European Commission

Summary Report on lessons learnt from fostering modern Cluster Policy in regions in industrial transition

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1. Introduction

The European Observatory for Clusters and Industrial Change (#EOCIC) is an initiative of the European Commission's Internal Market, Industry, Entrepreneurship and SMEs Directorate-General. The Observatory provides a single access point for statistical information, analysis and mapping of clusters and cluster policy in Europe, aimed at European, national, regional and local policy-makers, as well as cluster managers and representatives of SME intermediaries.

The customised advice on modern cluster policy in support of industrial modernisation provided to the 10 pilots[1] in industrial transition has been funded by DG GROW as part of the (EOCIC). The regions were selected as a result of an open call for expression of interest, published and assessed by the Commission services. The Commission launched a first call for expression of interest on 29 September 2017 and, due to demand from regions, a second call was launched on 14 December 2017[2]. The 10 selected regions[3] that engaged in the process carried out by the EOCIC on reflecting about modern cluster policies are: Cantabria (Spain), Centre-Val de Loire (France), East & North Finland, Hauts-de-France, Lithuania, North-Middle Sweden, Piemonte (Italy), Saxony (Germany), Slovenia and Wallonia (Belgium).

The aim of the work being provided by the EOCIC to the 10 regions in industrial transition is to define a set of actions in the form of a comprehensive strategy to foster regional economic transformation, identify collaboration and funding opportunities and connect with other regions in regional and cluster partnerships. This pilot will help to test new approaches to industrial transition through clusters and cluster policy and provide the European Commission with evidence to strengthen post-2020 policies and programmes.

The work carried out by the EOCIC in the 10 regions consisted of two phases. In the first phase, assessment reports for each region were produced based on desk research, stakeholder interviews and study visits, summarising the key challenges of industrial modernisation and the potential policy directions. In the second phase, EOCIC has built on the results of the assessment reports to develop concrete policy proposals for each industrial transition region. Tailored and concrete recommendations, a detailed work plan and a roadmap to address the regional challenges were provided through the policy briefing reports.

The Joint Peer Review Meeting which took place on 4 April in Turin was an opportunity for the 10 pilot regions to exchange experiences, practices and lessons learnt. This report summarises the results of the work carried out by the EOCIC in the 10 regions, as well as the lessons learnt during the process.

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[1] Including 8 regions and the two countries: Slovenia and Lithuania, hereafter all referred to as pilot regions, and also the concerning: transformation, challenges, strategy, clusters, economic development and policies are hereafter often referred to as 'regional'.

[2] European Commission, *Pilot action: Regions in Industrial Transition*. Available at: https://ec.europa.eu/regional_policy/en/information/publications/factsheets/2018/pilot-action-regions-in-industrial-transition.

[3] 12 regions were selected in the beginning for the overall process concerning the project on pilot regions in industrial transition, from which 10 engaged in the process of analysing how to better use modern cluster policies with the supporting work carried out by the EOCIC.

2. Key characteristics of the pilot regions

While the 10 pilot regions in industrial transition share a number of attributes, they also differ significantly in terms of geographic and population size, economic diversification and specialisation, innovation and the development of cluster organisations (see Figure 1). Furthermore, there are notable differences *within* subregions. For example, in Cantabria both population and economic activities are concentrated in the coastal area. Similarly, East & North Finland and Hauts-de-France suffer from talent migration towards larger cities and close metropolitan areas.

In most regions, the dominant sectors are traditional industries, often rooted in historical regional strengths, such as machinery, food production and processing, metals, and pharmaceuticals. For example, forestry and mining in East & North Finland, cosmetics and pharmaceuticals in Centre-Val de Loire, automotive, energy and machine building in Saxony. These regions recognise the need for renewal and they look to their Smart Specialisation Strategies (S3) and other tools to strengthen their strongest and most promising sectors.

In other pilot regions, the economic decline of traditional sectors has already led to a significant shift in the economic make-up of the territory. For instance, in Wallonia, fabrication of rubber, plastic products, electrical equipment production, metallurgy and the pharmaceutical industry have increased in importance compared with the previously significant mining sector. In Centre-Val de Loire, the services sector has slightly increased in importance compared with traditional industrial sectors.

The pilot regions are strong and moderate innovators, according to the Regional Innovation Scoreboard.[4] In many areas, R&D and innovation are geared towards local strong sectors and supported by local educational institutions. In some regions, there are significant differences in the importance of private sector's contribution to RDI. For example, in Centre-Val de Loire and Piemonte, business R&D expenditure is high. In North Middle Sweden, the regional innovation system is built around different cluster initiatives and interaction with the regions' higher education institutions and innovation platforms. Similarly, Piemonte and Saxony have strong research frameworks, with four and three regional universities and multiple research centres. Within East & North Finland, there are significant differences between regions in terms of innovation, which is often geared towards sectors that are strong locally.

Cluster organisations play an important role in strengthening the existing economic make-up in some pilot regions, especially in industries that are already of regional importance. Cluster organisations in Hauts-de-France and Centre-Val de Loire are organised into Pôles de compétitivité and clusters supported by regional authorities. In Centre-Val de Loire, the older organisation is Cosmetic Valley (since 1994, with over 400 members), which is organised around one of the most important sectors in the region. In Hauts-de-France, the diversity of techno-scientific fields covered by the cluster organisations reveals the sectoral orientation of the region (e.g. textile industry, circular economy, nutrition and biotechnology). Cluster organisations in Piemonte were set up by the region a decade ago in the form of innovation hubs, with a mission centred on technology transfer and diffusion of innovation. In North Middle Sweden, there are several strong clusters (e.g. Paper Province, FindIT, Triple Steelix) and the region has a long cluster tradition.

In other pilot regions, cluster organisations are less developed. For example, cluster organisations in Cantabria are still in a developing stage and their services consist mainly of attending fairs and events, networking, and fostering synergies with potential partners. Finland has no national cluster strategy but

[4] Data is not available for the French regions, due to the regional reform, but the majority of Northern France is categorised as Strong Innovators.

the current national strategy for regional development calls for the development of "centres of competence" based on smart specialisation, which are very close to the cluster idea. All but one cluster organisation in East & North Finland are in Lapland (Arctic Smartness which comprises six clusters), with the remaining one in North Karelia (Joensuu Science Park).

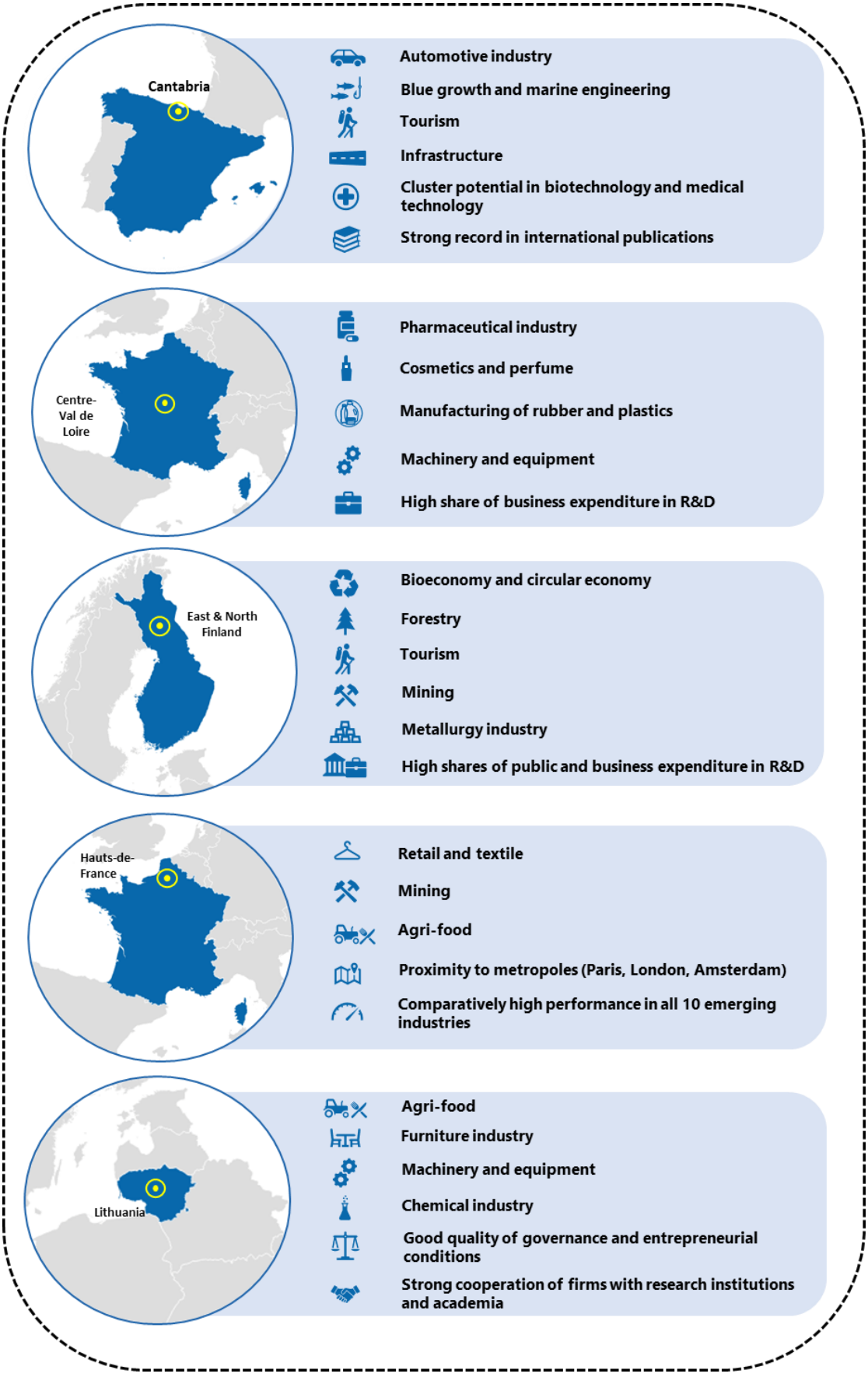
The key factors explaining the level of development of regional clusters[5] include, among others:

- the region's history of economic diversification (e.g. Saxony, Piemonte, Hauts-de-France, North Middle Sweden);
- the lack of cross-sectoral linkages (e.g. Centre-Val de Loire);
- the existence of administratively and economically distinct sub-regions (e.g. East & North Finland and Hauts-de-France); and
- the focus on regional policies and programmes to stimulate economic growth (e.g. North Middle Sweden, Lithuania).

