), mapping aspects such as the alignment between their institutional involvement within the HEI Initiative project and their territorial RIS3 e.g. the University of Warsaw in the InterHEI (Interdisciplinary HEI Entrepreneurship Fostering Programme) project, or the gap between academic demands and industry needs (e.g. INVENTHEI).

However, in many cases, at the time of the research, work was still ongoing or evolving to identify connections to RIS3 throughout implementation (e.g. InterHEI, HEInnovaSport, EntreUnity). In the first phase of the Smart4Future (Smart Innovation for Smart Future) project, partners analysed the needs of their local innovation ecosystem, mapping challenges and assessing capacities of stakeholders. Nevertheless the alignment with RIS3 was initially weak in the Croatian case, and it was only through the revision of the RIS3 that a stronger alignment had evolved with the territorial specialisations, according to the Algebra University College representative.

Other projects considered alternative strategies / policies in their mapping exercise – for instance, the NetworkIQAlliance (Building Forward Better Ecosystems) partners used the European Regional Innovation Scoreboard to identify regions with different levels of industrial dynamism and employment characteristics, ensuring that 'emerging innovator' regions would collaborate with their peers to become 'moderate and strong innovators'. Interestingly, respondents from other projects mentioned major differences between different members and member states in relation to

innovation: the InterHEI respondent acknowledged how much they were able to learn from their peers and hence build their institutional capacity to enhance project actions and impact.

Similarly, the UNIcorn (Fostering Knowledge Transfer from Universities to Business – Innovation to Unicorn) project bases their collaboration on the macro-regional objectives of the Baltic Sea Region. The 4InnoPipe (Strengthening Innovation Pipelines for Impactful Universities) project mapped EIT activities, assessed their relevance for project stakeholders and defined synergies and collaborations that could be developed. Following an initial mapping of territorial strategies and stakeholders, the latter were interviewed under the project to ensure alignment of project activities with territorial needs.

Whilst many projects aim to transform their local innovation ecosystem and reflect territorial specialisations, others take a broader view, aiming, through international collaboration and exchange and the integration of research and innovation strategies, to address global societal challenges such as social inequality[29], promoting sustainable growth and innovation related to sustainability[30], circular economy[31], mobility[32], health and nutrition[33], or responding to the twin transitions of climate change and digitization[34]. These initiatives had a strong focus upon connecting innovation and entrepreneurship to society, sharing knowledge and best practices across borders in order to enhance the overall impact of their initiatives. In most cases, participant organisations saw the exchange of good practices with their peers in the projects as a key positive spillover of the initiative. Notably, all projects were asked within the calls to identify where their activity aligns to specific SDGs and so these references appear frequently in HEI Initiative project actions. The European University of the Canary Islands (INCORE project), for instance, created an academic chair to work in the field of innovation and entrepreneurship in relation to the Sustainable Development Goals.

However, some respondents stressed the importance of ensuring that specific and suitably tailored actions were developed in response to the formal assessments of territorial needs, suggesting some room for improvement in terms of ensuring actions effectively respond to and reflect territorial challenges. Box 3 highlights some good practice examples in relation to project alignment with territorial needs and challenges.

[29] The E.I.N.S project (Entrepreneurship and Innovation Network for Smart and Sustainable European Regions, has, as one of its priority domains, social innovation linked to the reduction of social inequalities.

[30] For example, the HEI4S3-RM Building Ecosystem Integration Labs at HEI to foster Smart Specialisation and Innovation on Sustainable Raw Materials

[31] The CITE (Circular Economy Innovative Initiative in Textile for an Entrepreneurial Europe) project considered relevant policy/strategy domains at EU level, including the European Green Deal, Circular Regions, and the New European Bauhaus.

[32] The HEI4Future (Entrepreneurial and innovation skills for developing the new value chains of mobility, health and manufacturing) project addresses challenges related to advanced mobility.

[33] The HEADLINES (Higher Education Accelerating Directed Learning in Nurturing Entrepreneurship) project aims to improve local innovation ecosystems by connecting HEIs with partner organisations in the food and health sectors.

[34] The INCORE (Innovation Capacity Building for Higher Education in Europe's Outermost Regions) includes digital transformation, renewable energy and circular economy amongst its priorities.

Box 3: Project alignment to territorial needs and challenges – good practice examples

The BOOGIE-U (Innovation and Entrepreneurship through European Universities) project analysed territorial priorities and thematic areas[35] in their respective smart specialisation strategies in order to inform the development of regional innovation hubs in each project territory to address the relevant territories' needs and challenges. They additionally analysed the logic of their local innovation and entrepreneurial ecosystems, collecting relevant data and interviewing stakeholders in each involved region[36]. Partners co-design and implement challenge-based activities linked to / aligned with local needs and challenges and based around the regional innovation hubs.

One of the goals of the E.I.N.S. (Entrepreneurship and Innovation Network for Smart and Sustainable European Regions) project is to link smart specialisation and open innovation to connect regional ecosystems to pan-EU networks. The project partners identified 6 domains of common interest linked to their local smart specialisation strategies and designed 6 innovation hubs, one per domain, namely: (1) Food, (2) Digital Health and Social Innovation, (3) Creative Industries and Digital Media, (4) Digital Technologies and Advanced Manufacturing, (5) Smart and Sustainable Working and Learning Environments, and (6) Smart and Sustainable Cities, Regions and Villages. The hubs will form a network of innovation landmarks that address, utilise and reinforce RIS3 priorities to enhance regional innovation systems, forming a base for local regional stakeholders to address and co-solve local challenges and enhance and support pan-European collaboration.

The INCORE project focuses on expanding HEIs' innovation capabilities and fostering better integration with their respective regional innovation ecosystems in the EU's outermost territories. The European University of the Canary Islands undertook a mapping exercise of local, regional and national policies and strategies related to innovation and sustainable development, and identified the core sectors/domains of focus for local INCORE actions: digital transformation, renewable energy, circular economy and tourism.

The EUAcceL (Accelerating Innovation in Europe Through Start-up Development and Co-Creation) project and SFF ACCEL (Cohort 3) (Accelerating innovation across Regional Deep Tech Valleys in Europe) project (the latter being a spin-off of the former) makes use of the concept of 'Regional Innovation Valleys' in order to address specific territorial challenges. These 'valleys' are based around the provision of services to innovative start-ups in a specific specialisation area in a specific territory. These include the Varna Deep Tech Innovation Port, the Athens Innovation Hub, and the Thessaloniki Valley[37].

Each partner within the INTREPID-HEI (International Capacity Building in Innovation, Transfer and Entrepreneurship with focus on Shared Expertise in Higher Education Institutions) project aligns to their territory's specialisations / priority domains, for instance, Regensburg University of Applied Sciences planned digital courses and support services reflecting the Bavarian RIS3 priority of 'innovative technology-based services', and in South-East (RO), RIS3 priority domains are reflected in the thematic focus of measures to support start-ups in the region.

The EntreUnity (Entrepreneurial University Network) project addresses 3 specific challenges: global food security, ageing populations, and climate change. A mapping of the innovation ecosystems of the involved territories and their alignment with the EIT Food and Health's strategic agendas ensures that the outcomes of the project develop in parallel with other local and European initiatives and strategies, fostering complementarities and synergies.

[35] The selected thematic areas were energy and sustainability, food, industrial systems, health, and logistics and mobility
[36] These analyses are available at: https://www.hei-boogie-u.eu/deliverables/
[37] https://startforfuture.eu/page/regional-innovation-valleys

3.3. Strengthening partnerships – knowledge triangle integration

All projects to some degree aim to strengthen partnerships and collaborations with partners in their regional innovation ecosystem, including businesses, research organizations, NGOs, and other societal organizations. Unsurprisingly considering the nature of the initiative, a number of projects sought to place universities at the centre of regional strategy and policy making and act as catalysts to foster collaboration within the local ecosystem and build solutions to territorial needs. Some participants recognised the opportunity provided by the initiative for HEIs to strengthen and increasingly structure collaboration with public authorities and also civil society and arrive at improved co-created solutions to societal challenges.

