



Helsinki-Uusimaa
Regional Council



Helsinki-Uusimaa strategic EU-level concept for RDi activities and cooperation

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1. Introduction

Helsinki-Uusimaa, in southern Finland, aims to be the most innovative region in Europe. The headline aim is that Helsinki-Uusimaa's expenditure on research and development (R&D) should reach 5% of regional gross domestic product (GDP) by 2030. To achieve this, it is important that Helsinki-Uusimaa strengthens its research, development and innovation (RDI) activities at the EU level, that it increases its absorption of EU direct funding programmes and strengthens its European networking. This will enable the best possible knowledge to be accessed and shared, networking with other top EU regions and RDI actors and the successful attraction of talent and international companies to Helsinki-Uusimaa. In terms of EU funding, the target essentially requires a doubling of funding by 2030.

The objectives are realistically attainable because Helsinki-Uusimaa already has significant expertise in research, development and innovation which can be used to strengthen European cooperation and further develop its RDI activities. The RDI objectives are central to the development of the region, but the R&D efforts in Helsinki-Uusimaa are also of considerable importance for the country as a whole, as the expectations in respect of Finland's productivity growth and increased RDI activity are particularly focused on Helsinki-Uusimaa.

From the perspective of strengthening competitiveness and productivity growth expectations, Finland's ageing population and historically low birth rates remain a cause for concern with the working age population predicted to shrink by more than 20% in much of the country by 2040. Population growth in the country as a whole has been entirely driven by immigration since 2014. Helsinki-Uusimaa and the capital region in particular, is one of the few areas where the working age population is projected to increase. The role

of RDI in Finland's productivity growth and in securing the maintenance of the welfare society has thus become even more important. Helsinki-Uusimaa, for its part, has a role to play as the primary driver of RDI in Finland and of its internationalisation.

Research, development and innovation (RDI) is key to securing Finland's future, namely, its sustainable prosperity, welfare society and green transition process. The expectations for Finland's productivity growth and increased RDI activity are particularly focused on Helsinki-Uusimaa. Helsinki-Uusimaa's R&D expenditure of €3.87 billion accounted for almost half of Finland's total R&D investment. The importance of Helsinki-Uusimaa in terms of many other economic and RDI-related indicators is also highly relevant in this context.

1.1 Objectives set for RDI activities in Helsinki-Uusimaa



Key objectives for Helsinki-Uusimaa:

- Most innovative region in EU
- Increase the share of research, development and innovation expenditure to 5 percent of the region's gross domestic product by 2030.
- Carbon-neutral region by 2030.

Towards the 5% target and becoming the most innovative region in the EU

Finland's national target is to increase the share of R&D spending in GDP terms to 4% by 2030. To achieve this target, Helsinki-Uusimaa Regional Council estimates that R&D expenditure will need to increase by almost €440 million per year (in 2022 prices) for the country as a whole and by

€220 million per year for Helsinki-Uusimaa, assuming also that expenditure in all regions grows at the same rate.

At the national level, achieving the 4% target is calculated to require an increase in R&D expenditure in Helsinki-Uusimaa up to EUR 5.6 billion and an increase in R&D intensity to 5% by the end of the decade. Increased RDI activity requires increased investment in all sectors and from different sources which in turn requires increased access to EU funding. **Achieving this target will require the doubling of current EU funding for R&D expenditure by 2030.** Both the existing strong competitive EU funding receivers and the encouragement of new entrants will play an important role here in increasing EU funding.

In order to reach these targets, Helsinki-Uusimaa needs to step up its R&D efforts and at the same time, RDI actors need to cooperate more closely in the orientation of inputs and activities. Helsinki-Uusimaa must make better use of the EU internal market, grow and strengthen EU-level networks and talent pools and be better at attracting talent and investment to Helsinki-Uusimaa.

Towards a carbon-neutral Helsinki-Uusimaa by 2030

One of the objectives of the Helsinki-Uusimaa programme¹ is to be a carbon neutral region by 2030. The region's carbon neutrality target is also important for Finland as a whole, as Helsinki-Uusimaa currently produces one fifth of Finland's GHG emissions. The target includes making Helsinki-Uusimaa an environmentally-wise region in Europe which means, among other things, that the region will develop resource-wise solutions to local and global climate change challenges while promoting well-being. The roadmap for a carbon-neutral Helsinki-Uusimaa structures the climate work in the region and includes common guidelines for achieving carbon neutrality.

¹ [Well ahead – Helsinki-Uusimaa Programme 2022–2025](#).

Working together to achieve our goals

Closer cooperation between RDI actors is key to achieving the objectives set for RDI activities. Helsinki-Uusimaa Regional Council has already worked closely with RDI actors and other stakeholders. However, achieving the main objectives will require closer cooperation both within Helsinki-Uusimaa and with actors outside Helsinki-Uusimaa. This will require a stronger focus on the region's competences, the strengthening of existing pilot environments and innovation platforms in Helsinki-Uusimaa and the creation of new platforms.

Helsinki-Uusimaa's RDI roadmap to greater integration in EU networks elaborates on these themes and objectives².

**The expectations for Finland's
productivity growth and increased
RDI activity are particularly focused
on Helsinki-Uusimaa.**



² Helsinki-Uusimaa Regional Council has sought to support knowledge-based regional development and the acceleration of RDI activities in the region through regional strategy work and funding. The objectives for RDI in Helsinki-Uusimaa have been set in particular in the Helsinki-Uusimaa Regional Programme ([Well Ahead - Helsinki-Uusimaa Programme 2022–2025](#)) and in the Helsinki-Uusimaa Smart Specialisation Strategy ([Resource-wise Helsinki-Uusimaa](#)) and through the Helsinki Smart Region cooperation ([Helsinki Smart Region - a forerunner in implementing the New European Innovation Agenda](#)).



2. Snapshot: RDI activities in Helsinki-Uusimaa at the EU level

2.1 The state of RDI in Helsinki-Uusimaa

According to the EU's Regional Innovation Scoreboard (RIS)³, Helsinki-Uusimaa is the second most innovative region in Europe.

RIS is perhaps the best-known overall EU level index for examining structural and relative differences in RDI activities between regions. The regional comparison is updated every two years. In the latest comparison, published in July 2023, Helsinki-Uusimaa's index score has increased by 18% compared to the previous one, but its ranking remained the same. The Danish Capital Region (Copenhagen) comes top, taking over the top spot from the better performing Stockholm region in the previous comparison in 2021. The other main comparators for Helsinki-Uusimaa came in behind Helsinki-Uusimaa: Stockholm was fourth, North Holland (Amsterdam) 12th and Hamburg 13th. The comparator regions, including Helsinki, are among the top five in Europe in terms of economic potential in a comparison by Financial Times fDi Intelligence.⁴

In a regional comparison, the differences in innovation performance between EU regions have been fairly consistent from one year to the next. The

³ https://ec.europa.eu/commission/presscorner/detail/en/ip_23_3683.

⁴ fDi Intelligence: *European Cities and Regions of the Future 2023: The Best and the Brightest Among Europe's Investment Destinations*.

regions that are innovation leaders are mainly located in Northern and Western Europe, while many moderate and emerging innovators are located in Southern and Eastern Europe. The top performers are mainly located in geographical clusters, with the Nordic countries and their metropolitan areas strongly represented. Helsinki-Uusimaa has steadily improved its ranking since the end of the 2010s: in 2015 and 2017, the region ranked seventh while in 2019 it had climbed to fourth.

Table 1. Comparison of Helsinki-Uusimaa with key comparator regions using the Regional Innovation Scoreboard overall index.

	Placement	Innovation Index	Change (%)
Greater Copenhagen	1	156.3	10.7
Helsinki-Uusimaa	2	152.1	18.0
Stockholm	4	149.8	8.1
Noord-Holland (Amsterdam)	12	137.1	7.9
Hamburg	13	136.5	19.4

In terms of the various statistical indicators related to the economy and RDI, Helsinki-Uusimaa is very important for Finland as a whole.

The significance of Helsinki-Uusimaa in Finland by various indicators:

- **40%** of the entire country's GDP
- **50%** of the entire country's R&D expenditure and 45% of R&D personnel
- **Over one-third** of higher education graduates and **nearly half** of all research-level educated individuals graduate from universities located in Helsinki and Espoo which are home to Finland's most successful higher education institutions in terms of international rankings.
- **75%** of corporate patent transactions from 2010 to 2023. The growth in the number of patent applications in recent years has primarily been due to positive developments in Helsinki-Uusimaa.
- **55%** of foreign investments were directed to Helsinki-Uusimaa during the period 2016–2022.

In the 2022 research and development (R&D) statistics, Helsinki-Uusimaa's R&D expenditure of EUR 3.87 billion amounted to almost half of Finland's total R&D expenditure. R&D expenditure in Helsinki-Uusimaa has been growing rapidly since 2016 (Figure 1). The mid-2010s saw something of a trough for Finland as a whole with its RDI investment lagging behind its main peer countries while, at the same time, Finnish exports, investment and productivity declined. National competitiveness relative to several comparator countries therefore deteriorated during this period. Finland's exports and R&D investment relied, to a significant extent, on one large and important company, Nokia, and the ecosystem built around it, a situation which was probably sub-optimal and ultimately unsustainable in terms of the national innovation system. Finland and Helsinki-Uusimaa in particular thus had to deal with that 2010s slump and try to bounce back from that setback.

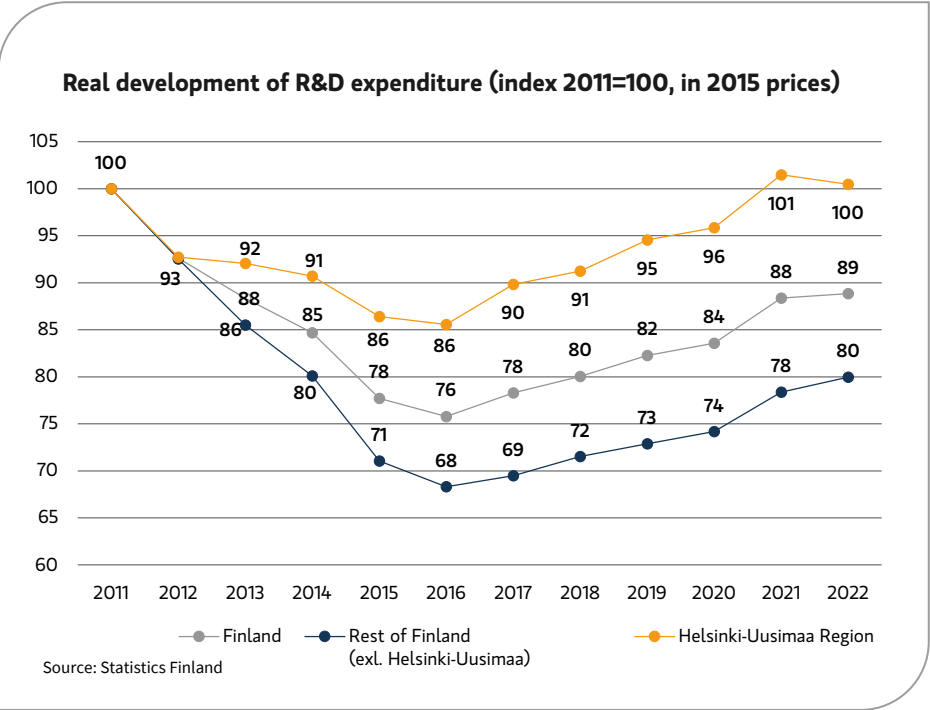


Figure 1. Real evolution of R&D expenditure.

Although R&D expenditure in Helsinki-Uusimaa has grown steadily in recent years, the latest statistics for 2022 show a slowdown in the growth of R&D expenditure in Helsinki-Uusimaa compared to 2021. At the same time, the share of GDP has remained almost unchanged (Figure 2). The share of R&D expenditure in GDP, or R&D intensity, in 2022 was 3.0% for the country as a whole and around 3.9% in Helsinki-Uusimaa.

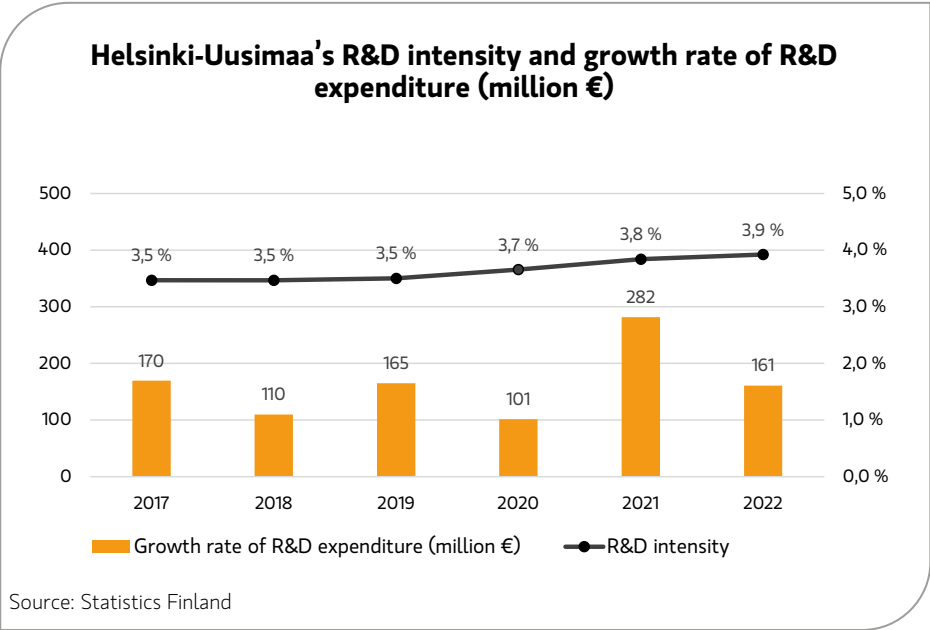


Figure 2. R&D intensity and R&D expenditure growth rate in Helsinki-Uusimaa (€ million). R&D intensity in Helsinki-Uusimaa for 2021 and 2022 has been calculated using the national GDP growth rate, as regional statistics have not yet been revised.

