EUROPEAN CLUSTER COLLABORATION PLATFORM

Clusters meet Regions' event in Vaasa, Finland
"Clusters as Drivers of the Green Industrial Transition"

Input paper

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Contents

Figures

Tables

Executive Summary

The following paper has been prepared in the context of the **Clusters meet Regions event taking place in Vaasa, Finland, on 24–25 September 2025**. The event is organised by the European Cluster Collaboration Platform (ECCP) on behalf of the European Commission, in collaboration with the Technology Centre Merinova, the Regional Council of Ostrobothnia, the Regional Development Company VASEK, the City of Vaasa, Viexpo, and the University of Vaasa. The event aims to explore the role of clusters in advancing the green industrial transition. With a strong focus on energy technology, digitalisation, and clean solutions, it highlights how clusters drive industrial transformation, strengthen competitiveness and support the twin transition.

The paper presents an overview of the economic and innovation profile of Western Finland and Ostrobothnia, outlines the cluster landscape and its contribution to regional development as well as green and digital transition, and examines the role of clusters in cross-border cooperation and participation in European support initiatives. Finally, it analyses how clusters contribute to the implementation of Ostrobothnia's Smart Specialisation Strategy (S3). By identifying strengths, ongoing initiatives, and potential directions for future policy, the paper aims to support discussions among policymakers, cluster organisations, SMEs and other regional stakeholders during the event.

The key takeaways of this paper are summarised below:

Context: Economic and innovation profile of Western Finland and Ostrobothnia

- Western Finland is Finland's second largest region by population and economic output, accounting for around 23% of national GDP. Ostrobothnia, one of the five regions in Western Finland, stands out with the highest GDP per capita in the region (€41,900 in 2023), reflecting its strong export orientation and internationally competitive industrial base.
- Industry accounts for around 19% of total employment in Western Finland—above both the national and EU27 averages—highlighting the region's strong industrial base. The region of Ostrobothnia has a diversified economy with specialisations in energy technology, marine industries, digital solutions, and primary production, supported by significant investments in hydrogen, wind energy and the battery industry.
- Western Finland is a "Strong Innovator" in the 2025 Regional Innovation Scoreboard, performing above the EU average but slightly below the Finnish national score. Its strengths include lifelong learning, international scientific co-publications, and business-led R&D investment, while weaknesses remain in tertiary education, non-R&D innovation expenditure, and trademark applications.

Cluster organisations in Western Finland and their importance for regional economic development

- Six ECCP-registered cluster organisations are located in Western Finland, three of which in Ostrobothnia. The most prominent is the EnergyVaasa cluster, which plays a central role as one of the leading energy technology clusters in the Nordics. The clusters in the region focus on energy technology, digitalisation and industrial innovation, reflecting the region's specialisation in the energy, mobility-transport-automotive and digital ecosystems. These organisations are particularly engaged in technology scouting, internationalisation and digitalisation.

- At the national level, Finland has shifted from a traditional cluster policy to ecosystem-based innovation frameworks, with initiatives such as Growth Engines, Ecosystem Agreements with university towns, and NordicHub. At the regional level, cluster policy is embedded in Smart Specialisation Strategies, with clusters acting as key vehicles for S3 implementation.
- Cluster organisations, in general, play a key role in enhancing regional industrial competitiveness by fostering collaboration, innovation, productivity and technology transfer. They also support the twin transition by facilitating the uptake of digital and green technologies, particularly in energy-intensive and manufacturing sectors. As regional intermediaries, clusters help firms align with sustainability goals and promote cross-sectoral cooperation for long-term transformation.

Cross-border cooperation and the involvement of clusters from Western Finland in European networks and support initiatives

- During the 2014–2020 funding period, the cluster organisation EnergyVaasa, operated by the Technology Centre Merinova, participated in two European Strategic Cluster Partnership (ESCP) projects: one ESCP-4i project (REINA PLUS) and one ESCP-4x project (Towards Cluster Excellency), both involving partners from four European countries.
- In the 2021–2027 funding period, clusters in Western Finland have not participated in Euroclusters projects to date, but EnergyVaasa, operated through the Technology Centre Merinova, is involved in one Interregional Innovation Investments (I3) project (I3-4-BLUE-GROWTH) and two INTERREG Aurora projects (OFFwind and Bothnia Green Energy). Other regional actors, such as universities, also take part in I3 projects in the fields of food processing, circular economy and health.

The role of clusters in Ostrobothnia's Smart Specialisation Strategy

- The interaction between Smart Specialisation Strategies (S3) and cluster organisations is a mutually reinforcing relationship, with S3 providing strategic direction and funding frameworks, while clusters mobilise stakeholders, foster collaboration, and feed intelligence into the Entrepreneurial Discovery Process to refine priorities.
- The S3 of Ostrobothnia 2022–2025 was developed by the Regional Council of Ostrobothnia as a coordinated framework to guide innovation-driven growth in the region. It sets out four priority areas that reflect regional strengths and future opportunities: Advanced production methods, digital solutions, energy technology and system solutions for renewable energy production, and the circular and carbon neutral economy.
- Cluster organisations in Ostrobothnia have a key role in S3 implementation, and Ostrobothnia participates in the S3 Partnership on Hydrogen Valleys, the Smart Sensors for Agri-food partnership, the Photonics partnerships and plays a leading role in the BlueXChange partnership.

01

Context: Economic and innovation profile of Western Finland and Ostrobothnia

EUROPEAN CLUSTER COLLABORATION PLATFORM

Strengthening the European economy through collaboration

1. Context: Economic and innovation profile of Western Finland and Ostrobothnia

Western Finland is one of Finland's five regions[1]. With around 1.39 million inhabitants[2] in 2024, Western Finland accounts for roughly a quarter of the national population, making it the second largest region after Helsinki-Uusimaa.

Within Western Finland, the administrative division comprises the regions of Ostrobothnia, South Ostrobothnia, Central Ostrobothnia, Satakunta and Pirkanmaa. Among these, Pirkanmaa is the most populous, while Ostrobothnia, with around 177,600 inhabitants, is the smallest region within Western Finland by population.[3] Despite its demographic size, it stands out for its **strong export orientation and internationally competitive industrial base**. It is widely recognised as one of the most outward-looking and business-driven regions in the country, with clusters specialising in energy technology, marine industries and digital solutions.

The development of Ostrobothnia is guided by its Regional Strategy 2022–2025, which sets out a **shared vision for sustainable growth and competitiveness**.[4] Its focus areas include building a resource-wise society, fostering growth from digitalisation, ensuring a sufficient supply of workforce and promoting inclusion. In the longer term, the strategy aims to achieve carbon negativity, advance the circular economy and strengthen internationally competitive business ecosystems. Complementing this, the Smart Specialisation Strategy (S3) defines four thematic priorities: Advanced production methods, Digital solutions, Energy technology and system solutions for renewable energy production and the Circular and carbon neutral economy.[5] Together, these strategies provide the framework for innovation-led growth and reinforce the region's role as a frontrunner in the green and digital transitions.

The following section provides an economic overview of Western Finland, with particular attention to Ostrobothnia, covering its macroeconomic profile, sectoral specialisation, as well as its innovation and regional competitiveness performances.

Economic profile of Western Finland and Ostrobothnia

Since the 1990s, Finland's economic development has been characterised by **steady growth in real gross domestic product (GDP)**, up until the global financial crisis. Although the economy returned to growth thereafter, it has not yet fully regained the peak levels reached in 2008. The COVID-19 pandemic caused only a temporary decline in 2020, which was followed by a renewed positive trend, underscoring Finland's resilience. This resilience is also reflected in the latest EU economic forecasts, which project a return to growth in 2025 and 2026 after two consecutive years of recession. The economic impact of Russia's war on Ukraine has been felt primarily through disruptions in international trade relations. Between 2022 and 2023, Finnish exports to Russia declined by 74%, compared with a 30% decrease in EU27 exports to Russia over the same period.[6] Finland's **high degree of trade openness** makes it particularly sensitive to such external shocks: as a relatively small economy, it cannot produce the full range of goods and services domestically, resulting in both exports and imports each amounting to around €50 billion annually. In 2023, Finland's main export destinations were Germany, Sweden, the

[1] These regions at the NUTS 2 level include West Finland, Helsinki-Uusimaa, South Finland, North & East Finland and Åland.
[2] Eurostat (2025): Population on 1 January by age group, sex and NUTS 3 region (last access 26.08.2025).
[3] ibid.
[4] Regional Council of Ostrobothnia (2022): Österbottens landskapsstrategi 2022–2025
[5] Regional Council of Ostrobothnia (2025): Strategy for Innovation and Growth of Ostrobothnia 2022–2025.
[6] Tulli (2024): Finnish international trade 2023 Figures and diagrams. Available online: Finnish international trade 2023 - Figures and diagrams (last access 26.08.2025).

Netherlands, the United States and China, while imports originated primarily from Germany, Sweden, China, Norway and the United States. A considerable share of trade is therefore conducted within the EU, underlining Finland's integration into **intra-EU value chains**.[7] The principal export goods were refined petroleum, kaolin-coated paper and flat-rolled stainless steel, whereas the most important import goods were crude petroleum, cars, refined petroleum and packaged medicaments.[8]

Within Finland, **Western Finland is an important industrial and innovation hub**, accounting for a substantial share of Finland's economic output and playing a central role in the country's export-oriented growth. In 2023, the region's GDP amounted to approximately €62.7 billion, representing around 23% of Finland's total GDP of €273.3 billion. Among the sub-regions, Pirkanmaa generated the largest share of output (€24.96 billion), followed by Central Finland (€11.19 billion) and Satakunta (€9.85 billion). Ostrobothnia contributed €9.05 billion, ranking just above South Ostrobothnia (€7.62 billion). However, both regions are smaller in terms of population. The **economic significance of Ostrobothnia** becomes particularly evident when considering output per inhabitant. In 2023, the GDP per capita (PPP) was €41,900, thus having the highest in Western Finland and being higher than the national average (€40,100) and the EU average (€38,100). The economy of Ostrobothnia has seen positive developments over the past years and is expected to continue on an upward trajectory[9], with signs of the region's business climate pointing to gradual improvement.[10]

Western Finland is home to important export-oriented hubs in energy technology and marine industries, which play a central role in Finland's **international competitiveness**. The regional economy is diversified, combining a strong industrial base with primary production and a gradually expanding service sector.[11] In terms of manufacturing turnover, exports account for around 70% of industrial production, one of the highest shares among Finnish regions. Furthermore, the industrial value added per capita is the highest in the country. Nevertheless, in terms of productivity, industrial enterprises in Ostrobothnia are clearly below the national average. Hence, one business development goal must be to **increase productivity**.[12]

The city of Vaasa and its surroundings are shaped by an **energy technology cluster**. Global companies, alongside numerous SMEs and startups, focus on energy efficiency, smart energy generation, and future power grids. Furthermore, a battery industry cluster centred on the **GigaVaasa factory** is expected to further strengthen the region's development. The Jakobstad area, on the other hand, has a **diverse and export-oriented economy**, with balanced employment across industry, public and private services. Key sectors include food, boatbuilding, plastics and forestry. In South Ostrobothnia, the economy is dominated by the **automotive and forestry industries**, alongside metal and food processing. Planned investments in forestry, wind energy, hydrogen and green steel are expected to create several hundred new jobs.[13]

