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POLICY PAPER

Entrepreneurial Regional Governance: societal innovation beyond spatial frontiers

ESPON observes that some regional public authorities demonstrate entrepreneurial behaviour when pursuing social and environmental benefits for their communities. In innovation-scarce environment, they connect temporarily with private-sector innovators from regions with higher potential for societal knowhow flow, adopt external knowhow and 'pollinate' their regional markets with new opportunities. These opportunities are discovered by local firms, who in turn respond with actions adding societal value in regional markets.

In doing so, regional authorities are acting as entrepreneurs, without assuming the role of businesses. That is, public authorities assemble and synthesise information distributed across space, time and types of legal entities so as to extract social, economic and environmental value for their communities. This is a crucial difference to traditional innovation policies. Not every region is destined to produce societal innovation, but every region is capable to tap into the existing societal innovation flows and repurpose acquired knowhow for the benefits of local communities, adjusting to spatial and structural conditions. This is the nature of the entrepreneurial action: creating a self-reinforcing societal value out of undervalued and/or unrecognised resources through access to spatially external knowhow with societal value.

THIS POLICY PAPER IS ADDRESSING:

- Regional policymakers developing and practicing policies in structurally and socioeconomically vulnerable regions, particularly those without well-established Regional Innovation Systems.
- EU, national and subnational authorities engaging in mission-led innovation, transformative, experimental and anticipatory governance.
- Horizon Europe programmers and beneficiaries.
- Regional authorities with and without experiences in the EU framework programmes for research and innovation.
- RIS3 and prospective S4+ managers.
- Authorities piloting Partnerships for Regional Innovation.
- Interreg programmes and beneficiaries.

Territorial cohesion, innovations and regions lagging behind

During the 2022 Czech Presidency of the Council of the EU, in the field of territorial cohesion and urban matters, Czechia is focusing on regional innovation capacity, or the ability of regions to build innovative environments and innovative approaches to regional development.

These priorities were chosen in the context of one of the five cross-sectoral flagship areas of the Czech Presidency: strategic resilience of the European economy. The overall objectives of the Czech Presidency are to contribute as much as possible to creating the conditions for the EU's security and prosperity and to find the right policy mix that will ensure peace on our continent, to lead the EU towards its long-term goal of a green and digital transformation, and at the same time to enable it to effectively address the security, energy and humanitarian challenges partly resulting from the COVID-19 pandemic and the war in Europe. The Czech Presidency was inspired by one of the speeches of former president Václav Havel, in which he reflected on the future of Europe. He called his speech 'Europe as a task' and encouraged Europeans to rediscover their responsibility for global environmental, social and economic problems. Territorial cohesion has been a priority since 2010, when it was introduced in the Lisbon Treaty (Article 2) as an official goal of the EU alongside economic and social cohesion. At the Czech Ministry of Regional Development, we are aware that, if we want to achieve territorial cohesion, we, together with other ministries, have to develop place-based policies that reflect the specific needs and challenges of different regions, especially those lagging behind.

The Czech government is committed to helping economically and socially vulnerable regions and to finding ways to boost their development potential. It is well known there is a close correlation between economic performance and innovation. It is, therefore, logical to find out how to strengthen the use of innovation in regions lagging behind to unleash the untapped potential of these territories.

During the Czech Presidency, we are focusing on the possible role of societal innovations in helping regions lagging behind. We have engaged the ESPON European Grouping of Territorial Cooperation to help us find out how regions lagging behind can make use of innovations. Together with this grouping, we conducted a study called 'Entrepreneurial Regional Governance'.

The study considered that European regions exhibit strong disparities in relation to their innovation capacity

in terms of both the development of innovation and the appropriation of social, economic and environmental benefits of innovation. While the former is associated with the quality of regional innovation systems, the latter is spatially independent. The study aimed to assess and explain the ability to benefit from innovation and suggested that regional governance might be able to forge links with regions with stronger performance in cross-regional sectoral innovation, adopt external know-how and 'pollinate' regional markets with new opportunities.

We simply must realise that not only states, but also regions, are important actors in promoting innovation and that we need committed local and regional leaders who will connect all relevant actors of innovation ecosystems and enable use of innovations.

One of the conclusions of the 'Entrepreneurial Regional Governance' study is that the role of regional governance in introducing innovations into regions is essential. At the same time, it is crucial to collaborate with regions with higher innovation capacity. In regions with no or negligible research and innovation systems of their own – often vulnerable regions or regions lagging behind – it might not be reasonable to build new research and innovation centres. It is often more effective and less costly to ensure access to cutting-edge knowledge and research results from other regions and to enable the transfer of these to local entrepreneurs and other actors.

We plan to further disseminate outcomes of the study and motivate local and regional leaders to apply the knowledge gained and enable use of societal innovations in their regions. It is vital to share good practices and for regions with lower innovation capacities to learn from other such regions that have benefited from connecting to regions with more advanced regional innovation ecosystems. We will also take the findings into account when preparing future Regional Development Strategy of the Czech Republic and other development documents.



Ivan Bartoš, Minister of Regional Development and Deputy Prime Minister for Digitalisation, Czechia

1.

Policy challenges

The Czech Presidency of the Council of the EU 2022 embarked on a mission to identify policies and practices that help regions to appropriate social, economic and environmental benefits from innovation, regardless of where it is produced. Particularly the structurally affected and socioeconomically vulnerable regions (Regional Development Strategy of the Czech Republic 2021+) require new approaches allowing them to tap into the potential of innovation benefitting regional development. Upon the request of the Czech Ministry of Regional Development, ESPON conducted a study putting emphasis on the role of regional authorities in smoothening innovation imbalances across spatial and organisational frontiers.

In the light of the EU Green Deal and the asymmetric spatial effects of the efforts to decarbonise the European regional economies, the regional innovation capacity has grown in importance in territorial cohesion policy. Yet, the social, economic and environmental benefits from innovation vary significantly across European regions. Spatial advantages and the degree of advancement of regional innovation systems alone cannot explain such disparities. Some regions are able to leapfrog while others, including those with traditional regional innovation systems stagnate (ESPON Technological Transformation & Transitioning of Regional Economies, 2020). In particular, the extant research misses to identify the role of public authorities in explaining the different degrees of social, economic and environmental benefits from innovation.

The study delivers fresh evidence informing both New European Innovation Agenda and the EU cohesion policy. The findings yield considerable benefits for regional policy-making, in particular in the context of a new generation of RIS3 strategies adjusted for sustainable development goals, ESIF-aided entrepreneurial development policies, innovation procurement, open government and open data developments, Horizon Europe and other collaborative and open innovation practices of public authorities. Most importantly, the study delivers evidence in support of a new promising policy pilot known as Partnerships for Regional Innovation, jointly developed by the Committee of Regions and the European Commission's Joint Research Centre.

The ESPON study is guided by the ideas on the Entrepreneurial State put forward by M. Mazzucato,

Professor in Economics of Innovation and Public Value at University College London whose work was pivotal in shaping the new mission-based EU Innovation policy.

... if value is created collectively, then those who pursue a career in the public sector should also be taught how to think outside the box, and how to be entrepreneurial. But they aren't. Instead, public policymakers and civil servants have come to regard themselves not as wealth creators, but at best as mere market fixers, and at worst as impediments to wealth creation.

... the State must lead – not by simply fixing market failures but by actively creating and shaping (new) markets ...

Mariana Mazzucato, *The Entrepreneurial State*

The State is seen as trapped in a self-definition of being 'bandage' of market failures' (Mazzucato, 2015), taking care of public goods and regulating negative externalities. The classical understanding of innovation as public good, resulting in private underinvestment in innovation and translating into fiscal policy such as subsidies and tax incentives for R&D have been in place since 1950s and remain valid today (European Commission, 2020). Mazzucato (2015) is challenging this understanding as a self-fulfilling prophecy with a wealth of evidence on transformative technological innovation created by State actors as a response to the growing societal challenges, notably climate change, energy, health and mobility.

Societal challenges are in the centre of ESPON's study, more accurately the so-called Grand Societal Challenges, which have long been recognised in strategic multinational policies (2030 Agenda for Sustainable Development of the United Nations; the 2015 Lund declaration; the Paris Agreement) and are increasingly debated in management research (Voegtlin et al., 2022; George et al., 2016). Strategic debates on societal challenges gain in importance in both European innovation and regional policies. This includes the work of the high-level expert group on the economic and societal impact of research and innovation advising the European Commission on transformative innovation policies, the New European Innovation Agenda and

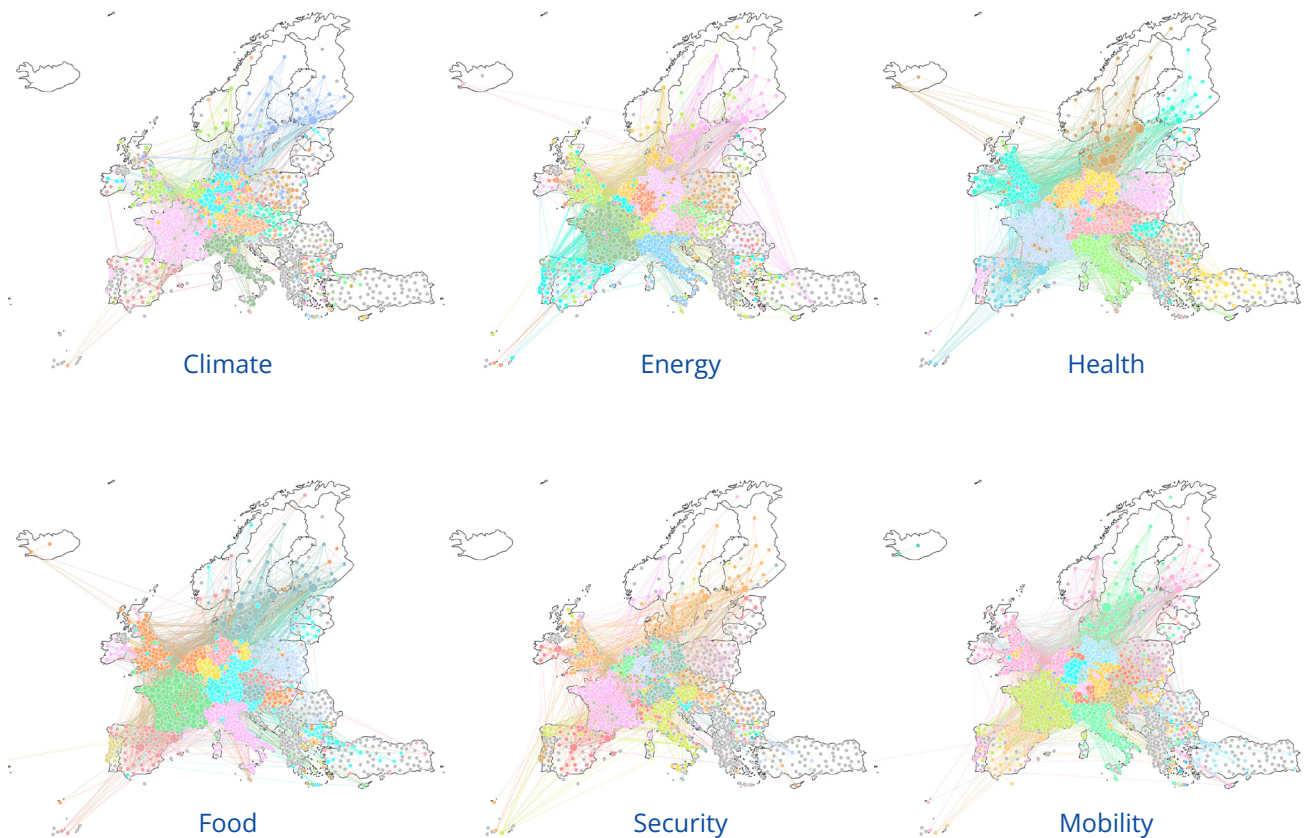


Fig. 1 Networks of cross-regional innovation flows with technological components relevant for Climate, Energy, Health, Food, Security and Mobility 2014- 2021

the Partnerships for Regional Innovation. Societal challenges require transformative change, which for more than a decade has been shaping a new innovation policy layer (Schot and Steinmueller, 2018) that can be referred to as societal innovation (Lehtola, V. V. and Ståhle, 2014).