Collaboration with local innovation ecosystem stakeholders differed across the projects however in terms of the types of participants and the nature of the collaboration. Whilst numerous respondents stressed the importance of engaging stakeholders and involving them in project activity, in many cases this focused primarily upon reinforcing cooperation and engagement between academia and industry. The majority of projects highlighted the need to enhance SME access to research infrastructures, test beds, and laboratory facilities; to improve understanding of local business prospects and capacity requirements for going to market, and to increase the capacity of higher education institutions to carry out demand-driven research and education activities. One respondent mentioned that the most relevant collaborations for start-ups can be other (larger) companies, yet the latter are generally hesitant to directly participate as project members. Others, looking to better reflect local business needs in their training offers, were struggling to engage businesses, but had to move ahead with project activities and develop offers for business training and mentorship.

Collaboration with public agencies was however less evident across the projects. Figure 13 shows the percentage of participant organisations that have contacted the authorities in charge of the design and/or implementation of smart specialisation strategies in their regions and/or countries, demonstrating that the majority (77%) did not. A number of participants stated that formal engagement with entities or authorities in charge of designing/implementing territorial strategies/policies had proven difficult. Nevertheless, survey respondents generally recognised the value of leveraging contacts with smart specialisation contact points and territorial administrations to better understand, reflect and integrate territorial needs and specializations and hence maximise the impact of their projects. It was seen as mutually beneficial for both HEIs and the public administration to collaborate, engage and co-create, and a number of projects were still looking to further develop these links throughout project implementation.

Figure 13: Respondent organisations in contact with RIS3 representatives (region/country) (absolute number; percentage of total)

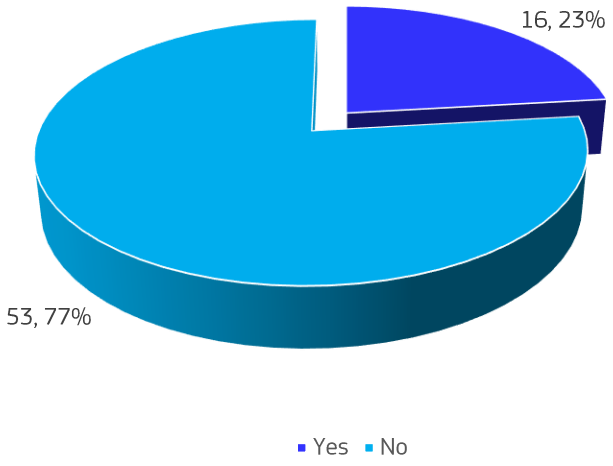
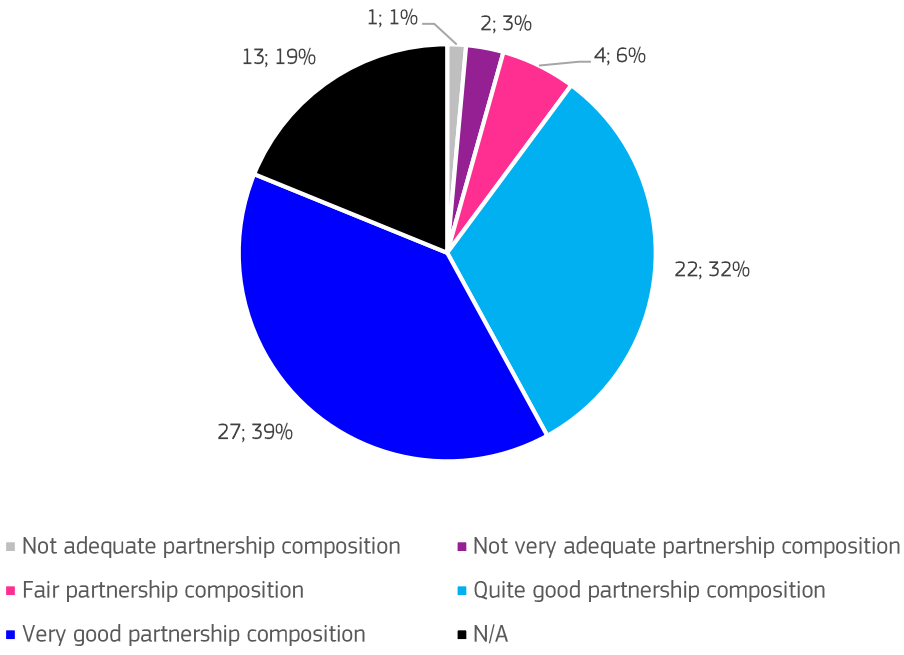


Figure 14. Respondents' opinion on the composition of the partnership (absolute number; percentage of total)



When participants were asked whether they considered the partnership of their project adequate (figure 14), most agreed that the partnership of their project is the right one in terms of the type of organisations that participate. Respondents who did not agree mentioned two types of stakeholders who were missing from the partnership: public authorities and businesses. Certain HEIs tended to find

stakeholder engagement easier, for example, Universities of Applied Science due to their innovation and entrepreneurship orientation, and universities in rural areas where they are a significant player e.g. University of Galway (i2i project) in the West of Ireland where strong local connections exist to companies and agencies that support innovation and entrepreneurship. Other HEIs build on the back of previous successful collaboration, e.g. the INCORE project is seen as the natural continuation of previous initiatives where the European University of the Canary Islands collaborated with regional stakeholders (specifically, the local Business Confederation) to foster I&E. Based on the strength of the current collaboration, there are plans to enhance the collaboration with other partners and build an alliance to apply to the European University initiative. Interestingly, this bucks the general trend whereby many HEI Initiative projects are created as spin-offs from European Universities alliances (see Box 4).

Box 4: HEI Initiative projects as spin-offs from European University alliances

The INNOUNITA (Innovation capacity building in UNITA) project is a branch initiative of the UNITA European university alliance. Project partners aim to address their regional innovation systems' gaps in relation to I&E education and develop training and capacity building activities to offer solutions that have a long-term impact on territorially-relevant entrepreneurship.

The C-ACCELERATE (Accelerating the role of Creative Communities through the Exploration of Entrepreneurial Education and Radical creativity within European Education) project was designed in the framework of the FilmEU European University alliance, enlarging the logic of the alliance through the enhancement of entrepreneurship.

EELISA UNFOLDS is a spin-off project from the European University alliance named EELISA. It aims to contribute to the transformation of higher education institutions into key players of the entrepreneurial and innovation ecosystem.

The Inno-EUt+ (Innovative European University of Technology) project was built as a spin-off initiative of the European university alliance EUt+, so it could complement the actions of these alliance by enlarging the role of I&E within its framework.

Inno4YUFE is the spin-off project of the YUFE (Young Universities for the Future of Europe) European university alliance. The goal of the project is strengthening the I&E domain within YUFE activities.

E.I.N.S. (Entrepreneurship and Innovation Network for Smart and Sustainable European Regions) project (a spin-off of the E^3UDRES^2 European University) looks to connect regional ecosystems to pan-EU networks under 6 priority domains.

A broad number of organisations and projects aim to engage with regional, national, and international innovation ecosystems, establish collaborations, and connecting and integrating different innovation ecosystems across Europe, with the goal to create networks, share knowledge, and foster collaboration to accelerate innovation and entrepreneurship. As mentioned previously, project partners from smaller member states were more likely to align and link with national level challenges, which facilitated partnership and collaboration with national level public authorities. The objectives of the EuroSpaceHub (Increasing space innovation and technology transfer by connecting space academia, industry and start-ups) project, in which the Technical University of Vilnius participates, are aligned with the Lithuanian national goal to become a full member of the European Space Agency; as a result further collaboration between the university and the national ministry has developed including applying as part of a consortium to Horizon Europe. More generally, the project offers the university the possibility to enlarge their network, approaching more stakeholders in the space industry.

Hence a number of projects emphasized the importance of sustainable sources of funding, including for travel and visiting between partners to facilitate collaboration, and having an effective exit strategy. Other participants mentioned the need to establish common platforms between partners, and even wider stakeholders to streamline communication and information dissemination, specifically around RIS3 aspects. In some cases, communication channels or platforms had been established to facilitate interaction and cooperation among stakeholders in the innovation ecosystems at local, regional (e.g. in Wallonia, see Box 5), national, and international levels. However, other respondents stressed the need for improved information sharing among project partners and improved communication and dissemination channels. Box 5 highlights some good practice examples in relation to partnership working.