Ostrobothnia is also directly affected by global transitions, which create opportunities for digital and green growth and are expected to expand the region's green footprint over the next ten years. The Regional Council of Ostrobothnia anticipates that a substantial portion of **investments in Finland's green transition** will be directed towards Ostrobothnia, benefiting both existing companies and new entrants to the region. The national dashboard on green transition from the Confederation of Finnish Industries showcases that Ostrobotnia ranks third in Finland in terms of Green Transition investments with €25.6 billion.[14] Technically speaking, these investments will be made in the battery, hydrogen and wind power industries. Specifically, Ostrobothnia's

[7] Eurostat (2025): Intra and Extra-EU trade by Member State and by product group (last access 26.08.2025).
[8] OECD (2025): Finland. Available online: https://oec.world/en/profile/country/fin (last access 26.08.2025).
[9] See https://www.ostro.chamber.fi/wp-content/uploads/2024/04/2404-BP-raportti.pdf (last access 27.08.2025)
[10] Government of Finland (2025): Kansallinen aluekehityksen tilanne- ja kehityskuva 2024 (last access27.08.2025).
[11] Regional Council of Ostrobothnia (2025).
[12] See https://www.pohjanmaankompassi.fi/sv/lages-och-utvecklingsbild/naringar-och-fui (last access 26.08.2025)
[13] Regional Council of Ostrobothnia (2025).
[14] See https://ek.fi/en/green-investments-in-finland/ (last access 11.09.2025)

position in the hydrogen economy has been strengthened by its access to green energy, energy technology solutions, high-quality research and development, and its long tradition of cooperation. The city of Kristinestad is planning hydrogen projects for the production of green steel. Construction work on Koppö Energia's hydrogen plant, for example, is expected to begin in autumn 2025. In terms of the battery industry, the Vaasa region is establishing itself as the leading area in Finland. GigaVaasa aims to establish a battery factory in Vaasa, further strengthening the region's green energy ecosystem.[15] However, to make GigaVaasa a reality, investment is required in the operating conditions of the battery industry. As mentioned above, these conditions include the development of infrastructure, logistics chains, and research and development cooperation, for example.[16]

Employment composition and specialisation of Western Finland

The following section examines the employment composition of the region in greater detail, highlighting the relative importance of different sectors in the labour market and comparing regional employment patterns with national and EU27 averages. This allows for the identification of **areas of specialisation as well as structural differences** that shape Western Finland's economic profile. Note that due to limitations in the availability of disaggregated data, the analysis is conducted at the level of Western Finland as a whole rather than for individual sub-regions such as Ostrobothnia.

According to the most recent Eurostat data, Western Finland stands out for its strong industrial base. In 2023, industry accounted for 19.4% of total employment, which is well above both the national and EU27 averages. Agriculture also has a stronger presence than in Finland overall and in the EU27, reflecting the continued importance of primary production in parts of the region. By contrast, the share of employment in services (35.4%) is notably lower than the national and EU27 levels, underlining the region's more industry-oriented profile. Public administration is the sector with 33.7% of employment, above the European average but below the national average, and is particularly linked to high employment in health and education. Overall, Western Finland's employment structure reflects a **strong specialisation in industry and primary production**, combined with a comparatively smaller service sector. This confirms the region's role as one of Finland's leading industrial hubs, closely linked to its export orientation and energy-intensive industries.

A similar pattern is observed when examining employment distribution across the EU industrial ecosystems. As part of its **Industrial Strategy** (March 2020), the European Commission has selected 14 industrial ecosystems that are particularly relevant in Europe and encompass all players operating in a value chain. These ecosystems encompass entire value chains, from upstream production to final services. [17] The classification of employment by ecosystem is based on NACE Rev. 2 aggregation, following the European Commission's methodology. Figure 1 illustrates the employment distribution across the 14 EU industrial ecosystems in Western Finland, compared with Finland as a whole and the EU27 average.

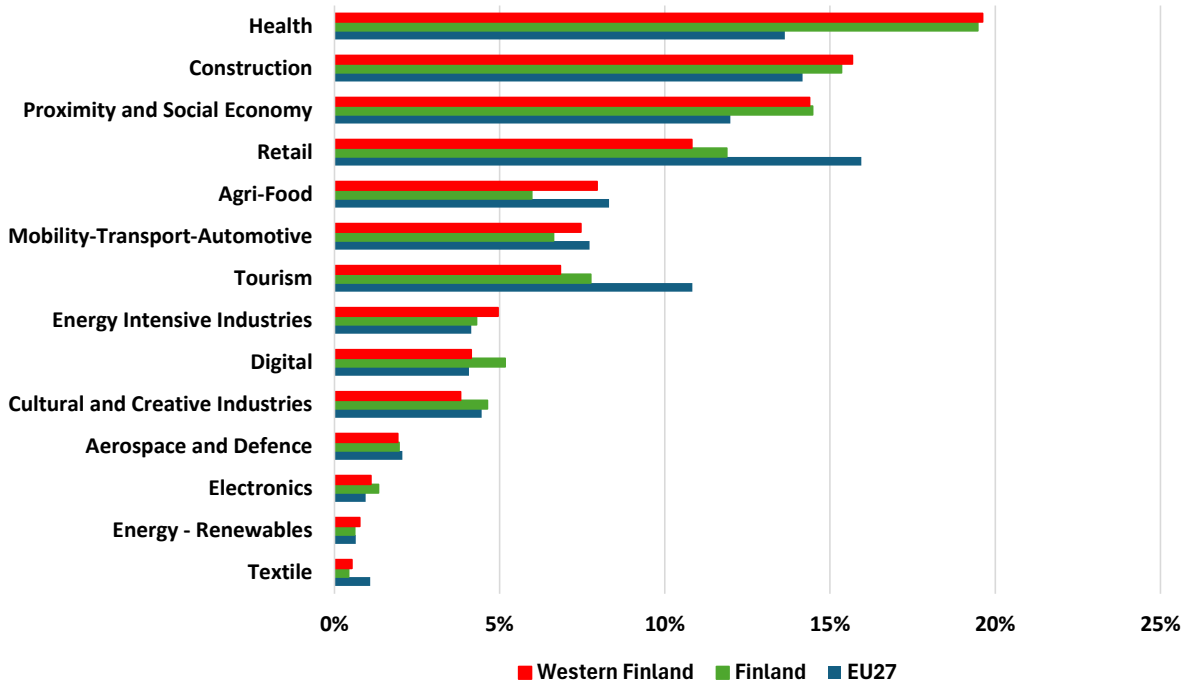
In Western Finland, the largest ecosystem by employment is **Health**, which accounts for 19.6% of total employment. This share is significantly higher than the EU27 average (13.6%) and slightly above the national average (19.5%). Shown by high employment for human health activities and residential care activities. The **Construction** ecosystem follows with 15.7%, which is also above both the EU27 average (14.2%) and the national average (15.4%). This is shown by specialised construction activities and the construction of buildings with a regionally relevant agglomeration.[18] The third largest ecosystem is **Proximity and Social Economy**, which

[15] See here for more information: https://www.gigavaasa.fi/ (last access 11.09.2025)
[16] See https://www.pohjanmaankompassi.fi/sv/lages-och-utvecklingsbild/naringar-och-fui (last access 26.08.2025)
[17] See here for more information: https://clustercollaboration.eu/in-focus/industrial-ecosystems (last access 26.08.2024).
[18] Regional-relevant agglomerations refer to regions that are highly specialised in a specific sector or industrial ecosystem, with employment in that sector or industrial ecosystem playing a significant role in the region's economy. These specialisation nodes are determined by a Location Quotient greater than 1.5 and a regional employment share higher than 1%.

represents 14.4% of employment and is broadly in line with both the Finnish and EU27 averages. This is particularly explained by high employment in social work activities and residential care activities.

In addition to these three largest ecosystems, Western Finland shows above-EU27 employment shares in energy-related fields. Energy-intensive industries account for 5.0% of employment, exceeding both the national average (4.3%) and the EU27 average (4.1%). Energy-Renewables employ 0.8% of total employment, which is also above the EU27 average of 0.6%. Furthermore, the Agri-food ecosystem should also be mentioned, with its employment share of 8.0% close to the EU27 average (8.3%) but higher than the national average of 6.0%. This is largely linked to the forestry and logging sector, which forms an important agglomeration with both regional and industrial relevance.

Figure 1: Employment across the EU industrial ecosystems for Western Finland, Finland and the EU27, in 2022



Source: ECCP (2025), own elaboration based on Eurostat. Note that the classification of the 14 industrial ecosystems has been calculated by aggregating NACE 2-digit activities, following the methodology established by the European Commission.

Regional competitiveness level of Western Finland

To provide an overview of Western Finland's performance in key dimensions of regional competitiveness, the ranking of the Finnish regions in the **Regional Competitiveness Index (RCI) 2022** is presented.[19] The RCI measures the competitiveness of regions across the EU in three dimensions: the Basic Sub-Index, the Efficiency Sub-Index and the Innovation Sub-Index.[20] Figure 9 in the Annex provides a detailed overview of the region's performance in various selected indicators and dimensions of the RCI.

With an overall score of 112.9 (EU27 = 100), Western Finland ranks 56th out of 234 European regions. It is classified as a **Transition Region**, performing clearly above the EU average but below the Finnish national average. Within Finland, Western Finland achieves the second-highest score, after Helsinki-Uusimaa (ranked 12th overall), underlining its strong competitive position among the five NUTS 2 regions. Although the score has

[19] See https://ec.europa.eu/regional_policy/assets/regional-competitiveness/index.html#/ (last access 26.08.2025).
[20] European Commission (2022).

declined by around 8% since 2016, Western Finland still demonstrates **resilience in maintaining competitiveness** relative to other EU regions.

Across all three sub-indices, the region performs close to the national average but does not surpass it in any of the dimensions. In the **Basic Sub-Index**, infrastructure is a significant weakness. Here, the ranking is below the EU average, seemingly reflecting a broader national pattern since the national ranking is below the EU average as well. This finding is supported by other infrastructure data, for example broadband internet coverage, where Finland is ranked below the EU27 average, too.[21] According to the Regional Council of Ostrobothnia, shortcomings in transport infrastructure and logistics solutions, as well as the poor condition of the road network, may slow down the growth of industry. This is discussed to potentially further slow down the process of making investment decisions.[22] Consequently, the region aims to install an innovative transport system to support Ostrobothnia's international competitiveness by 2050.[23] At the same time, the region has great strengths in the pillars of institutions and in basic education. This strength in terms of education is proven by high scores of Finland in the OECD PISA survey.[24]

For both Finland as a whole and Western Finland specifically, the **Efficiency Sub-Index** is the weakest dimension. With a score of only 43.7 points, the limited size of the market emerges as a key area for improvement. It thereby needs to be considered that the limited domestic demand due to the comparably low population is a significant restriction. Results above the EU average in the labour market and in higher education and lifelong learning, lift the overall Efficiency Sub-Index slightly above the EU average (101.0).