When looking at business R&D expenditure in relation to the business stock, Helsinki-Uusimaa ranked third among the Finnish regions. In the latest statistics, Helsinki-Uusimaa lagged behind several other regions in terms of relative R&D expenditure growth (Figure 3). The leaders were Ostrobothnia (30% growth) and South Karelia (22% growth), where growth was driven in particular by strong growth in business R&D investment.

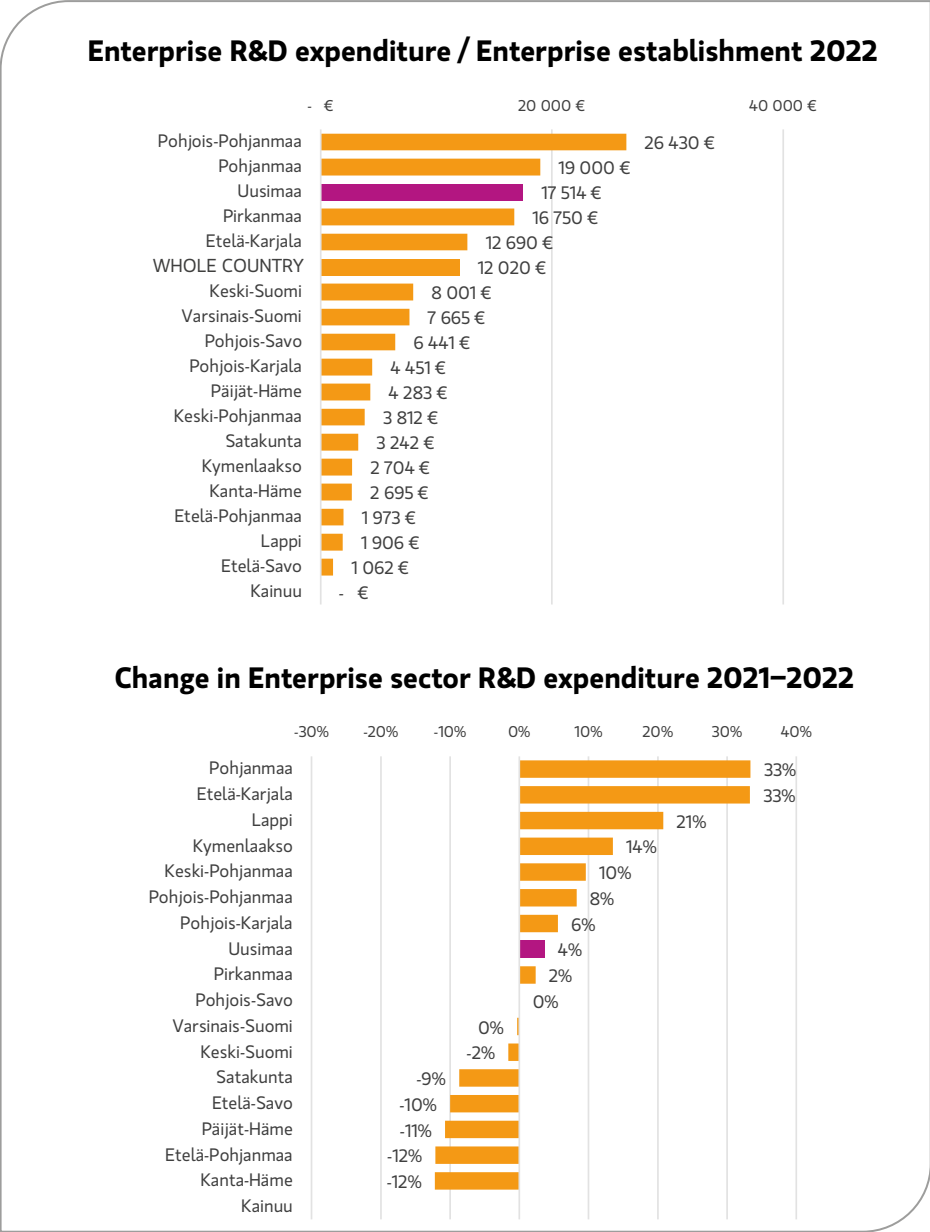


Figure 3. Business R&D expenditure relative to the regional business stock (above graph) and change in business sector R&D expenditure between 2021 and 2022 (below graph).

The challenge for Helsinki-Uusimaa and for Finland more generally therefore relates to the broader challenge of expanding the field of actors in RDI activities. This means that today's significant investments are mainly based on a few key sectors and a narrow range of companies. Small and medium-sized enterprises (SMEs), i.e. those employing fewer than 250 people, appear to be lagging behind in terms of R&D expenditure and staff development. The latest R&D statistics show that the decline in the number of employees is particularly marked in companies with fewer than 250 employees, with a drop of -11.3% for Finland as a whole. This reduction is partly a reflection of the current economic challenges faced. What is noteworthy from the perspective of Helsinki-Uusimaa, however, is that R&D expenditure in the service sector has grown much faster than in manufacturing over the last decade⁵ while the importance of the service sector in Helsinki-Uusimaa has increased.

Insufficient R&D staff numbers challenges the effectiveness of RDI activities

Another major challenge here is the adequacy of access to R&D personnel, something which seems to be emerging as a major bottleneck to R&D growth, especially in the business sector. Both domestic and foreign companies perceive that improving the availability of skilled labour would increase the intensity of their R&D activities. Moreover, according to the companies involved in the sector, the availability of R&D personnel is the most important factor influencing location decisions when considering the expansion of R&D activities on a global scale.⁶

Finland's population is growing, mainly due to immigration while the exiting from the workforce of R&D personnel through retirement is also becoming an increasingly significant issue. Helsinki-Uusimaa and the Helsinki Metropolitan Area in particular, is a strong attractor of internal migration and is also

responsible for the majority of international migration flows. In particular, the strength of Helsinki-Uusimaa is that the majority of graduates from universities in the metropolitan area are employed in the region. In recent years, there has also been an increase in graduate and postgraduate jobs and in the employment of graduates, reflecting the very strong pull of the region's labour market.

The number of immigrant workers in the R&D units of companies located in Finland is still relatively low, except for those companies in the ICT sector which have invested in international labour mobility on a long-term basis through various measures⁷. Another important factor in the employment performance of Finnish enterprises is that foreign-owned enterprises are increasingly creating new jobs in Finland. The number of foreign doctoral students has been increasing in recent years. However, the share of PhDs among business R&D personnel is still lower than in many comparator countries.

Helsinki-Uusimaa is particularly important in the Finnish context for foreign investment. In recent years, around 300 new foreign investments have been made each year in Finland. On average, half of all new foreign investment and new companies are located in the Helsinki Metropolitan Area. Foreign investment, especially in the health and welfare sector, increased in 2022. Foreign investment and the location of international companies, especially their research and development units, in Helsinki-Uusimaa will benefit the national innovation landscape, as they will add dynamism to the regional economy and create more highly-skill jobs.

5 Ali-Yrkkö, et al. (2021: 34-35). *Suomen Corporate R&D and the conditions for increasing R&D investment*. Government Research and Studies Publication Series 2021:50.

6 Ali-Yrkkö, Jyrki & Pajarinen, Mika (23.10.2023). "How do companies think Finland could attract more research and development activity?"ETLA Memorandum No 126.

7 Ali-Yrkkö, et al. (2021: 62). *Suomen Corporate R&D and the conditions for increasing R&D investment*. Government Research and Studies Publication Series 2021:50

2.2 The current EU programming period (2021–2027) and its main funding programmes

Understanding the objectives, policies and programmes of the European Union's innovation policy is key to the EU-level RDI roadmap for Helsinki-Uusimaa. The policy priorities of the European Commission in the current programming period are focused on the green transition: carbon neutrality, low-carbon technologies and combating climate change. Digital objectives and the strengthening of strategic autonomy in critical production have led to a focus on European chip manufacturing and AI regulation.

Horizon Europe

From the perspective of RDI policy and RDI actors in Helsinki-Uusimaa, the most important funding programme is the EU's RDI framework programme Horizon Europe, with a budget of 95.5 billion euros (over the programming period). This funding programme supports research and innovation in the region and enables the region's top players to network with European universities, research institutes and companies. Funding is concentrated on consortia projects, so close cooperation with the various partners is essential. In order to reach the goal of doubling the funding from the Framework Programme in Finland compared to the previous programming period (2014–2020), Helsinki-Uusimaa actors alone would need to secure almost €2 billion from Horizon Europe (between 2021 and 2027).

Digital Europe programme

The Digital Europe programme provides funding and support, in particular to the public sector, to build and scale digital infrastructure and develop skills, focusing on areas such as supercomputing, artificial intelligence and cybersecurity. With a budget of €7.5 billion, the programme will support the development of digital skills and cooperation with universities and strengthen the digital capabilities of public services, businesses and employment. The Digital Europe programme funds, among other things, the EDIH (European Digital Innovation Hubs) network which, in Helsinki-Uusimaa, has received

funding for the FCAI (Finnish Center for Artificial Intelligence) and the Location Innovation Hub (a centre of excellence for spatial information coordinated by the National Land Survey Institute).

Connecting Europe Facility

The Connecting Europe Facility (CEF) supports the development of sustainable infrastructure in the transport, energy and digital services sectors. The aim is to improve the functioning of the internal market, stimulate economic growth and improve the quality of life of citizens. CEF has a total budget of around €33 billion for the current programming period and focuses on infrastructure investments rather than pure RDI activities. The programme also emphasises national preparation and influencing the European Commission during the application phase. In Helsinki-Uusimaa, CEF funding can be used to improve infrastructure linked to mobility, renewable energy and digital, thus supporting the region's competitiveness and meeting the objectives of the European green transition. Infrastructure owners in Helsinki-Uusimaa could aim to benefit more from CEF as a single beneficiary instrument supporting substantial investments in large-scale development projects.

European Defence Fund

The European Defence Fund (EDF) strengthens the competitiveness of the EU defence industry and promotes cooperation between Member States in the development and procurement of defence equipment. The EDF aims to enhance the Union's independent defence capabilities and to support innovative research and technological development which is particularly important in a rapidly changing security environment. The EDF budget for the current programming period is around €8 billion. The programme will also contribute to the EU's strategic autonomy and reduce dependence on third party technologies, thus creating a more coherent and effective defence policy within the Union.

European Innovation Fund

The European Innovation Fund (IF) is an important financial instrument for Helsinki-Uusimaa’s industries focusing on industrial green transition. Innovation Fund’s priorities, such as industrial scaling, energy efficiency improvements and innovations in renewable energy and carbon capture and storage, are in line with the EU’s green transition objectives. Innovation Fund focuses on supporting industrial investment and is capitalised with funding from the EU Emissions Trading Scheme. Among the Helsinki-Helsinki-Uusimaa actors, Neste has received funding for two projects, one focusing on plastics recycling and the other on clean hydrogen production. NSF III Finland has also received funding for a geothermal project. The funding also supports the region’s development towards a sustainable and low-carbon economy.

European Regional Development Fund ERDF

For Helsinki-Helsinki-Uusimaa, the European Regional Development Fund (ERDF) provides essential support for strengthening the region’s dynamic economy and social well-being. Regional development funding is allocated by country and Helsinki-Uusimaa has been allocated around €33 million for the current programming period (i.e. around 4.4% of the total Finnish allocation for the 2021–2027 programming period). The ERDF funding does not, therefore, actually link Helsinki-Uusimaa’s RDI activities to the EU level, but together with national funding focused on RDI activities (research funding from the Academy of Finland and development funding from Business Finland), it can provide upstream support for RDI actors aiming at EU projects. Through the Smart Specialisation Strategy, the Helsinki-Uusimaa Regional Council has targeted funding according to the strengths of the region and has sought to promote the development and implementation of innovative projects.

2.3 EU funding for RDI activities in Helsinki-Uusimaa

The role of EU funding in financing RDI activities

EU funding is relatively small in terms of the amount of money spent on R&D by different organisations. At the same time, however, its importance has increased in recent years, both for companies and especially for universities (Figure 4). Based on Statistics Finland’s R&D statistics for the whole country, the share of EU funding in the R&D budgets of enterprises and research institutions has increased moderately in recent years. In higher education, the increase in EU funding in expenditure terms has been much stronger. Although regional statistics are only available for higher education institutions, it can be assumed that the trend has also been similar in Helsinki-Uusimaa more generally.

