

PART I
Chapter 6

What Have We Learned?

This chapter explores one of the most challenging aspects of cluster-based policies, evaluating their effectiveness. First it addresses the question of what should be evaluated, as the answer to this question varies by stakeholder needs. Second, it reviews many of the lessons learned from the different programmes studied in OECD countries. Finally, it highlights the areas for future research.

Introduction and key points

There is a long list of challenges to evaluating the effectiveness of policies to promote clusters and regional specialisation. As discussed in Chapter 1, there is a lack of agreement on how to even define a cluster, let alone measure the dynamics within the cluster. The public financial resources allocated to most programmes often being modest, especially relative to the ambitious goals, may also mean that the evaluation tools are not sensitive enough to measure any impact. Existing tools do not always measure some of the more relational aspects of cluster development that are often promoted in these programmes. Classic problems of causality in evaluation are exacerbated in the context of clusters and their ultimate impact on regional development. Nevertheless, based on some programme evaluations and a review of these OECD programmes there are definitely lessons to be learned. This chapter will focus on:

- *What are we evaluating?* The answer to this question is not always straightforward as there are several possible aspects that one could evaluate, such as the cluster's existence and performance, the cluster initiative and policy impacts. Several programmes studied have identified indicators that they are using to monitor or evaluate their programmes, notably in terms of concrete outputs and policy learning. They may also use evaluations as a requirement for accessing future funding.
- *Lessons learned.* This review of different OECD country programmes reveals that there are lessons to be learned for programme design that could help at least improve the likelihood that the programmes will be successful in their ultimate goals. A first set of lessons learned concerns the degree to which these programmes are appropriate, realistic and flexible enough to achieve their goals. A second set of lessons learned relates to policy coherence within and across levels of government. A third set of lessons learned is about the risks involved in such policies, which are often related to insufficient private sector engagement.
- *Future research.* Many questions remain regarding the appropriateness and effectiveness of policies to support clusters. First, more clarity is needed regarding the impact of globalisation on cluster positioning. There are also numerous regional level cluster support strategies that were not subject to this review of national policies but could offer more clear and concrete details on successful strategies.¹ Clearer frameworks for evaluating such policies and

their links with a region's overall innovation capacity, innovation performance and competitiveness, are also warranted.

What are we evaluating?

The first question regarding evaluation to be answered is what the subject of the evaluation should be. The answer of course will vary depending on the stakeholder. A cluster member is presumably more interested in the overall cluster's competitive position than in the cost-effectiveness of a particular public policy action. A cluster initiative manager may be most interested in success at bringing actors together in joint activities and the development of stronger economic and social relationships. A politician may need to know how many jobs were created or how much the region's economy has improved. One could group these evaluations into a couple of general categories. The analytic tools for both merit further analytic development.²

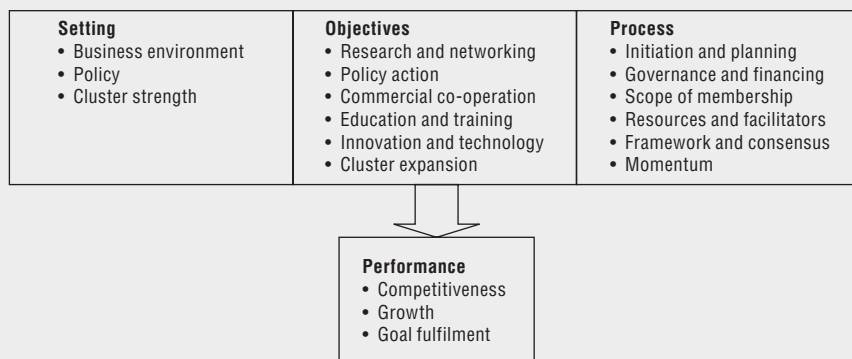
Cluster and cluster initiative performance. The goal of these policies is generally to improve a cluster's performance in the hopes of increasing competitiveness and supporting economic growth. Therefore, tools to measure its performance and changes in performance are required. Various analyses of cluster performance and competitiveness have been used across OECD countries. The most extensive was the Bank of Italy study of Italy's industrial districts, which seemed to show that clustered firms performed better than those elsewhere. Similar exercises have also taken place in Spain and in France, though in both cases the results were more ambiguous. Porter's study of US clusters, since extended to a number of EU countries and to Canada, also falls into this category. In contrast to a cluster *per se*, which may exist without any policy support, cluster initiatives have been defined as "organised efforts to increase the growth and competitiveness of clusters within a region, involving cluster firms, government and/or the research community" (Sölvell et al., 2003). The Cluster Initiative Performance Model, as described in Box 6.1, offers one framework for such an analysis.