The Innovation Sub-Index emerges as the strongest area of performance for Western Finland, with an overall score of 129.1. Interestingly the results of the pillars in this sub-index have a small span ranging from 125 in innovation to 132.6 in business sophistication. The innovation performance of Western Finland and Ostrobothnia will be discussed in detail in the next paragraph.

Performance of the regional innovation ecosystem of Western Finland

While the RCI provides a broad perspective, the last part of this chapter discusses the key drivers of Western Finland's Competitiveness - innovation - by examining the Regional Innovation Scoreboard. **The 2025 Regional Innovation Scoreboard (RIS)[26]** provides an evidence-based and comparative avenue for assessing its level of innovativeness. The RIS contains data on 23 innovation-related indicators across 12 dimensions for European regions at either the NUTS 1 or NUTS 2 levels.[27] The description of the RCI already indicated that Finland has a good innovation performance. In accordance with this finding the RIS ranks Finland as one of the four "innovation leaders" in the EU.

The EU Regional Innovation Index (RII) measures and compares the innovative performance of regions across the EU and is a key indicator of the RIS. According to the index, **Western Finland is classified as a "Strong Innovator"** (RII: 119, with the EU average set at 100).[28] It is therefore the second highest-ranked region in Finland, but due to the strong performance of the Helsinki region, it is slightly below the national score (124.1). When all the European regions assessed in the RIS are ranked according to the RII, Western Finland is ranked 52nd out of 247 regions overall, and 14th out of 71 strong innovators. In 2018, Western Finland was an innovation leader (RII:

[21] Available under: https://ec.europa.eu/eurostat/databrowser/view/isoc_cbs/default/table?lang=en (last access 25.08.2025).
[22] See https://www.pohjanmaankompassi.fi/sv/lages-och-utvecklingsbild/naringar-och-fui (last access 26.08.2025).
[23] Regional Council of Ostrobothnia (2025): Österbottens Landskapsplan 2050.
[24] OECD (2023).
[26] Available online: https://projects.research-and-innovation.ec.europa.eu/en/statistics/performance-indicators/european-innovation-scoreboard/eis#/ris (last access 19.08.2025).
[27] European Commission (2025): Regional Innovation Scoreboard 2025 – Methodology Report.
[28] European Commission (2025): Regional Innovation Scoreboard 2025 – Regional profile Finland.

126.8). Using 2018 as a baseline, the region's RII has increased by 6% over the last seven years. During the same period, the EU average increased by 12%. As seen in Figure 2, the region's overall score is very close to the national average.[29] Overall, Western Finland shows strong performance across numerous indicators, with 16 scoring above the EU27 average.

Its greatest innovation strength is evident in the 'Lifelong learning' indicator. Therefore, it can be assumed that the workforce in Western Finland is continuously acquiring new skills and knowledge, enabling it to adapt to technological change and **foster a culture of innovation**, despite significant deficits in tertiary education. This is supported by data showing that Finland ranks third in terms of adults participating in learning.[30] The imbalance in human capital (see deficits in tertiary education) indicates that, even though relatively few individuals complete higher education, upgrading of skills is embedded in the workforce. This is also echoed in Ostrobothnia´s S3, which emphasises competence and the sufficient supply of workforce.[31]

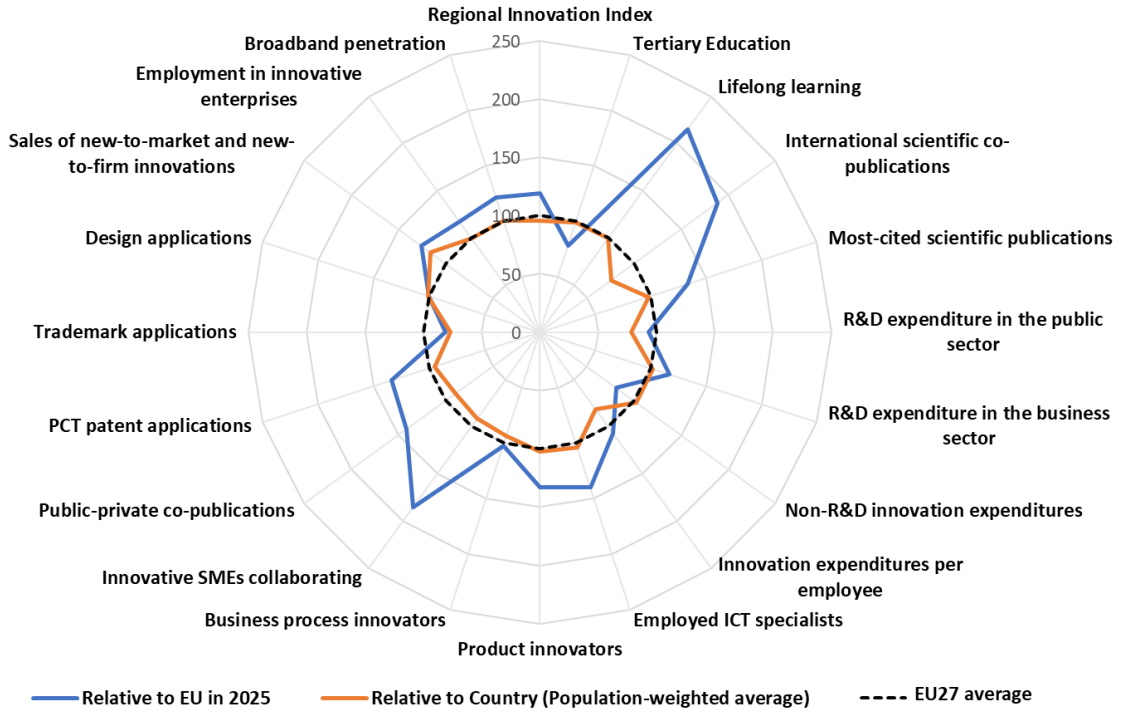
Innovation activity is further strengthened by **intensive collaboration** in both science and the business sector. This collaborative potential is reflected in the 'International scientific co-publications' indicator and the 'Innovative SMEs collaborating' indicator. The potential of collaboration between businesses and higher education institutions is also discussed as one specific strength of the Ostrobothnia region.[32] In science, global connectivity and high-quality research are indicated by a high ranking in the most-cited scientific publications. These strengths ultimately result in significant outputs in PCT patent applications, which measure the commercialisation of research. Additionally, solid performance in both product and business process innovation reinforces the impression that business led innovation is a key strength of the region.

This is reflected in **Ostrobothnia's innovation system, which is largely business-led**. R&D expenditure of Ostrobothnian companies has grown by about 40% in the 2020s. The Regional Council emphasises that this increase is caused by preparations for the green and digital transitions and the fact that large companies in Ostrobothnia have been granted significant amounts of money for Business Finland's pilot projects in recent years. Consequently, enterprises' investments accounted for 86% of the region's total R&D expenditure in 2023.[33] Moreover, the innovation outputs are also evident in the market. This aligns with Ostrobothnia's strategic objective to foster innovations in collaboration and internationally competitive business clusters and is indicated by high scores for 'sales of new-to-market and new-to-firm innovations' and 'employment in innovative enterprises'. Thus, the capacity of firms to transform innovation into economic and social value is demonstrated.

Furthermore, other indicators, such as broadband penetration, most-cited scientific publications, and employed ICT specialists, indicate that the region is enhancing its digital infrastructure and human capital, both of which are prerequisites for innovation. Nevertheless, the region of Western Finland has some **areas for improvement**. These areas include tertiary education, non-R&D innovation expenditure and trademark applications. The low level of tertiary education has already been discussed briefly. The low levels of non-R&D innovation expenditure and trademark applications point to weaknesses in complementary innovation activities, which also apply to Ostrobothnia. According to the Regional Council of Ostrobothnia, public investments in the RDI activities of the higher education sector are needed to enable the region to respond to existing development needs.[34] Overall, the majority of the RIS-indicators show **negative development compared to 2018** (compared to the EU average for each year). The indicators quantifying the innovative potential of SMEs — specifically, product innovators, business process innovators, and innovative SMEs collaborating — saw the largest relative decreases.

[29] The national average was calculated using the population-weighted average of the five Finnish regions (at the NUTS 2 level).
[30] Available under: https://ec.europa.eu/eurostat/databrowser/view/sdg_04_60/default/table?lang=en (last access 25.08.2025).
[31] Regional Council of Ostrobothnia (2022): Strategy for Innovation and Growth of Ostrobothnia 2022–2025.
[32] See https://www.obotnia.fi/assets/Sidor/1/22/Regional-Strategy.pdf (last access 26.08.2025).
[33] See https://www.pohjanmaankompassi.fi/tilanne-ja-kehityskuva/elinkeinoelama (last access 11.09.2025).
[34] ibid.

Figure 2: Performance of Western Finland in the 2025 Regional Innovation Scoreboard



Source: European Commission (2025): Regional Innovation Scoreboard 2025 – Regional profile Finland. Note: The dotted line represents the EU average (EU=100) while the blue line represents the innovation performance of Western Finland relative to the EU average; finally, the orange line indicates the performance of Western Finland relative to the country average.

In sum, Western Finland, and Ostrobothnia in particular, combine a strong industrial base with high internationalisation and solid innovation capacity. The region is **well positioned to drive the green and digital transitions, although challenges remain in productivity, infrastructure and skills**. Against this backdrop, the following chapters analyse the role of cluster organisations in supporting regional development, their engagement in European cooperation initiatives, and their contribution to implementing Ostrobothnia's S3.

02

Cluster organisations from Western Finland and their importance for regional economic development

2. Cluster organisations from Western Finland and their importance for regional economic development

The involvement of clusters in regional economic governance, policy design, and implementation at the regional level is of central importance for regional economic development. This chapter provides an overview of cluster organisations in Western Finland, including their geographic distribution and key characteristics such as size, membership structure, and thematic orientation based on industrial ecosystems. Furthermore, the chapter outlines the policy framework supporting cluster development at both the national and regional levels.

ECCP-registered cluster organisations in Western Finland and Ostrobothnia

Cluster organisations are **key actors in the European economy**, facilitating collaboration, networking and knowledge sharing between diverse innovation stakeholders within a geographical or sectoral cluster.[35] The European Cluster Collaboration Platform serves as a one-stop shop for cluster organisations at the European level. Therefore, the number of registered cluster organisations and other innovation actors in Western Finland on the ECCP gives the first impression of the intensity of organisation in regional industrial networks.

Figure 3 shows the geographical distribution of the ECCP-registered cluster organisations in the Finnish NUTS 2 regions. Out of the current total of 1,268 registered EU27 cluster organisations on the ECCP, there are 44 registered cluster organisations in Finland, with 6 of these being located in Western Finland. Looking at the **geographical distribution** of cluster organisations in Western Finland, three of the six cluster organisations are located in the region of Pirkanmaa (Tampere), while the region of Ostrobothnia (Vaasa), Satakunta (Pori) and Southern Ostrobothnia (Seinäjoki) each have one cluster organisation.