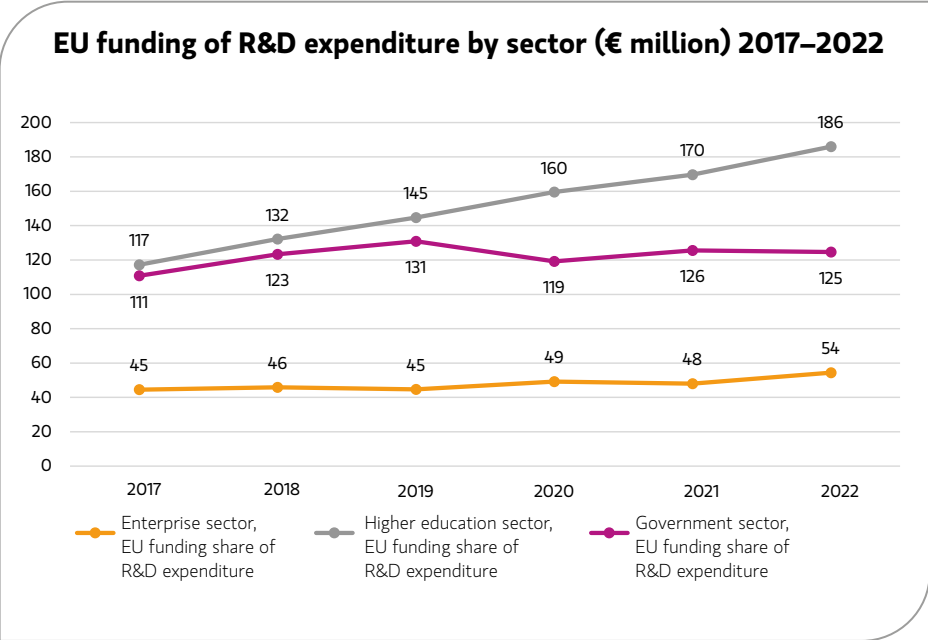


Figure 4. EU funding of R&D expenditure by sector (€ million) 2017–2022.

The share of EU funding in business R&D expenditure is small overall (around 1%), although in euro terms the volume has increased. The share of EU funding in higher education R&D expenditure has however steadily increased in recent years. In 2022, the share was 9% in Helsinki-Uusimaa. The share of EU funding has increased while the importance of external funding in higher education has also increased. In research institutions, the share of EU funding in R&D expenditure was around 12% in 2022 and while it has fallen slightly in recent years, in volume EU funding has increased.

2.4 The relative importance of public resource flows in RDI in Helsinki-Uusimaa

When examining national resource flows and EU funding, the MDI study⁸ showed that Helsinki-Uusimaa's share of the resource flows in the whole country is higher than its share of the population in both the state funding of the Academy of Finland and Business Finland and the state funding of higher education institutions in 2014–2021.

Similarly, Helsinki-Uusimaa's share is lower than its population share in region-based forms of support, such as the Structural Funds which are part of the EU's cohesion policy instruments: in terms of the Structural Funds, Helsinki-Uusimaa's share was 7.7 per cent and in state aid 11.4 per cent of the total national share in 2014–2021. The role of cohesion policy instruments in financing developed urban areas is small, and Helsinki-Uusimaa is no exception. In eastern and northern Finland, the role of such instruments is much greater.

As the funding from the Structural Funds is relatively lower in Helsinki-Uusimaa than in other Finnish regions, the importance of direct competitive

EU funding is particularly important. As far as EU funding distributed through national structures is concerned, from the point of view of RDI activities in Helsinki-Uusimaa, their targeted and strategic use is particularly important. The role and use of EU funding is particularly emphasised in activation, new openings and support for grassroots RDI activities, as well as pathways towards larger EU projects.

2.5 Helsinki-Uusimaa's success in Horizon Europe funding

Helsinki-Uusimaa has performed well by international standards, especially in terms of attracting Horizon Europe funding. The focus here is on Horizon Europe in particular, as it is the largest RDI programme in the EU and relevant for all Finnish RDI actors. Overall, Helsinki-Uusimaa actors have received €401 million in funding from Horizon Europe during the first years of the programme (2021–2022)⁹. Helsinki-Uusimaa accounts for 61% of the total Horizon Europe funding received by Finland. The total amount of funding disbursed continues the trend of the previous Framework Programme period, with Helsinki-Uusimaa actors receiving a total of €990 million from Horizon 2020, which corresponds to 64% of the total received by Finland as a whole. The amount of funding from Helsinki-Uusimaa is partly explained by the reporting of all funding, especially by national research institutes such as VTT, to their headquarters located in Helsinki-Uusimaa.

⁸ MDI's report for Helsinki-Uusimaa Regional Council: Key resource flows between regions in 2014–2021. The aim of the report was to produce a comprehensive statistical analysis of region-based resource flows, showing the share of Helsinki-Uusimaa in the key resource flows of different region-based aid schemes in relation to the rest of Finland.

⁹ Publications Office: CORDIS - EU research projects under HORIZON EUROPE (2021-2027) [Data set] (distribution added 16.8.2023) <https://doi.org/10.2906/112117098108/20>. The data set includes projects funded under the 2021-2022 HORIZON.

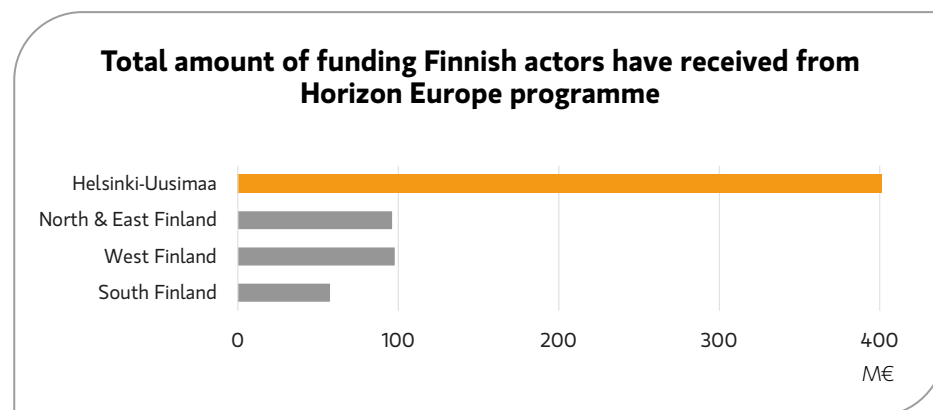


Figure 5. Total amount of funding Finnish actors have received from the Horizon Europe programme.

Compared to its counterparts in Helsinki-Uusimaa, research institutes and VTT are more prominent in Helsinki-Uusimaa. Stockholm's weaker performance is partly explained by its different industrial structure: in Stockholm, the banking and finance sector and information technology are highlighted, while the largest budget items in Horizon Europe are allocated to climate, energy, mobility and industrial renewal, digitalisation and space. On the other hand, Stockholm's higher education sector has done relatively well in the Horizon calls. In Hamburg, the share of business-invested funding is significant. In Noord-Holland, including the Amsterdam metropolitan area, RDI actors have been the most consistent performers in Horizon Europe funding calls. The region is characterised by different types of academic actors with foundations, which are shown in the "other" section of the funding distribution chart (Figure 6). For the Copenhagen region, the strong success of the higher education sector, particularly in attracting Horizon funding, is noteworthy although SMEs in the region have also performed well in the funding calls.

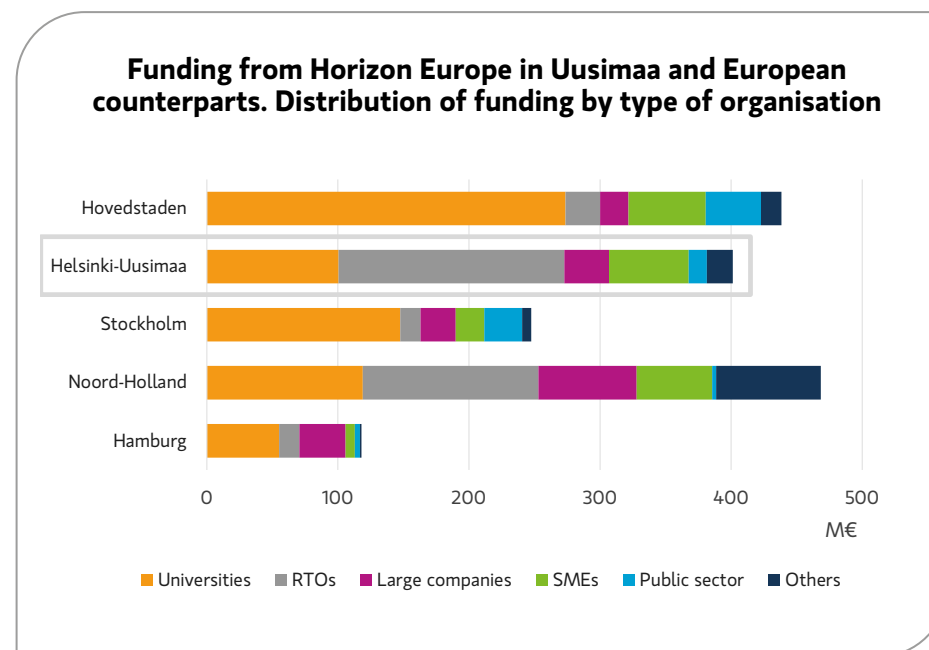


Figure 6. Funding from Horizon Europe in Helsinki-Uusimaa and European comparator regions and distribution of funding by type of organisation.

Helsinki-Uusimaa's absorption of Horizon Europe funding has been concentrated to a relatively narrow range of actors (Table 2). Of the more than €400 million disbursed through the programme, 68% is allocated to the three largest applicants for EU funding: VTT, University of Helsinki and Aalto University. This is also in line with the previous Framework Programme (2014-20), when the same actors absorbed 59% of the funding allocated to Helsinki-Uusimaa. VTT has received €110 million in funding from Horizon Europe. The funding has mainly come from Horizon thematic collaborative projects, with a focus on climate, energy and mobility and digital, industrial and space themes. The University of Helsinki has received €60 million, about half of which has been allocated to projects under the European Research Council. The European Research Council provides funding to research teams carrying out ground-breaking research at the cutting edge of their field. Aalto University

has received €38 million in Horizon funding. The funding has been allocated to joint industry-research projects, European Research Council projects and projects focusing on the commercialisation of research results.

Another recent Finnish success story has been the participation of small and medium-sized enterprises in the European Innovation Council (EIC) SME accelerator programme under Horizon Europe. SMEs in Helsinki-Uusimaa have mobilised €31 million from EIC calls which is about half of the total SME contribution in terms of Horizon Europe. Helsinki-Uusimaa SMEs have received the largest amount of funding from the EIC Accelerator programme (together with the Copenhagen region) and the largest amount in euro compared to their peer regions, reflecting the high SME potential of the region. Large companies have received 8% of all Horizon funding in Helsinki-Uusimaa. This figure is a continuation of the level of the previous EU funding programming period Horizon 2020. Funding for large companies is particularly concentrated on applications prepared by European industrial partners in cooperation with the European Commission and national experts.

Municipalities and cities are not particularly active applicants for Horizon funding. This is partly because many calls for funding are for research and development activities, in which local actors do not usually have a natural role. On the other hand, the City of Helsinki's development company Forum Virium has been successful in funding calls for more than a decade and has already raised €6 million for the development of the Helsinki metropolitan area during this funding period.

Table 2. Helsinki-Uusimaa's participation in Horizon Europe: who receives the money currently?

	Universities, higher education organisations and RTOs	SMEs	Large enterprises	Intermediary organisation	Other key actors
Organisations	Including VTT, University of Helsinki (HY), Aalto, HUS, Finnish Meteorological Institute, GTK, Syke, LUKE, Haaga-Helia, Laurea, THL, etc.	59	44	Forum Virium, CLIC Innovation	CSC
Percentage of total Horizon Europe funding in Helsinki-Uusimaa	All: 68 % VTT, HY ja Aalto: 52 %	15 %	8 %	2 %	2 %
Total volume (M€)	All: 272 M€ VTT: 110 M€, HY: 60 M€, Aalto: 38 M€	61 M€	34 M€	9 M€ (of which Forum Virium 6 M€)	7 M€
Funding for projects with only one applicant (M€)	University of Helsinki: from the European Research Council: 30 M€ Aalto: from the European Research Council: 9 M€	EIC Accelerator funding: 31 M€ (13 SMEs)	-	-	-

2.6 RDI actors' views on EU funding

The strengths and weaknesses, challenges and opportunities of RDI activities in Helsinki-Uusimaa were explored in depth through a survey of RDI actors in Helsinki-Uusimaa, interviews and joint roundtable discussions. The participatory process provided both quantitative and qualitative data on the perspectives of key actors in the region on RDI activities at the EU level.

Key actors and decision-makers in the RDI field in Helsinki-Uusimaa were first consulted through a **survey**, the results of which can be found in the annex

of the [Finnish publication](#). The sample consisted of 89 respondents from the private, higher education and public sectors.

To refine the views and the content of the roadmap, **a round of interviews** was conducted with a total of 22 representatives from universities, research institutes, the public sector, development companies and advocacy organisations. In addition, three **roundtables** were organised for different target groups: 1) the Smart Specialisation Strategy Steering Group (later RIS Steering Group), 2) Helsinki-Uusimaa development companies and business leaders of Helsinki-Uusimaa municipalities, and 3) Helsinki-Uusimaa's key ecosystems - companies and research representatives. A total of 48 participants took part in the discussions.

2.6.1 RDI actors' perspectives on participation in EU projects

The questionnaires and discussions revealed the different stakeholder motivations in terms of their desire to participate in EU projects. Companies seek public funding for RDI, especially for research, product and service development and piloting. University respondents use RDI funding to support networking which was not viewed as an important reason for business actors to seek funding. Cities and their development agencies also reported networking and learning good practice from peers as an important reason for participating in EU projects.

The main obstacles to applying for funding were lack of time and human resources. Universities and research institutes reported that lack of time was the most important barrier to applying for EU RDI funding (73% of respondents). Lack of human resources (65%) and resourcing the funding application (46%) were also perceived as barriers. 60% of business respondents considered the resources required to apply for funding as the main obstacle to RDI activities at the EU level. Preparing an application takes a lot of time, while obtaining funding is uncertain. Lack of human resources (43%) also made it difficult to apply. The perception that EU projects are cumbersome to administer (31%) was also highlighted in the responses.