Cluster policy effectiveness. This category covers a broad range of potential studies. The cost-effectiveness of an intervention is a classic policy evaluation area that may be of interest in cluster policy analysis. The nature of cluster interventions – specifically, the mix of tangible and less-tangible objectives – poses an immediate evaluation challenge, common to many partnership based programmes. In essence, the more the programme focuses on changing attitudes and behaviours, which is an underlying goal in many cluster programmes, the more difficult the programme becomes to evaluate. If the outcomes are measured simply in terms of co-location of enterprises, services received or meetings arranged, then the measurement can be relatively sound. However, when the definition of positive clustering outcomes is based on "levels of informal

Box 6.1. Web-based cluster evaluation surveys

Two web-based tools using the Porter cluster approach are available to the community of cluster practitioners.

Cluster Initiative Performance Model. This model was developed to better understand how different operational aspects of cluster initiatives are correlated with cluster performance. Those performance drivers include: 1) the social, political and economic setting; 2) the cluster initiative objectives; and 3) the process of its development. These drivers are broken down into different categories as illustrated below and assessed using a series of survey questions. A large scale Global Cluster Initiative Survey was conducted in 2003 and again in 2005. The results enable participants to get a better sense of how their responses compare with other respondents on these drivers and performance.



Cluster Competitiveness Report. This is a web-based, automated system of reporting on cluster competitiveness and cluster-policy effectiveness. The report measures the performance of clusters. It is designed to help business leaders to better understand their cluster's competitive position, and government leaders to measure progress and prioritise cluster-specific policy choices. This survey is administered by the non-profit Foundation for Clusters and Competitiveness and seeks to provide useful reports for individual clusters with a longer term goal of providing a global database containing accurate, objective information about clusters from a variety of industries. The survey is administered anonymously to a critical mass of actors in the cluster. The results of the survey are broken down into four areas: 1) profile of the companies and institutions participating; 2) competitive position (overall competitive position and assessment of specific business environment conditions); 3) analysis of response patterns (impact of company positioning, impact of specific factors on overall competitive assessment); and 4) trends.

Source: Sölvell et al. (2003), *The Cluster Initiative Greenbook*, Ivory Tower AB, Stockholm, Sweden and www.clustercompetitiveness.org.

collaboration or on the presence of informal knowledge spillovers then assessing the contribution of policy to changes in firm productivity become qualitative” (Martin and Sunley, 2003). Moreover, cluster policies have been applied in very different regional contexts and with differing levels of funding. As a result, despite the enormous interest, cluster policies still have much to prove in terms of their effectiveness and general applicability.

Measures of success in case study programmes. Of the programmes that specifically measure outputs, many tend to be firm and innovation oriented. For example, the Finland Centres of Expertise measure success by the number of jobs created, innovations developed, participants and persons trained. An evaluation of Japan’s Industrial Cluster programme measured the number of collaborative projects, and new businesses launched from existing firms or universities. The Georgia Research Alliance tracks similar statistics and others with a more clear human resource and knowledge generation focus, such as attraction of top professors, training of skilled graduate students and publications. Spain’s Basque Country focuses more on overall cluster economic performance in terms of key sectoral economic indicators.

Norway has taken an interesting approach by choosing to track indicators common to all projects as well as specific goals per individual project. Indicators common to all Centres of Expertise include increased co-operation, increased innovation and increased international involvement among others. Individual Centres have specific targets and an assessment of such targets based on the project’s own scale, level of development, challenges and potential. The programme also includes three stages of evaluation and reporting requirements: 1) a management evaluation; 2) a main evaluation after five years on results; and 3) annual reports, based both on project annual reports as well other information such as the management reports.

Several programmes link some evaluation of success to subsequent funding rounds. Norway’s Centres of Expertise Programme, which has a ten-year funding timeframe, does have two interim steps for project monitoring and assessment. The programme combines the need for an expectation of continued funding with a need to ensure on-going programme success. Other programmes include shorter funding cycles but allowing the successful programmes to participate in more than one cycle. Spain’s Basque Country’s programme requires semi-annual reports and has an annual funding cycle. Korea plans to use primary evaluation results for allocating budgets as a vehicle for creating some competition among the selected cluster cities.

Because many programmes seek to catalyse clusters or joint projects with seed money, the ability to leverage additional funds is often considered a measure of success. While matching funding requirements help to support this goal by design, funding achieved above and beyond these requirements

increases the programme's impact. The Georgia Research Alliance, whose goal was to increase the economic performance for the state via technology, reports to have achieved a five to one leverage, attracting USD 1 billion in federal research dollars and USD 1 billion in private investment for the state's total investment of USD 400 million. The French SPL programme for small firms sought specifically to serve as a base funding for small firm consortia to use to attract additional funds, and in one exceptional case this was a 40 to one ratio. Visanu's programme funding requirements were 50% national government and 50% regional government. One study found that the total funding included 23% private financing, albeit usually in time as opposed to money, and more regional than national funding.

