CLUSTERS AND KETS IN A CHANGING LANDSCAPE

JOINT POLICY RECOMMENDATIONS FROM THE CLUSTERFY PROJECT

ClusterFY
Interreg Europe

European Union
European Regional
Development Fund

Research &
Innovation

€

1.55 M
ERDF

Jan 2017
Dec 2021

EXECUTIVE SUMMARY

ClusterFY aims to improve regional and national policy instruments seeking to intensify clusterization processes especially related to Key Enabling Technologies (KET's), as well as foster interregional cooperation between and among clusters and business networks. These developments advance the implementation of regional innovation strategies.

Peer learning between ClusterFY partner regions has highlighted a diversity of experience with cluster policies. Although cluster initiatives are often seen as focusing on innovation and growth in firms, cluster policy also aims at influencing the system: bringing together triple helix actors to address broader regional and national aims for skills development, entrepreneurship, digitalisation, industrial modernisation, internationalization and sustainable development.

Despite the diversity between the partner regions, ClusterFY partners have a common view on the role innovation intermediaries (cluster and others) play in reaching and engaging SMEs; the importance of acting within a broader innovation ecosystem to address complex challenges; and the need for regional smart specialization strategies that build on related strengths – fostering connections between sectors, technologies and (international) geographies.

For this, we need cluster policies that acknowledge the variety of forms that collaborative initiatives may take, the broader role that they may play as part of the innovation ecosystem, and new measures to facilitate diversity within clusters and in collaborations with other clusters (across sectors, technologies and geographies).

INTRODUCTION

CLUSTER POLICIES AND KETS

Over the last decades, cluster policies have become a core feature of industrial, innovation and regional development policies across Europe. The EU's Industrial Policy Strategy (2017)[1] has highlighted ongoing efforts to strengthen cluster policy excellence in order to make better use of clusters as a strategic tool of industrial policy and support industrial innovation on the ground. Also in the context of smart specialization strategies, clusters are viewed as instruments to foster strategic interregional collaboration, sustainable linkages and investments between regional ecosystems across Europe[2].

Interest in strengthening cluster policy has risen strongly at European, national and regional levels. The European Cluster Policy Forum and the 2018 Council Conclusions on the EU Industrial Policy Strategy called for a further development of European cluster policy, including the introduction of Joint Cluster Initiatives as a key tool for boosting industrial modernization and strengthening the business environment for SMEs.

The use of Key Enabling Technologies (KETs) is a core aspect of industrial modernization as well as research and innovation strategies for smart specialization (RIS3). Policy strategies across Members States and European DGs call for support to digital transformation of industry, promotion of energy and resource-efficient technologies, and the development and uptake of (other) KETs (such as biomaterials, metals, polymers and advanced manufacturing). On a European level, this is facilitated by several actions including: supporting investments in KETs and enhancing the policy environment; helping SMEs access KETs technology platforms[3]; promoting multidisciplinary skills for KETs and stimulating important industrial projects; and ensuring a level playing field for KETs.

Clusters are crucial in the creation and promotion of innovation and can be seen as a catalyst for structural change. To support this development, governments can make use of regional or national policy instruments in order to facilitate clusterization processes – i.e. foster cooperation between businesses, investors, universities and research centres. The relative capacity of regions to embrace and adapt new (key) enabling technologies means that policy focused on improving framework conditions, including general and specialised skills and the knowledge base, has to be specific to the region's developmental path and its history. Cluster developments are similarly subject to their own developmental phase and historical antecedents.

An important consideration for new policy direction is the opportunity of connecting related diverse sectors, skills and technology bases, manufacturing and services segments and emerging industries and markets. The facilitation of diversity within clusters and in collaborations with other clusters (and KET platforms) should be an important aspect of new policy instruments. Where key enabling technologies are limited or absent, stimulation of cluster (and therefore firm) collaborations become critical for regions to safeguard their ability to keep up with technological developments whilst maximising their own potential. In addition, cluster collaborations may be considered to create critical mass necessary for market and product developments and therefore competitiveness.