It is noteworthy that almost 100% of the respondents to the survey had received public RDI funding, meaning that the data is heavily skewed towards the most active RDI actor segment. These companies also find EU projects and applying for funding too time-consuming and cumbersome to manage. Indeed, the main reason for not applying for more EU funding is clearly a lack of motivation and perceptions of the cumbersome nature of the process and administration. Universities and research institutes, on the other hand, are eager to apply for research funding, as it will help to offset their scarce research budgets. However, they are less motivated by the EU's multi-stakeholder development and innovation calls. In the higher education sector, Finland's regionally fragmented higher education sector, which has seen consistent funding cuts since the 2010s, was also seen as a challenge. Consortia-based business-driven RDI activities are often not seen as a key task for universities and thus may not be willing to devote resources to them.

According to the survey, increasing the number of RDI staff in your organisation would increase the enthusiasm to apply for EU funding. Other ways to increase application activity would include **financial support for project preparation**: 62% of the universities and research institutions surveyed said that project preparation funding to obtain external consultancy support for the application process would encourage them to apply for EU projects. 96% of respondents from universities and research institutes and 57% from businesses wanted funding for project preparation. More than half of the respondents had used external experts to help them find and apply for funding. Information sessions and events were also seen as an important tool for obtaining and using public funding.

77% of universities and research institutes wanted networking events between European actors and 50% between national actors. From a business perspective, networking was perceived as less important.

The discussions highlighted that smaller companies in particular should be encouraged to participate in consortia projects, where they can create

new customer relationships with larger companies. The path from smaller, local projects to larger and more impactful consortia projects, where SMEs become part of European industrial value chains, must be made possible, understandable and accessible.

2.6.2 Strengths and challenges of RDI in Helsinki-Uusimaa

Based on the data collected and the participatory process, a wide range of key internationally distinctive **strengths** of Helsinki-Uusimaa were identified. Several strengths were also repeated from the perspective of different RDI actors. These included:

- **A strong RDI and knowledge cluster and a functioning RDI system:** Finland and Helsinki-Uusimaa are known for their functioning RDI system. Helsinki-Uusimaa is home to the best universities and research institutes in Finland.
- **High level of skills and cost of RDI:** The cost of RDI in the region is low by Nordic and European standards. However, the level of knowledge is high, the average digital skills of the workforce are very good and society supports continuous learning.
- **A technology-friendly climate:** society and businesses have a technology-friendly climate and a willingness to embrace new innovations.
- **Cooperation between research and development organisations:** As well as having a long tradition of cooperation in this area, Finland also makes it easy to cooperate across organisational boundaries. In Helsinki-Uusimaa, there is strong cooperation between research and development organisations.
- **Networks and ecosystems:** the region has strong RDI cooperation across a wide range of themes and existing joint networks and ecosystems with internationally recognised expertise.

- **Strong startup culture:** Helsinki-Uusimaa and the capital region in particular are known for their startup culture, events and hubs, elements which were further strengthened during the 2010s.
- **Quality of life and safety, low hierarchy:** Finland and Helsinki-Uusimaa have a relatively high quality of life, while quality of life stand out in comparison with many international peers. In addition, Finland has a low hierarchy which enables both collaboration and launching new RDI activities in general.
- **Success in EU funding calls:** Helsinki-Uusimaa does well in EU funding calls when compared to peers. Universities and VTT are strong drivers.

During the process, various RDI actors in Helsinki-Uusimaa also highlighted the following **challenges** in the field:

- **Slow productivity growth:** Finland has a long history of slow productivity growth compared to international peers. Especially in the period 2008-2015, Finland lagged behind in productivity growth relative to countries such as Sweden and Denmark and has not subsequently been able to catch up. At the same time, recent studies also highlight wider problems in the productivity of private services in Finland. In addition, Finnish firms' innovations are rarely radical enough to maintain the productivity advantage they have over other firms in the longer term.¹⁰
- **(R&D) skills shortage:** Helsinki-Uusimaa suffers from a persistent and growing shortage of (R&D) skills. The potential of international doctoral graduates often remains untapped. Reductions in university research and teaching staff in the past have also had a deleterious impact.
- **Narrow focus of RDI investment:** RDI investment is narrowly focused on specific sectors and the largest investments are concentrated in a

¹⁰ Koski et al. (2023). *Productivity differentials between firms and the productivity frontier*. Government Research and Studies Publication Series 2023:42.

few of the largest companies, especially in the ICT sector. RDI activities in the SME sector are often small-scale and geared towards incremental innovation.

- **Lack of organisational RDI resources, project and financial expertise and co-financing:** the lack or low level of project and financial expertise and coverage in respect of the co-financing question remains both a barrier and a challenge to participation in EU projects.
- **Sustainability of public funding:** RDI actors are concerned about both the impact of the cuts experienced over the last decade and the lack of sustainability of RDI activities.
- **Fragmentation of the institutional development structure:** although there are strong RDI organisations in Helsinki-Uusimaa, the fragmentation of the institutional development structure is a weakness. This has been reflected in the scaling back of several municipalities and joint development structures across Helsinki-Uusimaa and in separate development activities by municipalities. For example, the closure of a joint invest-in company in the metropolitan area has meant that there has been little regional coordination of invest-in activities.
- **Lack of strategic priorities:** the Helsinki-Uusimaa region has strong RDI activities on a large scale, but there is a lack of jointly identified and recognised strategic priorities that could lead the way to Europe.
- **Lack of lobbying at the EU level and activity in funding applications:** compared to many active EU countries, Finland does not lobby actively enough to influence EU financial instruments and the content of EU measures. The lack of proactive national lobbying and the low level of lobbying by strong industrial players and companies on future EU programmes is particularly striking here.



Kuva: Tuusula Palaste

2.6.3 The future of RDI in Helsinki-Uusimaa

The interviews and round table discussions also looked to the future and discussed various development proposals to improve RDI activities in the region. In particular, the following sets of actions emerged most clearly from the material and the stakeholder involvement process:

Highlighting the strategic priorities of Helsinki-Uusimaa and strengthening strategic cooperation in RDI activities. RDI actors in Helsinki-Uusimaa highlighted the need to dare to choose thematic priorities and to raise them more clearly, especially at the EU level. This is seen as important for the profile and attractiveness of the region. At the same time, there is a need for greater regional awareness and coordination in respect of RDI activities, so that the different actors can work together to promote the common RDI

objectives of the region. The role of the Helsinki-Uusimaa Regional Council in the overall RDI activities is perceived as rather opaque. It is also important to strengthen and reflect more broadly on the strategic role of the Steering Group of the Smart Specialisation Strategy.

Helsinki-Uusimaa region-wide cooperation in attracting investment and talent. Helsinki-Uusimaa has the potential to increase its visibility and recognition as an attractive destination for investment and talent. Cooperation between RDI actors in Helsinki-Uusimaa is key to increasing the attractiveness of the region for investment and attracting talent. There is a need for coherent communication between RDI actors and targeted investment and talent attraction, especially in jointly selected priority sectors.

Foresight and targeted advocacy at the EU and national levels. It is important for Helsinki-Uusimaa to be active in EU-level decision-making and lobbying, especially on RDI funding and regulation. There is also a need for targeted lobbying at the national level to ensure that Helsinki-Uusimaa's voice is heard in the national multi-annual RDI funding plan. Lobbying the EU should be done in a timely and synchronised manner at both the national and regional levels, such that the views of the different RDI actors are carefully heard and collected. RDI actors themselves must be mobilised to influence the EU's plans in their respective fields. Compared to the most active countries, Finland adopts an overly reactive role in terms of EU influence.

Strengthening startup activity. Several interviewees raised concerns about the future of Helsinki-Uusimaa and the startup ecosystem. The startup boom was at its height in the last decade, but activity has been declining, so there is a need to strengthen once again startup activity in the region. The active participation of large companies in startup activities and the access of startups to innovation ecosystems are thus seen as important here.

Mobilising actors to apply for EU funding. If the aim is to increase EU funding, activation, targeted communication and further awareness-raising

are needed. On the business side, there is still a need to strengthen activation and highlight successes to attract more growth-oriented companies to apply for R&D funding.

Providing support services for businesses and cities to apply for EU funding. Businesses and cities need support services for the EU funding application process. Strengthening preparatory funding is important in order to enable businesses and organisations to compete successfully for EU funding. Funding is also essential for larger operators. Reducing the inevitable risk associated with the application process will increase the incentive for businesses to seek funding. As Business Finland's project preparation funding is limited to companies, it is not surprising that the current model of Business Finland and the Academy of Finland does not work in all respects for research operators, who find it difficult to take advantage of pre-project funding.

The need for targeted and clear preparatory funding is seen as necessary in the future. In addition, the use of external services for preparation is seen as important. In addition to businesses and cities, long-term capacity building in respect of research institutes and universities enabling them to strengthen EU funding application processed and networks is important.

Managing ecosystems and increasing interaction between RDI actors. Helsinki-Uusimaa has several RDI ecosystems and clusters in various sectors. Developing their governance would be an effective way to increase cooperation between RDI actors creating better pathways to EU-level action. Cooperation between actors is key to accessing EU funding and this cooperation needs to be supported in the long term. RDI actors see a need for regular networking events and support for existing platforms for long-term cooperation. There is also a need to improve the knowledge base in terms of funding instruments. In addition, Finnish actors should network and cooperate more with international companies with EU branches.



3. Strategically important RDI ecosystems and projects in the region

As part of the snapshot of RDI activities in Helsinki-Uusimaa, strategically important clusters, ecosystems and centres of excellence in the region were examined in the light of extensive background material. The literature on regional clusters and different types of ecosystems is very diverse and the differences between the concepts are not always very clear. The following definitions were used in this report¹¹: a **cluster** is a group of firms and other actors related to a particular strong industry, business segment or theme in a region. However, the actors do not necessarily have a functional link between them. An **ecosystem** is more strongly defined as a collection of different actors around a common goal, with interdependencies between actors and common governance structures (coordination). **Place-based hubs and platforms**, on the other hand, refer to campuses, RDI infrastructures and development platforms or testbeds, i.e. permanent services and interaction platforms supporting innovation and development.

¹¹ see also Valkokari, K., Hyytinen, K., Kutinlahti, P. & M. Hjelt (2020) *Collaborating for a sustainable future - ecosystem guide*; Granstrand, O. & M. Holgersson (2020). "Innovation ecosystems: a conceptual review and a new definition," *Technovation*, Elsevier, vol. 90; Laasonen, V. et al. (2022). *Impacts and indicators of Innovation Ecosystems: A Framework for Analysis*. Publications of the Government's analysis, assessment and research activities 2022:23

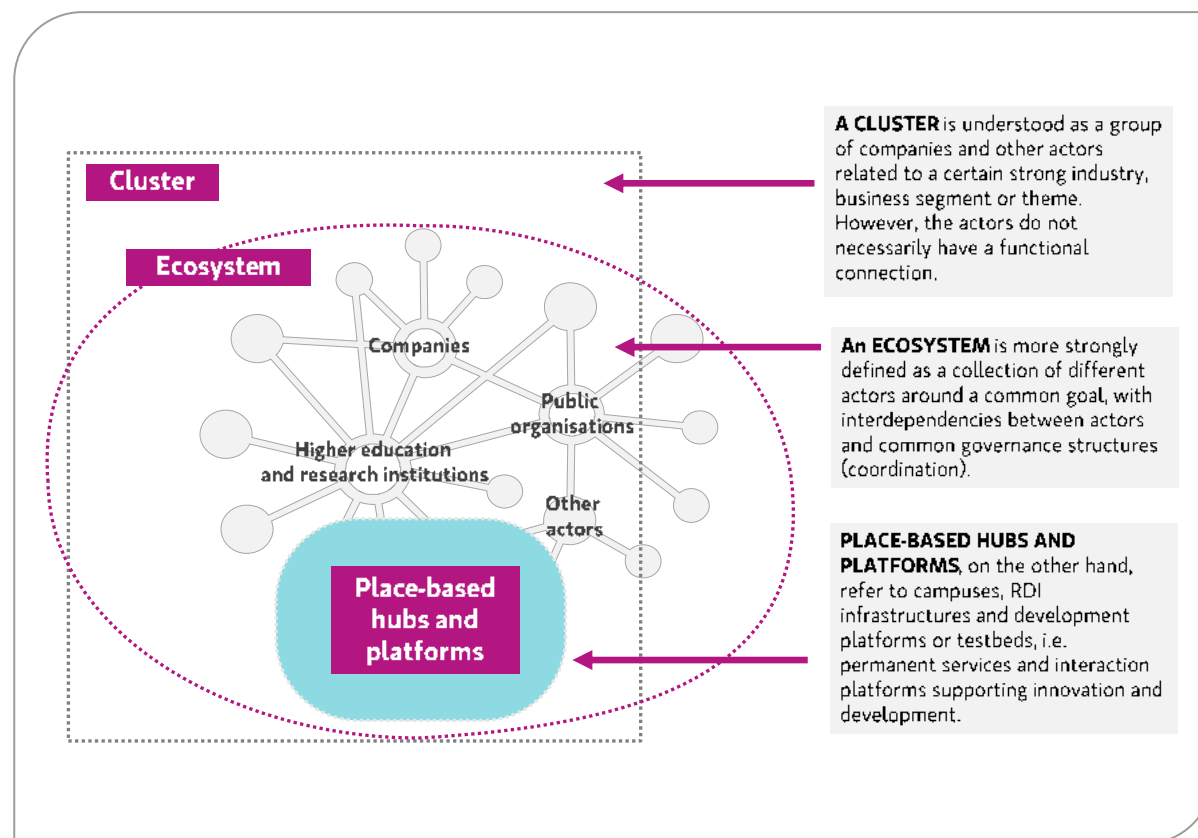


Figure 7. Key concepts and their relationship when looking at the major RDI strengths in Helsinki-Uusimaa.