Box 5: Strengthening partnership and knowledge triangle integration - good practice examples

The INVENTHEI (Innovation and Entrepreneurship in HEIs) project aims to foster innovation and entrepreneurship through engagement with local stakeholders in "innovation districts". Partners collaborate with their regional authorities and development agencies, holding regular meetings to discuss project activity, including alignment with RIS3 and the project's contribution to RIS3 implementation.

Comenius University of Bratislava (i2i project) collaborate with Bratislava's Innovation Office in order to ensure that local policy and strategy priorities are integrated into the project and that learning outcomes from the project are disseminated widely. Similarly, Algebra University College (SMART4FUTURE), stated that their strong collaboration with the city of Zagreb helps them identify local needs that are built into project activities to enable the development of innovative local solutions.

HEI4RIS3-RM (Building Ecosystem Integration Labs at HEI to foster Smart Specialisation and Innovation on Sustainable Raw Materials) utilised the Regional Innovation Impact Assessment (RIIA)[38] to design Ecosystem Integration Labs. These aim to foster collaboration among raw material industries and related services in the regional ecosystem of each project partner, placing HEIs as central drivers of this process and drew upon RIS3 Thematic Platform initiatives on mining, batteries, and digitisation to reflect on relevant challenges.

CloudEARTHi (Build innovation capacity using Big Data in Environmental Sciences, Sustainability and Circular Economy) aims to "increase the innovation & entrepreneurial capacity of the HEIs to improve integration, engagement & impact within their innovation ecosystems", establishing new and enhanced collaborations of varying nature, content and type with external partners around, for example, joint R&I, new start-ups in the sector and technology transfer.

The e-WallonHY[39] initiative is based on the logic of the local RIS3 and has created a platform integrating stakeholders linked to Wallonia's hydrogen sector, alongside an action plan and common projects. The platform provides a strategic base for the development of the KICstartH2 (Accelerating Sustainable Hydrogen Uptake Through Innovation and Education) project activities and the incorporation of RIS3 logic.

Participation in a HEI Initiative project was seen as encouraging collaboration with the Knowledge Innovation Communities (KICs) and hence to enhance collaboration with other innovation stakeholders, both KIC partners and non-member organisations. Unsurprisingly, organisations that were KIC members were more inclined to engage in joint projects with other members. The DIN-ECO (Boosting Digital Innovation and Transformation Capacity of HEIs in an Entrepreneurial Ecosystem) project has specifically, as one of their objectives, the promotion of the collaboration with the EIT

[38] https://publications.jrc.ec.europa.eu/repository/handle/JRC109020
[39] https://www.kicstarth2.com/projects-3/e-wallonhy

KICs, especially by member organisations in the consortium that are not affiliated to a KIC. The project aimed to develop a range of activities to enhance collaboration with the KICs at the level of each member organisation. Similarly, the Entrepreneur (Entrepreneurial Preparation for Notable and Engaging Universities) project considers the relationship with KICs is a key opportunity: one of the project partners is a KIC (Manufacturing) member: the Teaching Factory Competence Centre in Greece. Building on their experience, all other project partners aim to strengthen their collaboration with KIC members. The HIVE (HEI Innovation for Knowledge Intensive Entrepreneurship) project also aims to strengthen collaboration with EIT's KICs partners, by identifying potential cooperation possibilities with their members but also with other stakeholders of their regional ecosystems.

3.2. Enhancing the quality of innovation and entrepreneurial education

Being part of HEI Initiative project was perceived to enable HEIs to expand or accelerate their institutional activities to support innovation and entrepreneurship and strengthen integration and contribution to innovation ecosystems. Figures 15 and 16 represent the views of respondents on the suitability of the HEI Initiative for the development of activities relevant to their organisation and to their project consortium respectively. At organisational level, 44% of respondents affirm that the initiative is very suitable and 36% say it is suitable. In relation to the relevance of the initiative to the consortium as a whole, these figures increase slightly, respectively, to 45% and 39%.

Figure 15. Respondents' opinion on the adequacy of the HEI Initiative approach to provide an adequate framework for activity as an organisation (absolute number; percentage of total)

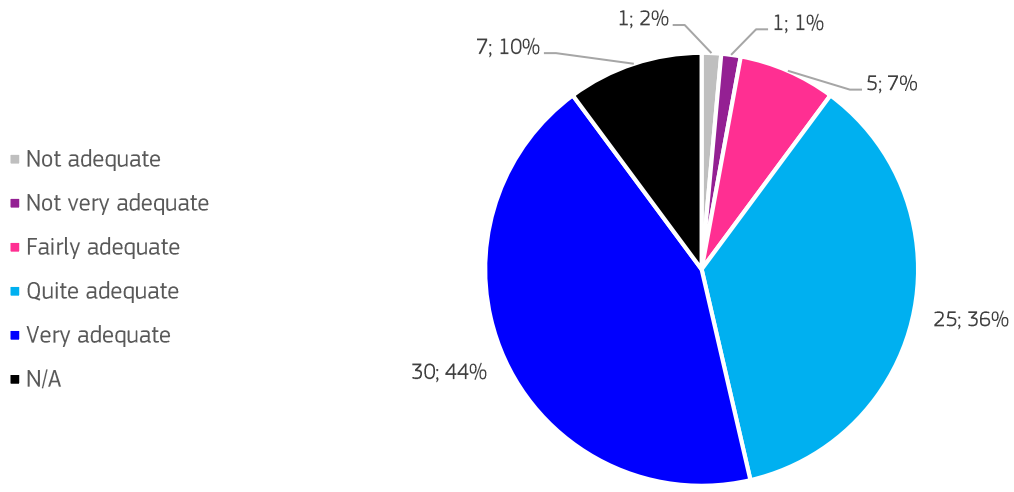
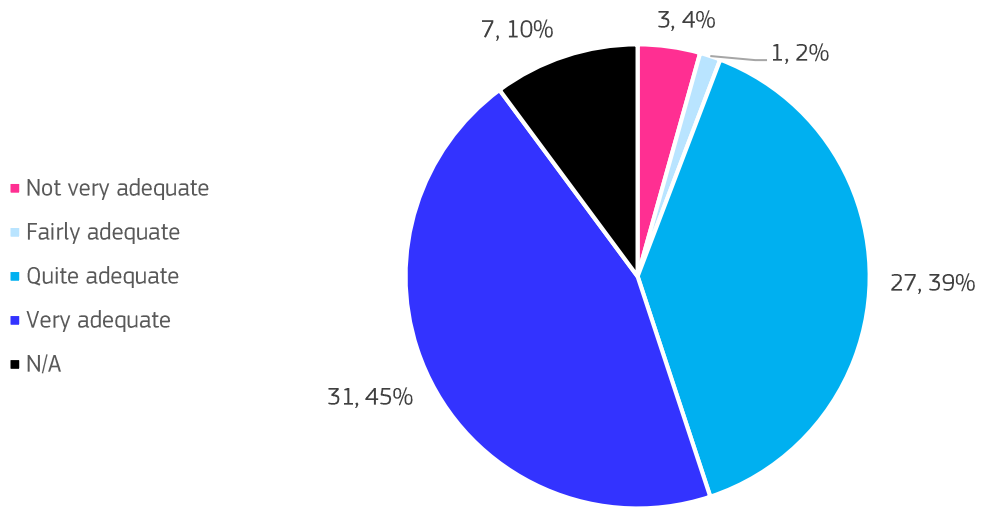


Figure 16. Respondents' opinion on the adequacy of of the HEI Initiative approach to provide an adequate framework for activity as a partnership (absolute number; percentage of total)



The majority of organisations emphasised the focus of their projects on enhancing entrepreneurial education and performance and cultivating an entrepreneurial culture and mindset among students, faculty, researchers, staff and start-ups. Representatives of the INCORE project for example said project participation had provided them with a structured methodology to accelerate and strengthen the role of I&E in their institution. The EcoAction (Action to Boost Ecosystem Impact through Cross-partner Learning) project focuses on the exchange of good practices amongst the members of the consortium to enable their increased capacity to build support services to entrepreneurs/start-ups and design or improve training I&E programmes.