The ESPON study is based mainly on observations from the pillar ‘Societal Challenges’ of the EU framework programme for research and innovation Horizon 2020 and on patent data from PATSTAT Global. In the context of the study, societal challenges are understood as those covered under pillar ‘Societal Challenges’ of Horizon 2020 and which are either technology-driven or affected by technology (Frietsch et. al., 2016).

- Climate action, environment, resource efficiency and raw materials (CLIMATE);
- Secure, clean and efficient energy (ENERGY);
- Health, demographic change and wellbeing (HEALTH);
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy (FOOD);

- Secure societies - protecting freedom and security of Europe and its citizens (SECURITY);
- Smart, green and integrated transport (MOBILITY).

ESPON subscribes to the arguments behind the Entrepreneurial State but the question of interest is as to whether this entrepreneurial ability in public governance trickles down to subnational governance levels, considering that regions do not have comparable capacity and competences to invest in innovation.

ESPON adjusts Mazzucato’s Entrepreneurial State for the capacities and competences of regions, taking into account that an Entrepreneurial Region is not a subnational copy of the Entrepreneurial State. It is a type of region that enables the inflow of societal innovation knowhow from other regions with structural innovation capacity, increasing marginal societal benefits without harming or diverting entrepreneurship within and outside the region. ESPON uses the term ‘Entrepreneurial Regional Governance’ to describe the set of observed processes that jointly qualify a region as entrepreneurial.

2.

ESPON contribution: the model for Entrepreneurial Regional Governance and the underlying evidence

ESPON observes that some regional public authorities demonstrate entrepreneurial behaviour when pursuing social and environmental benefits for their communities. In innovation-scarce environment, they connect temporarily with private-sector innovators from regions with higher potential for societal knowhow flow (Fig. 2a), adopt external knowhow and 'pollinate' their regional markets with new opportunities (Fig. 2b). These opportunities are discovered by local firms, who in turn respond with actions adding societal value in regional markets (Fig. 2c). In doing so, regional authorities are acting as entrepreneurs, without assuming the role of businesses. That is, public authorities assemble and synthesise information distributed across space, time and types of legal entities so as to extract social, economic and environmental value for their communities. This is a crucial difference to traditional innovation policies. Not every region is destined to produce societal innovation, but every region is capable to tap into the existing societal innovation flows and repurpose acquired knowhow for the benefits of local communities, adjusting to spatial and structural conditions. This is the nature of the entrepreneurial action: creating a self-reinforcing societal value out of undervalued and/or unrecognised resources through access to spatially external knowhow with societal value.

The characteristics of Entrepreneurial Regional Governance described here are based on evidence from projects funded by the EU framework programme for research and innovation, Horizon 2020, and patent data from PATSTAT Global. The unit of analysis is NUTS3 covering all EU, EFTA regions, the UK, the Western Balkans and Turkey. ESPON uses longitudinal data within the time period 2014 and 2021, collected for 1514 NUTS3 regions. The Horizon 2020 project and organisation data sampled to estimate the cross-regional societal knowhow transfer facilitated by public authorities is sourced from the so-called innovation actions and research and innovation actions of the framework programme. The choice to limit the sample on these actions is explained by their nature: they aim at innovation that is ready for or close to market replication and allow for the involvement of public authorities, e.g. in piloting of societal innovation. These are necessary preconditions for cross-regional transfer of societal knowhow with commercial value. Data sampled to estimate the firm responses to societal challenges includes other types of relevant actions such as coordination and support actions, pre-commercial procurement, public procurement of innovative solutions and the SME instrument.

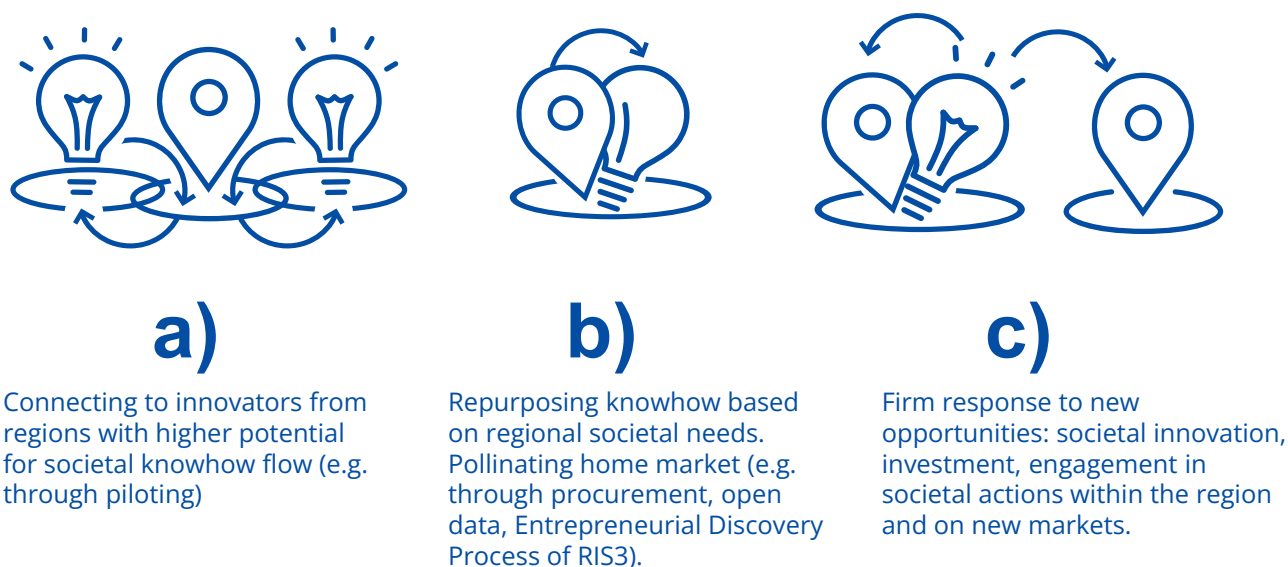


Fig. 2 Sequence of processes constituting Entrepreneurial Regional Governance

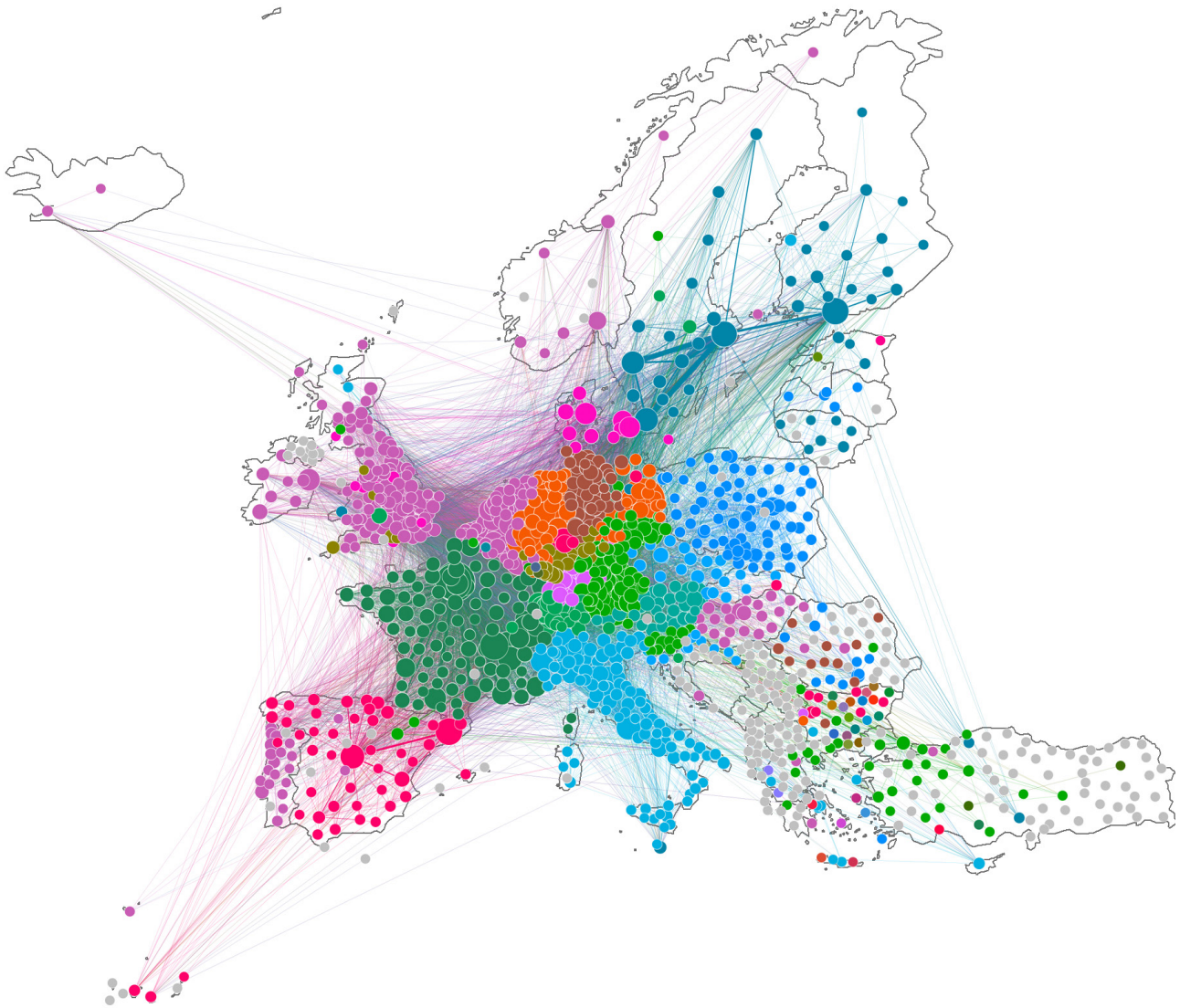


Fig. 3 Network of cross-regional innovation flows with technological components relevant for six societal challenges 2014- 2021

1. Regional authorities act as change agents in a spatially confined societal innovation network.

ESPON investigated the naturally occurring cross-regional societal knowhow flows, looking into patent applications with technological components relevant for at least one of the six societal challenges (Frietsch et. al., 2016) and with co-applicants from at least 2 different NUTS3 regions in the EU, EFTA, UK, Western Balkans and Turkey. Based on this, collaborative societal innovation networks were constructed for each of the six challenges (Fig. 1) and for all 6 challenges jointly (Fig. 3) to demonstrate how the naturally occurring knowhow flows with societal innovation value behave.