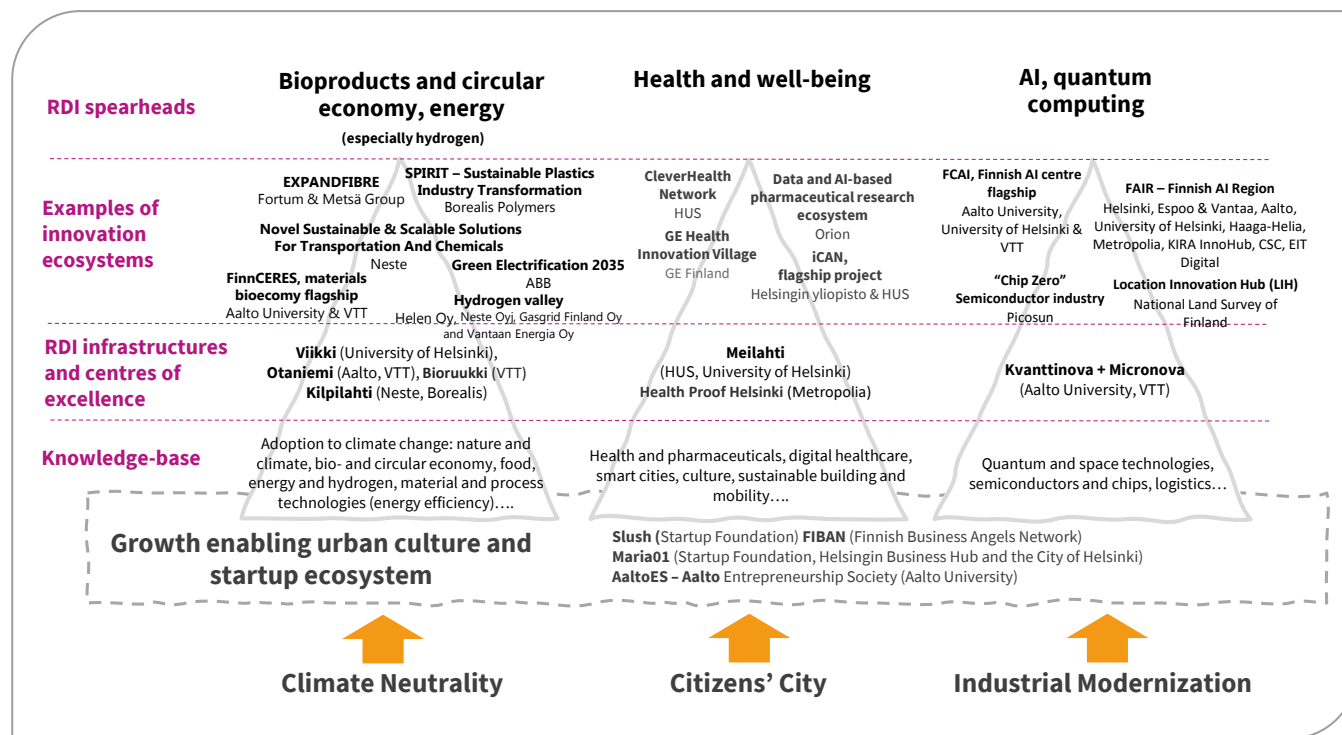
In this study, the starting point for our analysis was firstly the innovation and knowledge ecosystems that have received public RDI funding and whose main actors are located in Helsinki-Uusimaa (a leading company, higher education institution, research institute). For these organisations we then investigated which themes and which actors or groups of actors had received public RDI funding. The analysis focused in particular on those policy instruments

where the target is to build innovation ecosystems¹². An extensive review of the documented RDI infrastructures in Helsinki-Uusimaa was also carried out¹³. Purely business ecosystems and funding from foundations, for example, were excluded from the scope of the review, as these are difficult to examine comprehensively, and the latter are very small in size. In addition, it was assumed that major innovation ecosystems also seek public RDI funding to support their activities.

Our analysis was based on the main strategic priorities of smart specialisation in Helsinki-Uusimaa which are 1) Climate neutrality, 2) Citizens' city and 3) Industrial modernisation. Helsinki-Uusimaa has a very broad economic base and a wide range of strengths under these smart specialisation themes. However, from an RDI perspective, certain particularly strong clusters can be identified, with clear internationally recognised excellence, business and diverse innovation activities and clusters that are concentrated in Helsinki-Uusimaa. Figure 8 provides a summary of the main, currently significant, clusters in Helsinki-Uusimaa identified by our analysis. Related examples of currently operating innovation ecosystems, key RDI infrastructures and campuses are also presented in the figure. In addition, the figure summarises the key knowledge base-related themes where Helsinki-Uusimaa has strong knowledge, research and business activities.

¹² The review focused on. Business Finland-funded driver ecosystems and growth engines, special grants and funding to finance innovation ecosystems, flagships of the Academy of Finland, European Digital Innovation Hubs (EDIHs) and city ecosystem agreements.

¹³ National infrastructures: <https://tiedejatutkimus.fi/fi/results/infrastructures>.



Helsinki-Uusimaa region has access to a wide range of international expertise and research on the **theme of Climate neutrality** with bioproducts the circular economy and new forms of energy (especially hydrogen energy) the main focus areas. There is also extensive international RDI activity within Helsinki-Uusimaa in these fields. There is extensive RDI cooperation and activity in the bio- and circular economy fields and research expertise in the areas of climate change adaptation as well as in natural and climate sciences more generally. Food production and technology, energy production and in particular hydrogen expertise, as well as materials and process technology and energy efficiency expertise can also be highlighted here.

Figure 8. Main existing clusters in Helsinki-Uusimaa identified by the analysis.

The themes under the smart specialisation banner are very broad and cover a wide range of different strengths which also overlap to some extent. An important unifying strength of Helsinki-Uusimaa in these themes is the urban culture and the startup ecosystem which includes a wide range of actors and partnerships, fostering growth. A growth-fuelled urban culture is considered to include good living environments that enable people to meet, learn, experiment and be entrepreneurial. Slush is the international centrepiece of the startup ecosystem, but the ecosystem in Helsinki-Uusimaa is very much built around its many universities and campuses (such as AaltoES), different themes and active actors. Active efforts have also been made to support the startup ecosystem, especially in the metropolitan area with certain platforms clearly visible and networked (e.g. Maria01).

Campuses and RDI clusters of particular international importance include Otaniemi and its pilot research centre Bioruukki and the Viikki campus which is being developed as the leading life science cluster in the Nordic countries. In addition, the Kilpilahti business park in Porvoo is a major hub for the bio- and circular economy, with Neste and Borealis as the leading companies. Helsinki-Uusimaa has several important innovation ecosystems related to bioproducts, circularity and new forms of energy.

The **Citizens' city theme** is described in the Smart Specialisation strategy as being linked to urban development, smooth everyday life and people's well-being. Health-tech, pharmaceuticals and well-being emerge as a particular international and diversified strength in terms of RDI cooperation and activity. Helsinki-Uusimaa has a very significant knowledge base in research, business

and the public sector in these areas. RDI cooperation takes place in health and pharmaceuticals, digital health, smart city services and technologies, culture and interaction, sustainable building/construction and mobility. Helsinki-Uusimaa region's strong innovation ecosystems in health, medicine and well-being include in particular the CleverHealth Network coordinated by HUS, the iCAN flagship project on Digital Personalised Cancer Medicine led by the University of Helsinki and HUS, Orion's Virtual Drug Research Ecosystem and GE Finland's Health Innovation Village health technology ecosystem. From the perspective of campuses and RDI infrastructures, the activities of HUS and the University of Helsinki in Meilahti stand out, while from the perspective of universities of applied sciences, we have Metropolia Health Proof Helsinki.

Industrial modernisation is a theme strongly linked to the previous themes (climate neutrality and citizens' city), but artificial intelligence (AI) and quantum computing have been highlighted as an important cluster in Helsinki-Uusimaa. As with the previous above-mentioned clusters, Helsinki-Uusimaa's strength in AI and quantum computing is based on a long development curve, extensive expertise in higher education, research institutes and the business sector. Helsinki-Uusimaa is home to top international research and expertise, as well as startups and more established larger companies that play an important role in industrial renewal (green and digital transition). RDI cooperation and the knowledge base relies on ICT skills and quantum

” ***In attracting inward investment and talent, clusters of excellence and specialisation are also important factors: excellence attracts excellence.***

and space technologies, semiconductors and chip technologies, logistics, etc. Innovation ecosystems include the FCAI Finnish Artificial Intelligence Centre Flagship led by Aalto University, the University of Helsinki and VTT, Picosun's "Chip Zero" semiconductor industrial ecosystem and the Location Innovation Hub (LIH) led by the National Land Survey of Finland. In addition, the Helsinki-Uusimaa region has a world-class number of Atomic Layer Deposition (ALD) reactors dedicated to RDI activities and an associated RDI community that has been operating for decades. In terms of campuses and RDI infrastructures, Micronova, in particular, and its planned extension Kvanttinova, in Otaniemi (Aalto University, VTT, City of Espoo) has distinguished itself as a centre for micro, nano and quantum technologies.

3.1 RDI roadmap priorities towards 2030

Research shows that the specialisation of a region's innovation field compared to its diversity is not an 'either-or' question, but that both are needed to ensure diversity, resilience and renewal capacity (van Oort et al., 2015¹⁴). This has been one of the main ideas behind the Helsinki-Uusimaa Smart Specialisation Strategy. This roadmap takes into account the geographical size and diversity of Helsinki-Uusimaa, but puts more emphasis on specialised nodes. The rationale for this is that RDI activities at the international level are highly competitive. EU RDI programmes compete on research and innovation excellence and the best possible talent is sought as partners in international consortia. In attracting inward investment and talent, clusters of excellence and specialisation are also important factors: excellence attracts excellence. The same applies to regional marketing and branding: telling the story of a region through a few interesting spearheads is more memorable than mapping diversity.

¹⁴ https://link.springer.com/chapter/10.1007/978-3-031-24531-2_2

3.2 Ecosystem-related spearheads towards 2030

Based on the above analysis of the current major clusters and ecosystems and RDI activities in Helsinki-Uusimaa, this roadmap proposes that a few strong emerging ecosystems should be designated as RDI spearheads with a particular focus on supporting EU-level activities. These are **bioeconomy, hydrogen, circular economy, health, AI and quantum technologies**.

These thematic RDI spearheads for Helsinki-Uusimaa towards 2030 reflect the region's strengths and future opportunities, but are also strongly linked to the Grand Challenges and the systemic changes needed to address them. This underlines the leading role of the Helsinki-Uusimaa region and that the actors in Helsinki-Uusimaa want to play a role as drivers in RDI activities both nationally and globally. The bioeconomy field represents the sustainable development approach that utilises renewable resources and promotes innovative solutions. Hydrogen opens the door to clean energy production and logistics, an essential step towards a carbon-neutral future. The circular economy approach emphasises the efficient use of resources, the minimisation of waste streams, the reuse of products and materials and in particular the use of recycled materials in high added value products, thus creating a genuine basis for sustainable business. The health sector, on the other hand, has huge potential in health technologies and services. All of these require digitalisation which cannot exist without the enabling technologies. So AI and quantum technologies are key enablers for all industries.

There are also strong links between the bioeconomy and the circular economy fields¹⁵. Three leading ecosystems, ExpandFibre led by Fortum and MetsäGroup, SPIRIT - Sustainable Plastics Industry Transformation

by Borealis Polymers and Novel Sustainable & Scalable Solutions for Transportation led by Neste, are at the forefront of this thematic spearhead. Research support for this theme is provided by the Academy of Finland's flagship project FinnCERES and, in particular, by VTT's Bioruukki as a research infrastructure. Neste and Borealis and their partners will also make the Kilpilahti area in Porvoo a globally significant industrial infrastructure for the 'green process industry' (bio-, circular and hydrogen economy). For the circular economy, this will be complemented by the modern facilities of Vantaa Energy and Remeo in Vantaa.

Hydrogen is seen as an important sustainable energy source for the future and there are high expectations for the hydrogen economy. Under the leadership of Finland's largest hydrogen user, Neste, research into the hydrogen economy is being carried out in the region, but there are also practical investment plans to develop an industrial hydrogen valley in Helsinki-Uusimaa in cooperation with Gasgrid Finland, Helen and Vantaan Energia. The industrial hydrogen valley would combine infrastructure, storage and the transmission of renewable hydrogen and serve both hydrogen producers and consumers on a large scale. The aim is to support Finland and Europe in achieving carbon neutrality targets and to create a concrete basis for a hydrogen economy.