Based on ECCP profiles, several observations can be made about the organisational, membership, and thematic structure of cluster organisations in Western Finland. The following information refers to the organisations for which data are available.

With regard to **staff size**, two organisations (40%) employ between one and five staff members, which is significantly lower than the EU27 average of 65%. Two organisations (40%) are medium-sized and employ between six and ten staff members, compared to the EU27 average of 21%. One organisation (20%) is larger and employs between 11 and 20 staff members, compared to the EU average of 9%. Taken together, these figures indicate that cluster organisations in Western Finland typically have larger management teams than the EU27 average.

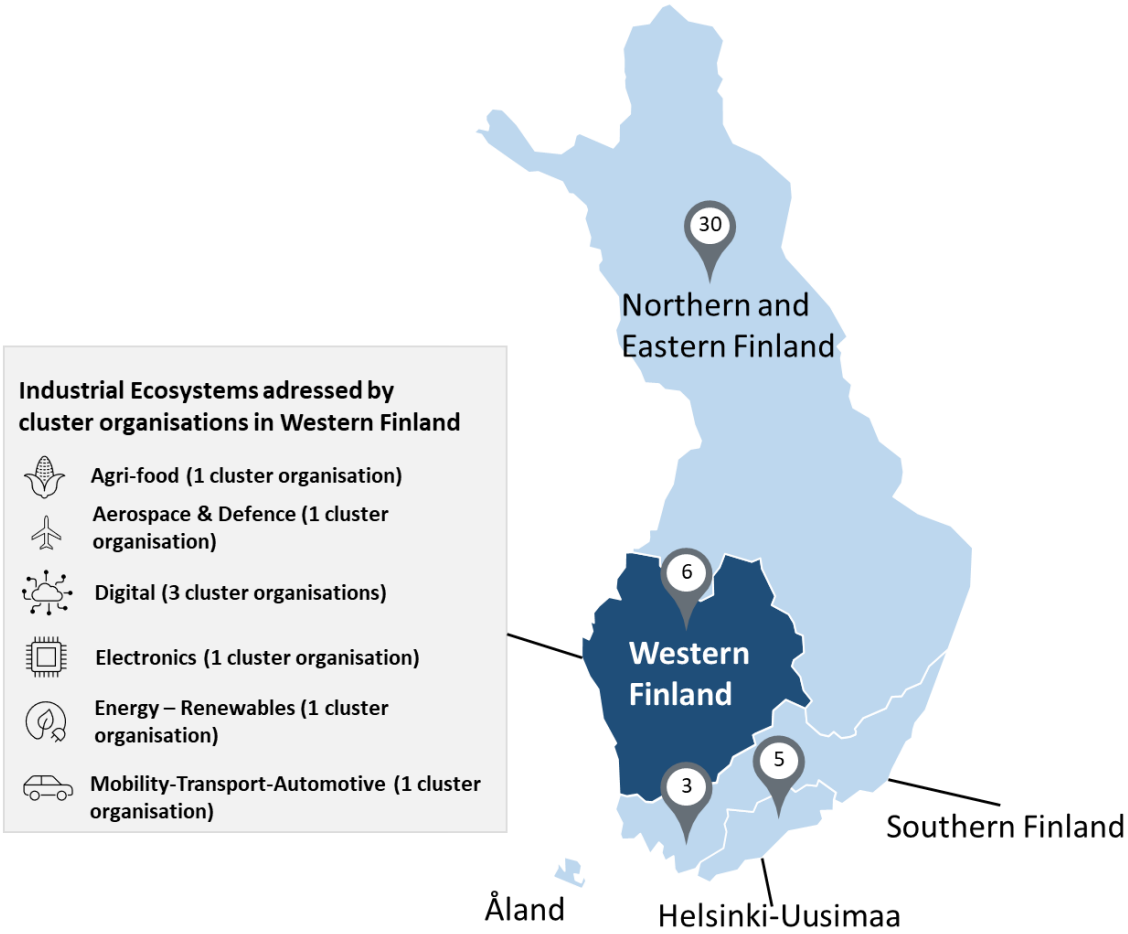
In terms of **membership**, two organisations (40%) have up to 50 members, which is close to the EU average of 36%. One organisation (20%) has between 51 and 100 members, compared to the EU average of 27. Two organisations (40%) have between 101 and 200 members, compared to the EU average of 22%.

In terms of **thematic orientation**, three of the cluster organisations in Western Finland are active in the Digital ecosystem, while the remaining ones focus on Agri-food, Aerospace & Defence, Electronics, Energy–Renewables, and Mobility–Transport–Automotive, with one organisation in each industrial ecosystem.

Collaboration interests among the cluster organisations in Western Finland are primarily focused on technology scouting, internationalisation, digitalisation, and peer exchange. These areas of interest are broadly consistent with the trends observed across EU cluster networks.

[35] A cluster, in economic terms, refers to the concentration of interconnected businesses, suppliers and associated institutions that are geographically proximate or related by sector.

Figure 3: Overview of cluster organisations in Finland



Source: ECCP (2025). Own elaboration based on https://reporting.clustercollaboration.eu/all, retrieved on 25.08.2025. The list of the six ECCP-registered cluster organisations in Western Finland are listed in Table 1 in the Annex.

At the Clusters meet Regions event in Vaasa, the focus will be on the role of cluster organisations in driving the green transition, fostering technological innovation, and strengthening the competitiveness of the energy sector. Several clusters from Western Finland addressing these areas will be presented in the following.

- **EnergyVaasa,** operated by the Technology Centre Merinova, is a globally oriented energy technology cluster, focusing on smart grids, marine solutions, sustainable energy, energy efficiency, and battery ecosystems. The cluster focuses strongly on R&D and internationalisation.[37] The Technology Centre Merinova, as a leading actor in the EnergyVaasa cluster, has played a major role in designing and implementing the S3, especially with regard to the priority area of the renewable energy ecosystem in the region. The key insights from the ECCP Cluster Solutions Library on Vaasa Energy are presented in Box 1, highlighting the role of the cluster in fostering green innovations and supporting the urban transformation in the city of Vaasa towards a carbon-neutral ecosystem.
- **Robocoast EDIH** is a European Digital Innovation Hub supporting the manufacturing industry across nine Finnish regions, providing one-stop access to top digital expertise (AI, robotics, IoT, 5G, HPC, cybersecurity) and connecting nearly 50% of Finland's manufacturing firms with 15 universities and 9,000 tech specialists to drive sustainable growth, Industry 4.0 adoption, and competitiveness.[38]

[37] For more information see: https://www.vaasa.fi/en/about-energyvaasa/
[38] For more information see: https://european-digital-innovation-hubs.ec.europa.eu/edih-catalogue/robocoast

- **DIMECC** is an innovation cluster that accelerates industrial growth by uniting SMEs, large companies, and research institutes through EU project facilitation, advanced AI training, sustainable development initiatives, and specialised events—serving as a hub for digital, manufacturing, AI, mobility, and sustainability ecosystems.[39]

Box 1: Cluster Solution Library – EnergyVaasa

Tackling Digital, Green and Social Transition in the Ostrobothnia Region

Background and Features: A leading hub for renewable energy technology

The EnergyVaasa cluster is the leading Nordic hub for energy technology. It was formally launched in 2001 by Technology Centre Merinova, ABB, and the City of Vaasa, and has since grown into a key driver of Finland's green and smart transition. Today, it unites over 180 companies, including several global market leaders, alongside universities and public actors in a strong "triple helix" cooperation model.

The cluster operates under the Technology Centre Merinova in partnership with Vasek and employs around ten members of staff. It is largely privately financed and has earned international recognition, becoming the first Finnish cluster to achieve the ECEI Gold Label for excellence in cluster management in 2022, with the award renewed in 2025. EnergyVaasa's current strategy (2025–2027) focuses on smart grids, marine solutions, sustainable energy production, energy efficiency, energy storage, and resilient power mix balancing, supported by cross-cutting themes like research collaboration, resilience, investment attractiveness, and cluster management. Universities play a central role through the Energy Academy, while the City of Vaasa and the Ostrobothnia Chamber of Commerce contribute to climate initiatives and regional development.

Service Portfolio: Providing services to navigate towards the green transition

The EnergyVaasa cluster strengthens regional innovation by supporting business development, internationalisation, and collaborative projects with companies, universities, and public authorities. It drives initiatives for carbon-neutral city ecosystems, fosters talent through education and training, and promotes members through events, branding, and international networks. Altogether, it serves as a hub connecting business needs with strategic innovation and sustainable growth.

Impact: Driving innovation and collaboration for a carbon-neutral future

Over the years, EnergyVaasa has been instrumental in shaping Ostrobothnia's smart specialisation strategy and in launching pioneering projects, such as the world's most environmentally friendly cargo and passenger ferry and the development of a carbon-neutral urban system in Vaasa. The cluster has steadily expanded, with turnover rising from €4 billion in 2012 to €6 billion in 2023 and employment increasing from 10,000 to 13,000. Altogether, EnergyVaasa stands out as a model of collaborative innovation, driving industrial transition and strengthening the region's role as a European leader in sustainable energy solutions. EnergyVaasa effectively supports the region's ambition to become a living lab for carbon-neutral cities and delivers on the vision of the Strategy for Innovation and Growth 2022–2025. The cluster organisation has played a major role in designing and implementing the S3, especially with regard to the priority area of the energy ecosystem in the region.

Lessons Learned and Transferability: Trust-based collaboration driving green and smart industrial transition

Ostrobothnia has a long tradition of trust-based collaboration, enabling the EnergyVaasa cluster to become a key driver of innovation and industrial transition. Strong ties between companies, public authorities and the Technology Centre Merinova, as the coordinator of the EnergyVaasa cluster, foster mutual trust, pragmatic cooperation and alignment with business needs. This partnership culture underpins the region's smart specialisation strategy and supports its green and smart transition. The main lesson is that successful industrial

[39] For more information see: https://www.dimecc.com/

transformation depends on trust among companies, research institutions and intermediaries, with professionally managed clusters playing a vital role in linking business challenges to strategic regional development.

Source: ECCP (2025). Note: The full case study can be found in the ECCP Cluster Solutions Library.

Cluster policy in Finland and Ostrobothnia

Finnish cluster policy at the national level has been present for a long time as Finland developed its own approach towards cluster development. Beginning in the 1990s, Finland's industrial policy was rearranged around the concepts of both national innovation systems and clusters.[40] Already then clusters were conceived at a national level, emphasising the transregional networks of large and small companies, research institutions and public bodies often organised around export-oriented large corporations.[41]

An **extensive evaluation** conducted by an international expert group in 2009[42] showed how, on the one hand, the cluster-related policy approach was highly successful in developing pre-existing and emerging strengths in its two main clusters during the 1990s and 2000s: forestry and ICT. On the other hand, however, it warned of the backsliding of the Finnish innovation system just as it reached its peak success – a warning shared by another international expert report.[43] Critical points were the low internationalisation of Finnish companies and companies alike as well as the relatively weak commercialisation, i.e., the transfer from R&D to marketable innovative products.