As cluster initiatives develop collaborative strength and more extensive linkages with innovation hubs/technology platforms in other sectors or geographies, they can address more complex challenges with broader societal impact. Governments may also have policy instruments to leverage these (more mature) clusters to support SME internationalization, to lead industrial renewal processes, or to address societal challenges.

Key to understanding policy impacts requires attention to systemic interactions and patterns at multiple system levels. It is important to understand that EU and national level policies interact and impact regional and local policy instruments.

1 Commission Communication COM (2017)479 final of 13.09.2017, available at https://ec.europa.eu/growth/industry/policy_en

2 See 2017 Smart Specialisation Communication on 'Strengthening Innovation in Europe's Regions', available at https://ec.europa.eu/regional_policy/en/information/publications/communications/2017/strengthening-innovation-in-europe-s-regions-strategies-for-resilient-inclusive-and-sustainable-growth

3 Including a mapping of technology centres in KETs on the European Cluster Collaboration Platform (see: https://www.clustercollaboration.eu/news/eu-mapping-technology-centres-key-enabling-technologies-kets)

KEY FINDINGS OF THE CLUSTERFY PROJECT

ClusterFY aims to improve regional and national policy instruments seeking to intensify Key Enabling Technologies (KET's)-related clusterization processes, as well as foster interregional cooperation between and among clusters and business networks. These developments advance the implementation of regional innovation strategies.

In close cooperation with regional stakeholders from the quadruple helix (Q4), the eight European partner regions/ countries of ClusterFY aim to develop recommendations on the improvement of regional and national policy instruments (such as ERDF) that address the intensification of clusterization policies especially in KET-related sectors. Furthermore, ClusterFY intends to foster cross-sectorial and interregional cooperation among and between clusters and business networks, as well as encourage their integration into innovative (interregional) value chains.

ClusterFY partners represent countries and regions at various stages of development in terms of cluster policies. While some regions are focused on developing and implementing instruments to support first phases of collaborative action, other regions are focused on leveraging mature cluster initiatives or other types of innovation ecosystems for broader regional change processes.

Despite the diversity between the partner countries and regions and their clusters (or innovation ecosystems), the peer learning highlighted three main findings common to all regions.

Innovation intermediaries are important to reach and engage SMEs.
To reach SMEs, understand their needs and engage them in innovation processes, it is important to have a proactive and neutral intermediary organization with a mandate, skilled staff and other resources to fulfill this function. Cluster organisations, as well as other types of innovation platforms, living labs, and (applied) research institutes fulfill this role in ClusterFY partner regions. Yet there is a need for increased acknowledgement, strengthened mandates and resourcing, and more focused efforts on SME and broader stakeholder engagement.

Being part of and acting within an innovation ecosystem is a first step to address complex challenges.
Individual organisations across regions everywhere experience constrained resources while needing to address more complex challenges. It is increasingly necessary to adopt the principles of open innovation – looking outside of one's own organizational boundaries and areas of expertise to find and apply related knowledge and technological capacities, and pooling efforts towards common goals. Cluster initiatives and other types of KET/innovation platforms are part of an innovation eco-system and have a responsibility not only to further the competitiveness of their participating actors, but also to facilitate action to address the challenges of the territorial system in which they exist.

Smart specialization strategies establish the policy frame for leveraging and building on related strengths.
National and Regional smart specialization strategies establish main challenges and priorities for action, as well as policies and instruments that can be used to address regional development challenges. Cluster initiatives and other types of collaborative innovation platforms are part of the regional innovation system and represent the industrial sectors and technological strengths of the region. They are also leveraged as one of the policy instruments that regions use to build new areas of strength. It is important that there is coherence between regional S3 and its clusters and KET platforms, and that regions pursue "smart related development" – building connections between sectors, technologies and (international) geographies.