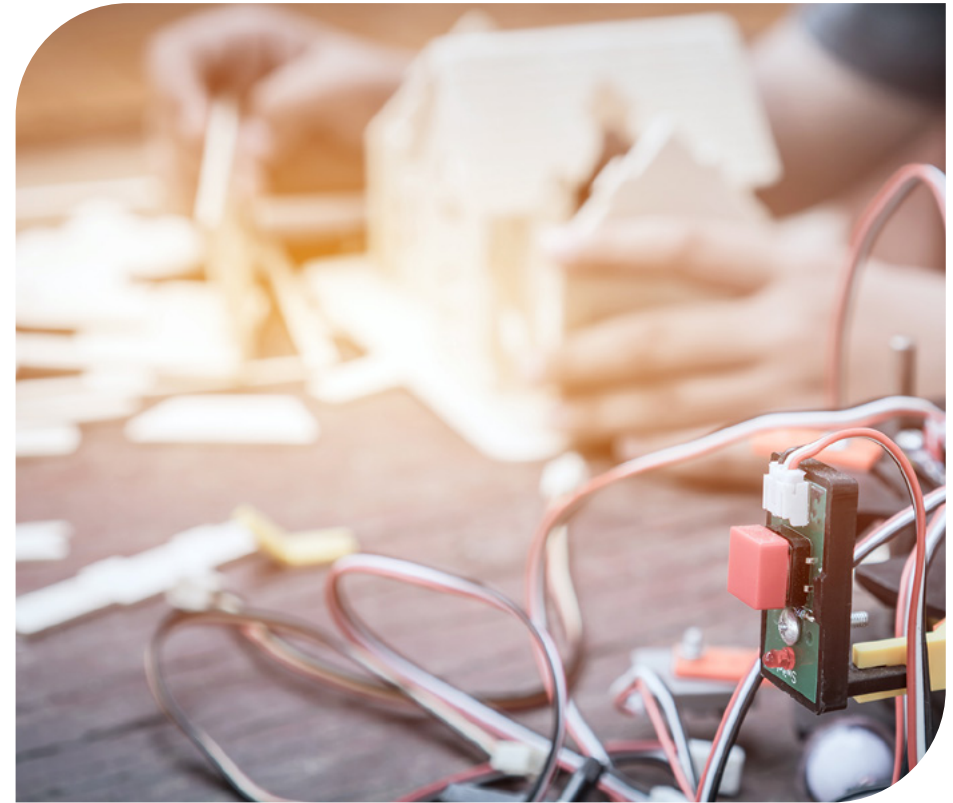
The health, pharmaceuticals and welfare sector is one of both high expectations and pressure for change. Healthcare is facing major challenges globally as populations age, but in Finland, the challenge has recently been increased by a serious shortage of healthcare personnel. There is much demand for innovation in healthcare, both in terms of resource efficiency and more personalised care and precision medicine. This is a major focus of the CleverHealth Network ecosystem, coordinated by HUS which is pioneering digital healthcare. The core team of the CHN includes major pharmaceutical, health technology and IT companies and the ecosystem is actively networking in Europe. One of the primary company's involved here is GE Healthcare

¹⁵ The bioeconomy, the circular economy and the hydrogen economy are integral to the green transition. According to the Confederation of Finnish Industries (EK), there has been a huge amount of new investment in the green transition in Finland in recent years. Many new investments are also planned, but implementation has been slow (<https://ek.fi/tutkittua-tietoa/vihreat-investoinnit/>).

which has a global development unit in Helsinki focusing on patient monitors and wireless technology. GE has also built up a network of startups (GE Health Innovation Village/"Silicon Vallila").

Digital capabilities underpin the whole of modern society with the value chains in this sector complex and highly global. In recent years, Europe has learned how changes in global politics affect the availability of the critical technologies needed by society and industry and begun to strengthen domestic production sovereignty. One of the most important measures in this context is the Chips Act which provides for €43 billion of investments and measures to strengthen European capabilities. In Helsinki-Uusimaa, these measures are reflected in the preparation of a new centre of chip excellence and the linking of Helsinki-Uusimaa-based operators to the Central European chip production pilot lines and design centre that are under preparation. At the same time, Business Finland is launching a new microelectronics-focused funding programme for the coming years. These ongoing processes will strengthen the renewal of Finnish industry and link Helsinki-Uusimaa's cutting-edge competences more closely to European ecosystems and value chains.

In Helsinki-Uusimaa, the RDI activities of research institutes focusing on digital capabilities (including quantum technologies and artificial intelligence) are strongly concentrated to Otaniemi and in some areas also to the Kumpula campus. Key players in the field include Nokia, but also Okmetic, Vaisala and MuRata, all of whom are among the global market leaders in their respective fields. Nokia Bell Labs, Ericsson, Huawei, Microsoft, Intel, Philips, Qualcomm and GE Healthcare are also developing their future solutions at their research centres in Helsinki-Uusimaa. Another spearhead in the field is the atomic layer deposition (ALD) technology invented and developed in Helsinki-Uusimaa over decades - no modern computer or mobile phone can be made without ALD. The main companies in the field, Picosun (now owned by Applied Materials), Beneq and ASM, are carrying out research jointly with VTT, Aalto and the University of Helsinki. Helsinki-Uusimaa has a world-class and unique



array of more than 60 ALD reactors in research and development, but these are scattered among research institutes and companies, without any specific coordination.

Helsinki-Uusimaa's main ecosystems contribute to what the region has to offer to the rest of Europe and to the world. As such, it is better to engage with EU calls with already strong spearheads in mind. External funding and RDI projects will further strengthen Helsinki-Uusimaa's strategic strengths with the aim of making them globally relevant. It is also important to align with existing EU programmes and policies to identify appropriate partnerships and funding opportunities.

Figure 9 below highlights the strengths of and RDI drivers for Helsinki-Uusimaa region which are then linked to EU programmes and priorities. They identify existing European ecosystems and partnerships in which the region's organisations can network. Linking Helsinki-Uusimaa's ecosystems to the European framework through EU priorities and legislation will help to concretise the importance of ecosystems and their need for support from future funding programmes.

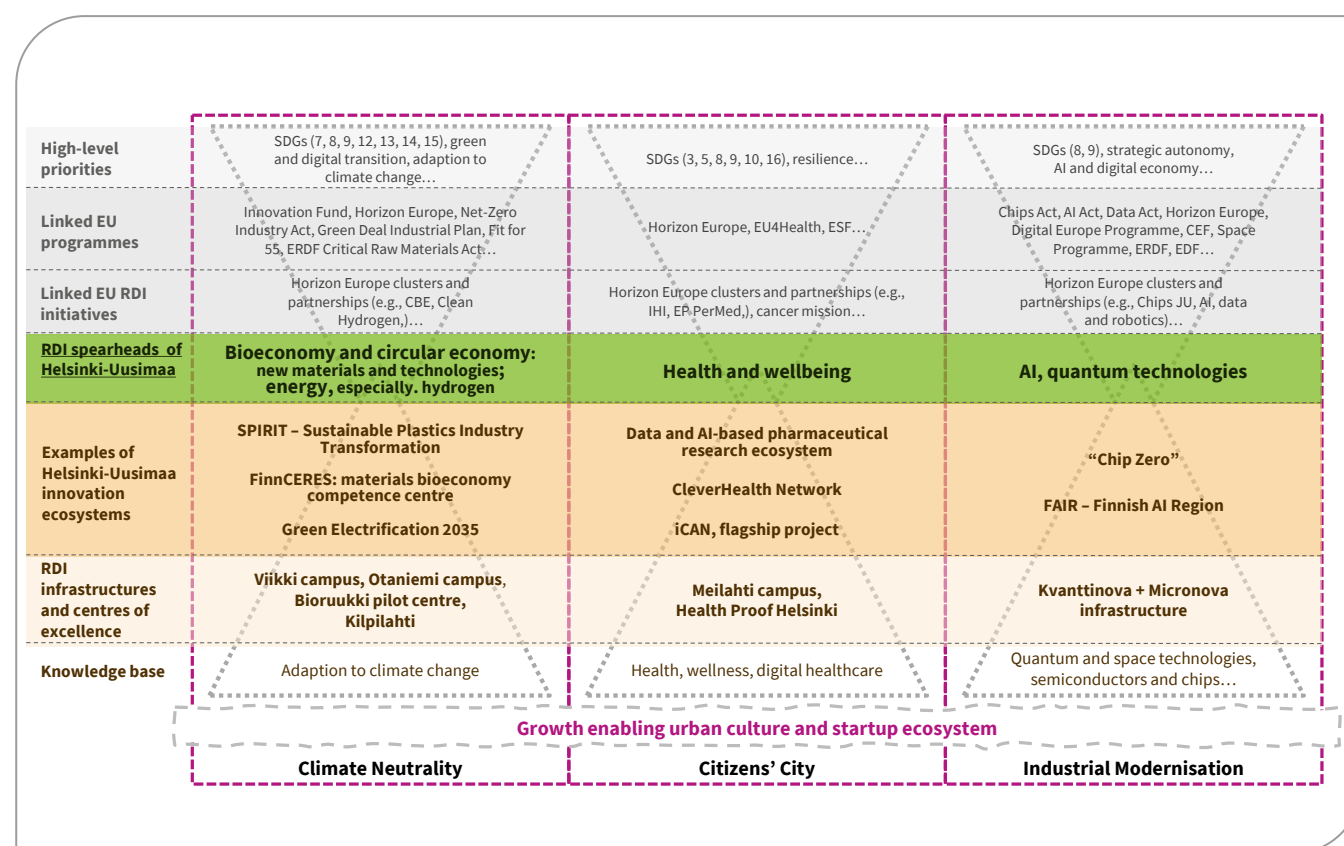


Figure 9. RDI strengths of Helsinki-Uusimaa in relation to European programmes and priorities.

3.3 Centres of excellence as RDI hubs

The European Union has a lot of high-quality RDI activity scattered across Europe. The EU also uses ‘centres of excellence’ in its international marketing to communicate the competitiveness and excellence of the Union as a whole and to attract international placements. Helsinki-Uusimaa is well placed to highlight its centres of excellence in RDI marketing and to use them to profile itself at the European and global levels. Such spearheads represent one way to increase the attractiveness of Helsinki-Uusimaa's companies and research units as EU project partners and to attract international talent and business investment to the region more generally.

Local centres of excellence, where research, business, innovation ecosystems and research infrastructure meet, have several important advantages over decentralised RDI activities. They provide a physical environment where different actors can easily meet. This promotes rapid information exchange and collaboration, which enhances the efficiency of innovation processes. In addition, actors from different sectors meet on a daily basis. This allows different areas of expertise and perspectives to come together which in turn generates innovation and new approaches. A dense cluster also attracts talent and businesses to the region, thus strengthening its competitiveness. In a concentrated environment, research infrastructures such as laboratories and test sites are more easily accessible and can be used more efficiently, accelerating research and development activities.

The innovation and knowledge generated in a cluster of excellence can lead to new businesses and jobs, further strengthening the cluster and the wider regional economy. While decentralised RDI activities may be appropriate for specific purposes, concentrated clusters of excellence can create synergies and effective collaboration, often leading to better results and contributing to the long-term development of the region.



Case HUS, The Helsinki University Hospital: Systematic effort and investment enable the growth in EU funding acquisition

HUS has succeeded in multiplying its EU funding over five years and acts as a coordinator in five significant European consortia related to digital healthcare. A key background factor has been systematic project preparation, a dedicated internal coordinator and the CleverHealth Network ecosystem. HUS is indeed one of the Finnish success stories in Horizon Europe participation. It serves as the coordinator for four Horizon projects and, in addition, is a partner in thirteen other projects.



Case Borealis: Ecosystem accelerating the entire circular economy sector's R&D activity

Through its flagship programme, Borealis has created an entirely new type of R&D collaboration network in order to build the sustainable plastic industry in Finland. Systemic change from a linear to a circular economy requires the collaboration of all sector players and a holistic vision across industries. SPIRIT sets the direction with its roadmap and enables the attainment of carbon neutrality goals and the creation of new green business for Finnish companies through strategically significant R&D investments.

Helsinki-Uusimaa has several campus-based RDI hubs, combining the work of internationally recognised research teams, university education, research infrastructures and the presence of companies. These include, in particular, the Otaniemi-Keilaniemi area which is known for its diverse business and research activities covering a wide range of sectors. Aalto University's move to Otaniemi as a whole created a unique concentration of technology, economics, arts and design on a single campus. The area is home to many innovative large companies, such as Fortum and Kone, as well as a wealth of smaller companies and startups. In addition to Aalto's research groups, other renowned research organisations can also be found in the area, such as the Geological Survey of Finland and VTT Technical Research Centre of Finland. In addition, Otaniemi is home to major research infrastructures such as Micronova and its future extension Kvanttinsula. Of the many RDI clusters in Helsinki-Uusimaa, Otaniemi-Keilaniemi is clearly the most diverse, combining a wide range of disciplines and bringing together a significant number of companies in a small area. It would be natural then to further promote the area as a special RDI hub and to further develop the RDI cooperation and offerings of the area.

Other strong RDI clusters also exist in Helsinki-Uusimaa and thus should not be forgotten. The most notable of these are the Viikki campus which is based on agriculture, forestry and life sciences, the Kumpula campus which focuses on natural sciences and the Meilahti campus which is based on medical and health sciences at the Helsinki University Hospital (HUS) and has grown up around the research institutes of the University of Helsinki. Various research infrastructures, as well as incubators and innovation ecosystems, have emerged on their campuses. One key area here is environmental and atmospheric research, involving not only the universities but also the Finnish Meteorological Institute (FMI), the Finnish Environment Institute (SYKE) and the Natural Resources Institute Finland (LUKE). An additional important emergent theme is the food of the future, with strong research activities being carried out by the Viikki Food Design Factory, Viikki Food Lab and VTT and in particular by Valio and Fazer. Interesting new companies have

emerged and are emerging in the sector, such as Solar Foods. A company-led innovation ecosystem is also being developed in the food theme.