The double shock of the financial crisis of 2008 and the demise of Nokia as the globally leading mobile phone company soon after lead to several years of stagnation and a **rethinking of Finland's approach to innovation policy**. The emerging policy framework has been building on the characteristic Finnish approach but updated it in crucial aspects. Like the clusters around leading export corporations in the 1980s and 1990s, the new "**innovation ecosystems**"[44] were to be networks constructed by and around "**platform companies**" which have a globally competitive position in the world market. Unlike the old clusters, however, the ecosystems are now designed to cross-regional and industrial boundaries. In particular, in the **Growth Engines**[45] programme, "[t]he selected companies are expected to construct a globally strong ecosystem around them by mobilising an extensive network of companies of different sizes, including research organisations and public actors, to identify and achieve a common set of concrete business goals."[46]

These enterprise-driven networks are organised around a leading corporation and the mission to find solutions to specific challenges. Funding for these networks is provided through "challenge competitions".[47] A second anchor of Finland's current ecosystem-centred cluster policy are **university towns**. The government concludes "ecosystem agreements" with university towns "regarding the strategic allocation of public and private RDI funding to strengthen globally competitive ecosystems".[48] These **urban ecosystems** are further complemented

[40] Romanainen (2001).
[41] Rouvinen & Ylä-Anttila (1999).
[42] Veugelers et al. (2009).
[43] Sabel & Saxenian (2008).
[44] Valkokari et al. (2021).
[45] See https://tem.fi/en/business-finland-s-ecosystem-funding (last access 29.08.2025). An overview of all services offered by Business Finland to support ecosystems can be consulted at: https://www.businessfinland.fi/en/for-finnish-customers/services/ecosystems (last access 29.08.2025).
[46] Sotarauta et al. (2022).
[47] See https://www.businessfinland.fi/en/for-finnish-customers/services/funding/funding-for-leading-companies-and-ecosystems (last access 29.08.2025).
[48] See https://tem.fi/en/ecosystem-agreements (last access 29.08.2025).

by the national innovation and skills network and together form the Innovative Cities and Communities programme.[49]

The **most recent policy programmes**[50] for regional development confirm and continue this path. The **Updated National Roadmap for Research, Development and Innovation**[51] aims to strengthen regional specialisation, the role of cities as innovation development platforms and the construction of internationally networked innovation clusters through instruments such as the aforementioned "ecosystem agreements" between the central government and university towns and cities and other regional funding instruments including EU financial instruments. Implementation is supported through "Centres for Economic Development, Transport and the Environment"[52] regarding regional development and "Centres of Excellence"[53] regarding scientific research.

Additional dedicated cluster support is provided through **NordicHub** run by Viexpo and should be named as a **platform and networking partner for Finnish cluster activities**. It aims at linking Finnish clusters with clusters from other Nordic countries and facilitating Nordic cross-border business activity in general.[54]

Furthermore, Business Finland is launching **targeted cluster funding calls** from time to time, for example to support the activities of an **innovation cluster for AI technologies**. The main objective in this case is to accelerate the adoption of AI technologies in Finnish companies. The cluster can include companies, public procurement units, research institutions, public authorities, associations, and other existing networks.[55]

At the regional level, cluster policy is **integrated into the regional Smart Specialisation Strategy (S3)**, namely the **Strategy for Innovation and Growth of Ostrobothnia 2022–2025**, where clusters act as key vehicles for implementing the priorities of advanced production methods, digital solutions, energy technology and system solutions for renewable energy production as well as circular and carbon-neutral economy (see also Chapter 4 for more information). In terms of financing, the EnergyVaasa cluster relies mainly on project funding and services fees rather than membership fees. These services include the development of production sites for cluster members. ERDF and Interreg funds go into cluster-led projects along the S3 priorities.

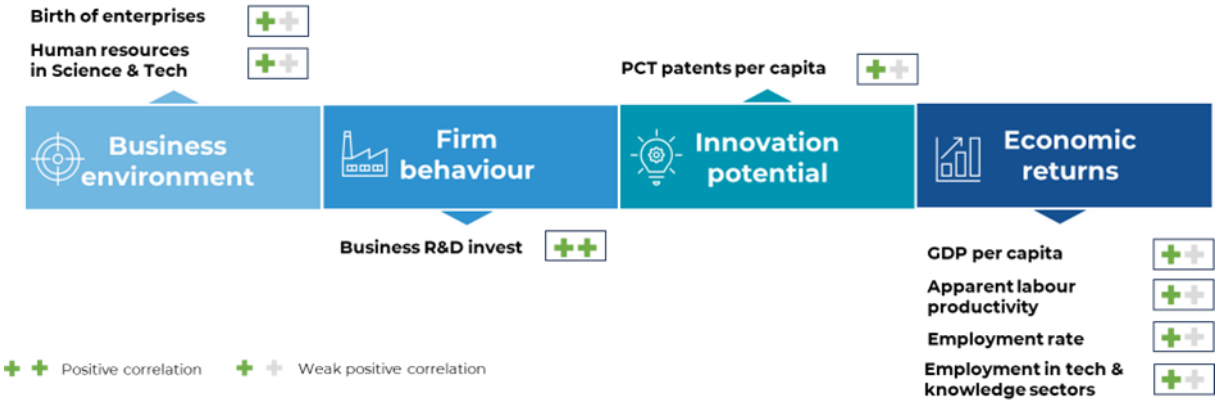
Recent regional projects double down on this integrated approach, involving the parallel development of the Innovation and Regional Strategies, launching new initiatives such as the Innovation Valley and the Hydrogen Valley[56], and introducing EnergyVaasa's new cluster strategy 2025–2027.[57]

[49] See https://tem.fi/en/-/boost-from-eu-funding-for-urban-innovation-agreements-and-area-innovation-networks (last access 29.08.2025).
[50] For a full overview of current cluster policies, see the most recent ECCP Factsheet: https://clustercollaboration.eu/in-focus/policy-acceleration/country-factsheets-on-cluster-policies-and-programmes (last access 29.08.2025).
[51] Ministry of Education and Culture of Finland (2021).
[52] See https://www.ely-keskus.fi/web/ely-en (last access 29.08.2025).
[53] See https://www.aka.fi/en/research-funding/programmes-and-other-funding-schemes/finnish-centres-of-excellence/ (last access 29.08.2025).
[54] See https://nordichub.fi/ (last access 29.08.2025).
[55] See https://www.businessfinland.fi/en/whats-new/calls/2025/innovation-cluster-funding-call-ai-technologies (last access 29.08.2025).
[56] See https://www.obotnia.fi/en/about-us/news-from-the-regional-council/successful-project-drives-progress-for-hydrogen-and-innovation-valleyst and https://www.both2nia.com/en/news/both2nia-hydrogen-valley-nutshell (last access 16.09.2025).
[57] See https://www.vasek.fi/assets/Sidor/1/90/EnergyVaasa-strategia-2025-2027-_julkaistava_pdf.pdf (last access 16.09.2025).

The importance of cluster organisations for regional economic competitiveness and twin transition

Cluster organisations play a significant role in enhancing **regional industrial competitiveness and productivity** by fostering collaboration, specialisation and innovation. The findings of the Cluster Panorama Report reinforce this role showing strong, positive correlations between the presence of clusters and multiple indicators of **economic returns**, **innovation potential**, **firm behaviour**, and **business environment**. This is depicted in Figure 4.

Figure 4: Relationship of clusters and regional competitiveness, correlation results



Source: ECCP (2024). Own elaboration based on European Cluster Panorama Report 2024. Note: The symbols in the table indicate Pearson correlation coefficients that are significant at 95% level. Positive/negative Correlations include coefficients >=0.3, weak correlations include coefficients >=0.1. Green fields indicate a positive relationship and red a negative relationship.

Within the **business environment** dimension, regions with a strong cluster presence tend to exhibit higher levels of human resources in science and technology, which suggests that clusters are magnets for skilled talent and contribute to the development of regional innovation ecosystems. These environments are also more conducive to entrepreneurship and firm creation, as evidenced by the positive correlation with the birth of enterprises. This implies that clusters help build dynamic local economies where new firms are more likely to emerge and thrive.

In the area of **firm behaviour**, cluster organisations are closely linked with increased business R&D investment and the employment of ICT specialists, both of which are fundamental for enhancing firms' innovation capacities and digital readiness. These results indicate that clusters do not just passively reflect the strength of their member firms but actively contribute to improving their performance by facilitating knowledge transfer, cooperation, and access to specialised services and infrastructure.

Under the dimension of **innovation potential**, a particularly notable result is the positive correlation between cluster presence and patenting activity, including PCT patents per capita and digital patents, which are important proxies for technological advancement and international competitiveness. The results also show some degree of correlation with green patents, suggesting that clusters may increasingly support the development of sustainable technologies, although this relationship is still emerging.

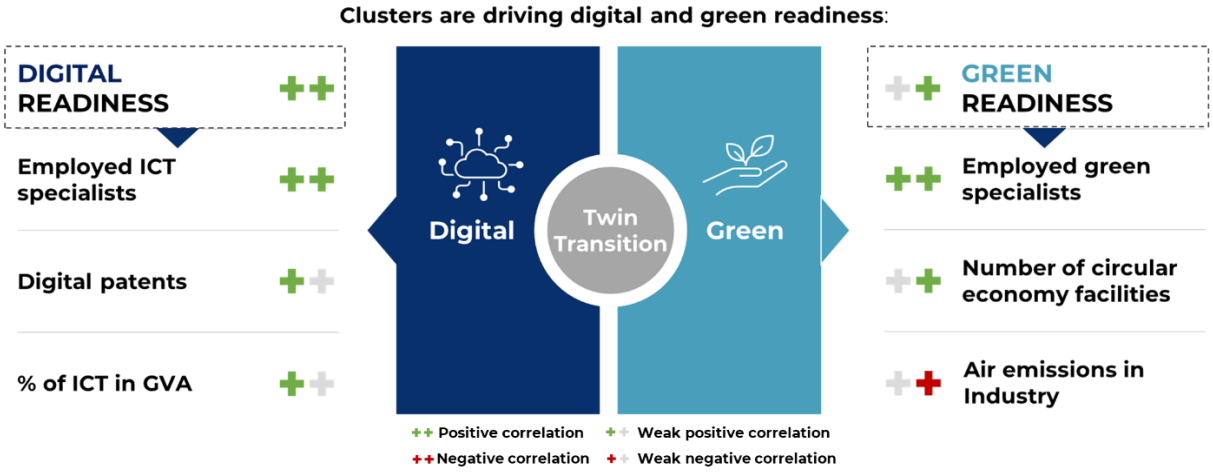
Concerning **economic returns**, the presence of clusters is positively associated with key performance indicators such as GDP per capita, employment rate, labour productivity, and employment in knowledge-intensive sectors. These macro-level outcomes underscore the broader economic benefits of strong cluster ecosystems, which are able to leverage regional assets, support structural transformation, and contribute to long-term growth.