Finally, it is important to note that the regions differ widely in their administrative structures. Two regions are member states, six have their own regional government (one of them following a recent merger), and two are collaborations of sub-regions without a central legislative regional authority. This puts the 10 pilot regions in very different positions in terms of strategy development, access to national funds and other resources, and policy coordination.

[5] In Slovenia, the S3 and SRIP cluster organisations are national and at implementation phase.

Figure 1: Overview of key regional assets in the 10 pilot regions



- Bioeconomy and circular economy
- ICT
- Renewable energy industries
- Metallurgy industry (steel)
- Long cluster tradition
- Good cooperation of innovative SMEs

- Automotive industry
- Aerospace and chemistry
- Machinery and equipment
- Agri-food
- Presence of European leading companies in key specialisation industries
- High share of business expenditure in R&D

- Automotive industry
- Machinery and equipment
- Microelectronics
- Metallurgy industry
- ICT
- High shares of public and SME expenditure in R&D

- Automotive industry
- Machinery and equipment
- Metallurgy industry
- Microelectronics
- Pharmaceutical industry
- Strong record in publications and high share of business expenditure in R&D

- Pharmaceutical industry
- Metallurgy industry
- Machinery and equipment
- Manufacturing (rubber and plastics)
- Good share of human resources in science and technology
- High share of business expenditure in R&D

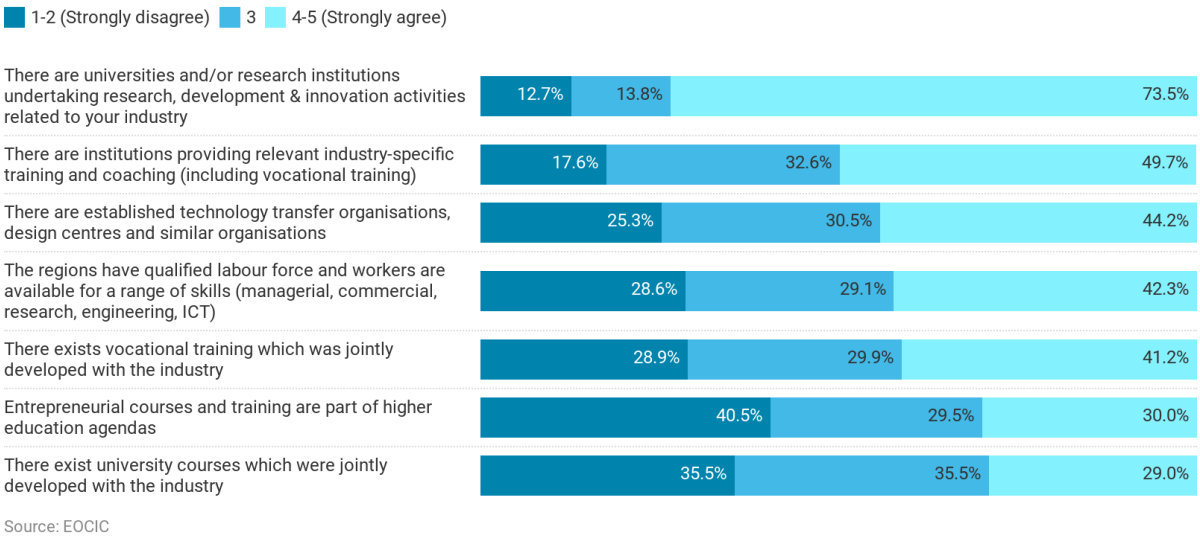
3. Joint challenges in the pilot regions

This chapter presents the most relevant challenges experienced by the pilot regions as a consequence of global megatrends and due to weaknesses in the regional ecosystem.

Demographic change and the availability of sufficient levels of talent and skills are challenges faced by most of the pilot regions. Demographic change is cited as a particularly challenging megatrend in seven regions (Centre-Val de Loire, East & North Finland, Hauts-de-France, Lithuania, North Middle Sweden, Piemonte, Saxony and Slovenia) though it is also of importance in the other regions. An **aging population and sub-replacement fertility rates** have an impact e.g. on labour and skills shortages, closure of enterprises, need for health services, and even intra-regional differences (e.g. urban vs. rural). This is particularly acute for regions in industrial transition where skills mismatches are worst and there is a need for upskilling. Another trend contributing to the problem particularly in East & North Finland and North Middle Sweden is urbanisation, which draws both people and companies to cities in and outside the regions, further reducing the population and human capital and leaving especially the more rural areas struggling.

This is confirmed in the EOCIC survey[6] where only 42% agreed that their region had a sufficiently qualified labour force with a range of available skills. The most consistent knowledge asset across the pilot regions are universities doing research, development and innovation activities that are related to industry (over 73% of respondents agree). The picture is more mixed when it comes to technology transfer (44% agree) and there is significant room for improvement in terms of co-developing educational curricula with industry (e.g. less than 30% agree that such joint curricula exist at university level). Looking across the different regions, there was remarkable similarity in responses. However, in North Middle Sweden, technology transfer was seen as an issue while this was less the case in Saxony. In Cantabria, Hauts-de-France and Slovenia, co-development of vocational training with industry was seen as weaker, while this was not the case in East & North Finland.

Figure 2 – Stakeholder views regarding the knowledge base and skills in the pilot regions



Source: EOCIC

[6] The EOCIC survey gathered approximatively 180 responses across the 10 pilot regions in industrial transition. Different types of stakeholders responded to the survey: companies, policy makers, cluster and business support organisations, investors and research institutes.

Specific challenges related to **access to talent/skills or skills mismatches**, were identified in Cantabria, Centre-Val de Loire, North Middle Sweden, Piemonte, Saxony and Lithuania. These challenges differ between regions; Centre-Val de Loire suffers from regional and sectoral attractivity problems and mismatch between skills and industrial needs.

In Cantabria, there is a lack of high-skilled personnel with different educational levels, including those with highly specialised training. In North Middle Sweden, the working-age population with full tertiary education is lower than the national average. The skills-related challenge in Piemonte is that the manufacturing sector is less attractive to young generations than the service sector, young engineers prefer to migrate to more dynamic and fast-growing regions or countries rather than work in regional SMEs, and the ongoing demographic transition is reinforcing the problem by reducing the number of young people entering the education system. Furthermore, the share of the population with tertiary education is lower than the national and EU average.

Particularly in Saxony, the "global war for talents" requires an improvement of employment terms, creation of reliable career options and framework conditions. Finally, an important challenge in Lithuania and Slovenia relates to cultivating cluster excellence, by strengthening cluster management with high-level specialists.

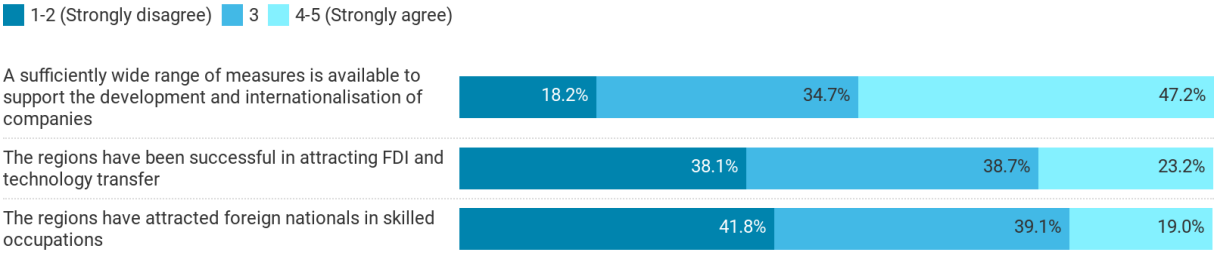
This was also one of the main topics discussed during the Joint Peer Review Meeting, particularly the need to **identify and develop key skills in the regions** (including both cluster management and workforce skills). Identification and development of skills in the regions is of relevance for all the regions. All the participants agreed that the skills thematic is relevant to all of the "table working group discussions" and should be considered as a mega trend as part of the Industrial Transition agenda. All regions have developed skills strategies in some shape or form. One of the major themes mentioned by many participants concerns the general feeling of a skills mismatch i.e. the unemployed do not have the skills to meet current job profile/vacancies and a general feeling of a lack of cooperation and connections between actors. Overall, clusters are only marginally involved in the skills agenda and need to link better to the public authorities and companies active in the field. Skills development policies are typically supported by ESF and with little support via ERDF. Some of the main issues raised by participants relevant to industrial transition challenges are:

- **Links to universities:** many participants note the important time lag between identifying business skills and training needs and the approval and implementation of new training courses to the needs of businesses;
- **Talent Attraction/Staff Retention/Brain Drain:** Many regions suffer from these phenomena, particularly those regions close to major national capitals (Paris/Hauts-de-France and Centre-Val de Loire and Madrid/Cantabria) or major regional capitals (Milan impacting on Piemonte and Lombardy). The different challenges faced by rural/remote (Finland/Sweden) was also highlighted and the need to attract labour often from overseas to meet business needs;
- **SMEs vs Large Companies:** Large companies are often able to put in place in-house and structured HR and Skills development programmes and are less in need of outside support. SMEs, with limited in-house skills and resources require outside interventions and support;
- **SME managers are part of the challenge:** A need to help SME managers develop HR strategies was identified as a priority. Generalist managers of smaller companies are often ill equipped to deal with recruitment, training and skills development activities and need outside help. Clusters can provide support and also inject other competences such as facilitation of innovation/technology take-up within SMEs thus impacting on the skills profile of HR recruitment.