Building on these key findings, the ClusterFY partners propose five policy recommendations:
1. Renew Policy for the changing cluster landscape
2. Develop Monitoring and Evaluation Practices
3. Develop Instruments to enable Use and Services of KETs
4. Leverage Innovation Platforms to address societal challenges and missions
5. Increase use of clusters in support of SME internationalisation

CLUSTERFY JOINT POLICY RECOMMENDATIONS

ClusterFY's joint policy recommendations are structured around the three sub-objectives of the ClusterFY project:

- to create the favourable conditions in order to **boost the regional/national KETs related networks and cluster development** as an important part of RIS3 and innovation ecosystem
- to intensify clusters and business networks collaboration across borders and sectorial boundaries **exploiting Key Enabling Technologies** and enhance interregional business networks and cluster cooperation in fields of strategic interest
- to **increase the internationalisation** of clusters and business networks and their integration into innovative value chains

CREATING FAVOURABLE CONDITIONS FOR BOOSTING DEVELOPMENT OF CLUSTERS AND KET-RELATED NETWORKS

1. RENEW POLICY FOR THE CHANGING CLUSTER LANDSCAPE

What are the issues? Why is this theme important?

There is an ongoing evolution of the cluster concept and a broader conception of cluster policies – inclusion of competitiveness poles, innovation platforms/ecosystems focused on addressing regional challenges/social challenges that can unite different institutions and ecosystems, for e.g. energy, clean tech, healthy ageing. It is important to acknowledge the role clusters play – but also to acknowledge that other types of collaborative platforms and living labs (based at research institutes, NGOs, etc.) fulfill similar roles/intermediary functions.

In addition, there is an evolution to the types of tasks/mandates placed on clusters (and other intermediaries/innovation platforms). In ClusterFY study visits and stakeholder meetings, partners have highlighted a breadth of examples of open innovation processes – research and innovation centres and cluster initiatives that have the role of opening up to outside players (other technologies, international stakeholders, etc.) through new methods (scrumming it, agile development processes). In addition, examples of new platforms and processes for mobilizing stakeholders and experimentation were highlighted.

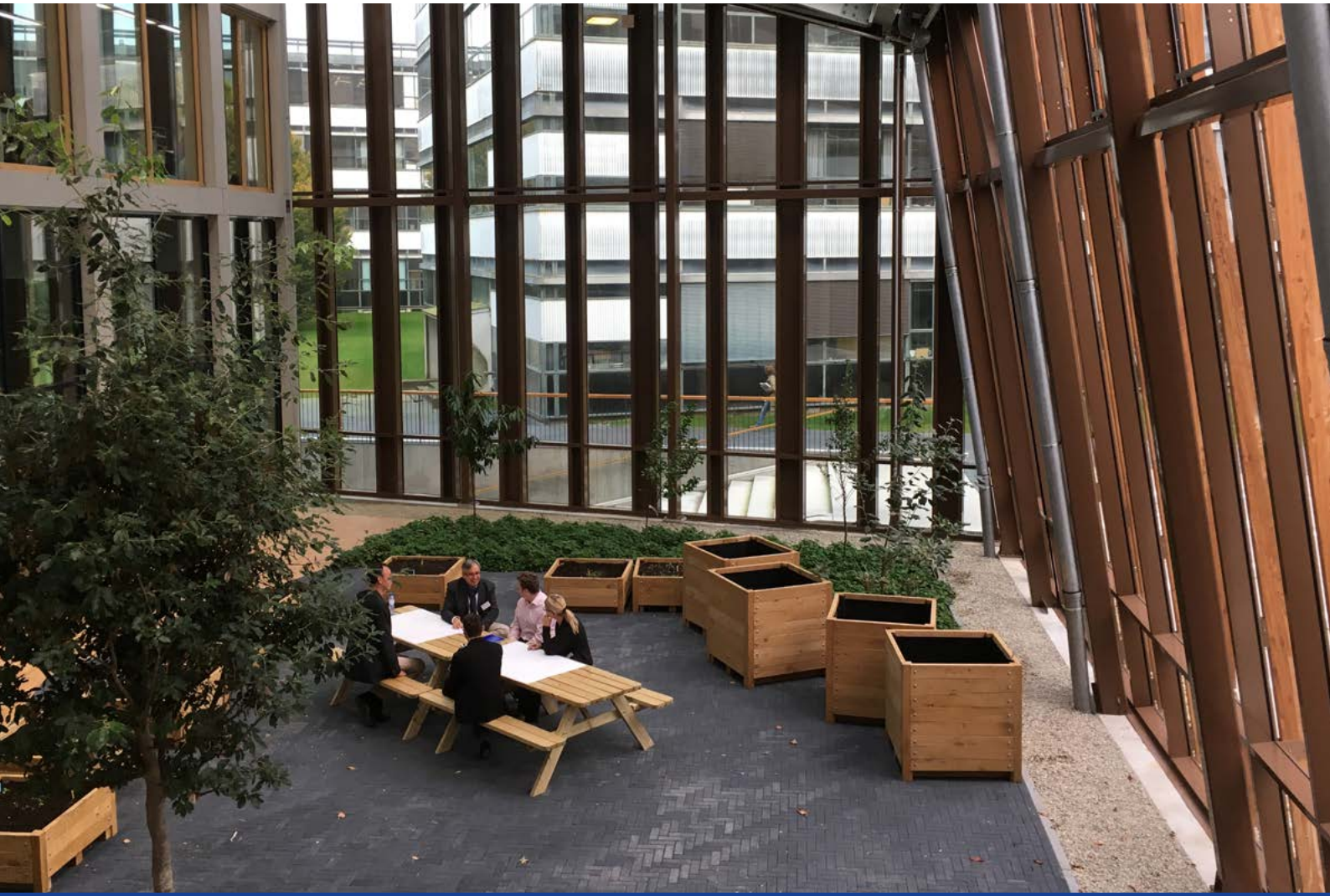
As clusters and other collaborative initiatives and platforms are given the mandate to guide and facilitate longer-term, more complex transformation processes, the role of the cluster manager/orchestrator also becomes more complex, including such functions as:

- Defining challenges/focus of collaborative efforts
- Fostering stakeholder engagement in long-term processes
- Enabling experimentation/agility
- Managing adaptive systems

There is continued importance for developing capacities and skills for management teams of clusters and other intermediary organisations – in particular skills related to the management of longer-term innovation and transformation processes. There is also a need for new ways to legitimize the 'more advanced' roles that clusters/collaborative platforms take on (becoming a 'societal partner' of government and providing particular services to SMEs and other stakeholders).

What specific actions are recommended?

A. In addition to cluster management, involve other stakeholders (e.g. board members and regional policymakers) in mobility and peer learning processes.
B. Offer training and peer learning activities focused on developing/expanding skills for intermediary organisations working with system innovation/transformation, including topics such as:
    a. Mobilization and involvement of broader/extended stakeholder groups
    b. Management of longer-term change processes (including approaches to monitoring/developmental evaluation)
C. Initiate national level efforts (e.g. campaigns, programs) to increase awareness of the importance of innovations and the impact of new technologies on competitiveness, and about the tools that could be used to build innovations around existing core business offerings or develop new business models. (A source of inspiration is the Slovakian national program Let´s Innovate!)
D. Leverage (mature/re-certified gold label) cluster organisations as educators (public service providers) for other actors in the ecosystem in the areas in which they excel (offering funds to enable e.g. development and implementation of training modules, staff exchanges, etc.).
E. Leverage the ECCP to highlight the role of cluster organisations and other collaborative platforms play in system innovation/transformation…using success stories and other approaches to highlight the various functions that are fulfilled (e.g. facilitating inter-sectoral collaboration, being assigned the mandate/partnering with government to select and fund innovation projects) and track the contributions that are made to societal challenges.
F. Revise (ESIF) funding regulations and programme calls to recognize both other forms of intermediary organisations/ collaborative platforms (in addition to cluster organisations) and the more advanced roles/functions that these intermediary organisations play (as a societal partner to government).
G. Conduct a survey of existing cluster organisations and other entities in the ECCP database to assess their role in system transformation.



2. DEVELOP MONITORING AND EVALUTION PRACTICES

What are the issues? Why is this theme important?

Driven by the limitations of state aid regulations as well as demand for evidence-based policymaking, there is increasing focus on results/impacts and a desire to tie public support (and funding) to performance.