These correlations imply that clusters not only support economic growth but also enhance resilience and adaptability through innovation and entrepreneurship. Moreover, the Cluster Panorama highlights the influence

of clusters in creating enabling environments for enterprise formation and knowledge exchange, which are foundational for long-term competitiveness.

Cluster organisations are not only engines of economic competitiveness and innovation, they are also emerging as **key enablers of the twin transition**, which encompasses both digital and green transformation processes. Recent findings from the European Cluster Panorama Report underline the significant positive link between cluster presence and many factors associated with the green and digital transition (see Figure 5).

Figure 5: Relationship of cluster organisations and digital and green readiness, correlation results



Source: ECCP (2025). Own elaboration based on European Cluster Panorama Report 2024. Note: The symbols in the table indicate Pearson correlation coefficients that are significant at 95% level. Positive/negative Correlations include coefficients >=0.3, weak correlations include coefficients >=0.1. Green fields indicate a positive relationship and red a negative relationship.

With respect to the **green transition**, the analysis shows that the presence of cluster organisations is positively correlated with green readiness indicators, indicating that regions with a higher number of clusters tend to be better prepared for adopting environmentally sustainable practices. This implies that clusters may facilitate the green transition by supporting eco-innovation, promoting sustainable production models, and mobilising relevant actors across value chains. Interestingly, a positive correlation is also observed between cluster presence and air emissions in industry, suggesting that clusters are often located in more industrialised regions, where emissions are naturally higher due to economic activity. This underlines the importance of involving clusters in decarbonisation strategies, given their influence over industrial ecosystems. Rather than being seen as part of the problem, clusters can be leveraged as platforms for change, helping industries within their networks to implement cleaner technologies and reduce their environmental footprint.

Regarding the **digital transition**, cluster organisations are strongly associated with higher performance indicators such as the share of ICT in gross value added, the employment of ICT specialists, and the number of digital patents. These relationships underscore the critical role of clusters in enabling the diffusion of digital technologies across regional economies. Furthermore, regions with high cluster intensity tend to demonstrate greater digital readiness, as measured by comprehensive indicators including connectivity, digital skills, and ICT usage in firms. This suggests that clusters not only support the digital upgrade of existing industries but also help foster new digital business models through cooperation with research institutions, digital innovation hubs, and testing environments. Importantly, cluster organisations are among the few regional intermediaries that can simultaneously drive firm-level digitalisation and contribute to the broader transformation of industrial ecosystems.

Furthermore, cluster organisations play an **important role in facilitating technology transfer** by fostering collaboration between businesses, research institutions, and innovation actors, while also supporting cross-border cooperation and participation in EU programmes. This is further outlined in Box 2.

Box 2: How cluster organisations facilitate technology transfer

As Europe sees itself in a race to gain competitiveness in the technologies of the future, it is not only about innovation capacity at the technological frontier, but also about **diffusion capacity** in the broader economy.[58] Cluster organisations provide the institutional infrastructure to foster the collaboration between small and large businesses, research organisations and academia, and innovation support actors in enabling **technology transfer** for **broad application and commercialisation**.[59] As analysed in the ECCP Panorama Report 2024, EU cluster organisations facilitate innovation diffusion and technology transfer through networking activities including events and fairs, brokering collaboration between companies and innovation labs and research institutions and providing information material, consultancy services and trainings on topics such as funding programmes, IP management and business models – and not least by raising awareness.[60] Finally, technology transfer is nothing that is confined to the region but **cross-border cooperation and investment linkages** are crucial[61] – something that cluster organisations are supporting actively by raising regional industries' visibility and by facilitating or even directly managing participation in EU programmes like the Interregional Innovation Investment (I3) instrument.[62]

Source: ECCP (2025).

[58] Ding (2024).
[59] As recently discussed in the ECCP's EU Cluster Talk 'From Research to Revenue: Facilitating Technology Transfer through Clusters'. Available online: https://www.clustercollaboration.eu/content/eu-clusters-talk-research-revenue-facilitating-technology-transfer-through (last access 15.08.2025).
[60] ECCP (2024).
[61] Crescenzi & Ganau (2025).
[62] The I3 instrument supports collaboration projects between participants from different EU regions and countries for close-to-market innovation, scale-up and commercialisation. For more information, see https://eismea.ec.europa.eu/programmes/interregional-innovation-investments-i3-instrument_en (last access 15.08.2025).

03

Cross-border cooperation the involvement of clusters from Western Finland in European networks and support initiatives

EUROPEAN CLUSTER COLLABORATION PLATFORM

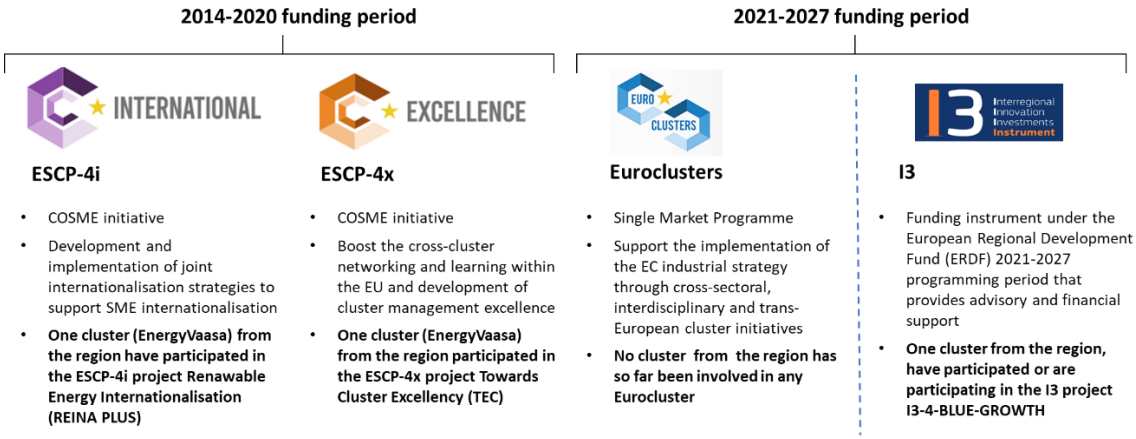
Strengthening the European economy through collaboration

3. Cross-border cooperation and the involvement of clusters from Western Finland in European networks and support initiatives

Findings from the Evaluation Study of and Potential Follow-Up to Cluster Initiatives under COSME, H2020 and FPI of the European Commission (2021) show that **cross-border cooperation is perceived by innovation stakeholders as a highly relevant activity for clusters to support sustainable growth and resilience-building of their SME members**.[64]

The chapter is structured around the main EU-level support initiatives in which clusters from Western Finland and Ostrobothnia are involved. It first shows participation in the **European Strategic Cluster Partnerships (ESCP)** under COSME during the 2014–2020 funding period. It then turns to more recent initiatives under the 2021–2027 period, notably the **Euroclusters programme** and the **Interregional Innovation Investments (I3) instrument** (see Figure 6). Finally, the chapter highlights the role of clusters from Ostrobothnia and Western Finland in **INTERREG**, with a particular focus on their engagement in the INTERREG Aurora programme.

Figure 6: Overview of selected EU support initiatives that involve cluster organisations from Western Finland



Source: ECCP (2025). Own elaboration based on the different project databases.

Involvement of cluster organisations from Western Finland and Ostrobothnia in cluster partnerships

The European Strategic Cluster Partnership (ESCP), funded under the EU Programme for the Competitiveness of Enterprises and Small and Medium-sized Enterprises (COSME), is a relevant EU support initiative to increase cross-border cooperation of EU cluster organisations and other intermediary organisations. Through the ESCP initiative, partnerships were established between clusters and intermediary organisations from EU Member States and associated countries. Those partnerships focused on two different thematic areas, which were internationalisation (ESCP for Going International)[65] and cluster excellence (ESCP for Excellence)[66], out of which

[64] Prognos et al. (2021).
[65] For more information on the ESCP-4i, see: https://www.clustercollaboration.eu/eu-cluster-partnerships/escp-4i (last access 29.08.2025).
[66] For more information on the ESCP-4x, see: https://www.clustercollaboration.eu/eu-cluster-partnerships/escp-4x (last access 29.08.2025).

the ESCP for Going International was still running throughout 2024[67] and the ESCP for Excellence[68] already ended in December 2023.[69]

Among the seven ESCP projects with Finnish beneficiaries, two are based in Western Finland. These include one European Strategic Cluster Partnership for Going International (ESCP-4i) project and one European Strategic Cluster Partnership for Excellence (ESCP-4x) project. In both cases, the Technology Centre Merinova from Vaasa, representing the EnergyVaasa cluster, is involved. The two projects are outlined in more detail below:

- **The REINA PLUS project (Renewable Energy Internationalisation)**, running from 2016 to 2018, was a European Strategic Cluster Partnership designed to strengthen the internationalisation of SMEs in the renewable energy sector.[70] Led by the Basque Energy Cluster, with partners from Austria, Portugal and Finland (including the EnergyVaasa cluster from Ostrobothnia), it supported SME integration into global value chains and entry into high-potential markets such as Mexico, Brazil and Chile. During its implementation, REINA PLUS organised 13 business missions to six international markets, involving 118 European companies and generating more than 90 business opportunities. These activities resulted in 30 cooperation agreements with local stakeholders and 22 direct agreements between European SMEs and third-country companies.[71]
- The **Towards Cluster Excellency (TCE)** project, carried out from 2016 to 2017 under the ESCP-4x initiative, aimed to strengthen the management practices of participating clusters and raise their level of excellence.[72] Coordinated by the Technology Centre Merinova, together with partners from Spain, Portugal and Sweden, the project focused on clusters active in energy technology and forest industries. Its objective was to enable clusters to deliver more professional and high-quality business support services to SMEs within their networks. In doing so, TCE enhanced cluster capacity, encouraged collaboration across sectors and borders, and positioned SMEs for greater competitiveness and sustainable growth in both European and global markets.

For the 2021–2027 funding period, the European Commission has launched the implementation of the EU Industrial Strategy. In this context, so-called Euroclusters[73] are funded under the Single Market Programme. The Eurocluster initiative[74] aims at supporting cross-sectoral, cross-regional European industry clusters cooperating with other economic stakeholders such as companies or business organisations, thus building upon the four previous strands of "European Cluster Partnerships" from the 2014-2020 funding period. From September 2022, 30 Euroclusters have been launched to implement the EU Industrial Strategy. Euroclusters are cross-sectoral, interdisciplinary and trans-European initiatives involving industry clusters and other actors such as research organisations and companies. To date, none of the existing Euroclusters include participation from clusters or other organisations in Western Finland.