I&E education-related activities undertaken by HEI Initiative projects can be categorised within a set of distinct groups:

- *Training and mentoring:* targeted training programmes for students and staff aimed at cultivating an entrepreneurial mindset, improving skills that are necessary for starting and running successful businesses and creating a culture where entrepreneurship is a viable career path. Efforts are being made in many cases to enhance and improve mentorship in areas that align with regional strengths or development priorities. Under Inno4YUFE, for example, participant HEIs developed a 'Research and entrepreneurship training and mentoring programme', as well as their 'Entrepreneurial internship programme', both aimed to enhance students' skills and providing them with know-how on innovation processes, start-up implementation, and entrepreneurial skills. The HEIght (Higher Education Innovation Growth and Training) project develops training for trainers to ensure alignment of academic activities with the needs of local industry and enterprises.
- *Support services for start-ups:* the direct encouragement and support for the creation of new business through the provision of guidance and mentoring on management, financial or legal aspects, help with the development of business plans, and assistance with applications for seed funding. For instance, the AccEnt Accelerating Innovation and Entrepreneurial Excellence in Higher Education Institutes) project has created the AccEnt Entrepreneur Helpdesk, a free-

of-charge service to help entrepreneurs when facing validation or growth-stage challenges such as business model, venture financing, investing readiness, sales strategy, etc.

- *Research application and knowledge transfer:* analysing the gap between academic production and industry needs; promoting the application of research results in the real world to bridge the gap between theory and practice; encouraging researchers to consider how their findings can drive innovation, create new technologies, or solve existing problems in various sectors/industries. The NOBALIS (Nordic Baltic Universities boosting entrepreneurial and innovation support services) project, for example, identified specific shared business challenges across the territories, and mobilised students and staff teams to create solutions.

- *Cross-cutting curriculum enhancement:* integration of subjects related to innovation and entrepreneurship across various programmes/disciplines to ensure that all students, regardless of their subject area, are exposed to entrepreneurial principles and are encouraged to think creatively and innovatively; e.g. the InnoChange project (Driving Change, Capacity Building Towards Innovative, Entrepreneurial Universities) aims to develop joint training of an entrepreneurial curriculum through a course on 'creativity, responsibility, and entrepreneurship'.

- *Industry involvement in entrepreneurship education:* considering businesses in curriculum design and fostering mobility and closer links between academia and industry to provide students with real-world insights and experiences, making their education more relevant and applicable. E.g. The CHIC (Creating Holistic Innovation Capacity) project has developed tools to engage students in innovation projects and collaboration experiences through problem-solving for local stakeholders, including businesses.

- *Developing educational materials:* the tailored development of relevant training materials and/or guidance following an identification of sectoral or thematic training needs. The ILCA (Innovation Laboratories for Climate Actions) project, for example, undertook a survey among SMEs (related to the climate domain) from partner territories to identify their training needs and developed a 'climate micro-credentials' initiative.

- *Developing innovation capacity:* build innovation capacity and enhance core entrepreneurial activities within higher education institutions (HEIs) and their ecosystems. Various workshops, events, and hackathons have been organised to foster creativity and brainstorm ideas. The INNOUNITA (Innovation capacity building in UNITA) project aim to address gaps in relation to I&E education through the development of training and capacity building activities to offer solutions that have a long-term territorially-relevant impact on entrepreneurship.

At a more strategic level, some participants were aiming to influence their institutional context and policy/decision-making to better support innovation and entrepreneurship through changes in academic regulations, funding allocations, or the creation of dedicated innovation and entrepreneurship centres.

Student engagement was highlighted as a key factor in the success of the projects and potential impact on regional development, leading to the creation of a strong pipeline of entrepreneurial-minded graduates to fuel the innovation ecosystem. Project representatives also stressed the positive impact for students of being part of a European initiative that focused upon ensuring they have the relevant skills and knowledge for their future professional life. Students from HEIs under the

CloudEARTHi project were reportedly very satisfied with their participation in the project that helped them consider – for the first time – actually becoming entrepreneurs.

Box 6: Enhancing innovation and entrepreneurial education - good practice examples

The HEADLINES (Higher Education Accelerating Directed Learning in Nurturing Entrepreneurship) project connects HEIs with partner organisations in the food and health sectors to improve local innovation ecosystems and address related social challenges. Under the Munster Technological University (Cork, IE) Innovation Challenge programme, local and international companies in the region identify industry needs and challenges for students to solve working in multidisciplinary groups over an 8 week period.

The SMART2M (Innovation Capacity Building for Higher Education in Industry 4.0 and Smart Manufacturing) project is a sector-based initiative aiming to empower entrepreneurs and innovation developing solutions in the domain of industry 4.0 and/or smart manufacturing. The partnership has designed a platform (Virtual Innovation Forum) where specific challenges can be posted and organisations can propose solutions to those, matching demands with potential supply, leading to the development of innovative projects.

The Inno-EUt+ project developed joint formal and informal entrepreneurial curricula to encourage students and academic staff to be more entrepreneurial, and produced a handbook[40] about designing inclusive entrepreneurship courses in HEIs.

The C-ACCELERATE (Accelerating the role of Creative Communities through the Exploration of Entrepreneurial Education and Radical creativity within European Education) project has developed the C-ACCELERATE Entrepreneurial Module targets students in the arts and fostering entrepreneurship-related competences to encourage project-based innovation in the arts.

The i2i (Idea to impact) project looks to align their innovation and entrepreneurship activities to RIS3, with students proposing projects relevant to RIS3 specialisation domains to ensure a greater regional impact. Under the project, the University of Galway launched two annual summer incubator programmes dedicated to student-based innovation projects in the West of Ireland, and uses design thinking and canvas tools to help students to understand I&E domains and build their competences linked to RIS3 and, more broadly, knowledge-based endogenous growth.

The ETEIA (Energy Transition Entrepreneurs in Action) develops training and capacity building activities to foster entrepreneurship in the sectors of resource management, energy technologies and circular economy, based on a diagnosis of needs and competence gaps in this sector in the member territories. The IDEATION (Innovation and entrepreneurship actions and trainings for higher education) project similarly implements I&E activities focusing on the needs of their territorial ecosystems.

CloudEARTHi built upon and expanded activity undertaken in a previous project supporting the development of an ecosystem for start-ups at the Austro-Hungarian border. Previous start-up beneficiaries participate in the project connecting to current students and inputting into entrepreneurship education. Staff from the regional development agency also teach some content, helping to raise awareness amongst potential entrepreneurs of regional needs and challenges.

The CHIC (Creating Holistic Innovation Capacity) project introduced a programme for student-to-student mentoring and looked to foster increasing connection with and participation of industry in existing courses.

The EELISA UNFOLDS project designed courses on technological innovation and entrepreneurship, introductory sessions to intra/social entrepreneurship, and workshops on managing innovation, with the aim

[40] https://arrow.tudublin.ie/cgi/viewcontent.cgi?article=1004&context=researchporbk

of reducing the gap between training activities, knowledge, and talent at participating HEIs and the needs of the local ecosystems.

The partners of the RiEcoLab (Responsible Innovation-Led Entrepreneurial University Transformation Centres – Ecosystem Integration Labs) have designed a training toolkit on 'Participatory Engagement Strategy for facilitating the Entrepreneurial Discovery Process'. This toolkit aims to improve understanding how to engage with local stakeholders to address their needs/challenges, including the development and implementation of a stakeholder engagement plan. This training item is business-oriented, and aims to help potential entrepreneurs identify potential collaboration.

The DISCO (Developing Innovative Sustainable Cooperation Opportunities) project designed diverse mechanisms of cooperation and experimentation, including innovation labs, an observatory of entrepreneurial ideas, and the creation of a common entrepreneurship massive open online course.