As cluster policies enter second (and third) decades of existence, it is important for policymakers to follow-up on initial objectives/effect logics and communicate the progress that has been made in order to motivate continued investment in this policy approach. In countries where ESIF resources are heavily used to support cohesion policies and increase the competitiveness of national economies, continued support to cluster initiatives must be very selective and evidence based. This would require a set of performance criteria to be developed and used in a flexible manner – i.e. that each country select the performance criteria that are most suitable to their own policy aims.

At the same time, the strategic focus of cluster initiatives is increasingly embedded in societal challenges and contributing to regional smart specialization strategies – where measures of economic impact are only one of the factors. It is also important to include other aspects of impact (e.g. environmental and social sustainability). This requires different approaches to tracking long-term transitions and system innovation.

Implementing cluster policy needs scrutiny and understanding of various system level interactions (including stakeholder behaviours and institutional norms). Stakeholder insights and practices can help map systems interactions and emergent patterns as part of policy practice. Collective endeavours to understand systemic emergence by key stakeholders (triple/quadruple helix) could influence coherent behaviours and thereby increase impact of desired future developments for clusters and the region.

What specific actions are recommended?

A. Building on the ESCA framework for cluster management excellence with indicators for management and activities/outputs, develop a common framework of indicators for longer-term results/impacts, including:
   - Some basic/'fixed' indicators and other 'variable' – a menu to choose from depending on the cluster initiative's phase of development and policy frames
   - Indicators to track development of the collaborative ecosystem
   - Indicators and approaches to track impact on/contribution to societal challenges

B. Accompanying the framework of indicators, develop a methodology guide – providing guidance on alternative approaches to monitoring and evaluation (including examples/cases of existing practice).

C. Develop and test new M&E approaches including peer reviews (leveraging the Cluster Excellence Expert Group and the European Cluster Policy Forum), involving stakeholders in M&E design and implementation, or other approaches.

D. Acknowledge and communicate information on national "certification of excellence" systems as a complement to ESCA labelling and quality certification processes.

E. Develop a process to involve stakeholders in the continual adjustments to ambitions, indicators and uses of the ESCA labelling and quality certification (to learn from experiences and good practices in regional or national certification systems).

THEMES RELATED TO EXPLOITING KETS AND SUPPORTING STRATEGIC INTERREGIONAL COLLABORATION

3. DEVELOP INSTRUMENTS TO ENABLE USE AND SERVICES OF KETS

What are the issues? Why is this theme important?

ClusterFY study visits and stakeholder meetings have highlighted a number of examples of KETs 'embodied' as applied research centers and/or innovation platforms

- Conducting applied research
- Test/demo capabilities
- Providing services to 3rd parties (e.g. education/training, technical skills, R&D projects building, access to financing) to multiple sectors

KET platforms work to develop innovation eco-systems…building new chains/coalitions of people, trying to involve different actors, integrating possibilities for test/demo, and 'translating' KETs into use (for both industry and society). It has been confirmed[1] that regions investing resources in fields with high technological opportunities are in a position to exploit their advantage in terms of advanced innovation performance. KET´s have systematic relevance as they enable development of new products and services and processes needed to modernize EU industry, strengthen the research, development and innovation base of EU regions and facilitating regional cohesion.

However, there are gaps between the availability of test infrastructure (and other KET platform services) and their use – particularly by SMEs[2]. Digital Innovation Hubs (promoted by the Digitising European Industry initiative[3]) are a good example of expanded efforts to communicate the presence, develop the capacities and services offered, and foster SMEs' access and use of such KET platforms across Europe. Similar efforts could be made in other KET areas to establish networks between (currently fragmented) regional KET platforms and develop stronger expertise and services to meet SME needs in these areas.

Although the European Commission and Members States have recognized these issues and taken action to facilitate pan-European access of SMEs to KETs technology infrastructures[4], more can be done to accelerate both an awareness of the value of KETs and their application.

