Clusters

Definition and context

A cluster is a concentration of specialised suppliers and service providers in their field — often driven by business environment conditions uniquely beneficial for their specific type of activities. Cluster organisations are public-private partnerships. On average they follow a 60/40 rule with 60% public financing. Three terms can be distinguished:

- **Clusters** are geographic agglomerations of companies, suppliers, service providers, and associated institutions in a particular field, linked by externalities and complementarities of various types.
- **Cluster initiatives** are organised efforts taken by actors in a cluster to increase the cluster’s growth and competitiveness.
- **Cluster programmes** are organised efforts taken by government to increase the growth and competitiveness of clusters in its constituency.

We can talk about seven innovation gaps where cluster organisations play critical roles as bridge builders:

- The research gap, limiting interaction between firms and research organisations
- The education gap, limiting interaction between firms and education organisations
- The capital gap, limiting interaction between firms and education organisations
- The government gap, limiting interaction between firms and public bodies
- The firm-to-firm gap, limiting interaction among firms
- The cross-cluster gap, limiting connections between firms in one cluster and another
- The global market gap, limiting connections between cluster firms and global markets

Studies have found that companies within clusters achieve higher levels of productivity and innovation, and that clusters are environments where new firms exhibit higher survival rates and growth. Globalisation is one important driver for the growing role of clusters in the modern economy. Companies have many more locations to choose from than before, and the presence of a cluster is an increasingly important decision criterion. Companies increasingly rely on the dynamic interaction in clusters, with other companies as well as academic institutions, to generate new ideas and translate them into new products, services, and ways to provide value. The impact of this trend, as well as the changing nature of innovation, have been confirmed by an increasing number of studies that show the relationship between the presence of clusters and strong economic performance. But some of these studies also indicated that Europe is lagging behind main global competitors on the presence and dynamism of clusters.

Governments need to find a new way to engage the triple helix actors in dialogue and action to strengthen competitiveness. Clusters are a natural platform for such joint efforts. On the other hand, governments need to increase the effectiveness of their own policies in areas from regional...
development and investment attraction to skill development and innovation, which might be achieved by aligning policy efforts with clusters' needs.

After a number of years with growth in the use of cluster programmes, the European Cluster Policy Group (ECPG) has developed policy recommendations to maximise the impact of these programmes across different dimensions of the Europe 2020 strategy, regarding: (i) support for international cooperation among clusters, (ii) the role of clusters in the development of emerging industries/services, (iii) the efforts to raise the excellence of cluster policies and cluster organisations, and (iv) ways to create better synergies between Community instruments with a cluster dimension.

**Cluster support:** Policy approaches can be compared for both their actual impact (in addressing a problem or market failure) and their potential costs (in leading to distortions or government failure). Policies that target individual companies are highly effective but also very distorting. Policies that target the entire economy are only slightly distortionary, if at all, but they are often also not very effective. Policies aimed at individual industries come somewhere between these two poles. Cluster policy, however, offers a superior mix of benefits and costs. It is organized around a group of industries that by definition have strong linkages. Aiming policy at them will thus not only be effective but will even trigger additional benefits from positive spillovers that are induced. The policy is neutral within the cluster where competition for factors of production is the sharpest; it is distortionary only relative to activities outside the cluster, where other skills and assets are needed by definition. Although some distortion remains, the approach promises a potentially better balance of effects.

The academic debate has evolved into advocating two types of policy objectives:

- In one approach, agglomeration is the key policy lever; as agglomeration progresses, competitiveness will naturally follow as cluster effects set in. In another approach competitiveness is portrayed as the vital policy lever: as competitiveness builds, agglomeration will naturally increase as the cluster becomes more attractive for new entrants; with competitiveness as the ultimate goal, clusters become a process tool to design and implement policies more effectively. Be it as it may, the European Cluster Observatory survey-based findings show that a strong existing cluster with firms that have met the market test makes it much more likely that a cluster initiative will report its efforts to be successful.
- A second important success driver is the presence of a strong regional government.

If the evidence indicates that cluster programs work best for strong, established clusters, a cluster policy confined to “strengthening the existing strengths” is less obvious for less advanced economies and regions in need of structural change, which is the focus of the S2E project.