In 2024, a **new call for collaborative cluster initiatives under the Euroclusters programme was launched**, targeting areas such as critical raw materials and net-zero technologies. Up to 16 projects will be funded, with at least eight focusing on these priority areas, for a duration of up to 36 months. The initiative aims to expand

[67] For more information, see: https://clustercollaboration.eu/eu-cluster-partnerships/escp-4i/fourth-generation (last access 29.08.2025).
[68] https://clustercollaboration.eu/eu-cluster-partnerships/escp-4x (last access 29.08.2025).
[69] For more information on the European Cluster Partnerships, see: https://clustercollaboration.eu/eu-cluster-partnerships (last access 29.08.2025).
[70] For more information, see https://profile.clustercollaboration.eu/profile/cluster-partnership-initiative/b33166cb-8f11-451c-96ac-2ce2dcbe8002 (last access 29.08.2025).
[71] For more information on the key achievements of this ESCP-4i project, see https://www.clustercollaboration.eu/sites/default/files/reina_plus_phase_2.pdf (last access 29.08.2025).
[72] For more information, see https://www.clustercollaboration.eu/eu-initiatives/tce-towards-cluster-excellency (last access 29.08.2025).
[73] For more information on the Euroclusters, see: https://eismea.ec.europa.eu/funding-opportunities/calls-proposals/joint-cluster-initiatives-euroclusters-europes-recovery_en (last access 29.08.2025).
[74] For more information on the Eurocluster initiative, see: https://www.clustercollaboration.eu/euroclusters (last access 19.08.2025).

Europe's access to global supply and value chains, thereby strengthening resilience and future competitiveness. The selected Euroclusters from this call will be announced shortly.

Involvement of cluster organisations from Western Finland and Ostrobothnia in the Interregional Innovation Investments (I3) initiative

The Interregional Innovation Investments (I3) Instrument is a funding initiative under the European Regional Development Fund (ERDF) for the 2021–2027 funding period. It provides financial and advisory support through the European Innovation Council and the SMEs Executive Agency (EISMEA). The aim is to support interregional innovation projects in their commercialisation and scaling-up phases, helping them overcome regulatory and market-related barriers to reach investment readiness. A total of €490 million is available for the 2021–2027 period, with up to €10 million per project, and a 70% EU co-financing rate applies to all beneficiaries and cost categories.[75]

In the region of Western Finland, innovation actors are involved in four I3 projects, with **one cluster participating in one project, namely the EnergyVaasa cluster from Ostrobothnia**, represented by the Technology Centre Merinova.

EnergyVaasa is involved in the project "**I3-4-BLUE-GROWTH: Unlocking the potential of Sustainable Blue Economy"** and participates as a partner alongside organisations from France, Hungary, Italy, the Netherlands, Portugal, Poland and Spain. The project aims to strengthen the blue economy innovation ecosystem by fostering knowledge exchange and developing capacities and investment opportunities in aquaculture, fisheries, renewable marine energy, and decarbonisation, thereby enhancing the blue economy capacities of less developed European regions. The consortium is led by the National Innovation Agency from Portugal.

Furthermore, there are I3 projects with participation from other innovation actors, mainly universities from Western Finland. These projects are briefly described below:

- The project **"enHancing dIgital and Green growtH in the Food processing industry via Interregional innoVation invEstments" (HIGHFIVE)** to foster digital and green innovation in the food processing industry, contributing to the Farm to Fork strategy. The participant from Western Finland is the Seinäjoki University of Applied Sciences, alongside partners from Belgium, France, Germany, Hungary, Latvia, the Netherlands, Slovenia and Spain.
- The project **"De-and Remanufacturing for Circular Economy Investments in the Composite Industry" (DeremCo)**. The project focuses on circular economy solutions for the reuse of composite materials in new high-value products. The participant from Western Finland is **Tampere University**, with additional participants from Austria, Belgium, Finland, Germany, Italy, Portugal, Slovenia and Spain.
- The project **"European cross regional innovation for Sports & Active Healthy Lifestyle" (INSHAPE)** aims to provide a healthy environment among EU regions trying to promote Sport and active life among European Citizens. The beneficiary from Western Finland is the **University of Jyväskylä**. Further participants in this project are located in Belgium, Finland, Hungary, the Netherlands and Spain.

[75] For more information, see: https://eismea.ec.europa.eu/programmes/interregional-innovation-investments-i3-instrument_en (last access 23.08.2025).

Involvement of cluster organisations from Western Finland and Ostrobothnia in INTERREG projects

INTERREG is the EU's flagship scheme for cooperation across borders, which assists local, regional and national governments in policy-making for regional development issues.[76] INTERREG is about cooperation between communities, regions and countries in the EU and covers the following topics: smarter Europe, greener Europe, more connected Europe, more social Europe, Europe closer to citizens and better regional governance. Public institutions and private non-profit organisations from all 27 EU member states, plus Norway and Switzerland, are eligible to participate in the programme, which is co-funded by the European Union and has a budget of €379 million from the European Regional Development Fund (ERDF) for the 2021–2027 period. INTERREG has multiple subprogrammes, which are divided into three types of programmes: cross-border, transnational and interregional.

From Western Finland, the cluster EnergyVaasa from Ostrobothnia, represented by the Technology Centre Merinova, participates in **two projects under the INTERREG Aurora programme**. This programme promotes cross-border cooperation between Northern Finland, Sweden and Norway, with a focus on competitiveness, sustainability, digitalisation and the green transition. The two projects are outlined in more detail below.

The **OFFwind** project running from 2023 until October 2025, aims at increasing the uptake of offshore wind energy in the Aurora area by addressing challenges linked to arctic conditions.[77] Its focus is on the offshore areas of the Gulf of Bothnia and the Norwegian Sea outside Northern Norway, which offer significant potential for wind parks but face obstacles such as ice and severe weather. To address these issues, the project develops and shares methods and models to reduce the impact of harsh environmental conditions. The main target groups are public and private actors, who benefit from knowledge on arctic conditions across the planning, development, operation and maintenance phases of offshore wind farms.

The **Bothnia Green Energy** project runs from 2023 until the end of 2025 and supports cross-border cooperation between Finland and Sweden.[78] Its objective is to accelerate innovation and stimulate investments in sustainable energy solutions by creating new networks and ecosystems around the region's energy companies. Project partners come from both Finland and Sweden, bringing together regional development companies, municipalities, energy providers and innovation actors. From Ostrobothnia, the partners include Herrfors, Vaasan Sähkö and Technology Centre Merinova .

[76] For more information on INTERREG see: https://www.interregeurope.eu/ (last access 26.08.2025).
[77] Technology Centre Merinova (2022): OFFWIND. Available online: https://www.merinova.fi/en/projects/offwind/ (last access 26.08.2025).
[78] For more information on this project, see https://www.kvarken.org/en/project/bothnia-green-energy/ (see 29.08.2025).

04

The role of clusters in Ostrobothnia's Smart Specialisation Strategy

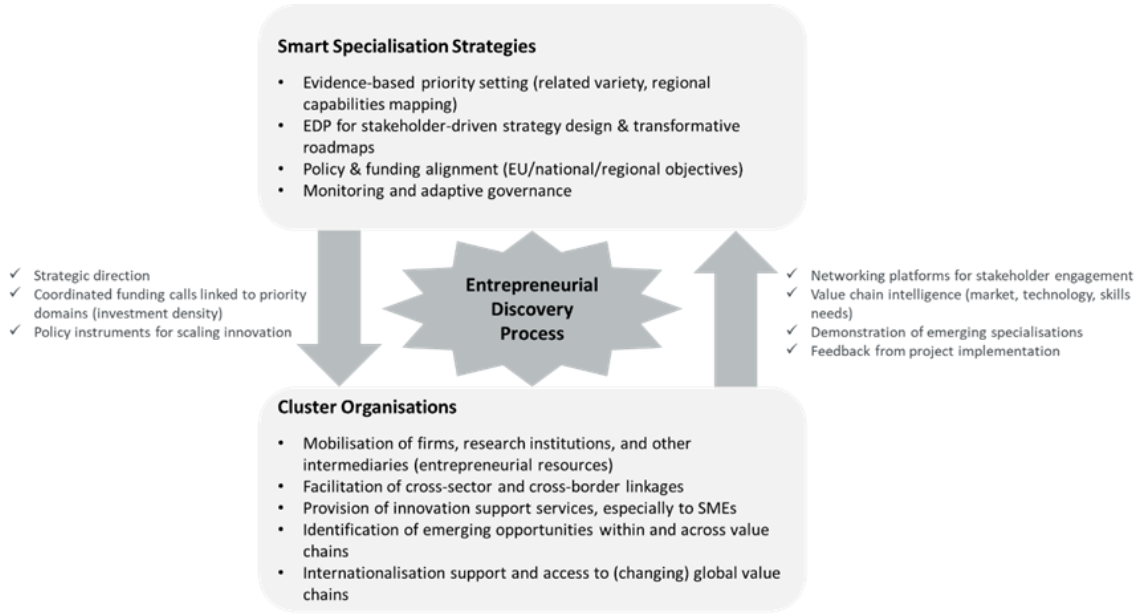
EUROPEAN CLUSTER COLLABORATION PLATFORM

Strengthening the European economy through collaboration

4. The role of clusters in Ostrobothnia's Smart Specialisation Strategy

Smart Specialisation is a strategic approach developed by the European Commission that requires regions to identify and focus on their unique strengths and capabilities to foster innovation-driven economic growth. The concept of clusters and Smart Specialisation Strategies (S3) are closely related and in close interaction, as the promotion of economic growth and competitiveness through regional proximity are key elements in both concepts.[79] The interplay between S3 and cluster organisations can be understood as a **mutually reinforcing relationship** in which each side plays a distinct but complementary role in driving regional innovation, as shown in Figure 7. This includes evidence-based priority setting, informed by analyses of related variety and regional capabilities and the Entrepreneurial Discovery Process (EDP) as a participatory mechanism for designing transformative roadmaps. S3 also ensures policy and funding alignment across EU, national, and regional levels, and embeds monitoring and adaptive governance to adjust priorities over time.

Figure 7: Interaction of clusters and Smart Specialisation



Source: Prognos (2025).

Cluster organisations, on the other hand, can serve as the operational arm of this framework. They mobilise firms, research institutions, and other intermediaries to bring entrepreneurial resources into play; facilitate cross-sector and cross-border linkages and provide targeted innovation support services, particularly to SMEs. Clusters identify emerging opportunities within and across value chains, while also helping their members to internationalise and access changing global value chains.

The **Entrepreneurial Discovery Process** sits at the centre of this interaction, acting as a bridge between strategy and implementation. It enables knowledge exchange and joint priority setting by connecting the top-down strategic direction of S3 with the bottom-up market and technology intelligence gathered by cluster

[79] European Commission (2013); OECD (2016); Keller et al. (2019).

organisations. The entrepreneurial discovery is an interactive and inclusive process in which the relevant actors identify new and potential activities and inform the government. The government assesses this information and empowers those actors most capable of realising the potential.[80] In practice, S3 offers strategic direction, coordinated funding calls linked to priority domains, and policy instruments for scaling innovation. In return, **cluster organisations feed back insights from project implementation, demonstrate emerging specialisations, and provide value chain intelligence** – covering market trends, technological developments and skill needs, which help refine S3 priorities.