A. Building from the mapping of existing regional and national KET platforms, create international networks of KETs (similar to European network of Digital Innovation Hubs – in other KET areas) linked to EIT nodes, enabling both mutual learning/knowledge exchange and the possibility to address SME needs (through referrals and connections within the network).
B. Strengthen communication and awareness raising on possibilities of KETs' applications, including for example:
    - Develop and disseminate case stories (as part of/complement to the existing web tool)
    - On ECCP, create overview map including both cluster organisations and KET platforms (link existing web tools)
    - Support training and mentoring programmes between KET network nodes
C. Leverage funding instruments (including ERDF funds) and support new initiatives to link SMEs to existing KET platforms and encourage SMEs to employ KETs in developing and using new technologies, products, services
D. Leverage existing policy instruments (e.g. COSME ESCP for S3) to foster collaboration between KET platforms and cluster initiatives (strengthening cross-sectoral collaboration)

1 http://publications.jrc.ec.europa.eu/repository/bitstream/JRC98111/jrc98111_regions%20kets%20and%20fgt%20-%20technical%20report%20-%20final.pdf
2 See EU COM(2014) 14 final For a European Industrial Renaissance, as well as ClusterFY partner policy study: KETs in North Middle Sweden
3 See https://ec.europa.eu/digital-single-market/en/digital-innovation-hubs
4 See: https://ec.europa.eu/growth/industry/policy/key-enabling-technologies/eu-actions/help-smes-access_en

4. LEVERAGE INNOVATION PLATFORMS (E.G. CLUSTERS AND KETS) ACROSS EUROPE TO ADDRESS SOCIETAL CHALLENGES AND MISSIONS – A NEW EU-WIDE PROGRAMME FOR COLLABORATIVE INNOVATION PROJECTS

What are the issues? Why is this theme important?

In the coming programming period, there is increased focus on industrial transition (fostering skills development in related fields, automation/digitalization, more energy-efficient production, etc.) as part of regional smart specialization strategies. KETs are enablers, and KET platforms can be leveraged in broader industrial transformation processes.

> *The European Commission prompts regions to integrate KETs into their research and innovation strategies for Smart Specialisation (S3). Regions are encouraged to invest in KETs as part of their S3 policy mix in order to support spill-over effects of KETs-based solutions and to enhance industrial value chains in Europe.*
>
> *Although KETs are technology and research intensive, all types of regions – even those with fewer resources – are able to participate in KETs activities in different roles. The S3 framework, paralleled with interregional connectivity, can give rise to cooperation in deployment, diffusion or even co-innovation of applications. Such dynamics may be distributed between regions specialised in the basic inventions and regions investing in specific application domains. (https://s3platform.jrc.ec.europa.eu/kets)*

There is a need for thematic (social challenges or missions) approach in which KETs are specifically leveraged – combining cluster initiatives/regional networks and KETs platforms across sectors and geographies.

- for standardization
- for EU critical mass
- for involvement/strategic drive from industry

For this, there is a need for more flexible programming mechanisms to enable engagement of different types of collaborative platforms (accessing competence, facilities/infrastructure), as well as more flexible funding modalities.

What specific actions are recommended?

A. Building on recommendation 1f above, elaborate a new definition of innovation intermediaries that acknowledges the more advanced role that clusters, KET platforms (and other forms of collaborative innovation platforms) play in enabling industrial transformation, SME internationalisation, etc.; innovation intermediaries should be eligible for public funding in a similar manner to applied research institutions

B. In the foreseen (EU-wide) interregional programme/call for collaborative innovation projects, ensure that:
   - A focus on addressing industrial transformation/societal challenges or missions
   - KETs/KETs platforms are included as a critical element
   - Open/flexible programming approach to serve all types of regional contexts (e.g. different types/levels of involvement over time, phased levels of financing over time)
   - Coupling clusters/KETs/innovation platforms (operational actors) with regional strategy (RIS3)

C. Offer a new financing approach as part of foreseen interregional programme (above) for challenge-driven innovation processes, with…
   - A first phase with open process focused on stakeholder engagement to scope vision and actions
   - A second phase with possible follow-on investments in collaborative innovation projects (within strategic frame defined in the first phase)

   Sources of inspiration are Vinnova's Challenge-driven innovation programme, and North Middle Sweden's high impact action in the EU Industrial Transition Pilot (A Challenge Lab and accompanying Seed Fund).

THEMES RELATED TO LEVERAGING CLUSTERS TO SUPPORT SME INTERNATIONALISATION

5. INCREASE USE OF CLUSTERS IN SUPPORT OF SME INTERNATIONALISATION

What are the issues? Why is this theme important?