As cluster policies and programmes have become part of the political toolbox, there has been an increasing interest in evaluating the effectiveness of such policies and programmes. For instance, data for regional framework conditions, analysed by Orkestra in San Sebastian, Spain, shows that there is a positive relationship between Regional GDP per capita and 1) employment in strong clusters (clusters highly over-represented in the region), and 2) the regional mix of clusters (measures how much regions benefit from the cluster mix effect rather than strong performance within any individual cluster). But in spite of a rapid increase in the number of cluster policies and programmes, and thousands of cluster initiatives around the world, there is still a lack of solid evaluation models. This

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4 Ketels, C., Lindqvist, G., Solvell, O., 2012: "Strengthening Clusters and Competitiveness in Europe. The role of cluster organizations". The Cluster Observatory and Stockholm School of Economics


6 Ketels, C., Lindqvist, G., Solvell, O., 2012: "Strengthening Clusters and Competitiveness in Europe. The role of cluster organizations". The Cluster Observatory and Stockholm School of Economics

7 Ibid. p.9
does not prevent cluster programme evaluation to become more sophisticated: The European Cluster Observatory uses a model with several components, allowing to control both for external explanations (by using control groups), and to capture unintended effects through process tracing (mainly through interviews). By using complementary methods they can compensate for weaknesses inherent in each method, and also make use of the strengths of each method. The model uses a number of complementary data sources and methodologies:

1. Statistical analysis of firm financial performance (e.g. value added growth, profitability, wage per employee and other data from annual reports) compared to control groups
2. Surveys of social media (text analysis) and surveys of cluster organisations and member firms in clusters (e.g. performance of firms, bridging innovation gaps, cluster identity and level of trust)
3. Interviews with cluster managers and member firms (process tracing)
4. Benchmarking with other clusters/regions and the use of peer evaluation teams.

**Implementation**

Various observatories have been set up to monitor the deployment and performance of clusters:

- The European Cluster Observatory\(^8\) covers clusters based on 56 sectors in 404 regions in 36 countries, regional statistics for 264 regions in EU-27, over 1,400 cluster organisations and over 1,600 other organisations playing critical roles within clusters. The data ranges from basic descriptive statistics (age, size, sector focus, objectives, cluster manager background, financing, board etc), to input on performance. Furthermore, the Observatory offers data and analysis of regional competitiveness conditions and transnational cluster networks in Europe.
- A separate Cluster Collaboration Platform\(^9\) offers a range of tools to cluster managers throughout Europe.
- Cluster-Excellence.eu\(^10\) aims to identify and set up a meaningful set of quality indicators and peer-assessment procedures for cluster management. The intention is to develop training materials and set up an approach for quality labelling of cluster management, in order to help cluster managers achieve high levels of excellence in their duties and to succeed in the peer-assessments. Cluster-Excellence.eu will then create and act as a club of professionals and institutions, to promote cluster management excellence, and diffuse the adoption of the Quality Label among its members.

To give an order of magnitude of what clusters represent, 38% of all European employees work in industries that concentrate regionally in clusters. This does not mean, however, that clusters have a critical mass: The average regional cluster accounted for about 1% of total employment in a region\(^11\); larger clusters, maybe up to 5%. Upgrading one cluster will tend to have only a moderate impact on the regional economy overall. Hence the complexity of the debate on how to optimize policy interventions on clusters.

Cluster organisations are most common in sectors such as IT and automotive\(^12\). However, sectors including Food processing, Health care, Energy and Green technology, are on the rise. Cluster initiatives in Europe are typically organised through small organisations receiving financial support from a range of both public and private sources. Regarding membership 75% of clusters have formal members, whereas 25% work in more loosely-coupled partnerships.

Cluster organisations put their focus on building an identity, a strategy and brand for the cluster, and enhancing innovation through collaboration across innovation gaps and joint R&D projects. Less focus is put on business development among member firms (export promotion, commercial

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\(^8\) [http://www.clusterobservatory.eu](http://www.clusterobservatory.eu)
\(^9\) [www.clustercollaboration.eu](http://www.clustercollaboration.eu)
\(^10\) [www.cluster-excellence.eu](http://www.cluster-excellence.eu)
\(^11\) Ketels & Memedovic, 2008
\(^12\) Ketels et al, 2012
cooperation and joint purchasing). Cluster initiatives with large staffs perform better in every aspect, both internally and externally. Among European cluster organisations there is no significant difference in performance between the clusters that were initiated through a public call or policy program, and those that were initiated by a private sector initiative.

Cluster managers report the best impact on improved collaboration among firms in a given cluster (firm-to-firm): 89% report improvements over the last three years in collaboration among firms. Similar results are reported for collaboration firms-to-research institutions, and for collaboration with other clusters. The higher priority a cluster organisation puts on collaboration among firms, the better is performance in every aspect, both internally and externally.

**Funding:** Cluster organisations are public-private partnerships. Public sector and private sector initiatives are equally common\(^\text{13}\). Older Cluster Initiatives ("CIs") tend to have somewhat higher revenues from sales of services (consulting) and somewhat less national public funding. With respects to governance, private sector dominates CI boards (59%), with academia second (17%) and public sector officials third (15%). Board members from the financial sector play very limited roles (2%).