Building regional SME capacity for internationalisation is a recurring challenge in most region with different drivers: lack of funding, weak entrepreneurial culture, lack of collaboration and outreach. Challenges related to securing sufficient funding are reported in five regions (East & North Finland, Lithuania, Piemonte, North Middle Sweden and Wallonia).

In the EOCIC survey, **less than half of the stakeholders consider that there is a sufficiently wide range of measures available** to support the development and internationalisation of companies (47% of respondents). Most regions do not agree that foreign nationals in skilled occupations have been attracted to the region and less than one quarter of stakeholders (23%) consider that their region has been successful in attracting FDI and technology transfer.

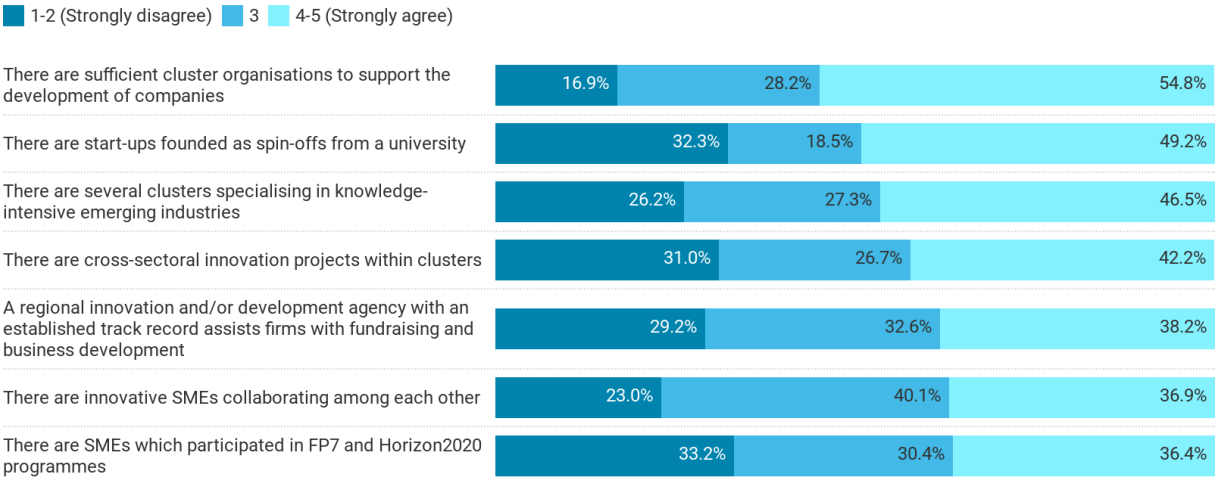
Figure 3 –Stakeholder views regarding SME internationalisation in the pilot regions



Source: EOCIC

Furthermore, only **around 54% of stakeholders consider that there are sufficient cluster organisations** to support the development of companies. While about half (49%) indicated that there are start-ups founded as spin-offs from universities, this differed significantly across regions (e.g. more positive in Wallonia than in Centre-Val de Loire, East & North Finland or Hauts-de-France). Furthermore, only about one in three of the pilot regions thought that regional innovative SMEs collaborate with one another including through participation in FP7 and Horizon2020 programmes (though the views were more positive in Saxony on this aspect).

Figure 4 –Stakeholder views regarding collaboration in the pilot regions



Source: EOCIC

The main reasons for this challenge include:

- lack of information and communication;
- complex and/or fragmented frameworks and bureaucracy;

- legal restrictions limiting cooperation;
- lack of venture capital or other funding instruments;
- insufficient coverage of different stages of enterprise life cycle; and
- concentration of investments and funding in the metropolitan areas.

For instance, five pilot regions reported challenges related to a weak entrepreneurial culture (Centre-Val de Loire, East & North Finland, North Middle Sweden, Piemonte and Wallonia). In East & North Finland, the challenges relate to the entrepreneurial discovery process, and in Piemonte the entrepreneurial ecosystem is considered less dynamic, particularly in comparison with other regions in Northern Italy.

Collaboration and outreach challenges were identified in six regions (Cantabria, Centre-Val de Loire, Lithuania, North Middle Sweden, Piemonte and Wallonia). In Cantabria, it was noted that a lack of business cooperation culture is reflected in the modest number of existing clusters and the fact that most of them are created by public initiatives rather than through bottom-up processes. Similarly, in Piemonte the low propensity to collaborate is considered limiting to the region's innovation potential and company growth. The limited outreach capacity of the regional cluster organisations is seen as an example of this low propensity to aggregate.

However, collaboration between firms and universities tends to work well within the framework of multi-annual research contract agreements with large firms. In Centre-Val de Loire, collaboration and internationalisation are weak according to the Regional Ecosystem Scoreboard. Collaboration between SMEs and academic/research institutions is limited, as is collaboration among innovative SMEs. In North Middle Sweden there is a need to improve cross-sectoral collaboration between clusters, especially in the context of coordinating the design of education with industry. Lithuania identifies problems both with intersectoral cooperation and international cooperation.

Collaboration of firms and universities was also discussed during the Joint Peer Review Meeting. Despite many differences between the 10 participating regions, consensus seems to be that there is a **need to build SME capacity for internationalisation through clusters**. The type of need and the role of clusters varies from region to region. More concretely, there is a need for international skills across all regions (both among the SMEs and the cluster management), a better understanding of the benefits of working together – both with in the region and with actors across the borders and skills to build up networks and consortia to foster cross-sectorial innovation.

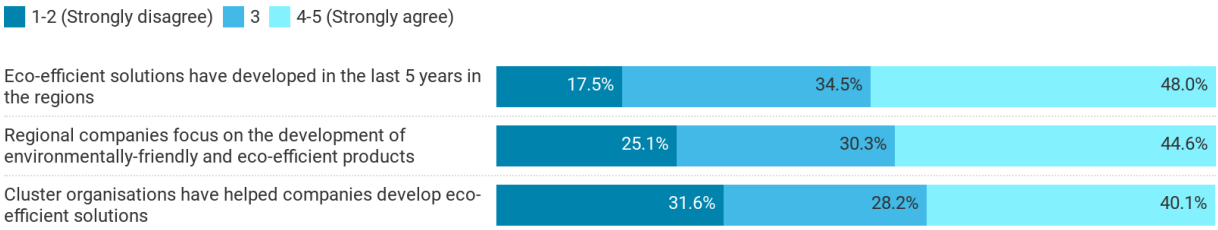
Building capacity of clusters to support the internationalisation of SMEs depends very much on the maturity of the cluster. Some clusters are born with an international scope, while for other clusters internationalisation is an add-on to existing services. The more advanced clusters are, the more likely it is that these have an international strategy. Furthermore, there seems to be quite different mechanisms to support the cluster internationalisation across the regions and some regions have quite advanced support (including grants to go abroad, support to write EU-applications, training of cluster staff etc).

Climate change, increasing environmental awareness and/or subsequent green and circular economy were also highlighted in eight regions (Centre-Val de Loire, East & North Finland, Hauts-de-France, North Middle Sweden, Saxony, Slovenia, Piemonte and Wallonia), in many cases as both a challenge and an opportunity.

In the EOCIC survey, **only 48% of respondents in the pilot regions agreed that solutions had been developed in their region in the last 5 years**, 45% of respondents thought companies in their region focused on the development of such solutions and only 41% saw any

contribution from regional clusters in this respect. It should however be noted that there were stark differences across the regions with Cantabria being most negative and East & North Finland being overwhelmingly positive. Despite these differences, the results show that there is significant potential in further developing cluster activities in this important area.

Figure 5 –Stakeholder views regarding the circular economy and eco-efficiency in the pilot regions



Source: EOCIC

Reduction of the ecological footprint is challenging for many sectors, and for the sectors involved in energy production will require a fundamental transformation. On the other hand, many regions highlight the potential for innovation, new business and new sources of raw material. There is potential for new roles in the value chain, also on an international scale, and with the increasing interest in nature, rural and natural areas also envision an increase in international interest. For example, East & North Finland observed that the Arctic region may benefit from some aspects of climate change and be able to use its special environmental conditions to conduct research e.g. on carbon storage and renewal energy sources for global benefit.

During the Joint Peer Review Meeting, participants discussed on **how to seize the opportunities offered by the circular economy** in their region. All participants agreed that the circular economy "Closing the loop[7]" approach is an opportunity to seize. There are several examples in the regions on how the circular economy topics are being tackled and deployed concretely (e.g. in S3, in economy sectors, in clusters focus areas). Yet, there is still a lack of understanding on what the circular economy concept might mean in the practice of regional policy makers. There is a need to identify and explain what it is meant by circular economy and to clarify:

- who has the lead;
- who are the targets and stakeholders involved;
- how the approach is put in place, which tools, measures and resources are being devoted;
- since when - until when should stakeholders act for circular economy;
- when are the results monitored.