The evidence reveals that societal innovation flows are spatially trapped, that is, they are more accessible to neighbouring regions due to structural relatedness. Societal innovation diffusion tends to flourish within national borders, expecting newcomers in societal innovation in countries with denser networks of collaborative societal innovation. This would predict an exacerbating marginalisation of regions in the periphery or outside the collaborative societal innovation network. ESPON observes, however, that some regional authorities embark on efforts to alleviate the spatial disadvantage observed in natural societal innovation flows (Fig. 4), by engaging in cross-regional missions, transformative partnerships and experimentation (European Commission, 2020).

Number of societal innovation projects of the public sector, jointly with market innovators from other regions

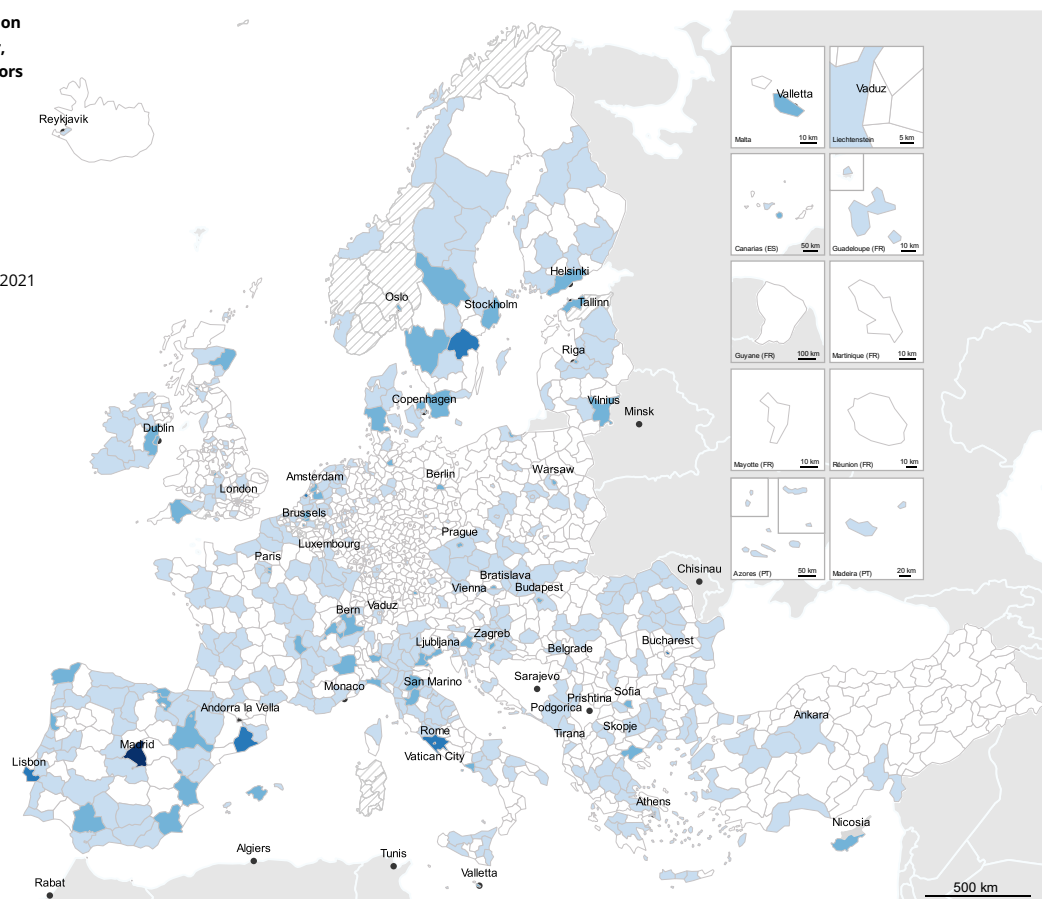
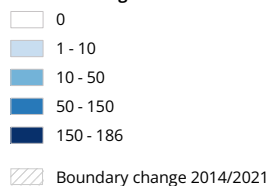


Fig. 4 Societal innovation projects of public authorities 2014- 2022

2. Firms responses to societal challenges are linked with actions of public authorities.

ESPON finds a positive correlation between the engagement of regional public bodies in societal innovation with market innovators from other regions on the one hand and the subsequent engagements of regional businesses in societal innovation on the other hand (Fig. 5). The results of the analysis reveal that on average every project of regional public bodies in societal innovation with market innovators from other regions is associated with one independent societal innovation project of a firm from the same region. The observations are based on societal innovation projects, for which public authorities and firms sign contracts in the same year independent from each other, and the non-random association of decisions to join such projects is speaking for a coordinated process withing the regions (Fig. 2b).

Moreover, there is a significant association between decisions of firms to enter a societal innovation project and already running societal innovation projects with the involvement of regional authorities that exhibit potential for transfer of societal innovation knowhow.

This can be interpreted as an environment shaped or at least influenced by public authorities that helps to guide risk-averse businesses towards new opportunities that reconcile commercial and societal interests. This understanding is in line with Mazzucato's (2015) argument for the positive effects of public actions attracting societal business investment that would otherwise not have occurred (Fig. 6).

3. Public authorities find potential for societal knowhow transfer.

The previous experience of regional authorities in partnerships with innovators from regions with higher potential for societal knowhow flow has also significant positive effect on societal innovation projects of firms. This potential (Fig. 7) derives from the relative position of partnering regions in the collaborative societal innovation network.

The more cross-regional links a region accumulates through joint patent applications with other regions, the higher the potential for societal knowhow outflow.