One of the explicit, if not implicit, goals of national programmes is to improve the public sector's approach to innovation and clusters. The Czech National Innovation Plan seeks to increase involvement of regional public actors in support of clusters and regional innovation systems. This is one of the anticipated measures of success for the next round of the Klastry programme. An evaluation of the Finnish National Cluster Programme revealed that one of the key findings was co-ordination across public sector agencies that fund research.

Policy learning. While not every programme has a formalised post-programme evaluation, there are examples of policy learning. The mechanisms for this are both informal and formal, including pilot programmes and special "learning" components. The challenge is not only to improve an existing programme, but to capture that knowledge for the development of future programmes. For example, there are countries that have changed policies over time or are re-introducing similar policies but the lessons learned from the last rounds are not known.

Informal participant feedback has proven useful in the development of the *Pôles de compétitivité* programme in France. Given the high profile nature of the programme as well as the stature of some of the large firms participating, firms have provided feedback on the programme. In some cases this feedback is highly public and in national newspapers. Some of the changes made to the programme to respond to these comments include somewhat less onerous cluster governance requirements and a certain level of simplification regarding the funding mechanisms.

Countries are also using pilot programmes to promote policy learning with regards to clusters and innovation systems. Norway actually ran a pilot programme of its Centres of Expertise before having the first official call for proposals. Participants in the pilot programme then had to compete in the official round. While Korea's Innovative Cluster Cities is a major national investment and could not be considered merely a pilot project, the lessons learned from this programme will serve to inform the programmes to be implemented in all industrial complexes in the future.

To better understand the dynamics of development in clusters and innovation systems in detail, a few programmes have an explicit “learning” component. Sweden’s Visanu programme included several interactive research projects. These projects involved researchers who took a participant observation approach and followed the cluster throughout the funding cycle. The on-going presence of such researchers was designed to get valuable information on the process of developing cluster interactions and a regional platform. Some of these reports are available in English to promote knowledge sharing even beyond Sweden.³ Norway’s Centres of Expertise will include periodic management evaluations to provide recommendations to improve programme strategic development.

Lessons learned

Appropriateness of a cluster policy

This first set of lessons learned concerns the degree to which these programmes are appropriate, realistic and flexible enough to achieve their goals. Given the popularity of the cluster approach, there is concern that it is being used as the core strategy to achieve competitiveness, yet the two are not merely interchangeable. After an analysis regarding why a cluster policy is helpful and to whom it should be addressed, the appropriate programme design question becomes relevant. The wide variety of cluster types, cluster stages and regional conditions complicates these design efforts but flexibility in solutions is possible.

Identify explicitly what the national level’s interests are, what the barriers to achieving those goals are, and how a cluster approach can help overcome these problems.

Often governments launch programmes to enhance competitiveness or build innovation capacity yet these objectives are very broad. Such goals do not specify the nature of the problem that the national level needs to address and hence why programmes to promote clusters, as opposed to other tools, would be the most effective option. This lack of clarity also limits the ability to target, fund and evaluate outcomes.

Germany’s BioRegio was perhaps the most focused of all the policies studied, as it was designed to support one sector and therefore much less comprehensive than some other programmes. Nevertheless, the clarity of motivations for national level intervention, the straightforward goals for this programme and the focused public support contributed to its success.

Weigh the relative merits of active intervention from the national government versus framework conditions and facilitation.

In some countries, the policy approach focuses on framework conditions and arms-length facilitation. Several OECD countries use this framework approach instead of an explicit national policy, and they possess successful clusters. The United States, for example, only has relatively modest national level programmes for lagging regions (such as the EDA University Centre programme) but otherwise seeks to provide better framework conditions for competitiveness. Explicit cluster approaches are really found more at the state (subnational) level. Ireland's FDI attraction strategies played an active role in serving to develop certain clusters like ICT, without the need for a national cluster programme. The UK's Regional Development Agency approach is a national level framework for regional development that encourages a cluster approach through advice and funding but does not involve a specific programme. The Netherlands "Peaks in the Delta" regional strategy has a similar approach of providing funding for spatial economic development planning that includes cluster support. Australia's Regional Partnerships Programme, under the *Stronger Regions, Stronger Australia* framework, also has a more broad-based facilitation approach rather than obliging regions to adopt a cluster or regional innovation approach.

Consider that cluster-type policies can be valuable as a practical tool, not only to respond to conceptual models.

Some of the very pragmatic advantages include helping governments to: diagnose regional economic strengths, clarify market linkages among economic actors, dialogue with "systems" of public and private actors and focus public resources. Therefore, regardless of philosophical approaches to the cluster and innovation system concepts, these programmes could be considered for their other merits.