5 Key findings

Whilst many HEI Initiative projects address a distinct topic or theme: tackling industrial sectors, knowledge domains or a specific technology etc, others tend to consider only specific geographic areas sharing certain characteristics or interests. Overall, projects addressing specific needs or sectors tend to be more effective in their integration with their territorial innovation ecosystem. However, in both cases collaboration is fostered upon joint interests relevant to the local innovation ecosystem, and hence to some degree addresses local needs and/or challenges, even if alignment to specific territorial strategies or policies has not always been integrated into the development of the partnership or the project.

A number of projects are however built upon a comprehensive analysis and mapping of local needs and identification of the relevant societal and economic challenges of the territorial innovation ecosystem. This strategic approach seems more able to ensure that projects provide practical solutions that resonate with the local context and that are likely to have maximum local impact. Some projects have also successfully evolved broader collaborations with the local innovation ecosystem as activity progressed. Nevertheless, there is generally still room in most cases to better integrate and align project activity with local policies, strategies, and programmes relevant to the challenges addressed or specialisation domains or sectors that are relevant to the territories, aligning to or integrating the RIS3 entrepreneurial discovery process.

Similarly, there is underused potential to further integrate the insights and learnings from HEI Initiative projects, and from their analyses of local needs and challenges, into territorial policy and strategy-making. There is limited collaboration generally between HEIs and public officials responsible for policy implementation under the initiative and further reiterations of the initiative should require a strengthening of the connection between project outcomes on the one hand, and policy and strategy design and implementation on the other. Strengthening the involvement of public authorities in project activities could also enhance synergies with other public-funded initiatives and ensure the alignment of project activities with EU/national/regional/local strategies and policies, improving coherence and complementarity with broader development agendas and enhancing the overall impact and directionality of these initiatives and EU funding.

The initial undertaking of mapping exercise at local level to map potential collaborations and relevant capacities and activities of stakeholders also facilitates and strengthens stakeholder engagement and ensures their added value to the project and of the project to the HEIs/partners' wider activities. The exchange of experience and good practices among project partners fosters a culture of innovation and continuous learning within the consortia that can amplify the results achieved across the network. However, a diversity of partnerships and partnership working is evident among project consortia: while some project partners are largely integrated (in the context of the initiative, but sometimes additionally under other programmes or schemes), others seem to operate more individually and require further effort to foster synergies and enhance communication among and across partners. An exploration of potential collaboration beyond the project framework, especially with (other) KICs members, has the potential to create a wider, more sustainable, pool of expertise and resources, leading to more impactful outcomes through improved synergistic working and a more systemic and robust collaboration with KICs and their members.

HEI Initiative projects can also generally be considered as highly effective in their approaches to enhancing staff and student entrepreneurial skills and competences. The emphasis on a problem-solving approach, coupled with the specificity and practicality of project activities, facilitates the

achievement of project goals in relation to innovation and entrepreneurship education. The extent to which this relates to regional development and RIS3 and the specific context of the region, industry, and market demands varies, and future calls should insist on this alignment between training activities and local needs and challenges. Similarly, the extent to which HEI Initiative projects support the alignment of university missions varies and hence the extent to which a rethinking of the role and organisation of the university as an institution and a territorial actor is possible.

Table 1 provides an overview of the analysis of HEI Initiative projects in relation to the strengths and areas for improvement of both the initiative and the projects funded therein. Table 2 specifically looks at the HEI contribution to RIS3 and other territorial strategies through the HEI Initiative, drawing upon the typology of innovative practices established by Canto-Farachala et al (2022). Both tables elaborate conclusions from the research on the first two HEI Initiative calls, and a series of related recommendations regarding future calls and initiatives.

Table 1. Strengths and recommendations for the HEI Initiative programme and projects

Strengths	Potential improvement / recommendation
- Projects are based on analysis and/or mapping of the local needs and/or identification of potential collaboration with the local innovation ecosystem and more widely. - It is common to find alignment between the projects' activities and EU/national/regional/local strategies/policies, and in some cases, a multi-level framework is applied. - Many projects address challenges that are relevant to current societal/economic subjects, and they are built on a sound problem-solving approach. - Project activities are quite specific and targeted, which facilitates reaching goals. Additionally, individual activities tend to be designed with a very clear and practical purpose, whether it is shared by some/all organisations in a consortium. - Exchange of experience and good practices among project partners amplifies the expected results of the projects and of activities across the different partners. - HEI Initiative projects help broaden the existing collaboration between HEIs and other stakeholders in the local innovation ecosystem and build upon and strengthen other joint ventures.	- Local policies, strategies, programmes that relate to the challenge/domain addressed could be further considered in the definition of the approach and set of activities. This requirement could be more clearly elaborated in the call procedure and any relevant guidance documents. - Interactions between public authorities and project partners could be enhanced, with a strengthened role of the former, aiming at ensuring synergies with other public-funded initiatives and/or the consideration of project learning outcomes for territorial strategies and policy-making. - Projects could improve and maximise project connectivity to local needs/challenges through encouraging and promoting the participation of local stakeholders and actors in the co-creation of individual project activities not just as project partners within the consortium. - Partnerships are diverse; while in some cases the collaboration among partners seems fluid and successful, in others the implementation of the project activities seems to occur on a more individual basis - closer collaboration or synergistic working across partners could be encouraged and embedded in project design and ensuring joint/shared allocation of activities and tasks. - Not all consortia or partners foresee further collaboration outside or beyond the project framework, and some relevant outcomes or opportunities for sustainable collaboration could be missed. For instance, there is room to increase the

- There is a perceived significant positive impact of projects' activities on staff and student's entrepreneurial skills and competences. The direct engagement of and impact upon students is a clear added value. - The programme supports engaging in further collaborations with other innovation stakeholders at EU level, especially the members of the KICs. -The programme interacts strongly with other EU funded initiatives and enables early or previous collaboration to be enhanced and further built upon, demonstrating clear added value.	collaboration between projects' partners and the (other) KICs members. - The coincidence with European University alliances in some cases could suggest a need for better demarcation across EU ventures or a simplification of the funding offer.

Table 2. HEI engagement with RIS3 and other territorial strategies: main conclusions and recommendations

Dimension	Main conclusions	Recommendations
HEIs role in the design and implementation of RIS3/other policies/strategies	• Usually relevant analysis on the local need/challenges. • Potential to further integrate project learnings into policies/strategies. • Limited collaboration with public officials in this regard.	• Evidence of a mapping exercise or analysis of territorial needs and challenges should be a basis for project development and a requirement of the calls. • Stress in the call for proposals the relevance of engaging in collaboration with public officials in charge of designing/ implementing policies/ strategies. • Foster the inclusion of activities within projects that encourage the collaboration with public officials. • Include as a project outcome informing territorial policy making through the dissemination of policy-relevant learning.
HEIs role in the regional innovation ecosystem	• HEI Initiative projects broaden the collaboration between HEIs and the local R&I ecosystem. • This seems to be even more relevant when projects address specific	• Encourage addressing challenges linked to RIS3 domains based on the entrepreneurial discovery process[41]. • Foster the design of activities that necessitate the integration of additional non-traditional actors of the

[41] The specific chapter on HEIs and their role in the entrepreneurial discovery process on the JRC's HESS handbook. The handbook can provide useful insights on how HEIs can map themselves against RIS3 domains. The handbook is available at https://s3platform.jrc.ec.europa.eu/en/w/higher-education-for-smart-specialisation-a-handbook-1

	needs/sectors, instead of more general aspects.	quadruple helix model into the partnership to enlarge impact and improved relevance.
Training/skills alignment to territorial context	• The activities to support entrepreneurship are sound and well-targeted. • The alignment to the territorial context is diverse and it depends on each project, objectives, and involved partners.	• There is room to further enhance the alignment between training activities and local needs/challenges by project partners in the consortium, but also within the requirements under the call for proposals.
Collaboration and joint learning	• In many projects, the exchange of good practices among partners seems to improve and enhance their impact.	• Further synergies among project partners could be fostered to encourage and ensure sustainable collaboration beyond the end of the project timeframe. • A more systemic way to collaborate with the KICs and/or their members could be developed.