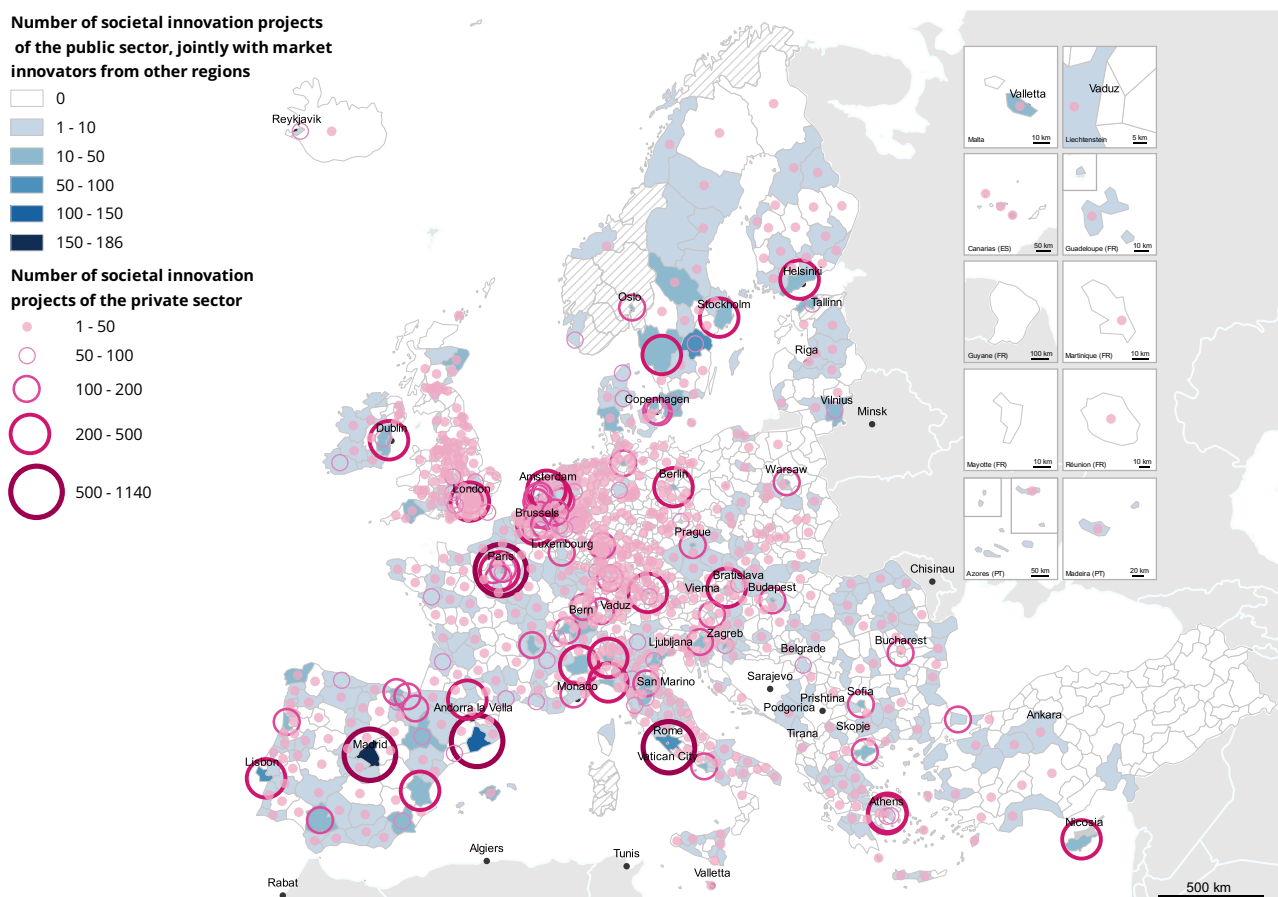


Fig. 5 Societal innovation projects of public authorities and firms 2014- 2022

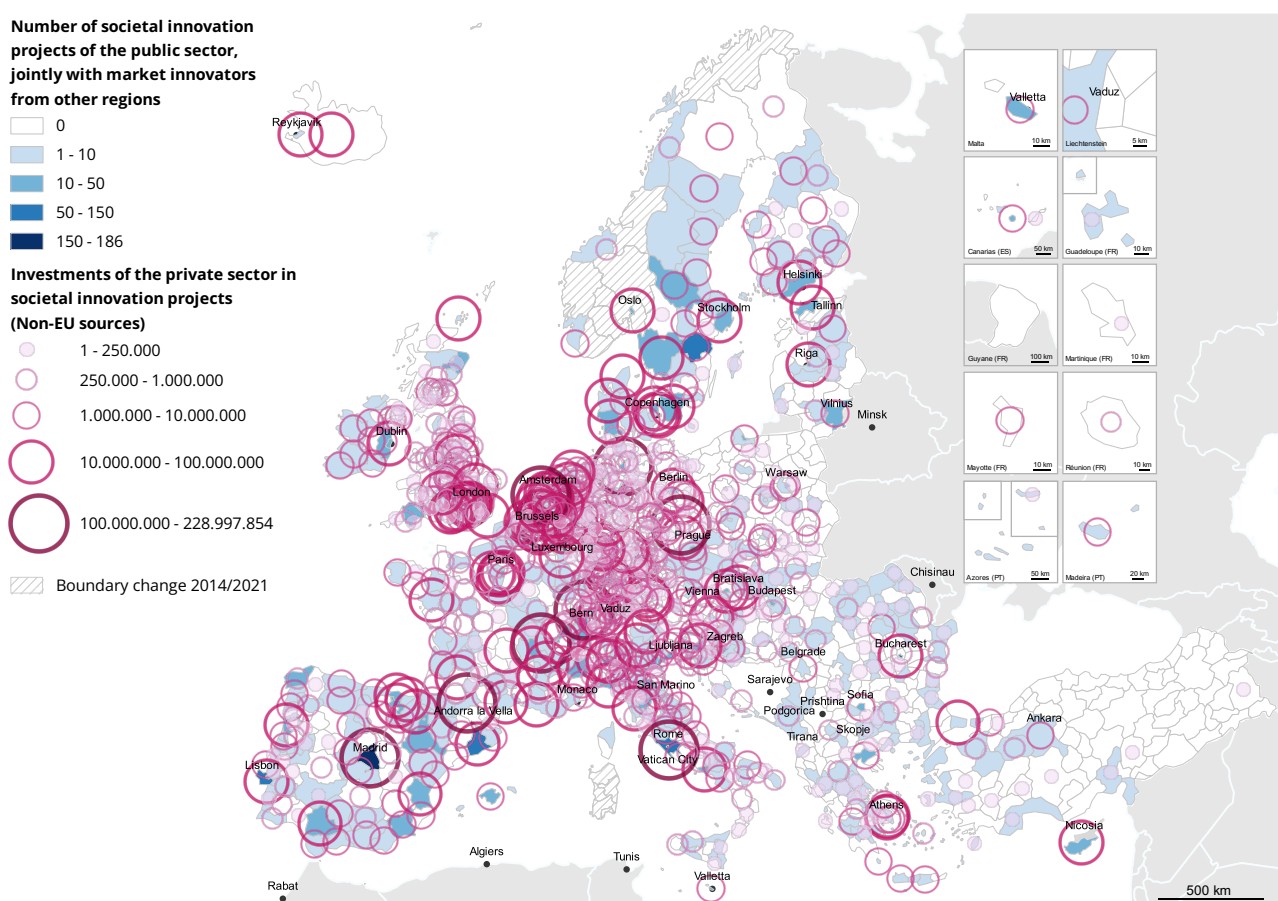


Fig. 6 Firm investment in societal innovation projects 2014- 2022

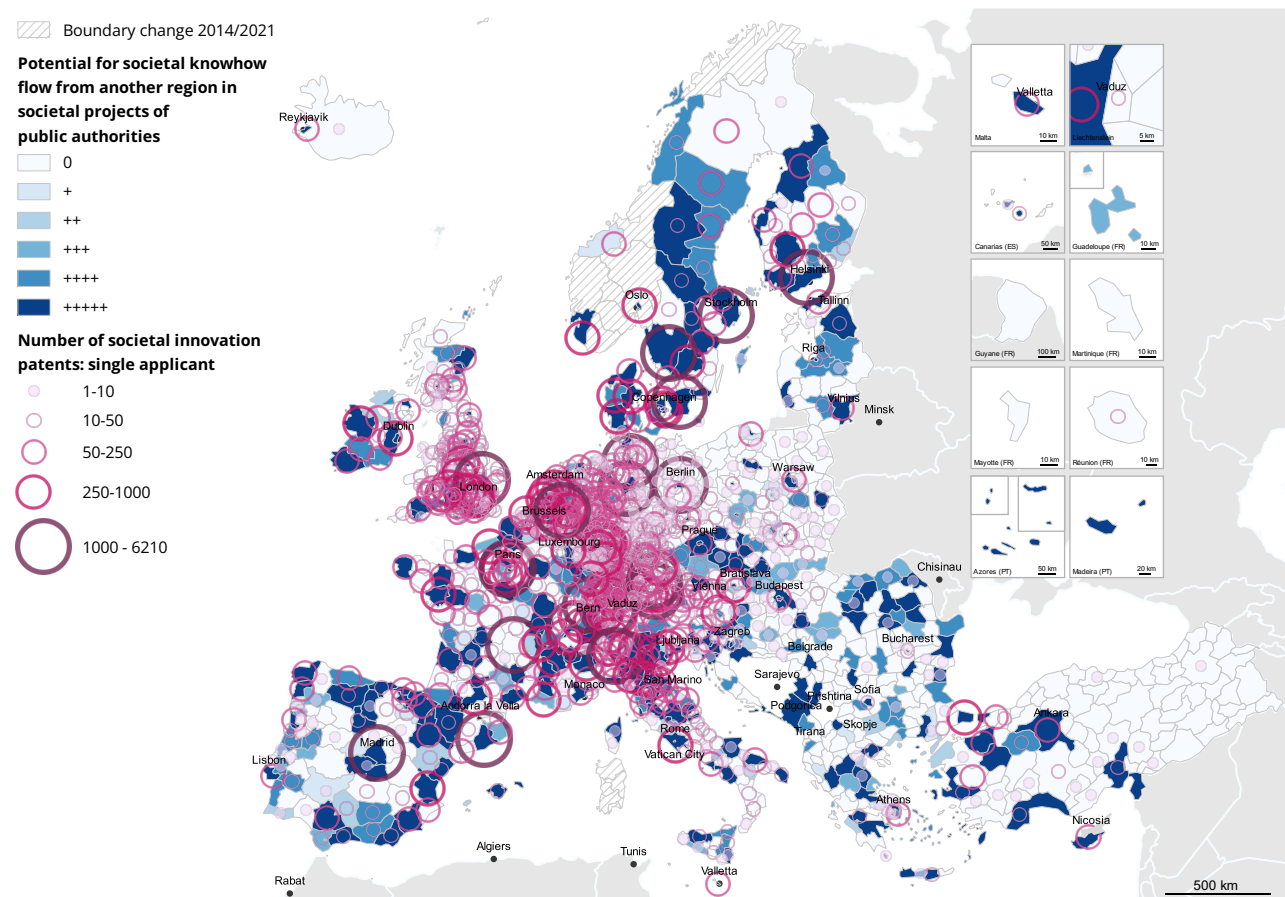


Fig. 7 Highest potential for societal knowhow inflow generated through societal innovation projects 2014- 2022

Paris city (FR)	9008	9790	1297	1	0	321	50,178,193	1080	86	4
Stockholms län (SE)	7676	2284	1938	2	4	288	70,213,346	338	48	5
München (DE)	6854	10524	1973	11	0	168	51,377,130	437	12	3
Paris Hauts-de-Seine (FR)	4669	6830	1422	2	5	381	94,117,898	38	4	1
Skåne län (SE)	3535	1476	1139	1	0	90	13,706,145	100	20	5
Berlin (DE)	3448	3389	1193	1	1	266	27,790,611	256	17	6
Stuttgart (DE)	3192	4248	877	3	3	75	14,114,849	19	3	0
Lyon-Rhône (FR)	2974	2632	610	2	0	139	34,742,986	101	33	7
Paris Yvelines (FR)	2764	4102	743	10	3	173	77,319,794	35	1	0
Helsinki-Uusimaa (FI)	2462	1714	2199	13	3	256	32,066,995	511	25	4
Isère (FR)	1946	2553	545	1	0	61	28,006,683	38	8	1
Graz (AT)	662	680	326	10	5	114	10,144,746	184	4	3
Vestjylland (DK)	576	858	254	3	1	40	14,973,851	0	6	0
Veluwe (NL)	461	393	222	1	0	69	2,946,451	308	2	0
Pyrénées-Atlantiques (FR)	453	410	60	1	0	27	7,118,757	14	2	1
Osrednjeslovenska (SI)	398	199	88	1	2	173	18,163,294	246	20	1
Noordoost-Noord-Brabant (NL)	389	496	245	1	0	50	7,000,342	4	4	1
Regensburg (DE)	381	357	54	1	0	13	945,505	11	1	0
West-Noord-Brabant (NL)	365	545	605	2	0	51	12,930,540	7	4	1
Monza e della Brianza (IT)	339	496	125	1	1	32	3,414,579	2	1	1

Highest Degree Centrality 14-22

Societal patents (cross-regi)

Societal patents (single)

Background IPR

Foreground IPR

Societal innovation projects of firms

Non-EU private investment in societal innovation

Societal innovation projects of universities & research institutes

Societal innovation projects of the public sector

Business bricolage

Fig. 8 Top 20 of societal innovation outlets in Europe, 2014 - 2022









								
Cantabria (ES)	26	1,792,728	13	13	21	21	15	4
Trenčiansky kraj (SK)	4	118,481	10	20	9	38	6	1
Goriška (SI)	18	2,026,234	17	24	9	16	6	0
İzmir (TR)	8	101,425	39	30	21	23	2	5
Malta (MT)	36	3,645,278	120	45	34	50	9	12
León (ES)	11	1,257,302	20	13	2	5	1	2
Ankara (TR)	50	3,022,063	83	43	21	50	9	20
Sofia (BG)	125	5,863,668	20	22	26	37	10	12
Arr. Oostende (BE)	7	210,051	13	86	25	16	10	4
Rīga (LV)	39	14,214,494	36	21	6	21	6	4
București (RO)	166	20,752,901	30	27	17	32	8	12
Oldenburg (DE)	7	88,092	16	93	23	48	6	5
Glasgow (UK)	43	2,483,905	98	66	26	31	9	28
A Coruña (ES)	22	801,144	76	46	15	24	10	16
Lubelski (PL)	4	72,806	22	23	11	11	11	14
	Societal innovation projects of firms	Private investments in societal innovation projects	Number of patents with societal link					
	A	B	C	D	E	F	G	H

Fig. 9 Top 14-22 regions participating in projects with very high potential for knowhow transfer. From left to right: home firm responses to societal challenges with aggregated values 2014-2021:

A) total number of societal innovation projects of firms;

B) total investment by private sector in societal innovation projects aggregated at NUTS3 level in EUR;

total number of patents applied for with addresses in these regions and containing technological components relevant for respectively C) health; D) food/bioeconomy, E) energy; F) mobility; G) climate and H) security.

Figure 8 shows the top-20 societal innovation ‘donors’ in Europe between 2014 and 2022. The higher the degree centrality, the stronger the gravity of the region within the network and the highest the affinity to cross-regional societal know-how transfer. This implies that their home innovators tend to co-create societal innovation value with innovators from other regions, thus sharing their know-how.