The following aspects and steps which have been highlighted as ways to tackle, implement and boost circular economy processes in the regions:

- **Circular collaboration:** by enacting bottom-up and top-down collaboration between industry, academy, civil society, policy makers, specialised agencies and all relevant stakeholders;
- **Ownership**: making clear who has the lead and the goals to achieve, where the responsibilities lie, who monitors processes and outcomes;
- **Leading examples**: pilot activities are useful, each region can choose and start from one theme/sector, perhaps the leading and most performing one and show how circular economy can be implemented and have effects on other sectors also;

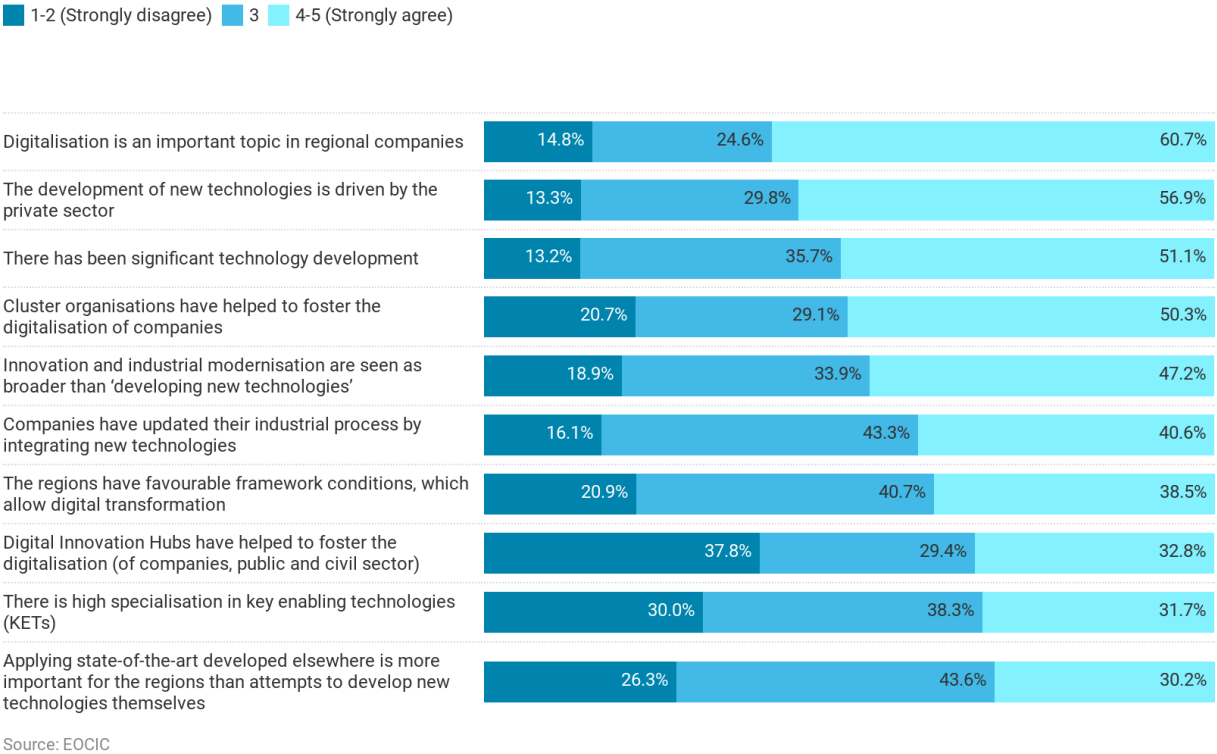
[7] Closing the loop refers to the necessary change from our current take-make-waste linear economy to a borrow-use-return circular economy (sometimes also referred to as the zero-waste or cradle-to-cradle economy).

- **Exploring potentials in applying the principles of circular economy:** tackling and possibly overcoming some of the challenges that the circularity of the processes presents, but also filling the gaps in knowledge and skills is another cross-potential among sectors and stakeholders;
- **Regulation and standardisation**: should be present at all level of competences, whether regional, national and European. Standardisation of procedures and their application should be monitored and any ethic issue arising from applying new processes should be carefully taken into consideration.

Digitalisation was referred to as an important trend in all ten pilot regions (Cantabria, East & North Finland, Hauts-de-France, Lithuania, Centre-Val de Loire, North Middle Sweden, Saxony, Slovenia, Piemonte and Wallonia), in many cases as both a challenge and an opportunity.

In the EOCIC survey, well **over half (60%) of respondents agreed that digitalisation is an important topic for companies**. While 57% thought this was primarily driven by the private sector, 50% also acknowledged the role of cluster organisations in fostering this. There is however a need to improve the way in which Digital Innovation Hubs contribute to digitalisation across the pilot regions (only 33% saw their impact here). Looking at differences across regions, Saxony is the only region where stakeholders thought the development of new technologies was mostly driven by the public rather than the private sector. Overall Cantabria was the most negative with regard to most aspects of digitalisation and technology.

Figure 6 –Stakeholder views regarding digitalisation and technology in the pilot regions



Source: EOCIC

Insufficient broadband coverage, lack of interest in and resources for digitalisation among SMEs, new (cyber) threats that need to be addressed, and new skills requirements were mentioned as specific challenges. But digitalisation is also seen as providing opportunities for innovation and enhanced participation, as well as boosting the economy and overall vitality of rural and sparsely

populated areas (e.g. through e-commerce and telecommuting). IT is closely linked to **new technologies**, which bring a combination of challenges related to adoption and skills requirements, and opportunities related to innovation and market opportunities. **Automation**, mentioned in Centre-Val de Loire, North Middle Sweden and Piemonte, also shares the same features, with risks to companies that cannot handle such change and workers who may find themselves competing with machines. In Cantabria, Centre-Val de Loire and Wallonia, the increasing customisation and personalisation of products and services is seen as a challenge due to the required resources and skills. At the same time, it is also an opportunity, as it has the potential to increase revenue for companies and clusters that are able to provide the demanded service.

Addressing the **challenges and opportunities of digitalisation** was one of the main topics discussed during the Joint Peer Review Meeting. The representatives of the regions agreed that the key problem is not the availability of digital infrastructure, but the adoption of digital innovations and working practices. However, in some cases, broadband coverage is an issue, particularly in the rural areas of the region (particularly in Piemonte and Cantabria). The factors behind the lack of adoption of technologies are various:

- SMEs simply do not understand the value of technology and/or do not see how technology can change their activities;
- SMEs do not have time to embrace changes led by technology and/or do not have time to carry out "R&D activity";
- SMEs do not have the right skills and expertise to exploit technologies.

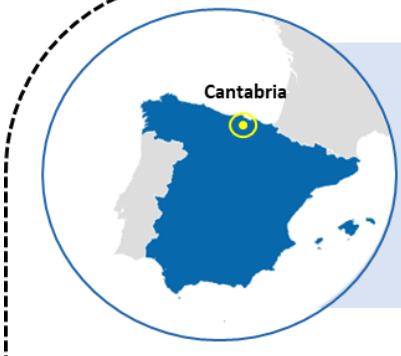
On how to tackle those problems and therefore, the lack of adoption of technologies, the regions seem to agree that there is a group of SMEs that fully embrace digitalisation, but the large majority still struggles. It was also clear that the micro-enterprises (less than 10 employees) are the ones less tuned to the adoption of digital technologies. When the bar of technological refinement was raised towards Industry 4.0 paradigm, the issue on adoption became even more relevant. The regions argued that the gap between different types of companies is growing as some companies are already well on the way to industry 4.0 while many other companies still have Excel as their most complex and most used IT solution.

Some regions also argued that this patchy adoption of digital technologies is a problem because it creates digital divide within the region and within the business system. The case of the agriculture sector was illustrative of this concern: the milk industry tends to be digitalised through milk robots and other tools, however, the farming activities that also serve the milk companies have not embraced digital technologies creating disconnection in the value chain.

Given that adoption was a key problem and that digital culture and skills were the main causes of it, the various groups debated ways of addressing the problem:

- **Clusters as the Digital Educator:** through in-house mentoring activities, specialised courses, running digital projects between an ICT SME and another SME and specific events (such as workshops, hackathons and so on);
- **ICT Cluster-Cluster Collaboration:** enabling relationships between an ICT Cluster and other clusters with the aim of enabling collaboration between SMEs from the ICT Cluster and other clusters. Ideally, the ICT cluster becomes the mentor and the digital educator of the other Clusters.