By combining the strategic orientation of S3 with the implementation capacity of cluster organisations, this interplay ensures that **innovation policies are both targeted to regional strengths and responsive to evolving opportunities**. Box 3 in the Annex provides some good practices of cluster involvement in S3 from other European regions and especially in the Entrepreneurial Discovery Process.

Against this background, this chapter examines the Smart Specialisation Strategy (S3) for Ostrobothnia and the role of cluster organisations in supporting and advancing its priorities. In Finland, S3s are designed at a granular regional level (NUTS 3). As a result, Western Finland comprises four separate specialisation strategies, one for each sub-region. In line with the focus of the event, the following section looks more closely at the strategy for Ostrobothnia, as set out in the **Strategy for Innovation and Growth of Ostrobothnia 2022–2025**. The Strategy of Ostrobothnia was developed by the Regional Council of Ostrobothnia, reflecting the region's long-standing focus on innovation-driven growth, and identifies four priority areas. These priority areas encompass Advanced production methods and digital solutions, energy technology and system level solutions for renewable energy as well as circular and carbon-neutral economy (see Figure 8).[81]

Figure 8: Priority areas of the S3 2021–2027 of Ostrobothnia

Source: Regional Council of Ostrobothnia (2025): Strategy for Innovation and Growth of Ostrobothnia 2022–2025.

[80] See https://ec.europa.eu/regional_policy/policy/communities-and-networks/s3-community-of-practice/entrepreneurial_discovery_en (last access 15.08.2025).
[81] Regional Council of Ostrobothnia (2025).

A closer examination of the different priority areas provides a clearer understanding of the objectives pursued by the Ostrobothnian Regional Council through its Smart Specialisation Strategy:

- **Advanced production methods:** This priority focuses on enhancing Ostrobothnia's productivity and renewal of companies through increased knowledge of how to apply robotics, 3D-printing, augmented reality and artificial intelligence.
- **Digital solutions:** This priority seeks to create new business opportunities in the region and strengthen the companies' development of intelligent processes through increased knowledge about how to apply IoT, big data, advanced analytics, and artificial intelligence.
- **Energy technology and system solutions for renewable energy production:** This priority aims to strengthen the companies' development of system solutions for renewable energy production through increased knowledge about energy storage, smart grids, grid flexibility**.**
- **Circular and carbon neutral economy:** This priority promotes the acceleration of companies' transition to reduced carbon footprint and the region's role as a forerunner within circular economy through increased knowledge about circular solutions, renewable fuels, and new transportation solutions.

Cluster organisations are recognised as key actors in the implementation of Ostrobothnia's Smart Specialisation Strategy, as they bring together companies, research institutions, and public actors into dynamic ecosystems that drive innovation. Their role goes beyond traditional networking, because they provide structured platforms for knowledge transfer, collaborative R&D, and the scaling-up of new technologies across value chains. In Ostrobothnia, clusters are particularly important because of the region's strong industrial base in energy technology, marine industry, and digitalisation, where cooperation between large global firms, highly specialised SMEs, and universities has produced internationally competitive solutions. By facilitating joint projects, testbeds, and pilot investments, cluster organisations help align innovation activities with regional strengths while also opening pathways to European and global markets. They play a central role in advancing cross-sectoral innovation — for example, linking bioeconomy with energy solutions or applying digital solutions to marine technologies — thereby creating new growth opportunities[82]. Moreover, cluster organisations actively participate in the Entrepreneurial Discovery Process (EDP) and in S3 thematic platforms, ensuring that Ostrobothnia's priorities are continuously refined and embedded in wider European value chains.

A concrete example of this is **Ostrobothnia's active involvement in several S3 thematic partnerships**. For example, in the Industrial Modernisation platform, Ostrobothnia engages in the **Hydrogen Valleys S3 Partnership.** Furthermore, Ostrobothnia plays a leading role in the **BlueXChange partnership** under the Sustainable Blue Economy platform, which focuses on innovative and sustainable solutions for marine industries and coastal economies,. Through these partnerships, the region strengthens its position in European value chains, gains access to shared knowledge and testbeds, and co-develops innovation projects with other EU regions, thereby reinforcing the implementation of its S3 and supporting Europe's green and digital transition.

[82] Regional Council of Ostrobothnia (2025): Strategy for Innovation and Growth of Ostrobothnia 2022–2025.

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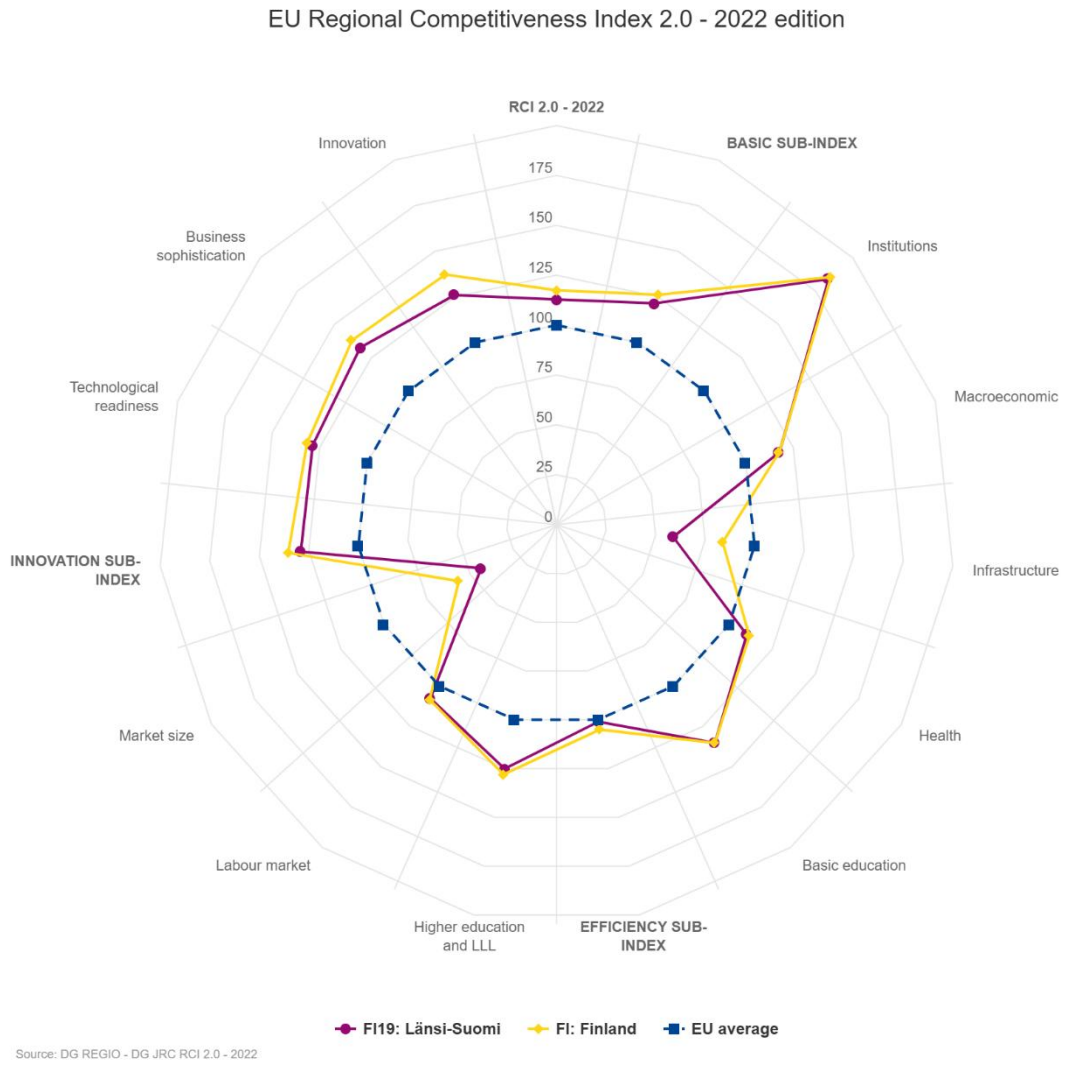
Annex

Regional Competitiveness Level in Western Finland

Figure 9: Performance of Western Finland in the 2022 Regional Competitiveness Index



Source: European Commission (2022): EU Regional Competitiveness Index 2.0 – 2022 edition.

List of cluster organisations in Western Finland

Table 1: Overview of cluster organisations in Western Finland registered on the ECCP and their addressed EU industrial ecosystems

No.	Cluster organisation (English name)	City, Region (NUTS 2)	Assigned Industrial Ecosystem	Website
1	DIMECC	Tampere, Pirkanmaa	Digital	http://www.dimecc.com
2	EnergyVaasa Cluster, operated by Technology Centre Merinova	Vaasa, Ostrobothnia	Energy-Renewables	http://www.merinova.fi
3	Robocoast Cluster	Pori, Satakunta	Digital	https://robocoast.eu/
4	Tampere Imaging Ecosystem	Tampere, Pirkanmaa	Mobility-Transport-Automotive	https://businesstampere.com
5	Tampere Region Safety and Security Cluster	Tampere, Pirkanmaa	Aerospace & Defence, Digital, Electronics	https://safetyandsecuritycluster.com
6	The Food Province of Finland Cluster	Seinäjoki, South Ostrobothnia	Agri-food	https://ruokaprovinssi.fi/cluster/

Source: ECCP (2025), based on the Mapping Tool (retrieved on 25.08.2025) and information from the cluster organisation's website.

Box 3: Good practices of cluster involvement in S3 from selected European regions

Czechia – Strategic Integration of Clusters in Czechia's Smart Specialisation

In Czechia, cluster organisations are deeply integrated into the Smart Specialisation Strategy (S3), contributing across a range of priority areas. They are actively involved in areas, such as "Advanced machinery and technologies for globally competitive industry", "Healthcare and advanced medicine", and "Sustainable agriculture and environmental sectors." Clusters are expected to continue aligning with these priority areas in the future. In addition, Czech cluster organisations demonstrate strong competencies in cross-cutting domains such as innovation, internationalisation, and the twin transition.

Skåne, Sweden – Board of cluster organisations:

In Skåne, the innovation strategy is part of Skåne's Regional Development Strategy (The Open Skåne 2030) and was developed by the Research and Innovation Council of Skåne. The Research and Innovation Council of Skåne is a forum of collaboration composed of a variety of actors from the public, private and the academic sectors. Cluster organisations are represented in this Research and Innovation Council through the board of cluster organisations.

Walloon Region, Belgium – Coordination cells & Strategic Innovation Initiatives:

In the Walloon Region, cluster organisations are actively involved in the Smart Specialisation Strategy (S3) 2021–2027 through their participation in coordination cells for each of the four priority areas. These coordination cells, which include both regional administration and cluster organisations, are responsible for monitoring the development of their respective priority areas. Furthermore, Strategic Innovation Initiatives, which are cross-sector consortia aiming to achieve S3 objectives through a set of coherent projects covering the entire innovation chain, play a key role in the region's innovation framework. Walloon cluster organisations have supported the emergence and structuring of these initiatives and continue to assist in strategy development and ecosystem building to enhance cross-sector collaboration and innovation.

Source: ECCP (2025).