Not surprisingly, the number of joint patents with technological components relevant for one or more of the societal challenges outweighs the number of single applications. Background Intellectual Property Rights (IPR) are the number of patents that innovators from these regions bring in as knowledge base for new societal innovation projects while Foreground IPR refer to the number of new patent applications from these regions as a result of the societal innovation project. Firm and university participation in societal innovation projects from these regions dominate, confirming the high degree of willingness of innovators from these regions to engage in new collaborative societal innovation. Business bricolage refers to the number of projects of public authorities from these

regions engaging in business modelling and planning in addition to technological innovation. Overall, the share of entrepreneurial bricolage projects suggests that public authorities from these regions have limited interest in projects that risk displacing the actual entrepreneur.

The top-15 instances of very high potential for societal knowhow flow generated through the connection of a public authority from these regions and an innovator from another region are shown in Figure 9 from top to bottom. Firms from these regions exhibit low affinity to cross-regional societal innovation, which explains the actions of public authorities.

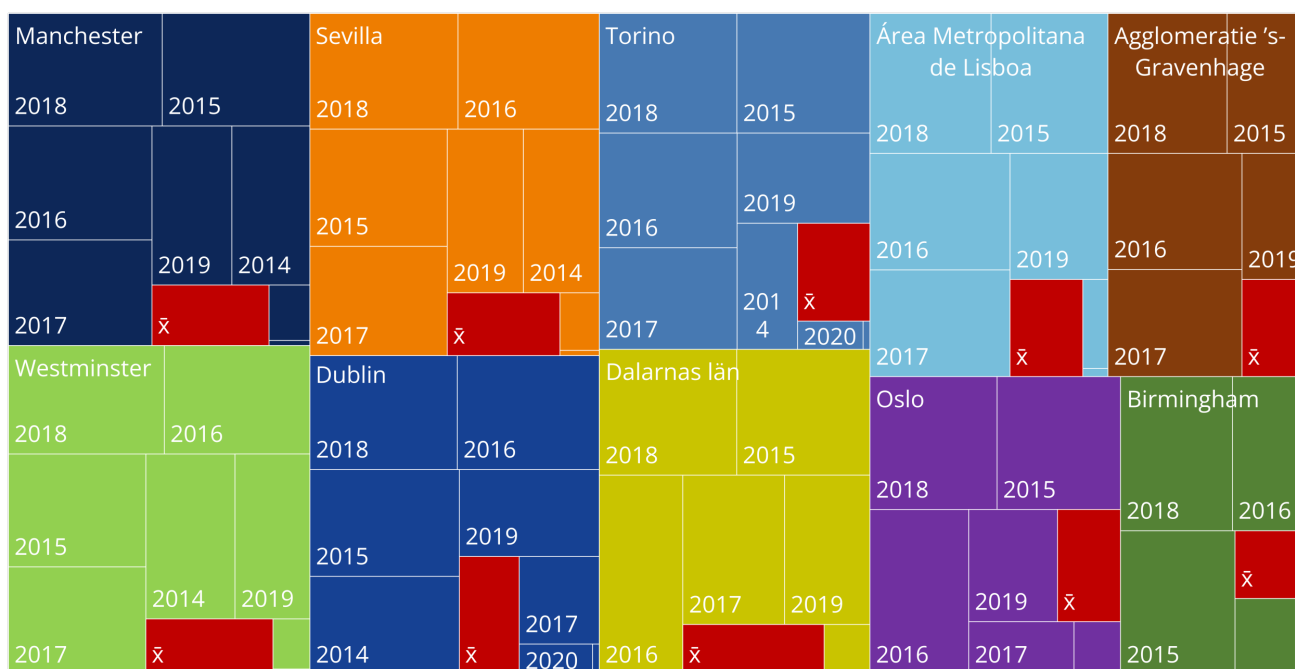


Fig. 10 Top 10 regions, in which public authorities engage recurrently in societal innovation projects with high-potential for cross-regional know-how transfer. \bar{x} denotes the average potential benefitting regions through societal innovation projects, generated between 2014 and 2021.

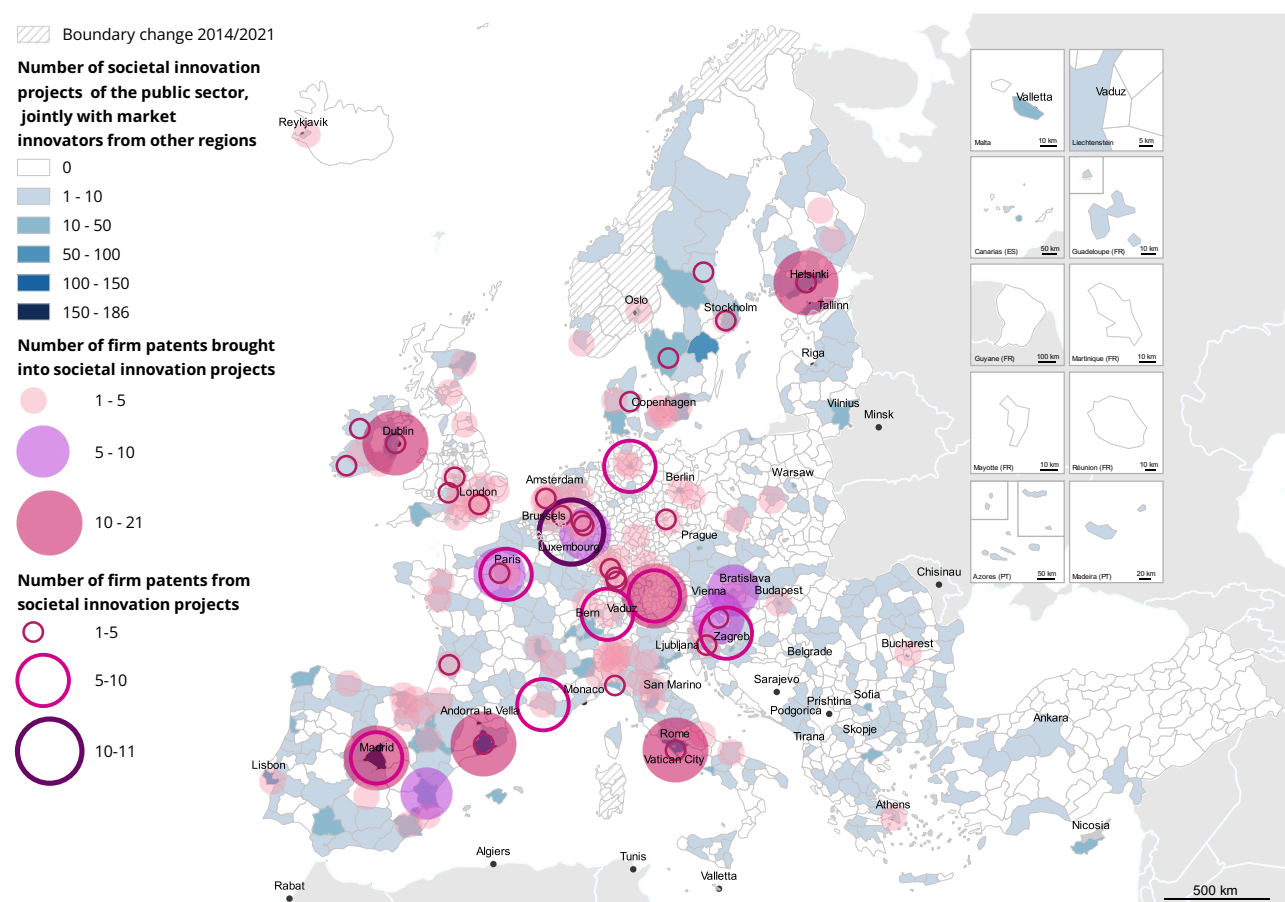


Fig. 11 Background and foreground intellectual properties of firms linked with societal innovation projects

4. Regional authorities engage systematically in search for societal knowhow in the regions.

The top 10 regions exhibiting annually recurring efforts of public authorities in connecting with innovators from regions with high affinity to cross-regional societal know-how transfer are Dublin, Sevilla, Torino, Agglomeratie 's-Gravenhage, Área Metropolitana de Lisboa, Dalarnas län, Manchester, Birmingham, Westminster and Oslo (Fig. 10). These regions have also a good track record of patent applications with technological components relevant for societal challenges. Most of the patent applications, both from single applicants and cross-regional joint applications are in the field of sustainable mobility, followed by health and food / bioeconomy. These regions tend to cooperate with innovators from Paris and Munich, which lead head the list of societal innovation 'donors' exhibiting highest affinity to cross-regional innovation with both societal and commercial value.

5. Regional authorities demonstrate entrepreneurial vigilance.

Cooperation with firms possessing and willing to share technological knowledge base for future collaborative innovation (Fig. 11) is another sign of entrepreneurial vigilance demonstrated by public authorities. Protected intellectual property provided by firms to project partners speaks for credible intentions of innovators to invest in a high-quality output, which in turn, benefits regional authorities through spillover effects.

Figure 12 lists examples of regions, whose public authorities exhibit entrepreneurial vigilance, i.e. they access background intellectual property provided by innovators outside their region within joint societal innovation projects. All five regions are intermediate an close to a city according to the Eurostat urban-rural typology and exhibit an above-average performance in most of the indicators characterising Entrepreneurial Regional Governance.

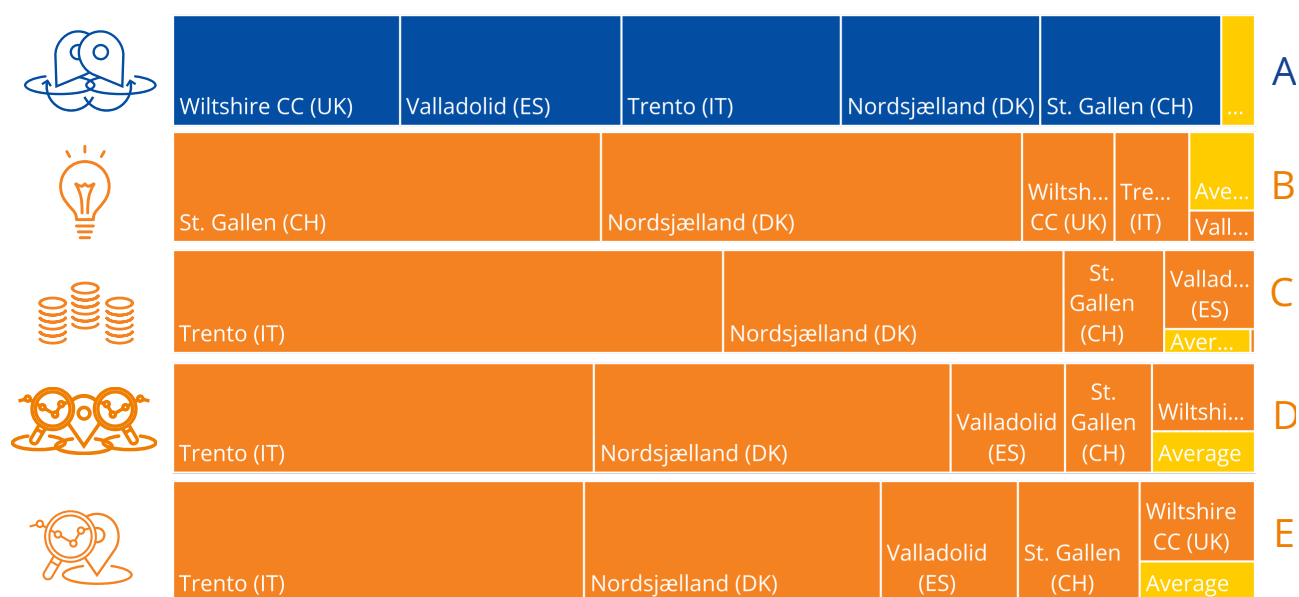


Fig. 12 Examples of entrepreneurial regions; (yellow bars = average)

- highest potential for societal knowhow flow generated through the involvement in societal innovation projects;
- number of societal innovation patents granted between 2014 and 2021 and applied for with addresses in these regions;
- total investment by private sector in societal innovation projects aggregated at NUTS3 level in EUR;
- firm participations in societal innovation projects with contracts signed between 2014 and 2022, aggregated at NUTS3 level;
- unique firms from these regions involved in societal innovation projects between 2014 and 2022.