Figure 7 – Overview of key challenges in the pilot regions



- Limited collaboration among academia, industry and government
- Low level of development and growth of cluster organisations
- Limited cluster organisation management capabilities
- Lack of critical mass in regional priority sectors

- Lack of cross-sectoral linkages and activities
- Skills mismatch and problems to attract and retain talent
- Weak SME innovation
- Low levels of entrepreneurship

- Need to move to higher added value networks and value chains
- Insufficient outreach and access to networks for businesses due to a sub-optimal entrepreneurial discovery process
- Lack of access to research & innovation infrastructures
- Fragmented, sub-optimal funding and financing landscape

- Two recently merged regions with very different economic structures
- Lack of innovation in SMEs
- Skills gap in growing sectors
- Lack of skills in the labour force

- Need to improve productivity by moving to higher added value networks and global value chains
- Overcome low trust between stakeholders and lack of (cross-sectoral) co-operation between research and businesses
- Increase cluster management capacities and capabilities (human and financial resources)

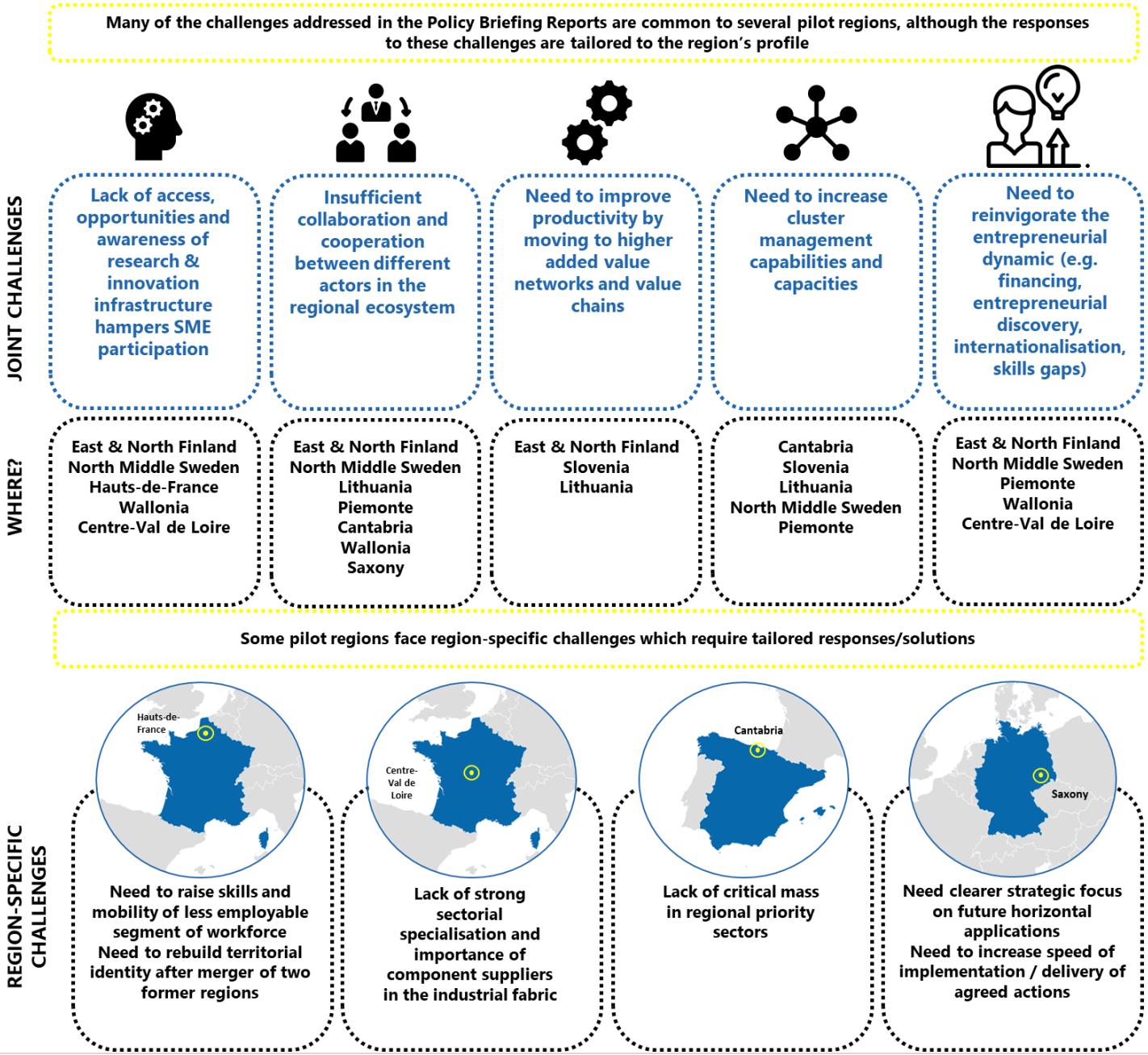
- Need to improve cross-sectoral collaboration between clusters
- Unavailability of talented experts
- Need to promote gender equality in the industry
- Low level of entrepreneurship and internationalisation
- Insufficient options for long-term funding
- Need to improve level of integration of the three-region innovation ecosystem

- Low entrepreneurial dynamics
- Low attractiveness of the region for talents and investments
- Fragmented productive system and insufficient collaboration
- Low share of innovators amongst SMEs

- Set a clearer strategic focus on future horizontal applications
- Increase the implementation speed of key measures by linking strategies and concrete implementation of measures

- Need to improve policy learning at the implementation phase
- Low development of skills, notably cluster management skills
- Need to promote productivity enhancing pilot and demonstration initiatives and infrastructures

- Lack of collaboration between businesses and competitiveness clusters and with other actors in the ecosystem
- Difficulty in scaling-up innovation
- Scepticism towards going international
- Skills gaps in growing sectors


Many of the challenges addressed in the Policy Briefing Reports are common to several pilot regions, although the responses to these challenges are tailored to the region's profile
JOINT CHALLENGES
Lack of access, opportunities and awareness of research & innovation infrastructure hampers SME participation
Insufficient collaboration and cooperation between different actors in the regional ecosystem
Need to improve productivity by moving to higher added value networks and value chains
Need to increase cluster management capabilities and capacities
Need to reinvigorate the entrepreneurial dynamic (e.g. financing, entrepreneurial discovery, internationalisation, skills gaps)
WHERE?
East & North Finland
North Middle Sweden
Hauts-de-France
Wallonia
Centre-Val de Loire
East & North Finland
North Middle Sweden
Lithuania
Piemonte
Cantabria
Wallonia
Saxony
East & North Finland
Slovenia
Lithuania
Cantabria
Slovenia
Lithuania
North Middle Sweden
Piemonte
East & North Finland
North Middle Sweden
Piemonte
Wallonia
Centre-Val de Loire
Some pilot regions face region-specific challenges which require tailored responses/solutions
REGION-SPECIFIC CHALLENGES
Hauts-de-France
Need to raise skills and mobility of less employable segment of workforce
Need to rebuild territorial identity after merger of two former regions
Centre-Val de Loire
Lack of strong sectorial specialisation and importance of component suppliers in the industrial fabric
Cantabria
Lack of critical mass in regional priority sectors
Saxony
Need clearer strategic focus on future horizontal applications
Need to increase speed of implementation / delivery of agreed actions

4. Measures to support industrial transition in the pilot regions

The EOCIC work in the demonstrator regions and the recommended measures is based on the idea that cluster (policy) plays a role in a **"managed industrial transition"** [8] through which the 10 pilot regions:

1. **Build** on their endogenous potential;
2. **Recognise** path dependencies and economic trade-offs; and
3. **Focus** on economic sustainability, strengthening cooperation and integration in global value chains and designing a set of complementary policies that reinforce one another

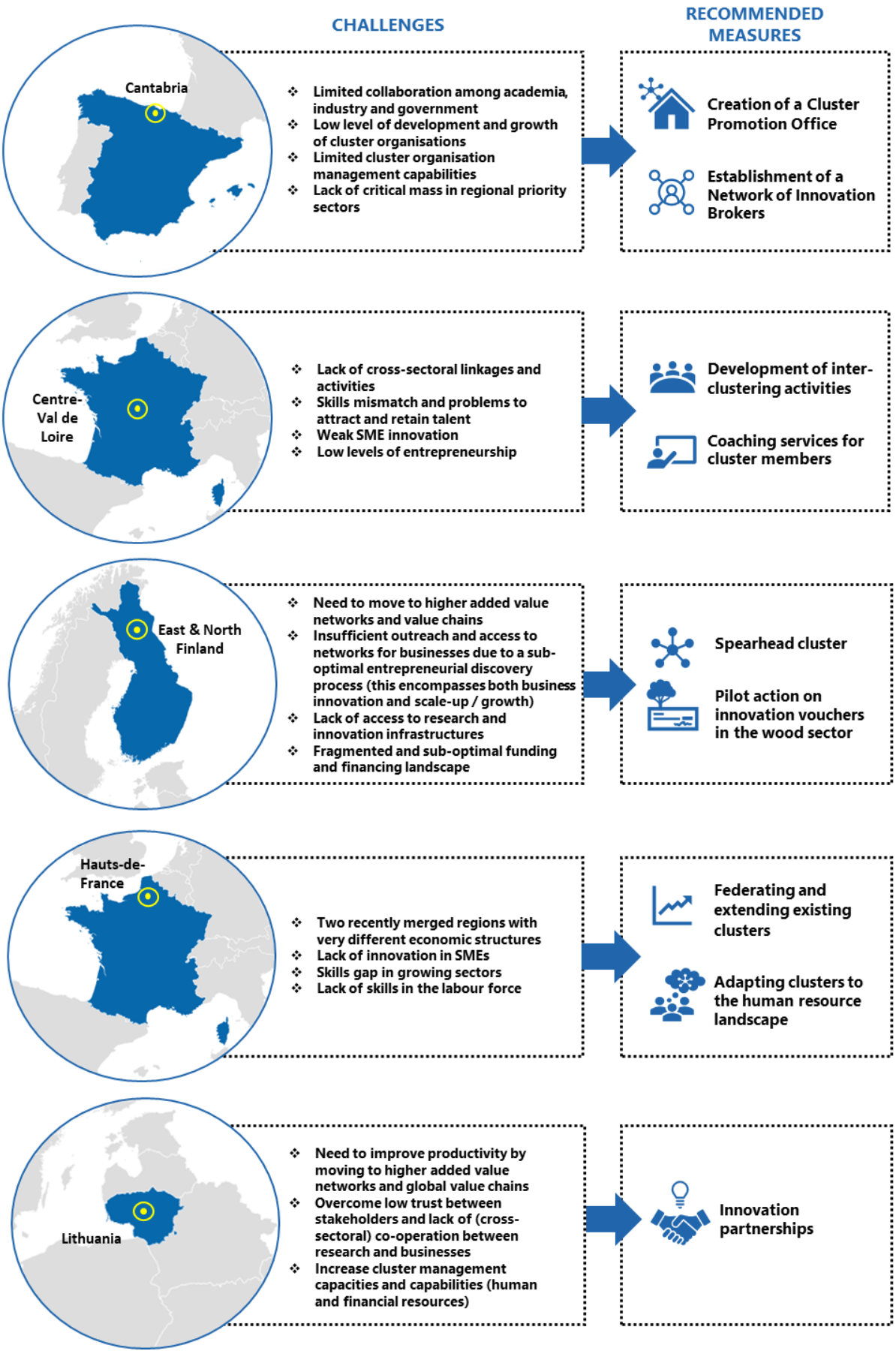
The EOCIC approach starts from the premise that incremental change is more likely (and more likely to be successful) than radical change and it stresses the importance of generating political consensus, support and leadership.