Internationalisation and innovation are intrinsically connected. Both considered growth strategies, they do not substitute for each other but are instead complementary. It is well established that internationally active companies are generally more innovative (gaining insights and inspiration from other markets) and that entering foreign markets often requires product and process innovations. Yet entry into international markets remains a challenge for many SMEs, and the barriers are manifold, including:

- Lack of knowledge/capabilities (on opportunities and benefits) and resources (time and money) in SMEs
- SME scale issues: When large and innovative corporations are missing in a region, regional SMEs benefit less from innovation/internationalisation spillovers from such large enterprises. This gap can be filled by regional SMEs forming cluster or platform initiatives with the aim of enhancing innovation and equally internationalisation.
- Regulatory obstacles in the home and host country, poor infrastructures, and limited governmental support to lower barriers in early phases (through e.g. providing adequate frameworks to lower legal and administrative barriers, information on markets, potential business partners and public assistance/support initiatives to cover part of the initial costs)
- A shortage of cluster/network organisations capable of fostering innovation and internationalization (providing support for finding business partners, market opportunities, or information on rules and regulations)

Connecting with peers, i.e. other SMEs, ideally with export experience, can definitely help lower those barriers for SMEs not yet exporting. The effectiveness of clusters/network organisations for more SME competitiveness and innovativeness is undisputed. Clusters and network organisations play a key role in the internationalization of small and medium-sized enterprises (SMEs). Several analyses and reports show that SMEs in clusters are more innovative and internationally oriented than other SMEs. But still many regions are lagging behind in international activities especially when small and medium SME's dominate the profile of a region's economy.

Over the last decade, efforts have been made to leverage clusters in support of SME internationalization (through e.g. H2020 INNOSUP, COSME ESCP-4i and ESCP-S3, as well as through Member State-led initiatives such as Vanguard Initiative pilots and BSR Stars Innovation Express). However, cluster-facilitated global value chain creation and support to SME internationalization remains difficult. Their efforts are exacerbated by several issues, including:

- Public aid for clusters[1] and for SMEs[2] is viewed as complicated and time consuming (by both beneficiaries and implementing bodies).
- Clusters have limited focus and experience in supporting SME scale-up activities (particularly efforts to access international markets, to understand institutional and regulatory frameworks, and to access resources).
- The rise of data-driven, digitally-enabled networks and platforms challenges traditional business and policy understanding. To date, platform environments have enabled exponential reach, smarter allocation of resources and the ability to harness the power of communities to transform markets for selling goods; the $10 trillion services markets may be next.
- There is a lack of governance and management of regional business support, as well as low use of ESIF to enable international cooperation (through application of Article 70).

1 Based on GBER regulations
2 Based on either GBER or de minimis regulations

What specific actions are recommended?

A. Develop new and simplified aid schemes supporting clusters' (and other intermediaries') support to SME internationalization. (A source of inspiration is BSR Stars Innovation Express grants to clusters for SME internationalisation support services. ClusterFY partner MITA has been a funding partner in this scheme.)