6 Conclusions

The projects addressed a variety of themes and undertook a wide variety of activities, ranging from establishing new courses or training modules, support services for SMEs, technology transfer and establishing incubator programmes, innovation hubs and ecosystem labs. At times cooperation was built upon previous relationships and collaboration, although all projects demonstrated, or were evolving, new ways of working and co-creating across partners and disciplines.

The extent to which the projects considered and reflected territorial specialisations and strategies varied considerably, with an early analysis of the territorial innovation ecosystem and its actors providing a more strategic framework for the development of actions with significant local resonance. Nevertheless overall the potential to integrate the insights and learnings from HEI Initiative projects, and from their analyses of local needs and challenges, into territorial policy and strategy-making was limited, although that may to some extent reflect the timing of the research in relation to the programme collaboration and project life cycle. A key concern mentioned by respondents related to the potential to extend collaboration beyond the timeframe of the project and the sustainability of the project activity, knowledge and resources. This should be explored in more depth in the context of the extension of the HEI Initiative until 2027 to ensure that future calls include the requirement for an exploration of project exit strategies and sustainability beyond the funding period. Future calls should also insist on the analysis of territorial challenges and strategies and the resultant strengthened alignment between training activities and local needs.

The HEI Initiative enables the increasing integration of HEIs into territorial policy-making and their strengthened contribution to and participation in territorial transformation. The initiative supports systemic transformations in universities and their increasingly transformational role in territorial innovation ecosystems. Through steering HEI entrepreneurship, research and innovation towards addressing local territorial needs and global societal challenges it promotes an improved alignment across the different university missions, linking education, research, innovation, and service to society to arrive at a much deeper level of cooperation and co-creation of knowledge within the knowledge triangle or quadruple helix.

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List of abbreviations and definitions

Abbreviations	Definitions
EDP	Entrepreneurial Discovery Process
EIT	European Institute of Innovation and Technology
HE(I)	Higher Education (Institution)
I&E	Innovation and Entrepreneurship
IVAP	Innovation Vision Action Plan
KIC	Knowledge and Innovation Community
PRI	Partnership for Regional Innovation
RIIA	Regional Innovation Impact Assessment
RIS3	Smart Specialisation Strategy
RIS Hub	Regional Innovation Scheme Hub

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Annexes

Annex 1. Research participants

Representatives interviewed

Organisation	Representative	HEI Initiative project
Vilnius Gediminas Technical University (LT)	Vilma Puriene	EuroSpaceHub
Munster Technical University (IE)	Josette O'Mullane	HEADLINES
Comenius University Bratislava (SK)	Zuzanna Lisonova	I2i Ideas to impact
University of Galway (IE)	Natalie Walsh	I2i Ideas to impact
European University of the Canary Islands (ES)	Cristina Oliveira	INCORE
	Juan Diego López	
University of Applied Science. Burgenland (AT)	Alexandra Baldwin	CloudEARTHi
University of Vigo (ES)	Pablo Cabanelas	HEI4Future
University of Warsaw (PL)	Mansour Esmaeil Zaei	InterHEI
University of Pardubice (CZ)	Monika Vejchodová	INVENTHEI
Algebra University College (HR)	Maja Brkljacic	Smart4Future
	Aneta Golebiowska	
DO! Entrepreneurship (Univ. of Ghent) (BE)	Jolien Coenraets	EUAcceL
Catholic University of Louvain	Joris Proost	KICstartH2

Organisations who submitted a survey response

ACEEU
Algebra University College
Ard Innovation AS
Aristotle University of Thessaloniki, Greece
Center for Circular Economy of the RWTH Aachen University
Comenius University Bratislava
Cracow University of Economics
Cyprus University of Technology
DO! Centre for Student Entrepreneurship (Ghent University)
Dublin City University
EBAN- European Business Angel Network
Fachhochschule Burgenland GmbH
Fundación Universidad Loyola Andalucía
Future.Solutions GmbH
GIS-TransferCenter Foundation
Hamburg University of Technology
Helixconnect Europe SRL
Igor Sikorsky Kyiv Polytechnic Institute
Institute of food technology in Novi Sad
IST
Latvia University of Life Sciences and Technologies
Lodz University of Technology
Marmara University
Medical University of Gdansk
NGO Agency of European Innovations
Norges Idrettshøgskole
Norwegian University of Life Sciences (NMBU)
NUI Galway
Ostbayerische Technische Hochschule Regensburg
Özyeğin University
Perrotis College

Pforzheim University
PorterShed, Galway City Innovation District
Queen's University Belfast
Riga Technical University
Seinäjoki University of Applied Sciences
ŠKODA AUTO University
St. Pölten University of Applied Sciences
Tallinn University of Technology
Tataj Innovation Ltd.
Technical University of Cluj Napoca
Technical University of Varna
The University of Edinburgh
UiT The Arctic University of Norway
Universidad de Castilla-La Mancha
Universidad del País Vasco/Euskal Herriko Unibertsitatea (UPV/EHU)
Universidad Europea de Canarias
Universidad Loyola
Universidade de Vigo
Universidade do Porto
Université Catholique de Louvain
University of Brimingham
University of Central Lancashire
University of Glasgow
University of Helsinki
University of Lodz
University of Pardubice
University of Santiago de Compostela
University of Twente
University of Udine
University of Warsaw
Vilnius Gediminas Technical university
Vrije Universiteit Brussel
Water Alliance
Western Norway University of Applied Sciences
Wroclaw University of Science and Technology
Yasar University

Annex 2. Profile of the respondents to the survey

The report presents information on the responses of the 69 participants in the HEI Initiative, consisting of higher education institutions (HEIs), businesses, and other types of organisations. The distribution and origins of the respondents can be referred to in figures A2.1 and A2.2.

Figure A2.1. Number of respondents per country (EU)

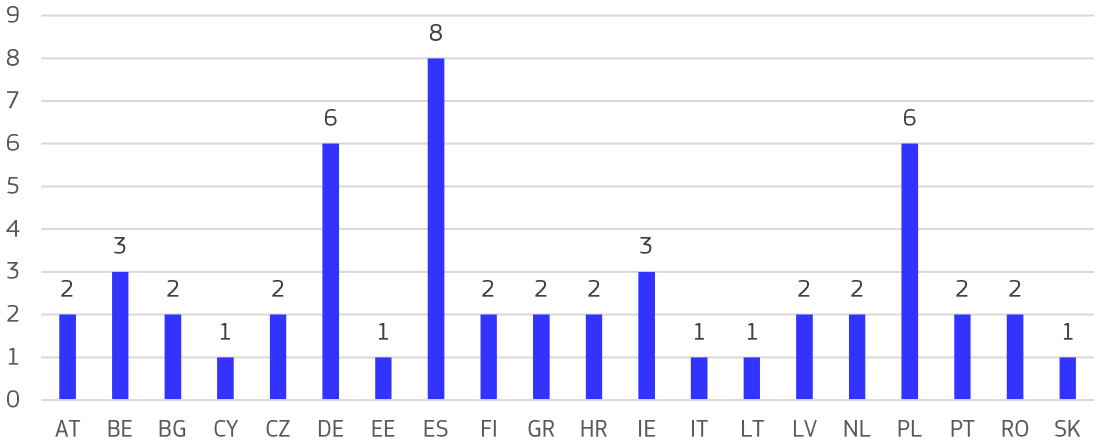


Figure A2.2. Number of respondents per country (non-EU)