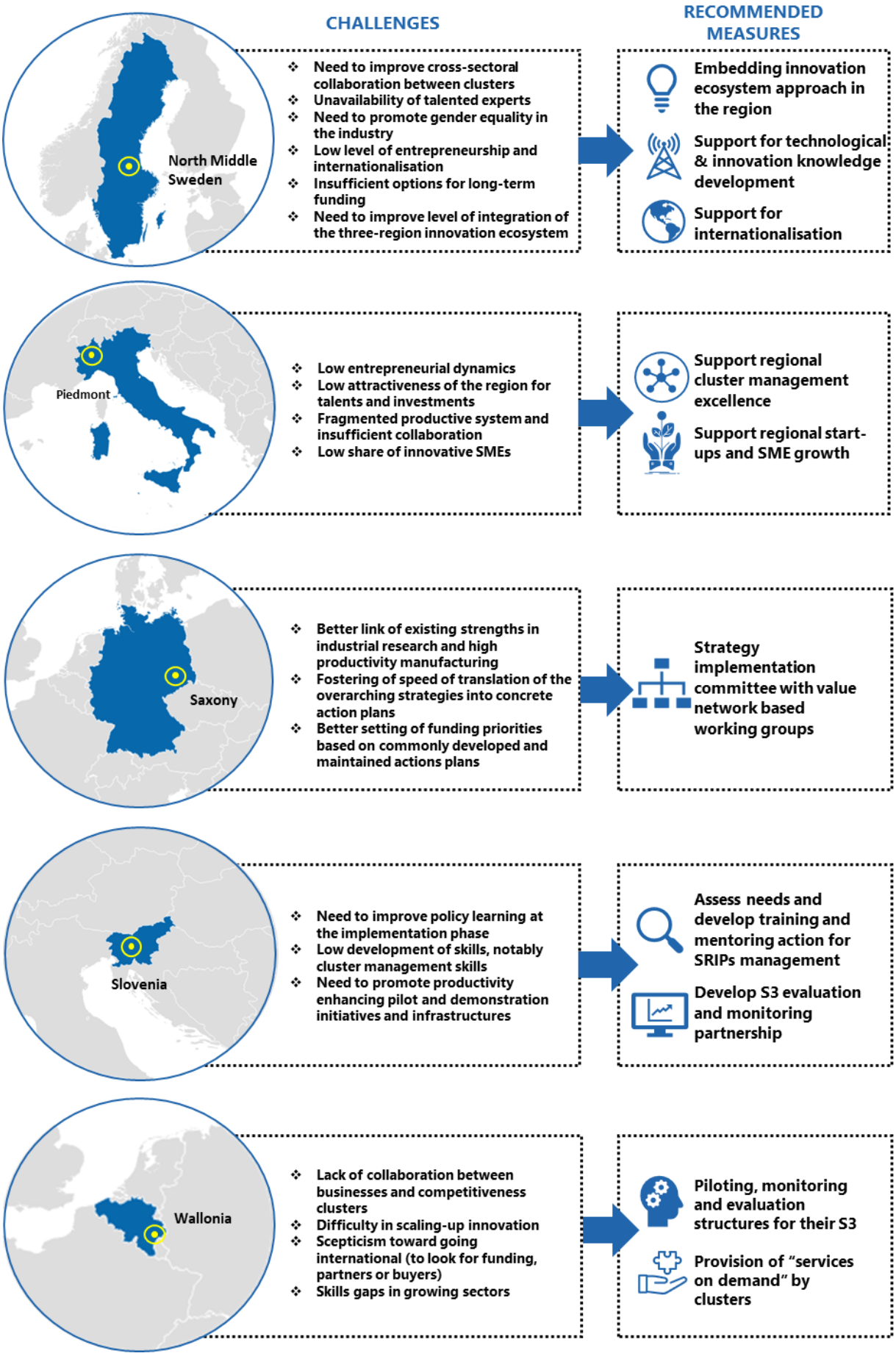
Clusters are seen as a rallying point for forming a broad consensus on a vision for the future and as a key vehicle for driving the regional industrial transition, gathering evidence of progress and generating lessons. They are a tool for policy experimentation, encouraging risk-taking to tackle specific challenges and to overcome common issues such as regional skills mismatches, obstacles to digitalisation, low international exposure or the need to plug into the opportunities offered by the circular economy.

In line with these ideas the measures suggested in the policy briefings are tailor**-made for the specific mix of challenges the regions face, the assets at their disposal and their administrative set up**. The table below provides a short overview of the proposed measures in the 10 pilot regions:

[8] EPC (2018). How do industrial transitions succeed? Transatlantic considerations on drivers for economic development. Available at: http://www.epc.eu/documents/uploads/pub_8924_industrial_transitions_succeed.pdf?doc_id=2090

Figure 8 – Matching challenges with proposed solutions




CHALLENGES
RECOMMENDED MEASURES
North Middle Sweden
Need to improve cross-sectoral collaboration between clusters
Unavailability of talented experts
Need to promote gender equality in the industry
Low level of entrepreneurship and internationalisation
Insufficient options for long-term funding
Need to improve level of integration of the three-region innovation ecosystem
Embedding innovation ecosystem approach in the region
Support for technological & innovation knowledge development
Support for internationalisation
Piedmont
Low entrepreneurial dynamics
Low attractiveness of the region for talents and investments
Fragmented productive system and insufficient collaboration
Low share of innovative SMEs
Support regional cluster management excellence
Support regional start-ups and SME growth
Saxony
Better link of existing strengths in industrial research and high productivity manufacturing
Fostering of speed of translation of the overarching strategies into concrete action plans
Better setting of funding priorities based on commonly developed and maintained actions plans
Strategy implementation committee with value network based working groups
Slovenia
Need to improve policy learning at the implementation phase
Low development of skills, notably cluster management skills
Need to promote productivity enhancing pilot and demonstration initiatives and infrastructures
Assess needs and develop training and mentoring action for SRIPs management
Develop S3 evaluation and monitoring partnership
Wallonia
Lack of collaboration between businesses and competitiveness clusters
Difficulty in scaling-up innovation
Scepticism toward going international (to look for funding, partners or buyers)
Skills gaps in growing sectors
Piloting, monitoring and evaluation structures for their S3
Provision of "services on demand" by clusters

Bringing these themes together leads to wider conclusions about how modern cluster policy can best support regional industrial transition. Broadly speaking, the recommended measures for the pilot regions can be arranged along two dimensions: **strategy and capacity building**.

The **strategy dimension** includes two types of measures: strategy development and strategy implementation.

- **Strategy development:** Many of the pilot regions are currently working on or have developed innovation or industrial strategies to set out their goals and identify the steps and partners needed to achieve them. Cluster policy is an important contributor to those strategies, because cluster organisations can be an efficient information collection and distribution medium, especially in sectors with a substantial number of SMEs. Examples for this include the Strategy "Assembly" (*Strategiewerkstatt)*[9] in Saxony which looks also at cluster policy (already completed), the suggested development of Spearhead clusters in East & North Finland, the creation of an innovation eco-system approach in North Middle Sweden. In Piemonte, there is a need to broaden the objectives of the cluster policies to better address the challenges of entrepreneurship, digitalisation, skills mismatch and internationalisation, but also to differentiate policy targets and instruments.
- **Strategy implementation:** Other suggested measures have the implementation of existing strategies as their main objective. Cluster organisations are used to identify and implement concrete actions to implement the strategies. By structuring discussions and work plans at the level of different value chains, cluster policy can make an important contribution to coordinating the actions of companies and policy makers in strategy implementation. Examples for such strategy implementation work are the innovation partnerships in Lithuania, the strategy implementation committee and its working groups in Saxony, services on demand in Wallonia, and the evaluation partnerships proposed in Slovenia.

The **capacity building** dimension on the other hand focuses on making clusters fit to fill their role in strategy implementation and also includes two types of measures: networks and skills.

- **Networks:** industrial modernisation requires a change of working practices and value chains and therefore a further development of existing networks and/or building of new networks. By helping to link cluster organisations to research organisations, or by inducing partnerships between cluster organisations in different sectors, the pilot regions can build networks for the future which can lead to new, innovative and competitive products. Examples for this type of measures include innovation partnerships in Lithuania, federated clusters in Hauts-de-France, spearhead clusters in East & North Finland, innovation and coordination actions in North Middle Sweden, inter-clustering activities in Centre-Val de Loire, the Network of Innovation Brokers in Cantabria or the "services on demand" by clusters in Wallonia.

- **Skills:** In addition to network building, companies and their cluster organisations also need to develop new skills or focus their activities on new activities such as training, internationalisation support or building and maintaining relationships with research partners. The measures suggested in the pilot regions aim to provide both resources and incentives for cluster

[9] The *Strategiewerkstatt* is a three-year open communication and consultation process that enables stakeholders (from the economic and scientific sectors, as well as from associations, networks and social partners) to participate in the process of developing an industry strategy for Saxony.

organisations to meet new skills requirements for themselves and to support regional stakeholders in upskilling and reducing skills mismatches in the region. Examples for this are training measures in Slovenia, Piemonte or Cantabria, efforts for clusters to better reflect the human resource landscape in Hauts-de-France, or cluster coaching in Centre-Val de Loire.