**Possible synergies**

Clusters can benefit from funding synergies between H2020 and ESIF. The work programme of COSME\(^\text{14}\) – the Programme for the Competitiveness of Enterprises and SMEs - invites applicants for cluster support "to explore the potential for synergies with the relevant Managing Authorities in charge of the ESIF in their territory". The COSME Cluster Internationalisation Programme for SMEs is aiming to promote the pan-European Strategic Cluster Partnerships to lead international cluster cooperation in new areas. The action will seek synergies with the inter-regional activities for cluster cooperation funded under the European Territorial Cooperation Regulation (INTERREG) and ESIF, e.g. in the context of smart specialisation strategies and the cluster animated projects for new industrial value chains in the "Innovation in SMEs" H2020 Work Programme. To this end, applicants are be asked to demonstrate how their approach has the potential to act as a catalyst by contributing to and/or leveraging other activities supported under H2020 and European regional funds.

Prior to COSME, Clusters Linked Over Europe (CLOE) started as an INTERREG project that helped seven regions to exchange experience and information about how to successfully manage and develop clusters. Clusters are networks of compatible or competitive interrelated companies working together to strengthen an industry in a particular area. Transnational contacts between clusters continued after the project ended and this was the starting point for many activities financed under FP7 and the CIP\(^\text{15}\), which was COSME’s predecessor.

Although clusters are only one of the instruments types involved in it, another illustration is the Bio-Based Industries Joint Undertaking (BBI), a public-private partnership established between the European Commission and the Bio-based Industries Consortium (BIC). BBI aims to bring together all relevant stakeholders to establish innovative Bio-Based Industries as a competitive sector in Europe, ranging from primary production, large industry, SMEs, clusters, trade associations, academia, RTOs to end-users. The BBI is responsible for the implementation of open calls for proposals for Research and Innovation Actions and Innovation Actions, as well as coordination and support actions, in line with the H2020 rules for participation with an overall budget of €3.70 billion. The EU will contribute €975 million from the H2020 programme budget. The industrial partners will commit €2.73 billion. This gives an exceptional leverage factor: for around €1 of public money spent, industry will spend €2.73. Member States will be closely associated to the BBI and are expected to actively promote the deployment of developed technologies, amongst others through ESIF. A Practical Guide on

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\(^\text{13}\) Ibid
\(^\text{14}\) http://ec.europa.eu/DocsRoom/documents/7322
\(^\text{15}\) Competitiveness and Innovation Framework Programme
BBI/H2020 and ESIF synergies was released in November 2014\(^{16}\), to realise synergies and coordinate regional, national and European strategies and related funding to stimulate innovation towards the bio-based economy. This Guide describes the features, frameworks and preconditions to foster an optimal combination of both BBI/H2020 and ESIF funding.

Some of the cluster observatories mentioned above can also be instrumental for synergies with ESIF: Regional Managing Authorities can identify the smart specialisation intentions of other Member States and regions via the S3Platform, their sectorial and cross-sectorial regional industrial strength via the European Cluster Observatory and cluster organisations and other SME intermediaries active in or interested in the building of European Strategic Cluster Partnerships via the European Cluster Collaboration Platform.

Among the specific ways of H2020/ESIF funding synergies channelled for clusters\(^ {17}\), we can mention:

- **Upstream sequential funding**\(^ {18}\) for improvement of social capital as assistance for building networks, clusters and consortia, under ERDF investment priority 1a.
- **Downstream sequential combination** whereby H2020 (or FP) project results are used or further developed with subsequent ESIF investments to improve the innovation eco-system in a territory that facilitates follow-up to successful RDI activities in order to bring them either higher up on the technology readiness level scale or closer to commercialisation, for instance regarding technology parks, clusters, partnerships between research, education and business, Living Labs, demonstrators, etc.

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\(^{17}\) European Commission, 2014: "Enabling synergies between European Structural and Investment Funds, Horizon 2020 and other research, innovation and competitiveness-related Union programmes - Guidance for policy-makers and implementing bodies"

\(^{18}\) Upstream sequential funding (ESIF followed by H2020), starting with ESIF funding for various purposes such as capacity building in physical capital (construction or improvement of research infrastructures, purchasing equipment (high potential for innovation procurement PCP – PPI), including IT equipment and connections, data storage capacities, etc.), innovation infrastructures (LivingLabs, FabLabs, Design factories, etc.) and social capital, is a potential "stepping stone" for stronger involvement in R&I activities.