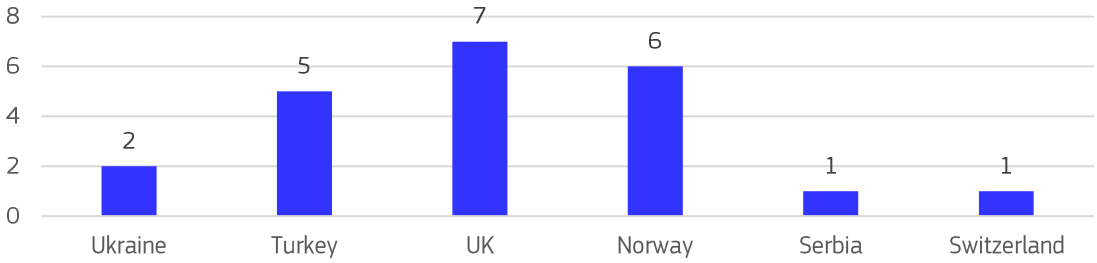
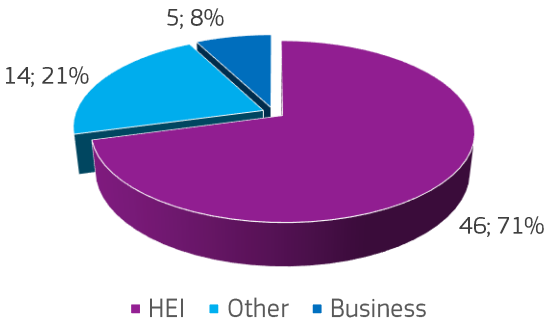


Figure A2.3. Type of organisation (absolute number; percentage of total)



As depicted in figure A2.3, the majority of the respondents represent HEIs, which aligns with the primary target of the HEI Initiative to engage and involve these educational institutions. Some HEIs are represented by their associated foundations or entities dedicated to supporting innovation and entrepreneurship. The

data also highlights the participation of businesses, specifically those operating in the consultancy or similar sectors. The "other" category encompasses a diverse range of organizations, such as associations, research and development (R&D) centres/institutes, and agencies.

Figure A2.4. Number of respondent organisations per project
Magenta: 2021 projects Blue: 2022 projects

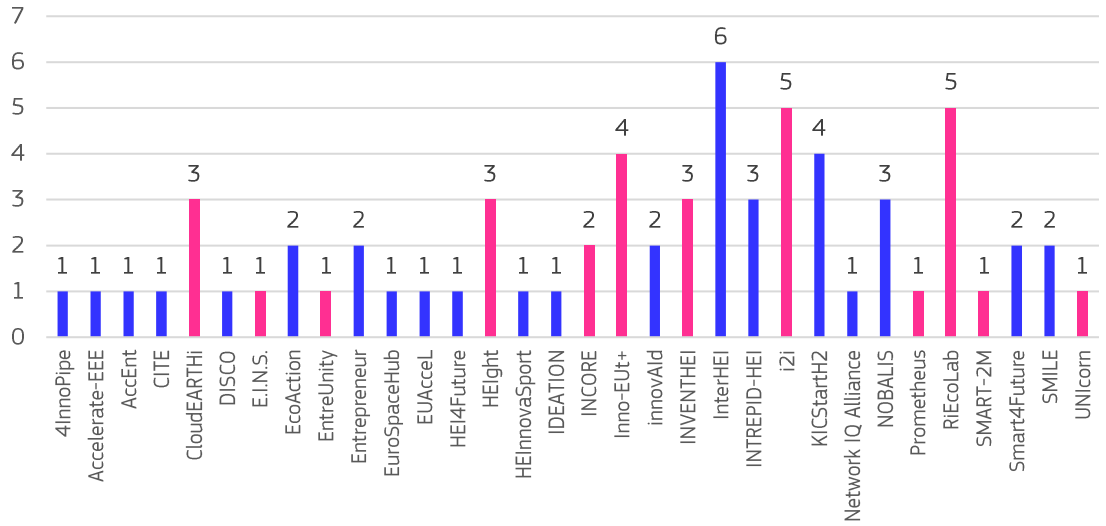


Figure A2.5. Number of respondents per year of project start (absolute number; percentage of total)

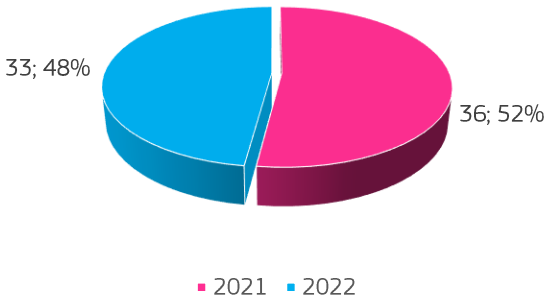
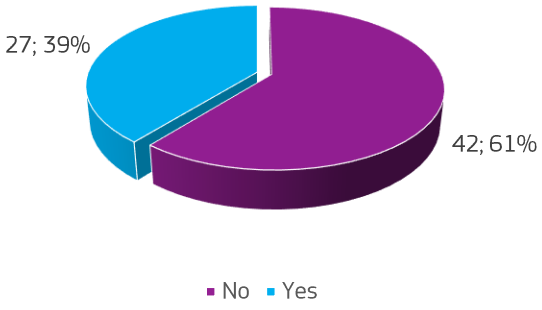


Figure A2.6. Respondents from coordinating organisations (absolute number; percentage of total)



The respondents represent 32 different HEI Initiative projects, out of the 79 existing ones (23 from the pilot call and 56 from the 2021 call) (detail in figure A2.4). That represents 40.5% of the total number of projects. In most cases, each project is represented in the survey by just one respondent, while multiple answers were obtained in a few cases. As we see from figure A2.5, 36 responses come from representatives of organisations/projects from the 1st call (pilot call); while the remaining 33 are from projects of the 2nd call. In terms of projects (not respondents), 12 (38%) of them started in 2021, and the other 19 (62%) started in 2022. Figure A2.6 informs about the type of respondent differentiating those who represent a project coordinating organisations (that is, organisations that lead a project) or partner organisations (that is, organisations participating but not leading a project).

Figures A2.7 and A2.8 provide information about the partnerships of the projects represented in the survey (which means that at least one representative organisation is a member of a given project). Regarding the number of partners per project, if we consider those in our sample, we find that the average is 7.1 partners per project.

Figure A2.8 illustrates the type of organisations present in the partnerships of the projects in the survey. All projects include HEIs, followed by businesses. In a small number of observations, we find public authorities (local/regional), and some partnerships include other types of organisations, mostly associations, agencies, etc.

Figure A2.7. Number of partners per project in the survey sample

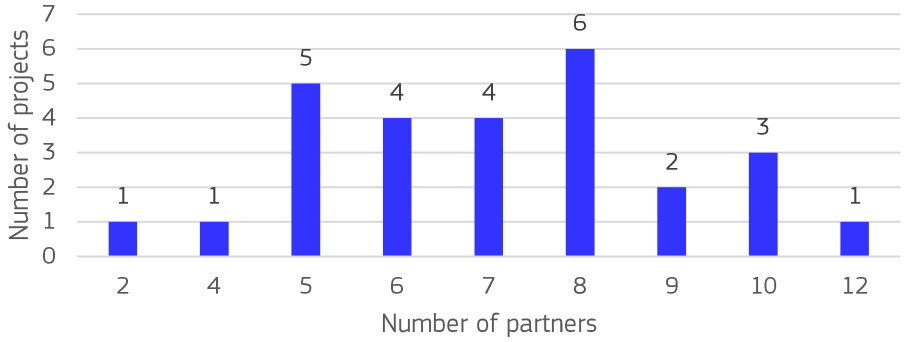


Figure A2.8. Number of projects in the survey that include each type of organisations in the partnership

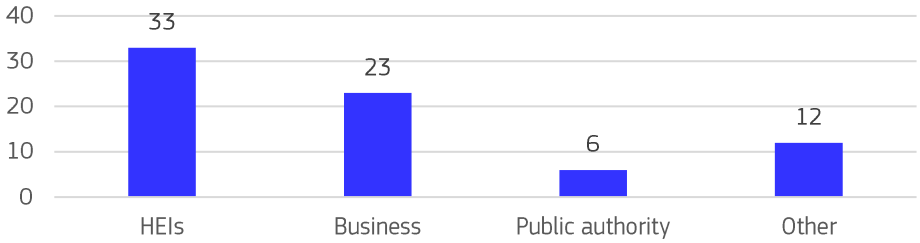


Figure A2.9. KIC(s) primarly addressed by projects in the survey (number of projects per KIC)