The figure below categorises the measures proposed in the pilot regions into these two dimensions and four types. Each of the proposed measures requires a set of specific actions (short, medium and long term) and a roadmap for implementation. Both of these elements are described more fully in the individual regional policy briefing reports.

Figure 9 –Typology of proposed measures in the pilot regions

5. From regional challenges to an industrial transition strategy

In a stable economic context, cluster policy can focus on supporting cross-fertilisation between companies, developing critical mass and helping companies overcome the size disadvantage. However, where industrial modernisation and addressing global megatrends is the objective, **cluster policy needs to embrace a more strategic focus.** Building and coordinating networks and skills in existing and newly established value chains requires better public policy coordination and better cluster management at the same time. While fostering innovation and developing tools to deal with change were always one part of cluster management and policy, the pace of industrial change has significantly raised the bar in these regards and this is of particular importance in regions that are undergoing industrial transition.

From regional diagnostic to industrial transition strategy: the journey

The figure below sets out the journey towards the development of an industrial transition action plan for the 10 pilot regions.

- The process started with a **diagnostic phase** during which existing regional characteristics were identified in SWOT and PEST analyses and the impact of global megatrends on the regional territories was analysed.

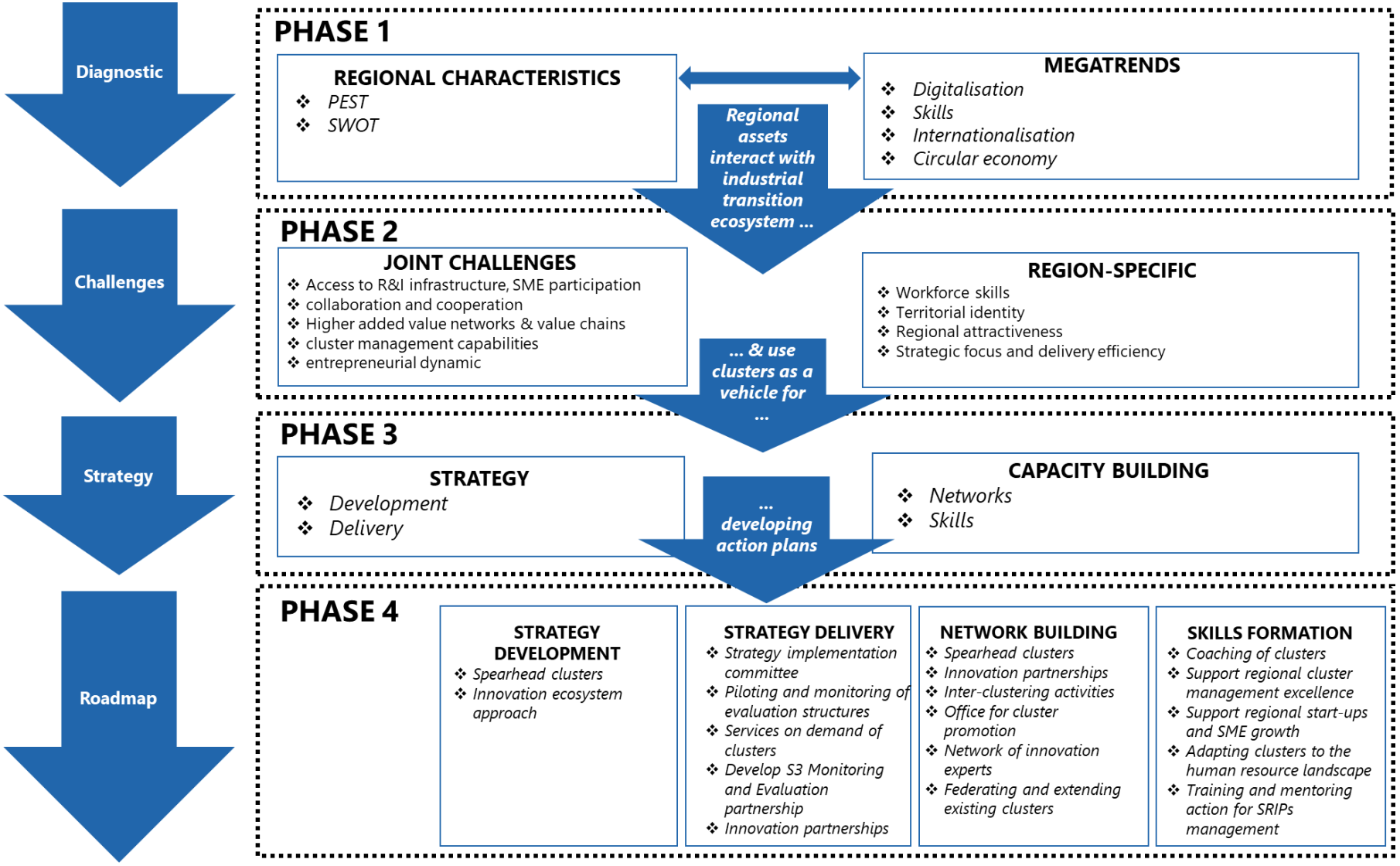
- In a second phase, this interaction led to the **identification of a number of challenges and obstacles** to a successful industrial transition. Some of the challenges are specific to each region but a number of them are also shared across several pilot regions.

- In a third phase the **role of clusters** in supporting the regions to develop solutions to these challenges was analysed. There are two major levels at which clusters can play a role: a) at a strategic level, in terms of strategy formulation and delivery and b) by building capacity through strengthening existing and creating new networks or through supporting skills formation.

- In the last phase of the work, these insights were used to **develop a set of specific measures** that are targeted to each of the regions, following the principles of a "managed industrial transition" [10] that builds on the pilot regions' endogenous potential, recognises path dependencies and economic trade-offs, and focus on economic sustainability, cooperation and integration in global value chains and the design of complementary policies that reinforce one another.

[10] EPC (2018)

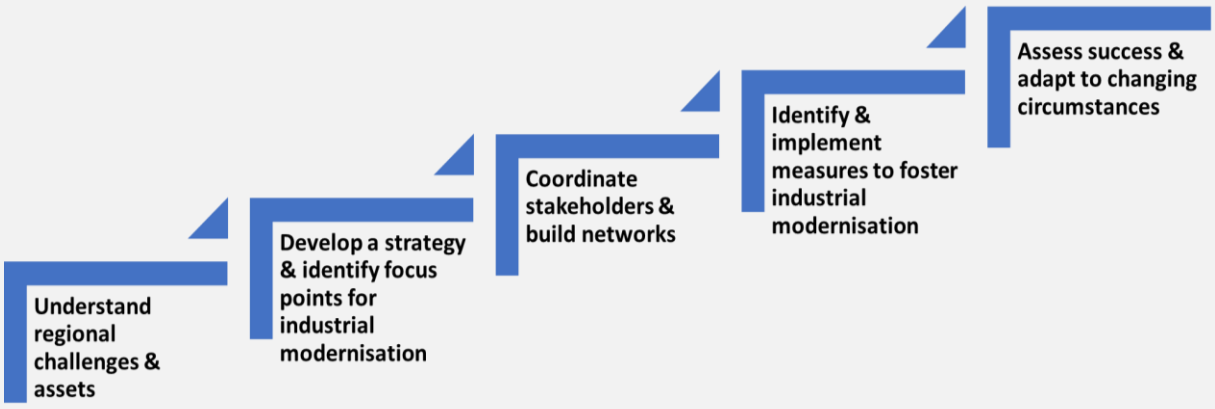
Figure 10 –Developing a cluster focused industrial transition strategy



Key stages in the industrial transition journey

Through its customised advisory service to the 10 pilot regions, EOCIC has identified a sequence of five steps that regions need to go through to support their industrial transition. Clusters are an important element in industrial transition, **but cluster policy needs to be flanked and complemented by other policies to be successful.** The box below provides an overview of these steps.

Table 1 –Key steps in tackling the challenge of regional industrial transition



1. **Understanding challenges and assets of the regional industrial base:** The first step always is to understand what makes the industrial base in the region competitive and what challenges that competitiveness currently and in the foreseeable future. This includes a good understanding of the industries but also of the underlying factors of competitiveness like research facilities, skills base and infrastructure. Many of the regions have developed this understanding with recent S3 the EOCIC assessment reports also provide an extensive diagnostic, which has been further developed in collaboration with the pilot regions.
2. **Developing a strategy and identifying focus points for industrial modernisation:** The second step would be the development of an industrial strategy (or innovation strategy) which identifies opportunities for growth in the industrial base. The strategy needs to be specific in understanding which value chains and value networks will most likely provide the industrial growth of the future in order to prepare the analysis on what the policy and infrastructure needs of that those growth opportunities are. Good examples of this process in the pilot regions include Saxony's Strategy "Assembly" workshop (*Strategiewerkstatt*[11]) and East & North Finland's spearhead cluster strategy. In addition, many regions have worked on this for their S3, but we found that not all strategies define the focus points clearly enough which makes it difficult to identify the right partners and develop concrete and coordinated action plans.
3. **Coordinating resources and building networks,** including financial and human resources. First, for each value chain, the right partners (companies, cluster organisations, research organisations or public authorities) need to be identified to develop the above-mentioned action plan specifically for the value chain or value networks. The building of these networks and incentivising collaboration for industrial modernisation is the topic of many suggested measures in the policy briefings and this has been a key focus in all 10 pilot regions. Second, there is a need to coordinate and focus funding streams from different sources and at different levels on the needs of the region's industrial transition. Funding streams can include research, infrastructure, and funding for cluster organisations and they can be sources at European, national, or regional levels or directly from industry and other private sector sources.