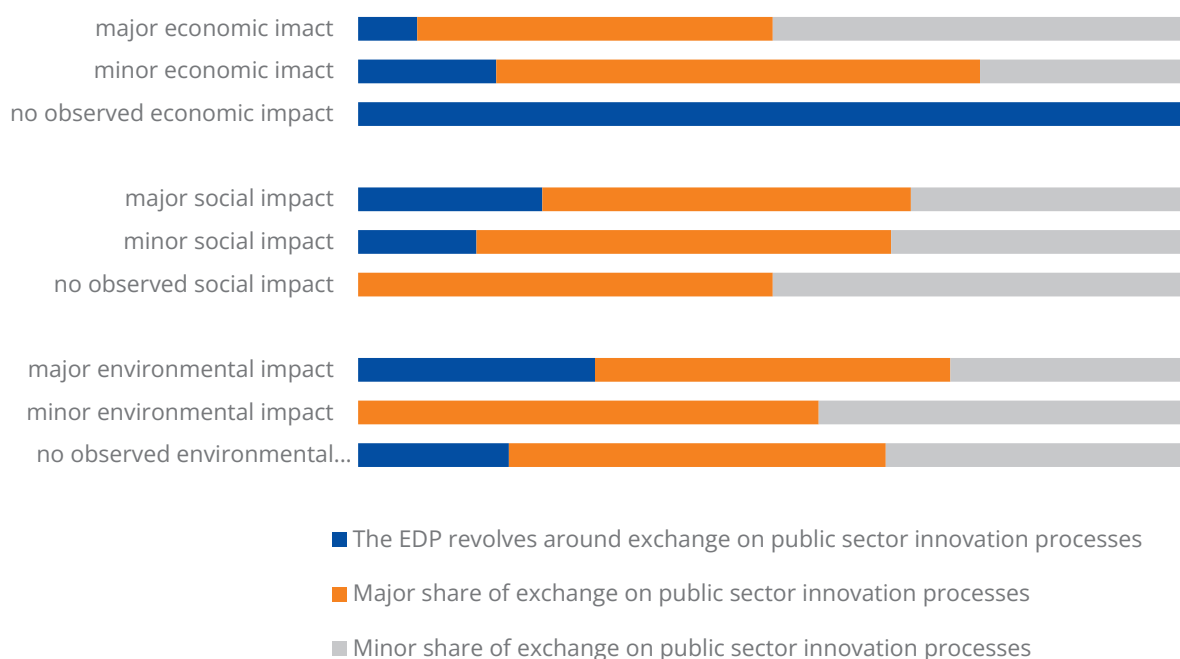


Fig. 13 Observed impact of EDP and importance of public sector innovation processes for EDP indicated by surveyed EDP managers

6. Regional authorities engage in a culture of open societal innovation diffusion with firms and other stakeholders within their regions.

ESPON's study provides evidence for the significant relationship between societal innovation projects connecting public authorities with innovators from other regions on the one hand and the responses of home innovators to societal challenges on the other hand. Between the action and the response, however, there are other processes within the regions, which assume an open culture of societal innovation diffusion between regional authorities, firms and other societal innovation stakeholders.

The different structural, spatial, political, institutional and cultural conditions imply a great variability of possible conduits of societal innovation knowhow within the regions. The study, therefore, focuses on a common mechanism, known as Entrepreneurial Discovery Process (EDP), which serves as the operational backbone of smart specialisation (RIS3).

The EDP is well known in the regions, and the reasoning behind it still holds: traditional innovation policy would be allocatively inefficient in regions that do not exhibit any particular strengths in science and technology. Instead, public research and innovation investments

shall be aligned with other place-specific productive assets. ESPON's evidence supports the EDP as a policy instrument to mainstream Entrepreneurial Regional Governance. In this context, ESPON surveyed regional RIS3 managers on the currently observed impact of the EDP and on subjects relevant for the study, among others on the role of public sector innovation processes (Fig. 13) and the degree of openness towards firms headquartered outside the jurisdiction of the authority governing the EDP (Fig. 14).

7 of 10 surveyed EDP managers confirm the relevance of Horizon 2020 projects, in which the region is represented, as part of the EDP. This confirms ESPON's evidence on Entrepreneurial Regional Governance. While the role of firms from other regions and the innovation role model of the public authority, a key prerequisites for Entrepreneurial Regional Governance, are associated with favourable assessments of the EDP impact among the surveyed EDP managers, these two aspects are not equally valued everywhere, which requires policy attention in the context of RIS3 and S4+ strategies.

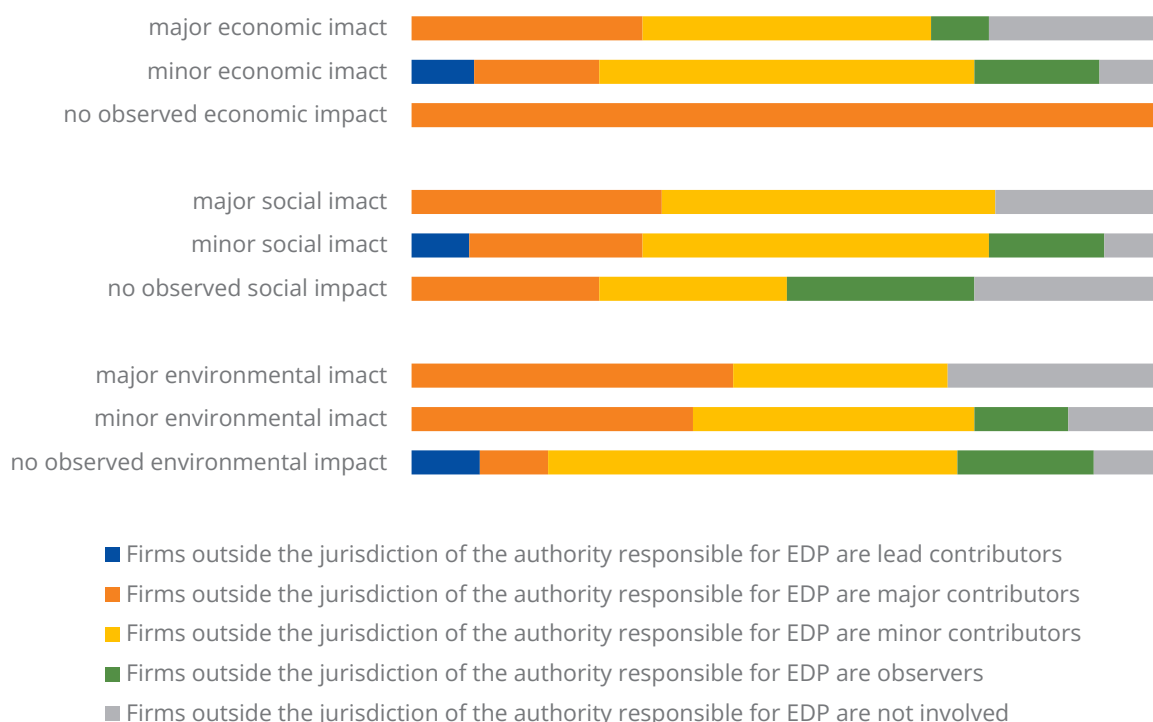


Fig. 14 Observed impact of EDP and the role firms from other regions in the EDP

7. Entrepreneurial Regional Governance does not depend on geographical location.

Based on four major indicators for Entrepreneurial Regional Governance, ESPON introduced a typology of regions responding to societal challenges and estimated the probabilities of regions to belong to one of three types (Fig. 15):

- Low responses to societal challenges: low probability for patent applications with societal relevance; low probability for firm and public participations in societal innovation projects across Europe and low probability to generate potential for societal innovation knowhow flow through the connection of public authorities to innovators from other regions.
- High market-driven responses to societal challenges: high probability for patent applications with societal relevance; medium probability for the involvement of firms in societal innovation projects across Europe;

low probability for public participation in societal innovation projects across Europe and for generating potential for societal innovation knowhow through the connection of a public authorities to innovators from other regions.

- Entrepreneurial Regional Governance: high probability in all four indicators, i.e. patent applications with societal relevance; involvement of firms and public bodies in societal innovation projects across Europe and for generating potential for societal innovation knowhow through the connection of a public authorities to innovators from other regions.

Unlike the second class and the traditional centre-periphery patterns in EU innovation monitoring, Entrepreneurial Regional Governance exhibits a more balanced geographical distribution. It is an observation that is still spatially fragmented but it is driven by easily adoptable and low-cost actions.