Porvoo's Kilpilahti is home to the largest oil refining and petrochemical cluster in the Nordic countries, with more than 40 companies operating in the area. Under the leadership of Neste and Borealis, Kilpilahti is developing and implementing new solutions for the bio- and circular economy and creating new ways to use industrial side streams. Posintra supports and promotes regional innovation cooperation, for example through its STRIIM programme.

The recommended way of marketing the RDI area would be to build an interesting story around Otaniemi-Keilaniemi while also mentioning the other clusters. In this way they would together tell a strong story: Helsinki-Uusimaa is a region where different RDI hubs are growing out of the knowledge base, hubs which also support each other. There is a lot of potential in the region: the Aviapolis in Vantaa and the logistics clusters in Vantaa and Riihimäki have growth potential. In the peripheral areas of Helsinki-Uusimaa and smaller towns and cities, there are also places for experimentation and complementary stories, such as the Fiskars design cluster.

Helsinki-Uusimaa is a sufficiently large and diverse region and can avoid the pitfalls associated with the over-concentration of RDI areas. When skilled labour and high productivity jobs become too concentrated, super-rich areas like Silicon Valley or London emerge and can suck the talent out of smaller towns and rural areas nearby. In Finland and in Helsinki-Uusimaa, this phenomenon can be seen in the high per square metre prices of property in the Helsinki region, especially in the city centre and in the difficulties faced by small peripheral towns in attracting skilled labour.

Therefore, the Helsinki-Uusimaa RDI roadmap should also include municipalities outside the capital region and their role in growth. New technology and post-covid practices may offer a solution to this: remote working enables (at least part-time) work outside RDI clusters. Early research

on the remote working boom of recent years shows that many high-skilled jobs can be performed smoothly and productively from almost anywhere. However, there are different phases of RDI work which, according to recent research, also benefit from physical proximity. Disruptive innovations and the production of new things with new people are not well served by remote access. In any case, remote working allows at least a couple of working days a week to be spent outside the centres and may thus enable the skilled population to settle across a wider area.

3.4 Operating practices: RDI ecosystems and startup culture

The analysis of RDI activities in Helsinki-Uusimaa revealed two strong local operating practices: ecosystem-based RDI-activities and startup culture. Both are also identified in international analyses of the region's strengths. In the Regional Innovation Scoreboard, Helsinki-Uusimaa is recognised for the strong participation of SMEs which is due in part to its ecosystem culture of involving a wide range of organisations, including smaller companies. The startup culture is reflected in international foreign direct investment (FDI) benchmarks, where technology startups are often the main reason for companies locating to Helsinki-Uusimaa. Both of these policy drivers emerge as strengths of the region, but the participatory process also identified concerns and hopes for their further development, so that they continue to provide a strong basis for international RDI activities in the future.

***In the Regional Innovation
Scoreboard, Helsinki-Uusimaa
is recognised for the strong
participation of SMEs.***



3.4.1 More impetus for the leadership of RDI ecosystems

Developing the leadership of RDI ecosystems is one of the key ways to increase EU-level RDI activities in Helsinki-Uusimaa. There are a large number of innovation ecosystems currently operating in the region (more than 50 were identified in this work), involving most of the region's largest companies, innovative SMEs, top research groups and other forward-looking organisations. Developing and supporting the functioning of these existing and emerging ecosystems can significantly increase the potential for EU-level RDI partnerships.

While good practices and success stories exist, ecosystems operate in different ways and there is little cooperation between them in terms of the transfer of ecosystem leadership skills. Ecosystems face similar challenges, such as sustainability, support for SMEs and internationalisation issues. Ecosystems could thus benefit from common support services helping them to better learn from each other. The exploitation of digitalisation in different sectors and the circular economy by definition require cross-sectoral cooperation, something which can also extend across different ecosystems. In new areas, such as the food of the future, cross-sectoral cooperation could play a key role.

How the ecosystem partnership is managed and how each partner is able to operate is critical to its success, in order to get the best out of it, both for the common goal (the leading company) and for the individual actor. This is where we, in Finland, have room for improvement, even though we are used to working together - or perhaps that is why we need to, re-think, innovate and improve in this area.

Ecosystems are based on a clear common goal (mission) and genuine cooperation between different actors. In today's world, there are big, complex challenges that no one can solve alone. This requires close multidisciplinary cooperation, clear objectives, the identification of different roles and needs

and significant investments. Innovation ecosystems both enable systematic, long-term co-development towards ambitious goals and provide the right degree of freedom for new ideas and development paths. Building cross-sectoral cooperation requires not only the ability to describe one's own needs and ideas in order to inspire new partners to join in, but also, and in particular, the ability to listen and the willingness to learn to understand the perspectives of others, whether as a leader or as a participant in the ecosystem.

Innovation ecosystems are a key force in the development of RDI activities. They should be able to learn from each other and be further developed in order to meet the changing needs of society. Strong ecosystems create the conditions for new breakthroughs and ensure that Finland remains competitive in the EU and global innovation landscape. Developing strong innovation ecosystems is also an easy win: a good foundation is already in place, with small nudges in the right direction, results can be significantly improved.

3.4.2 The next wave of startup culture

Although startups themselves do not participate much in EU project activities, they play an important role in the renewal of the RDI field. They also attract talent, business investment and international investors to Helsinki-Uusimaa. Helsinki-Uusimaa's startups have also performed well in EU startup programmes. The startup boom was at its height in the last decade but since then, activity has been declining. There is a perceived need then to strengthen startup activity in the region. A more active use of startups by large companies in their own renewal and the inclusion of startups in innovation ecosystems is seen as representing an important direction of travel in this regard. Adequate startup services in the region must also be guaranteed: startup campuses such as MariaO1, with services and various accelerator and mentoring programmes are key then to future success.

4. Roadmap of Actions

This chapter summarises the actions that Helsinki-Uusimaa can take to achieve its RDI objective of increasing the quantity and quality of RDI activities, strengthening networks and promoting EU-level activities. It is assumed that increasing EU-level activities will not only bring additional funding in respect of the region's RDI activities, but will also strengthen cooperation and the development of operational models within the RDI actors in Helsinki-Uusimaa. This in turn will improve the quality and planning of RDI activities at the local and national levels - making the region more attractive internationally and leading to more EU-level activities.

The following objectives, to which RDI actors jointly commit themselves, would lead the region towards a strong RDI performance at the EU level:



Objective 1: Setting targets for EU-level RDI activities and identifying other common objectives and strategic priorities.



Objective 2: Clarifying the regional RDI operating model in Helsinki-Uusimaa and strengthening EU-level RDI collaboration and networks.



Objective 3: Strengthen foresight and advocacy at the EU level.



Objective 4: Ensure the provision of support services for RDI actors to increase participation in EU programmes.



Objective 5: Make Helsinki-Uusimaa a more attractive RDI environment. Strengthen the attractiveness of RDI activities and enhance its reputation as one of the most attractive R&D environments in Europe.

These objectives are met by a set of five baskets of key actions (see figure below):



Figure 10. Operational priorities for strengthening RDI activities at the EU level in Helsinki-Uusimaa.

4.1 EU level strategy for RDI activities



Objective 1: Setting targets for EU-level RDI activities and identifying other common objectives and strategic priorities.

This set of actions includes strategic planning and choices, such as the selection of priorities and key policies. It also includes measures related to resourcing and attracting talent, as these are the cornerstones of knowledge-based RDI activities and are the main risk for the growth of RDI activities in Helsinki-Uusimaa. Startup activity is also included in this basket because of its strategic dimension: one of the key strengths of Helsinki-Uusimaa has been its exceptional startup culture in the technology area, something which has been key to attracting foreign direct investment (FDI) and building the RDI brand in the region. Some of the best startups will be the stars of the coming decades, including at the EU RDI level.

There is a clear problem with the objectives of this basket: there is currently no regional actor (coordinator, orchestrator) with a strategic mandate - not to mention an operational mandate - for EU-level RDI activities across the whole region. These tasks could be decentralised to different organisations, but this also requires common agreement and shared objectives. The tasks of this strategic basket are broad and require strong stakeholder cooperation and, as such, cannot be carried out by any single organisation alone.

Table 3. Strategic measures for strengthening RDI activities at the EU level in Helsinki-Uusimaa.

What?	Key measures
Defining and monitoring strategic objectives	<ul style="list-style-type: none"> Identifying the role of different sectors and actors in the RDI field at the EU level Setting and monitoring strategic objectives for RDI activities at the EU level Prioritising key actions and strategic means Defining the strategic role of public procurement in the RDI field
Development and regional marketing spearheads	<ul style="list-style-type: none"> Defining the regional spearheads, e.g. centres of excellence Enabling adequate funding for strategic development e.g. of centres of excellence Coordination and targeting of regional marketing
Resource allocation for RDI activities	<ul style="list-style-type: none"> Continuous analysis of skills needs in Helsinki-Uusimaa Monitoring the need for RDI resources Coordination of RDI resourcing between universities, higher education institutions and businesses
Attracting talent	<ul style="list-style-type: none"> Mapping of talent in the EU selected regions (in relation to the needs of Helsinki-Uusimaa) Attracting talent (campaigns, marketing, etc.)
Startup activities	Ensuring the adequacy and continuity of startup incubation and accelerator capacity Linking startup programmes to innovation ecosystems and business RDI activities Visibility of startups in the region's RDI and FDI marketing

4.2 Coordination and management



Objective 2: Clarifying the regional RDI operating model in Helsinki-Uusimaa and strengthening EU-level RDI collaboration and networks.

The coordination and management basket includes actions to involve stakeholders in the development of RDI activities at the EU level. Currently,

the Helsinki-Uusimaa Regional Council, and in particular the Regional Innovation System (RIS) Steering Group, Business Finland, municipal and urban development agencies, the Ministry of Economic Affairs and Employment and research institutes play different roles in the field of RDI coordination and management. As with the strategy, the main question regarding the measures outlined below is who should be responsible for them.

Table 4. Coordination and management measures related to strengthening EU-level RDI activities in Helsinki-Uusimaa.

What?	Key measures
Clarifying RDI coordination in Helsinki-Uusimaa	<ul style="list-style-type: none"> Operational model for EU-level coordination of RDI activities in Helsinki-Uusimaa Engagement of different stakeholders Defining the ownership of the stakeholders' own EU-level objectives
Regional networking and collaboration	<ul style="list-style-type: none"> Networking RDI actors from different sectors Regular high-level forums for stakeholders, to meet, to share knowledge and create and disseminate new practices
International networking	<ul style="list-style-type: none"> Identifying and connecting to important EU networks Encouraging Finnish RDI actors to collaborate and network with international companies
Building a culture of innovation, including the provision of RDI platforms, test environments and methodologies	<ul style="list-style-type: none"> Cities as innovation platforms Strengthening the culture of experimentation, developing cross-sectoral innovation Coordination and development of testbeds and other innovation environments
Leadership of RDI ecosystems	<ul style="list-style-type: none"> Strengthening the leadership practices of RDI ecosystems Increasing relevant collaboration between ecosystems

4.3 Advocacy



Objective 3: Strengthen foresight and advocacy at the EU level.

Currently, Finnish attempts to influence EU funding preparation and funding programmes is rather reactive and fragmented. RDI actors need more information on the possibilities of participation in such discussions and on the best ways to lobby, as well as on mobilisation for lobbying more generally, particularly in respect of funding and regulation. A key issue here is the need to proactively seek to influence plans for future EU programme periods. While it is clear that Finland plays too reactive a role at the EU level it is also necessary to focus on influencing national decision-making so that Helsinki-Uusimaa's voice is heard in the implementation of the national multi-annual RDI funding plan. As such, it is important to influence the Government's Research and Innovation Council in order to strengthen Helsinki-Uusimaa's position and funding in terms of the national RDI strategy.

Table 5. Advocacy measures to strengthen RDI activities at the EU level in Helsinki-Uusimaa.

What?	Key measures
Advocacy in Helsinki-Uusimaa	<ul style="list-style-type: none">• Regional vision and coordination for national RDI monitoring• Influencing the preparation of national multiannual funding
EU lobbying	<ul style="list-style-type: none">• Lobbying the EU's RDI programmes in the preparatory phase• Matching Finnish and EU RDI priorities• Taking forward the national technology strategy in a coherent way with the EU• Nordic cooperation on EU RDI advocacy
International networking	<ul style="list-style-type: none">• Identifying and connecting to important EU networks• Encouraging Finnish operators to cooperate and network with international companies and organisations
EU regional partnerships	<ul style="list-style-type: none">• Mapping relevant partner regions and actors in the EU• Strengthening cooperation with the selected regions

4.4 Support services



Objective 4: Ensure the provision of support services for RDI actors to increase participation in EU programmes.

RDI players in Helsinki-Uusimaa have identified a clear need for diverse and targeted support services. In particular, these organisations wanted to build their capacity to attract project funding, to receive support for project preparation and to strengthen networking in EU RDI activities. Support services play a key role in identifying suitable funding instruments, preparing project proposals and managing projects. Currently, information on EU programmes and participation is not reaching RDI actors. The role of communication is therefore important and storytelling and examples of funding options are useful for applicants.

From the funding applicant's point of view, the ability to identify and find suitable partners, both at the national and EU levels, is crucial. Cooperation and networking between the different actors must be strengthened through events, platforms, projects and clusters. In particular, businesses should be encouraged to participate in networking and internationalisation events to establish transnational partnerships.

The implementation of support services is the easiest of all the proposed actions. It is within the current mandate of Helsinki-Uusimaa Regional Council and many other organisations to invest more in their availability. Moreover, activities of this kind can also be promoted with very light coordination. Improving support services is also likely to be the most effective way of increasing the supply of EU project funding in the short term.