[11] The *Strategiewerkstatt* is a three-year open communication and consultation process that enables stakeholders (from the economic and scientific sectors, as well as from associations, networks and social partners) to participate in the process of developing an industry strategy for Saxony.

4. **Identifying and implementing key measures to foster the industrial modernisation:** Once the right stakeholders have been brought around the table and activated, the next step is to develop an action plan and a delivery roadmap. The specific content of the action plan will depend on the region, but it should be structured around a clear intervention logic and developed in an inclusive and iterative manner to ensure all stakeholders remain on board throughout the process. The action plans should distinguish between short term (e.g. annual), medium term (e.g. 5-10 years) and longer term (10+ years) actions, outputs and expected results. All pilot regions developed such action plans over the course of the EOCIC work (see Chapter 4).
5. **Assessing whether the strategy is successful and adapting it to changing circumstances:** Industrial modernisation is not a process with a completion date. To stay competitive, industry will need to innovate and improve continuously. A sustainable industrial transition support scheme therefore needs to encourage regular introspection and self-assessment and several of the proposed measures (e.g. Slovenia, Wallonia and East & North Finland) focus on piloting, monitoring and evaluation.

Clusters as a catalyst for the regional industrial transition strategy

Clusters can play a crucial role in all the steps described in the box above, from understanding the region, its assets and challenges to developing strategy, coordinating stakeholders, identifying solutions through assessment and monitoring. They do this through the following key functions:

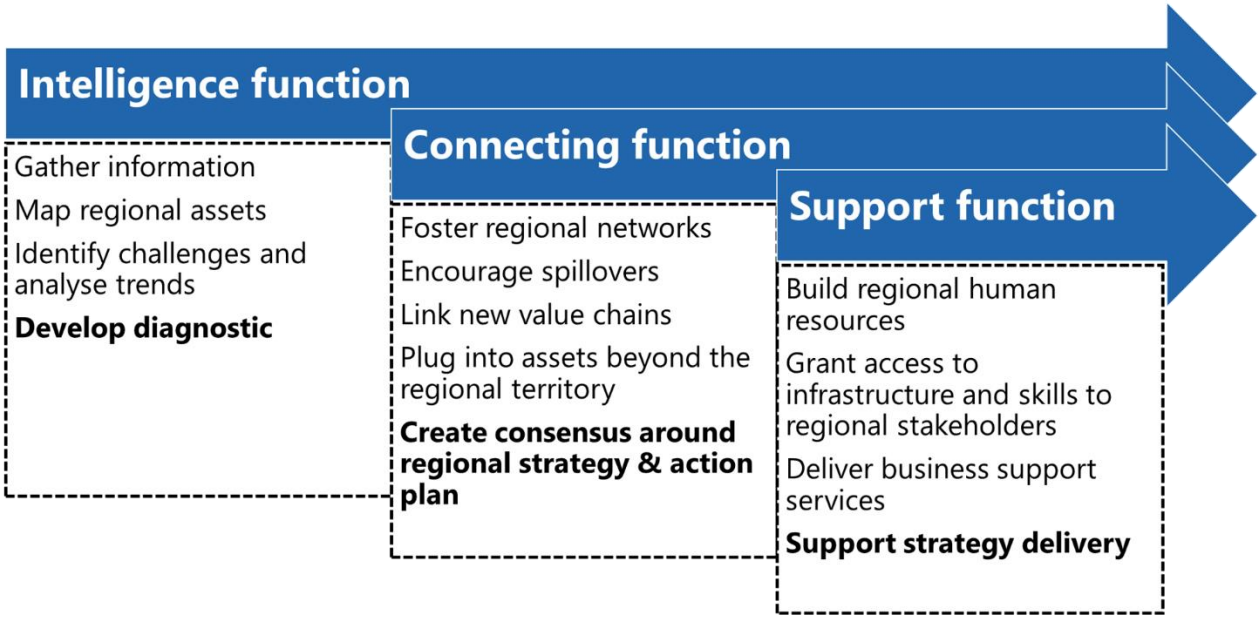
1. **Intelligence function**: gathering information from a wide range of stakeholders, mapping assets and developing a diagnostic of the key regional challenges;

2. **Connecting function**: fostering networks that enhance knowledge spill-overs between research and industry, within and across value chains and within and beyond the regional territory. The linkage function plays a key role in the emergence of a consensus on a vision of the region's challenges and opportunities; and

3. **Support function**: supporting the development of local human resources, providing access to existing research and innovation capacity (infrastructure and skills) and delivering business support services.

The main role of the first two levels is to build trust and foster innovation by bringing together relevant actors to generate new ideas. The main role of the support function is to help deliver the agreed strategy, facilitate scale-up and scale-out of ideas and innovations generated in levels 1 and 2. One great advantage of clusters is that they are a flexible and scalable instrument that enables policy experimentation, piloting and testing of strategies and interventions in specific value chains, among selected stakeholders and on a limited scale before roll-out across the region.

Figure 11 –Clusters as a catalyst for the emergence and delivery of an industrial transition strategy



Key questions for the joint peer review meeting

The joint peer review meeting organised in the context of EOCIC's customised advice to the 10 pilot regions is an opportunity to discuss the findings presented here, identify key lessons for the pilot regions, and develop further practical solutions to industrial transition challenges. The following questions will be tackled at the meeting and we invite participants to think about these prior to the event:

1. Do you agree with the **joint challenges** identified for regions in industrial transition through the process carried out by EOCIC?
2. Are the proposed **strategies and solutions** appropriate? Are there strategies or measures in other regions that could apply to your region and should also be highlighted?
3. Where do you see the **role of clusters** in formulating and delivering responses to regional challenges? What can be learned from other regions in this respect?
4. Following the end of the EOCIC customised advice to your region, **what other support** would you need / be interested in to help your region on its industrial transition journey? Concerning the support that you received, what would you have liked to receive in a different manner?
5. What are the **overall lessons learnt** for your region? For other regions? For the European Commission?

The European Observatory for Clusters and Industrial Change

The European Observatory for Clusters and Industrial Change (#EOCIC) is an initiative of the European Commission's Internal Market, Industry, Entrepreneurship and SMEs Directorate-General. The Observatory provides a single access point for statistical information, analysis and mapping of clusters and cluster policy in Europe, aimed at European, national, regional and local policy-makers, as well as cluster managers and representatives of SME intermediaries.

The aim of the Observatory is to help Europe's regions and countries design better and more evidence-based cluster policies and initiatives that help countries participating in the COSME programme to:

- develop world-class clusters with competitive industrial value chains that cut across sectors;
- support Industrial modernisation;
- foster Entrepreneurship in emerging industries with growth potential;
- improve SMEs' access to clusters and internationalisation activities; and
- enable more strategic inter-regional collaboration and investments in the implementation of smart specialisation strategies.

In order to address these goals, the Observatory provides a Europe-wide comparative cluster mapping with sectoral and cross-sectoral statistical analysis of the geographical concentration of economic activities and performance, made available on the website of the European Cluster Collaboration Platform (ECCP) [12]. The Observatory provides the following services:

- **Bi-annual "European Panorama of Clusters and Industrial Change"** that analyses cluster strengths and development trends across 51 cluster sectors and 10 emerging industries, and investigates the linkages between clusters and industrial change, entrepreneurship, growth, innovation, internationalisation and economic development;
- "**Cluster and Industrial Transformation Trends Report"** which investigates the transformation of clusters, new specialisation patterns and emerging industries;
- **Cluster policy mapping** in European countries and regions as well as in selected non-European countries;
- "**Regional Eco-system Scoreboard for Clusters and Industrial Change"** that identifies and captures favourable framework conditions for industrial change, innovation, entrepreneurship and cluster development;

[12] https://www.clustercollaboration.eu/

- **Updated European Service Innovation Scoreboard**[13], that provides scorecards on service innovation for European regions;
- **"European Stress Test for Cluster Policy",** including a self-assessment tool targeted at cross-sectoral collaboration, innovation and entrepreneurships with a view to boosting industrial change;
- **Customised advisory support services** to twelve selected model demonstrator regions, including expert analysis, regional survey and benchmarking report, peer-review meeting, and policy briefings in support of industrial modernisation;
- **Advisory support service to European Strategic Cluster Partnerships**, in order to support networking between the partnerships and to support exchanges of successful practices for cross-regional collaborations and joint innovation investments;
- **Smart Guides** for cluster policy monitoring and evaluation, and for entrepreneurship support through clusters that provide guidance for policy-makers; and
- **Brings together Europe's cluster policy-makers and stakeholders** at four European Cluster Policy Forum events, European Cluster Days, and at the European Cluster Conference In order to facilitate high-level cluster policy dialogues, exchanges with experts and mutual cluster policy learning. Two European Cluster Policy Forums took place in February and April 2018, the third one will take place on 15 November in Brussels. The European Cluster Conference is scheduled for 14 to 15 May 2019 in Bucharest (Romania).
- Online presentations and publications, discussion papers, newsletters, videos and further promotional material accompany and support information exchanges and policy learning on cluster development, cluster policies and industrial change.

More information about the European Observatory for Clusters and Industrial Change is available at: https://www.clustercollaboration.eu/eu-initiatives/european-cluster-observatory

[13] Previous versions for 2014 and 2015 were developed by the European Service Innovation Centre (ESIC), see http://ec.europa.eu/growth/tools-databases/esic/index_en.htm

European Commission

European Observatory for Clusters and Industrial Change

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