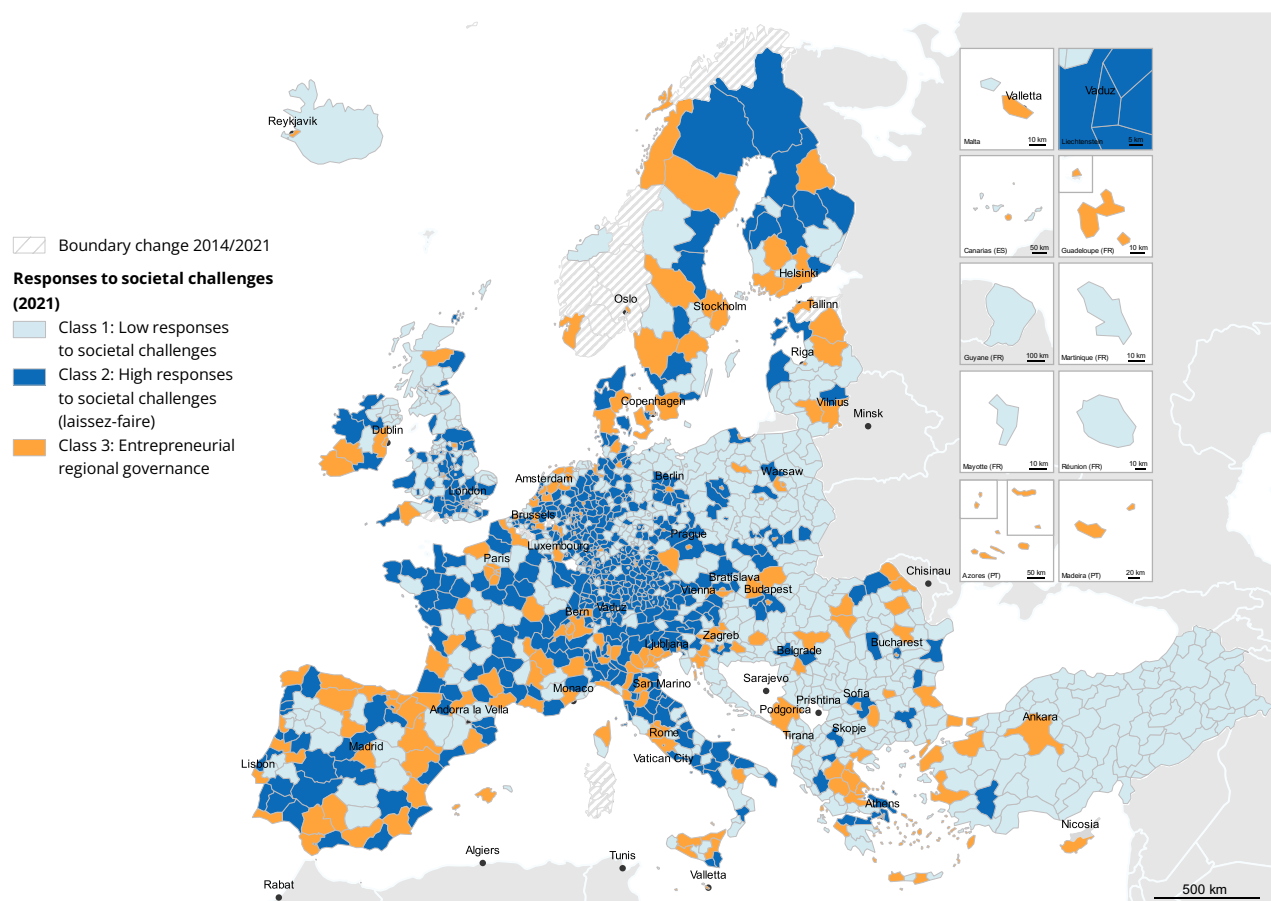


Fig. 15 Typology of regions responding to societal challenges

8. Cross-regional missions, transformative partnerships and experimentation do not crowd out the business.

ESPON provides evidence that not every involvement of public authorities in societal innovation projects qualifies as Entrepreneurial Regional Governance. The study finds a significant correlation between firm exits and the intention of projects involving firms, public authorities, universities and research organisations to engage in business-related activity and consequently in economic appropriation of jointly

developed innovation. Such projects are driven by good intentions but create an unintended perverse incentive, cannibalising the initial intention of the project and preventing spill-over effects.

Concretely, the study finds that societal innovation projects involving firms, public authorities and universities / research centres in Horizon 2020 engaging in business modelling, planning and development are facing firm exits more frequently than non-business projects (Fig. 16).

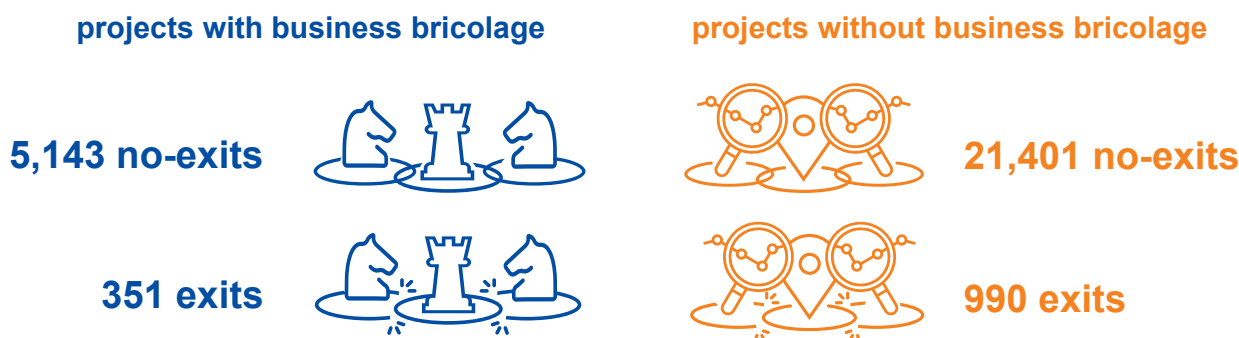


Fig. 16 Relationship between firm exits and entrepreneurial bricolage in societal innovation projects of Horizon 2020

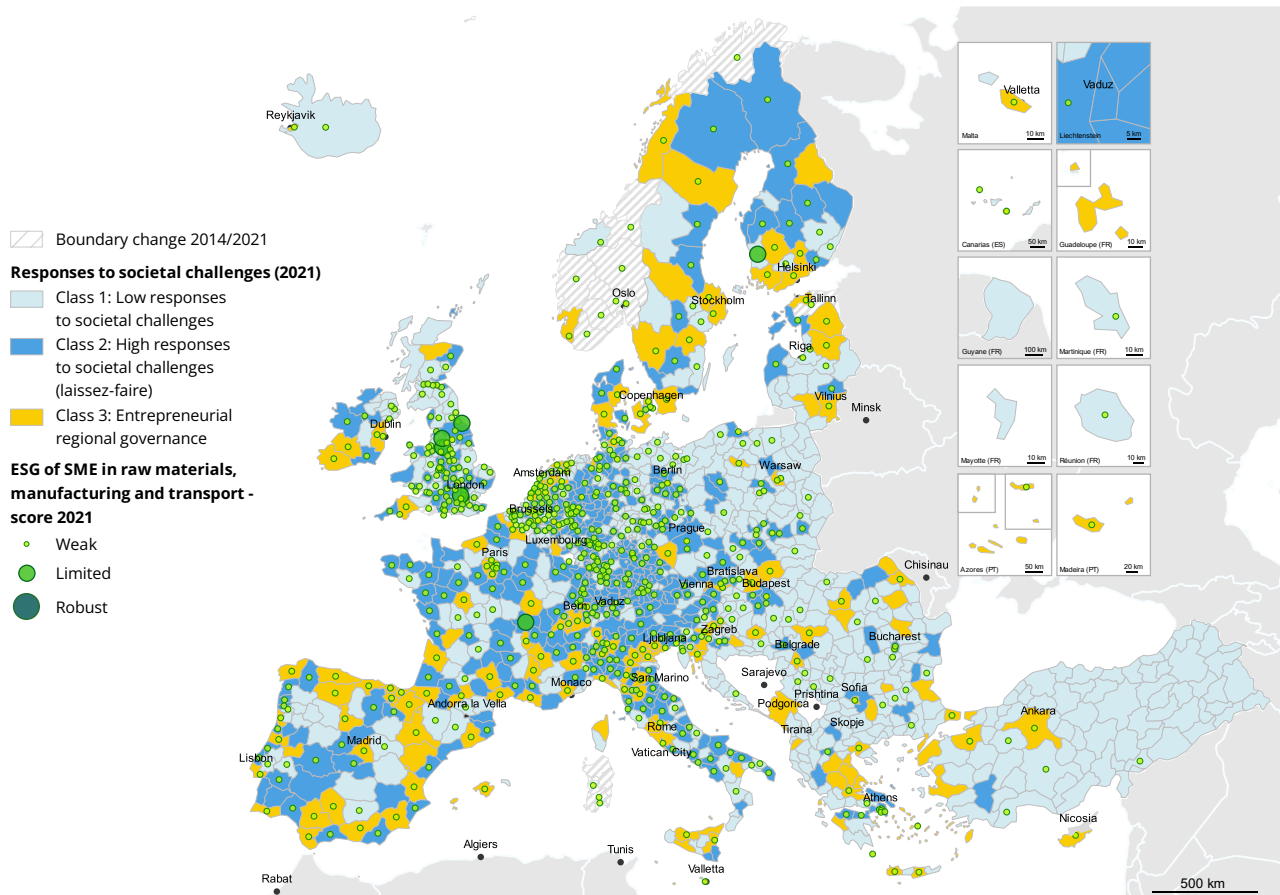


Fig. 17 Average ESG score of SMEs involved in societal innovation projects, predicted for 2021

On the other hand, societal innovation projects refraining from a business layer retain interest of firms and the potential for societal knowhow spillovers across regions. ESPON refers to this business layer that often overwrites the technological one as business bricolage, i.e. the project-designed business modelling limiting the private appropriability of an innovation in an effort to increase marginal societal benefits. The study finds sings of business bricolage in project documentation including objectives, project deliverables and work packages. Therefore, an important condition for Entrepreneurial Regional Governance is the absence of business bricolage as a project-designed follow-up of technological innovation.

9. Responses are expected from firms underperforming in sustainability parameters.

ESPON uses the Moody's environmental, social and governance (ESG) score predictor for 2021 to review the predicted sustainability performance of firms participating in societal innovation projects of the framework programme Horizon 2020. The ESG score

predictor applies a scoring methodology based on size, industry and location, which allows to have a consistent view of all firms of interest.

The sample contains 12,712 firms, which entered Horizon 2020 projects under the pillar 'societal challenges' between 2014 and 2022. The sample is distributed as follows: 19 per cent very large enterprises; 18 per cent large enterprises; 29 per cent medium-sized enterprises; 34 per cent small enterprises and is a very good representation of firm participation in the Horizon 2020 societal innovation projects. Around forty per cent of these enterprises are active in sectors, where negative externalities are probable, namely raw materials, manufacturing and transport.

The vast majority of these firms are predicted to perform weakly in relation to the environment, community involvement and business behaviour. On average, SMEs exhibit a weaker overall ESG performance (Fig. 17) as compared with large and very large enterprises (Fig. 18). This confirms the assumption that Entrepreneurial Regional Governance is pulling businesses that underperform in societal sustainability towards societal responsibility and investment.