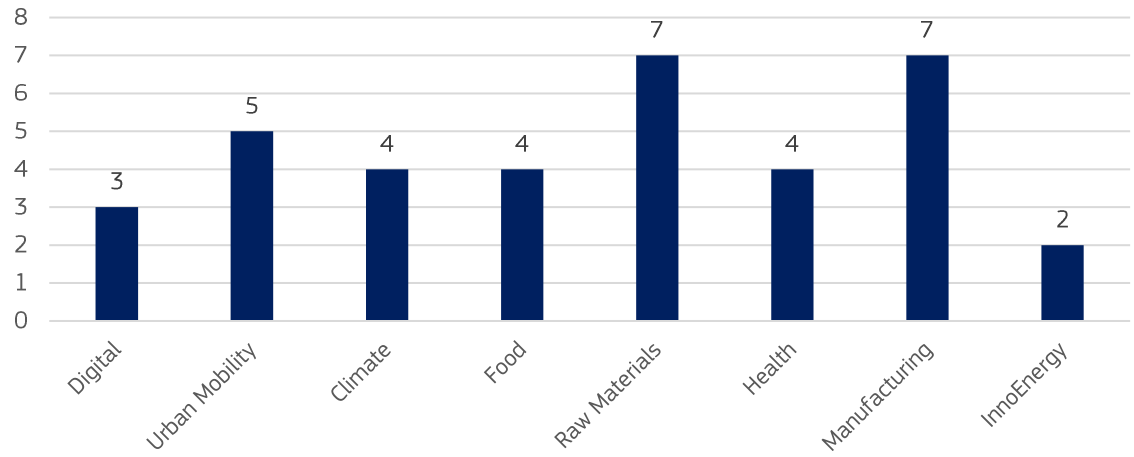
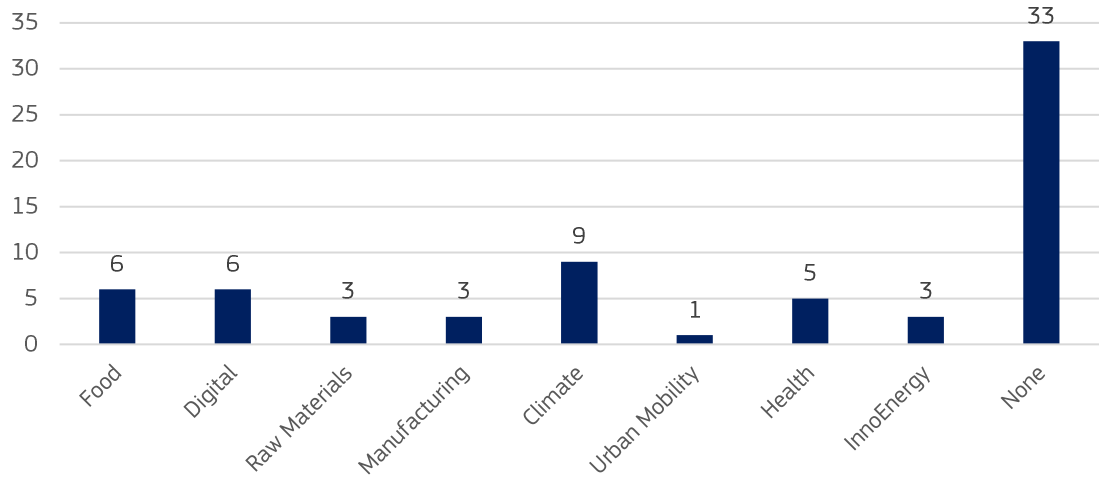


Figure A2.10. KICs to which respondents' organisations belong (number of organisations belonging to each one)



Annex 3. Questionnaire sent to HEI Initiative participants

1. Background information:

1. First and Last Name (Open-ended)
2. Email (Open-ended)
3. Name of your organisation (Open-ended)
4. Type of organisation
   (HEI/public authority/business/ other – elaborate)
5. Name of your project (Open-ended)
6. Are you the coordinating institution?
   Yes / No
7. Which year did your project participate in the Call for Proposals?
   2021 or 2022
8. Number of full partners
   Drop down (scale from 1-15 and >15)
9. Which types of Full Partner organisations are involved in your project? (choose as many as applicable)
   (HE/public authority/business/ other – elaborate) (multiple choices possible)
10. How many associated partners are involved in your project? (Scale 1-40)
11. Which types of Associated Partner organisations are involved in your project? (choose as many as applicable)
    (HEI/public authority/business/ other – elaborate) (multiple choices possible)
12. Which KIC is primarily responsible for managing your project?
    Drop down with KICs: (one choice)
13. Which KICs, if any, is your organisation a part of?
    Drop down with KICs: (multiple choices possible)

2. Strategic incorporation of the regional dimension:

14. To what extent do you feel your project addresses the needs of your institution's territory/region?
    Scale 1 – 5 (1 not at all/very little – 5 It is a strength of the project/very closely considered)
15. To what extent do you feel your project considers and reflects on the needs of the territory/region where the partner institutions are located?
    Scale 1 – 5 (1 not at all/very little – 5 It is a strength of the project/very closely considered)
16. To what extent do you feel your project considers and reflects on the needs of different innovation actors within their relevant territorial innovation ecosystem
    Scale 1 – 5 (1 not at all/very little – 5 It is a strength of the project/very closely considered)

17. Did your consortium undertake any type of formal analysis or assessment of smart specialisation and/or regional territorial development goals during the development of the project (candidacy)?
    Yes / No

18. Has your consortium undertaken any type of formal analysis or assessment of smart specialisation and/or regional territorial development goals during the project implementation?
    Yes, and it is part of our IVAP / Yes, we are planning on doing something but have not yet developed formal plans / No / Not yet decided

19. Please briefly describe what types of actions you have taken, or plan to take, related to smart specialisation and regional territorial development goals.
    Open-ended text (optional)

20. Have you have made contact with the Smart Specialisation Contact Point for your region/country in relation to your project?
    Yes / No

21. What percentage of your project partners have made contact with the Smart Specialisation Contact Points in their region in relation to your project?
    0% / 1%-20% / 21%-40% / 41%-60% / 61%-80% / 81%-99% / 100%

22. What percentage of your project partners have made contact with different innovation actors within the territorial innovation ecosystem in their region in relation to your project?
    0% / 1%-20% / 21%-40% / 41%-60% / 61%-80% / 81%-99% / 100%

23. Please elaborate on what, if anything, could be done to further or better reflect territorial needs, either individually as the coordinator/partner or more broadly across the partnership.
    Open-ended (optional)

24. Have you considered locally funded (RIS3) activities in your region/territory, especially as they relate to the current activities or future sustainability of your project? If you have please describe this below.
    Yes / No

    Open-ended (optional)

25. Do you have a relevant indicator(s) and target(s) related to territorial/regional action? If so, could you please describe it and provide an idea of progress in implementation to date?
    Open-ended (optional)

3. Project partnership, framework & expected impact

26. Please share the primary objective(s) of your project.
    Open-ended

27. In your opinion does the partnership benefit from an optimal composition of innovation actors or are certain groups / sectors under-represented?
    Scale 1 – 5 (1 project weakness/not optimal – 5 project strength/optimal)

28. Please elaborate more fully if you consider groups/sectors are under-represented.
    Open-ended (optional)

29. In your opinion, does the HEI Initiative approach provide an adequate framework for the activity you want to develop as an organisation?

Scale 1 – 5 (1 not at all / very little – 5 It is a strength of the HEI Initiative / very helpful)

30. In your opinion, does the HEI Initiative approach provide an adequate framework for the activity you want to develop as a project consortium?
    Scale 1 – 5 (1 not at all / very little – 5 It is a strength of HEI Initiative / very helpful)

31. If you answered 1 or 2 in either question above, please elaborate further on a) areas or activities you would like to explore but have not been able to fully progress and b) any obstacles you might have encountered in trying to do so.
    Open-ended (optional)

32. What are the main expected impacts of your project (feel free to provide relevant project materials)?
    Open-ended (optional)

33. Please feel free to share any other comment or question you would like.
    Open-ended (optional)

4. Further participation in the JRC's Higher Education in Smart Specialisation research?

34. Are you willing to share your project application form with the researchers from the JRC for further analysis? (You can redact any personal information if so desired / required) Yes / No

Thank you for your participation in this survey

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