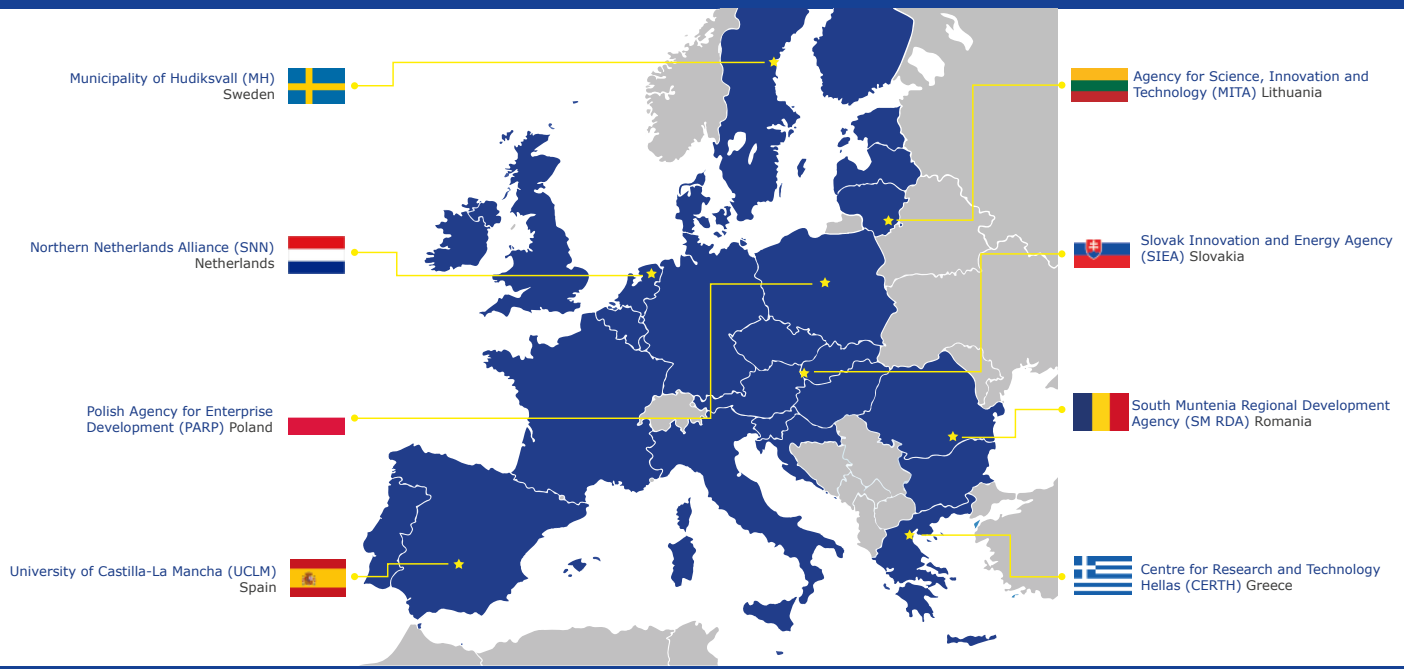
B. Provide support to forming and managing international alliances through clusters – e.g. through establishing multiple "scale-up hubs" (similar to digital innovation hubs) within clusters, specialized in different sectors, with the aim to offer a full set of services to growth-oriented entrepreneurs and small businesses. (A source of inspiration is ClusterFY good practice "FundingBox" presented by Maria Roca Puigserver, I4MS Project Manager, at Ciudad Real, October 2018.)

C. Support clusters and their members to access international markets and scale-up through use of digital technologies and platforms. Support could be focused on the micro enterprise segment of SMEs – catalyzing them to engage in new/experimental ways access skills, talent, markets or collaboration partners through use of digital technologies.

D. Offer new incentives (e.g. bonuses, focused support to pilot regions/MS, etc.) to increase the use of Article 70 by regions/MS to support peer learning, and to facilitate interregional collaboration and SME internationalisation. This could include initiating an 'umbrella mechanism' (a common framework and approach to operationalize Article 70 across Europe). (Again, a source of inspiration for an umbrella mechanism is BSR Stars Innovation Express grants to clusters for SME internationalisation support services. ClusterFY partner MITA has been a funding partner in this scheme.)

ABOUT CLUSTERFY

Fostering clusters' interregional collaboration and integration into international value chains

Clusters are a concentration of interrelated businesses, knowledge institutions and authorities. They stimulate and facilitate SMEs in forming long-term strategic, cross-sectoral and cross-regional partnerships that help boost their innovative ideas. In cooperation with the right partners, SMEs are able to develop competitive products and services and integrate into regional and interregional value chains.

The Interreg Europe project ClusterFY aims to improve regional and national policy instruments seeking to intensify Key Enabling Technologies (KET's)-related clusterization processes. Furthermore, it aims to foster interregional cooperation between and among clusters and business networks, and encourage their integration into innovative value chains. These developments advance the implementation of regional innovation strategies. The Northern Netherlands believes strong clusters are key in the implementation of its regional innovation strategy and that clusterization furthers the region's entrepreneurial discovery processes.