Table 6. Measures related to EU-level RDI support services in Helsinki-Uusimaa.

What?	Key measures
Increasing capabilities	<ul style="list-style-type: none"> • Internal resourcing, allocation and recruitment of RDI staff in companies, universities and research institutes • Training RDI actors in EU activities and funding opportunities • Support for RDI project and funding strategies
Communication	<ul style="list-style-type: none"> • Raising awareness and mobilising the RDI sector to apply for EU funding • Communicating RDI enablers (e.g. tax incentives)
Project preparation and funding support services	<ul style="list-style-type: none"> • Monitoring funding channels and communicating funding opportunities • Joint events, information sessions and training for actors in the region • Providing support and expertise in finding suitable funding and preparing funding applications • Support services for EU project management
Networking services	<ul style="list-style-type: none"> • Identifying key networks, connecting to them • Building and managing national and international ecosystems • Finding domestic and international partners • Consortia building support services
National funding and project pathways	<ul style="list-style-type: none"> • Providing and communicating adequate preparatory funding • Coordination of national funding (e.g. ERDF) to support other EU funding to create pathways from smaller and regional projects to larger and more impactful international EU projects

4.5 Placemaking



Objective 5: Make Helsinki-Uusimaa a more attractive RDI environment. Strengthen the attractiveness of RDI activities and enhance its reputation as one of the most attractive R&D environments in Europe.

The fifth basket's placemaking relates to increasing the attractiveness of Helsinki-Uusimaa for RDI activities in EU projects and international talent placements.

Placemaking is a concept that refers to the development of cities and regions to make them more attractive, welcoming and vibrant places that are better able to attract people, talent and businesses. It is closely linked to strengthening the competitiveness of regions (Florida, 2002¹⁶). Regions that offer high quality living and working conditions attract investment and create a favourable environment for RDI and economic growth. The impact of placemaking on investment is highlighted in terms of foreign direct investment (FDI). Research shows that investors are now increasingly paying attention to the vitality and quality of life in a region (Kotler et al., 2018¹⁷): diverse urban environments and well-maintained public spaces can act as a competitive advantage when companies consider entering new markets (Lucas, 2014).¹⁸

Cooperation between the public and private sectors is key to creating attractive urban environments. The key is to strengthen the identity of places and highlight their attractiveness and also to use the private sector's contribution to the design and maintenance of public space.

¹⁶ 18 Florida, R. (2002). *The Rise of the Creative Class*. Basic Books.

¹⁷ Kotler, P., et al. (2018). *Marketing Places*. Routledge.

¹⁸ Lucas, R. (2014). *Place Branding and Foreign Direct Investments, Place Branding and Public Diplomacy*, 10(1), 58-66.

The importance of placemaking in the context of regional economic development and RDI is underlined in the globalising world where cities compete fiercely for investment. Location decisions are increasingly influenced by the quality and vitality of the environment. Helsinki-Uusimaa can succeed by attracting investment through effective placemaking which requires strategic planning and broad stakeholder involvement.

Table 7. Placemaking measures for EU-level RDI activities in Helsinki-Uusimaa.

What?	Key measures
Making the Helsinki-Uusimaa region even more attractive	<ul style="list-style-type: none"> • Marketing and developing the regional opportunities for high standard of living (including attractive small towns, nature, sea, countryside) and quality of life in Helsinki-Uusimaa • Opportunities for teleworking as part of RDI activities • Access to international services (schools, kindergartens) • Emphasis on culture • Integrating design in urban and regional planning to increase the attractiveness of the habitat
Places of encounter	<ul style="list-style-type: none"> • Walkable RDI hubs; places and events where RDI actors can meet informally and in events
RDI centres of excellence and infrastructures	<ul style="list-style-type: none"> • Development of RDI centres of excellence, especially Otaniemi-Keilaniemi, also the campus areas of Viikki, Kumpula and Meilahti; Kilpilahti innovation hub • International marketing of RDI hubs, centres of excellence and infrastructures
Regional marketing	<ul style="list-style-type: none"> • Regional marketing: what does Helsinki-Uusimaa offer Europe?

4.6 Summary of the roadmap

The proposed actions in relation to the Helsinki-Uusimaa RDI roadmap emphasise the need to strengthen implementation and clarify priorities. The RDI roadmap identifies the need to improve the leadership of RDI ecosystems and to increase interaction between RDI actors. The aim is to strengthen the region's competitiveness at the EU level and increase awareness and participation in terms of EU funding calls. Cooperation within the region in attracting investment and talent should be intensified, as should foresight and targeted lobbying at the EU level. Strengthening startup activities, increasing participation in EU funding calls and providing business support services are key development measures.

These measures will help Helsinki-Uusimaa to strengthen its position as an attractive RDI environment and to attain its strategic objectives. The proposed actions focus on strengthening cooperation and systematically building ecosystems and networks. A vibrant RDI sector plays a key role in creating sustainable growth and innovation in Helsinki-Uusimaa and Europe. Taken together, these measures can help Helsinki-Uusimaa to become a more important part of the European research, development and innovation landscape.

The first and second baskets focus on agreeing, cooperating and implementing a common strategy for the region. This requires structures to build cooperation between actors in the region. The priority here should be given to making better use of existing fora (RIS steering group), the regional cooperation group and, for example, the Business Finland Ecosystem which brings together the leading ecosystems. In addition, various high-profile fora, industry working groups or similar could be convened for targeted groups of RDI actors. Compared to Europe's number one innovation region, Greater Copenhagen, Helsinki-Helsinki-Uusimaa clearly lags behind in the number of regional coordination structures and the extent of cooperation. Thus, strengthening regional joint RDI activities and coordinating, for example,

FDI activities in forums larger than a city would likely be an effective action, although achieving a functioning model would require significant effort and agreements between several organisations.

Measures under the third basket would strengthen the region's EU foresight and influence in EU RDI activities. This requires close cooperation with different stakeholders and the ability to react quickly to changing situations. On the other hand, these measures also require a sectoral input from the key actors. Foresight lays the foundations for long-term and forward-looking RDI activities and strengthens the success of Finnish companies and research organisations in Europe. In the short term, the main challenge is to support RDI frontrunners to have a stronger impact through relevant channels in their respective sectors in Europe.

The fourth basket of measures aims to ensure the provision of support services for RDI actors to render participation in EU programmes as smooth as possible. Support services play a key role in building the skills and capacity of regional actors helping them to actively participate in EU-level RDI activities. These measures are very practical and relatively easy to implement. They also have the highest immediate impact.

The measures in the fifth basket aim to make Helsinki-Uusimaa a more attractive RDI environment. The other objectives support this objective, as a strong and vibrant RDI sector contributes to the region's reputation as an inviting R&D environment. Focusing on RDI centres of excellence and increasing their visibility will clearly contribute to this target. The fifth basket includes targets related to Helsinki-Uusimaa's regional development and urban development more generally. They are important in terms of making the region an attractive place to undertake RDI activities, but such actions do require a long period of time to take effect and a very large number of organisations (including cities, municipalities, universities and businesses) to work together.

Of all the measures in the baskets outlined above, seven were prioritised as having the greatest impact on doubling the EU's financial commitment by 2030:

- Setting and monitoring strategic objectives for RDI activities at the EU level
- Development of RDI centres of excellence, special focus on Otaniemi-Keilaniemi; Viikki, Kumpula, Meilahti and Kilpilahti also strongly involved
- Providing and communicating adequate preparatory funding
- Project application and funding support services
- Raising awareness and mobilising the RDI sector to apply for EU funding
- Lobbying the EU in the preparatory phase of RDI programmes

The proposed actions in relation to the Helsinki-Uusimaa RDI roadmap emphasise the need to strengthen implementation and clarify priorities.



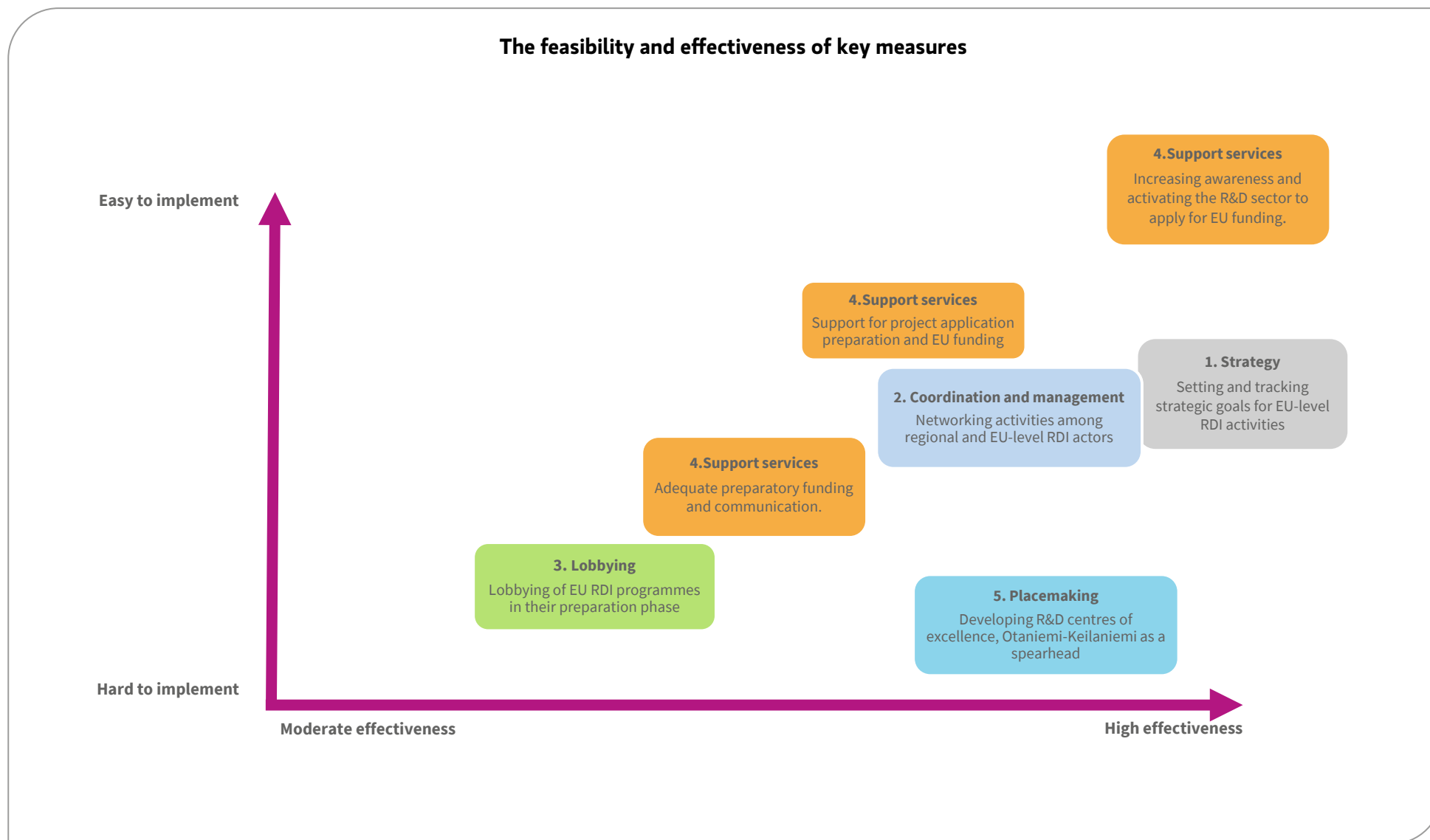


Figure 11. The feasibility and effectiveness of key measures linked to EU-level RDI activity.



5. Closing Words

Let's imagine for a moment the Helsinki-Uusimaa region in the year 2030, where strong EU-level research, development, and innovation activity is clearly visibly manifested in the daily lives of all Helsinki-Uusimaa residents in terms of educational opportunities, economic growth, well-being, intriguing job opportunities and vibrant international exchanges, especially towards Europe.

For residents, this means not only high-quality education and opportunities for lifelong learning but also jobs that inspire creativity and foster expertise. Those living in the Helsinki-Uusimaa region will enjoy a thriving society where health and well-being services are world-class. Science, technology, and innovation are part of everyday life, offering residents quality of life and inspiring opportunities that are strongly linked to daily life and culture.

Companies in the Helsinki-Uusimaa region are part of a global innovation network. Strong EU-level RDI activity attracts companies that are building a sustainable future. Small and medium-sized enterprises participate in large European projects while startups flourish, simultaneously driving the development of larger companies. Businesses benefit from the region's strong expertise, giving rise to innovations and new business opportunities.

Research institutions and universities are true engines for initiating RDI collaboration and building ecosystems. Researchers and experts working in the Helsinki-Uusimaa region are an integral part of recognised international professional communities, where knowledge sharing and collaboration are commonplace. This attracts top talent from around the world, bringing new perspectives and ideas.

Overall, the Helsinki-Uusimaa region is a place radiating dynamic energy and optimism, even extending beyond Finland. Helsinki-Uusimaa's RDI actors collaborate extensively with actors elsewhere in Finland and across Europe. Strong EU-level RDI activity not only changes the face of the region on the global map but also deepens its national roots and strengthens local community ties. The future Helsinki-Uusimaa is open, inventive and committed to building a sustainable tomorrow.

Strong European RDI activity strengthens the European internal market, geopolitical position and the visibility of European values worldwide. For these reasons and more, promoting EU-level RDI activity in Helsinki-Uusimaa, Finland's economic powerhouse region, is meaningful in many ways.



**Strong European RDI activity
strengthens the European internal
market, geopolitical position and the
visibility of European values worldwide.**



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