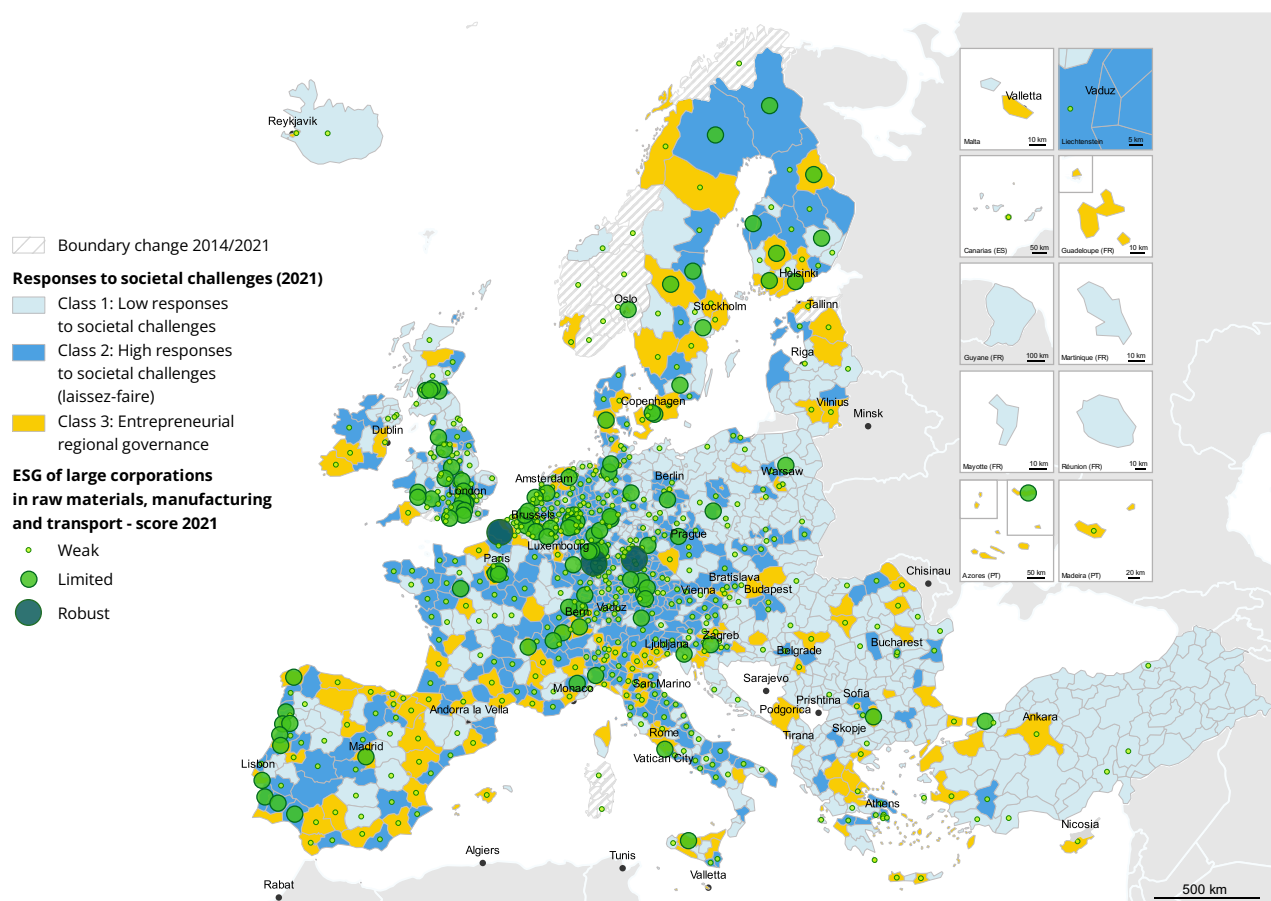


Fig. 18 Average ESG score of large corporations involved in societal innovation projects, predicted for 2021

3. Policy messages

Horizon Europe newcomers

Access to spatially exogenous information with societal value is an untapped resource and opportunity in regional policymaking. Societal innovation is not the privilege of regions with high innovation capacity. Every region is capable to tap into the existing societal innovation flows and repurpose the innovation for the benefit of local communities, adjusting it to spatial and structural conditions. More than 65 per cent of NUTS3 regions have no records of participation in societal innovation projects with market innovators from other regions between 2014 and 2022. Regional and local authorities are advised to overcome irrational

barriers and make this practice a strategic priority accompanying ERDF-related activities. The practice will pay off. As shown, the majority of regional public bodies in areas with low innovation capacity are able to connect to geographically farther regions, accessing societal innovation knowhow, which, in turn, translates into firm responses to societal challenges at home. The attention of regional policymakers who are not experienced with the framework programme is drawn particularly to societal innovation projects. ESPON has evidence that such projects have a substantial potential for knowledge spillovers and entrepreneurship with societal value.

Framework programme veterans

Only four per cent of the regions engaging in societal innovation projects with market innovators from other regions had gained access to background intellectual property deliberately provided by an innovator from another region as knowledge base for new innovation within societal innovation projects. The regions gaining access to background intellectual properties exhibit a good track record of firm responses to societal challenges at home. Background intellectual properties is an indication for the quality of the anticipated cross-regional spillover. Regional authorities intending to enter new partnerships under Horizon Europe are advised to study declarations of background intellectual properties in consortia agreements. Consortia with background intellectual properties are likely to yield more benefits for the participating public authorities. Moreover, 'shortcuts' to innovators in regions with strong gravity in the societal innovation network have a significant correlation with various responses of firms to societal challenges at home. Partnership with innovators from places with very advanced regional innovation systems like Paris, Munich, Berlin, Stuttgart, Helsinki or Stockholm are despite triviality highly recommendable.

Partnerships for Regional Innovation (PRI)

Entrepreneurial Regional Governance is an observation that can be mainstreamed, and the most adequate instrument towards mainstreaming is PRI. The PRI pilots are advised to consider the first step in the sequence of Entrepreneurial Regional Governance (Fig. 2a), looking for transformative innovation coalitions with innovators from other regions exhibiting high affinity to cross-regional collaborative innovation with societal and commercial value. The framework programme remains the most important enabler. ESPON delivers evidence in support of the principles designed to pilot PRI and advocates a widespread early adoption. For regions experiencing structural and capacity-related entry barriers, PRI is a fast track to benefits from the framework programme for research and innovation along the multi-source-funded trajectory towards transformative innovation.

Transformative coalitionists and experimentalists

ESPON provides evidence for a positive correlation between firm exits from societal innovation projects and the engagement of such projects in business modelling and business plans. Regional authorities shall

refrain from engaging in activities that risk diverting businesses in general and from layering business dimensions upon collaborative triple-helix innovation in particular.

S4+ managers

ESPON supports the continuation of the Entrepreneurial Discovery Process (EDP) with the respective adjustment for sustainability and stakeholder engagement. EDP is a proven instrument resting on social capital and the experience of RIS3 and prospective S4+ managers. At the same time, ESPON reminds of the implications of Entrepreneurial Regional Governance, whose main actor is a regional authority that exhibits entrepreneurial vigilance and appropriates exogenous knowledge. This is a necessary adjustment of EDP, which in its origins assumes a 'principal-agent' problem, i.e. governments (the principal) do not possess a-priori knowledge to determine which are the emerging sectors that can bring higher marginal benefits for society. The Entrepreneurial Regional Governance proves the existence of a-priori knowledge and demonstrates the sources. In fact, the entrepreneurial regional authority acts ahead of home innovators, attracting business investment. With this re-levelling of the information asymmetry, the EDP is well positioned to serve as a conduit of entrepreneurial opportunities with societal value, sourced from places, to which home innovators are otherwise not well connected in terms of societal innovation flows.

Enthusiasts in innovation-scarce environments

The evidence from ESPON supports the notion of an Innovation Associate programme for public bodies in regions deprived of an industry-led Regional Innovation System. In analogy to the pilot action under Horizon 2020 designed to support SMEs and start-ups in the recruitment of post-doctoral researchers from other countries in support of a business innovation idea, the Innovation Associate for Regional Governance can assume the form of an ESIF-aided capacity-building support framework for societal innovation missions set by the public authority. Mission-led regional authorities will face similar challenge like private-for-profit entities, whose innovation missions involve high friction costs in finding a good-fit talent. Societal missions require a good mix of technological, financial, economic and public policy-related knowledge, which in the absence of demonstrated entrepreneurial skills of regional authorities, can help to trigger a self-propelling process of Entrepreneurial Regional Governance. Thus, an Innovation Associate for Regional Governance

programme can contribute to efforts aimed at reducing the imbalances in relation to the entrepreneurial ability in public governance, which are crucial for a spatially just paradigm shift to mission-led public policy in the regions.

Interreg programmes and beneficiaries

Interreg programmes, particularly those with specific objectives embracing innovation, entrepreneurship and capacity building, are a well positioned and plausible policy instrument to catalyse societal innovation flows across regions. In 2019, Interreg Central Europe launched an experimental call 'capitalisation through coordination' aimed at EU-funded project results in the fields of technological and social innovation from programmes like Horizon 2020. The reasoning

behind was that such results can benefit territorial challenges in the cooperation area and at the same time it was a sign towards the framework programme, demonstrating the necessity to approach innovation policy through the lens of territorial needs. Particularly the asymmetric spatial effects emanating from the Grand Societal Challenges prove the need to embark on mission-led innovation policy, which became the guiding principle of the new framework programme Horizon Europe. The Central Europe experimental call was a promising signal demonstrating willingness of Interreg authorities to reduce risk aversion for the benefit of the cooperation area, and is a good example of Entrepreneurial Regional Governance at transnational scale. It is advisable to continue and extend such actions in other programmes, making the best possible use of Interreg resources dedicated to societal innovation.

Sources

European Commission, Directorate-General for Research and Innovation, Geels, F. (2020) Transformative innovation and socio-technical transitions to address grand challenges, Publications Office, <https://data.europa.eu/doi/10.2777/967325>

Foray, D. (2014). From smart specialisation to smart specialisation policy. *European Journal of Innovation Management*, vol. 17, no. 4, pp. 492-507.

Foray, D., David, P. A., and Hall, B. (2009). *Smart Specialisation: The Concept. Knowledge for Growth: Prospects for Science, Technology and Innovation*. Luxembourg, Publications Office of the European Union.

Frietsch, R., Neuhausler, P., Rothengatter, O. and Jonkers, K. (2016). Societal Grand Challenges from a technological perspective: Methods and identification of classes of the International Patent Classification IPC. *Fraunhofer ISI Discussion Papers - Innovation Systems and Policy Analysis*, No. 53, Fraunhofer-Institut für System- und Innovationsforschung ISI, Karlsruhe

George, G., Howard-Grenville, J., Joshi, A. and Tihanyi, L. (2016). Understanding and tackling societal grand challenges through management research. *Academy of Management Journal*, 59, 1880-95.

Lehtola, V. V. and Ståhle, P. (2014). Societal innovation at the interface of the state and civil society, *Innovation: The European Journal of Social Science Research*, 27:2, 152-174.

Mazzucato, M. (2015). *The Entrepreneurial State*. Anthem Press

Schot, J.W. and Steinmueller, E. (2018). Three frames for innovation policy: R&D, systems of innovation and transformative change, *Research Policy*, 47, 1554-1567.

Voegtlin, C., Scherer, A., Stahl, G. and Hawn, O. (2022). Grand Societal Challenges and Responsible Innovation. *Journal of Management Studies*. 59. 1-28. 10.1111/joms.12785.



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