Several programmes have made very active use of this practical aspect of the cluster concept to adopt cluster-informed approaches to economic development. In Spain, managers of the Basque Country Competitiveness Clusters programme have used a clever approach to working with clusters. Their duties are conceived in the context of an organisational matrix. They ensure that all the meetings of a cluster are attended by the same person, and that all the meetings on a particular horizontal common theme across clusters are attended by the same person (internationalisation, technology and quality/excellence in management). Furthermore, approximately half of the region's industrial base can be reached through an email to 12 cluster initiatives. As a result, there is very active contact between the cluster initiatives and civil servants. The Oregon Cluster Industries approach is not a programme with clear budget per say, but the Oregon Economic and Community Development Department is trying to restructure itself to be more focused on clusters. Italy's Law 317 sets out an authorising environment that explicitly recognises industrial districts as entities eligible for certain forms of public support.

Be realistic with respect to clarity of targets, funding and duration as compared to programme goals.

The programme goals should determine both the targets and the resources, but these choices include a number of inherent tradeoffs. The first trade-off is whether to concentrate resources with a very limited pool or to be more inclusive. Other trade-offs concern leading *versus* lagging regions and dynamic *versus* exposed sectors. The available funding and timeframe in turn need to be realistic given the number and nature of targets resulting from these choices. Engaging actors may be costly in terms of time and transaction costs even if not in public expenditure, while the benefits of R&D investments may take considerable time to accrue.

Disappointment regarding the effectiveness of programme results is often related to insufficient funding and timeframes relative to expectations. For the major R&D initiatives, several have very long-term timeframes, up to ten years like Sweden's VINNVÅXT and Norway's Centres of Expertise. While there may be interim evaluations to ensure the full period of funding, this timeframe implies that such long-term commitment may be needed for successful results. Programmes with a very short timeframe but with substantial R&D investments are perhaps less likely to achieve their goals.

Ensure that programmes have a range of instruments for adaptation across the targets (in terms of cluster types, region types, etc.).

Even where a limited range of regional economies and clusters are targeted, they nonetheless have diverse needs. One of the most notable distinctions that impacts the use of instruments is the cluster lifecycle, as a cluster that is emerging *versus* mature *versus* transforming will have different needs. Clusters are also embedded in different environments that may be rich or weak in knowledge generating institutions or linkages among actors. Evidence from recent evaluations documents the variations in instrument use within the same programme across clusters. Programmes thus need to have this flexibility built in by offering a range of possible instruments from which clusters may choose.

Programmes have shown flexibility to different cluster and region types without necessarily sacrificing clarity of goals. An evaluation of the Japanese Industrial Clusters programme revealed four general categories of clusters with very different characteristics and needs that were nevertheless able to benefit from the programme. They included metropolitan areas (strong existing clusters with large firms), science and technology-centred clusters (technology transfer), niche clusters (smaller agglomerations with niche fields) and networks across mini-clusters (thin and small scale clusters). Finland's Centres of Expertise were also using the programme for different sets of needs. An evaluation noted that smaller centres focused on cluster-based development and internationalisation while larger centres focused on R&D projects.

Policy coherence

Achieving policy coherence across sectors and across levels of government is a perennial challenge in supporting regional development. In the case of supporting regional specialisation, there are a multitude of programmes from at least three different policy families all working towards potentially similar goals. The fragmentation of resources across these different programmes is confusing to both public and private actors. At best, the programmes are simply co-existing but with potential increased transactions costs for the participants. At worst, the programmes actually divide actors that should otherwise be working together, such as when administrative boundaries don't map to the clusters or certain relevant actors are not eligible for support in the context of the programme.

Determine a cross-ministerial strategy for national level intervention.

Clear objective setting and planning at the central level can help to align different actions and serves to promote coherence across regions. The proliferation of cluster-type approaches at the central level, in addition to sub-national programmes, necessitates a clear programme mapping to prevent duplication, fill gaps and avoid missed opportunities. While different central level agencies and ministries have sought to collaborate in some countries, high-level support strengthens the motivations for such collaboration and raises the level of the programme on national agendas.

There exist interesting examples of either clear strategies or cross-ministerial efforts in support of a plan. France's *Pôles de compétitivité* and the Korean Innovative Cluster Cities are both highly prominent in their respective countries and therefore assemble key actors across ministries. There are several other examples of programmes that are less politically prominent but have sought to work across ministries, especially in the Nordic countries. Sweden's Visanu programme (three agencies), Norway's Arena and Centres of Expertise programmes (three agencies) and Finland's Centres of Expertise (inter-ministerial committee) are all examples. While the inter-agency rivalries may not be resolved by such arrangements, they certainly have opened doors to greater communication for improved policy coherence.

Work in consort with regional levels in programme development for capacity building, coherence and complementarity.

In several countries, cluster programmes began at the regional and local level well before any explicit national level policy. In those cases, the national level can learn from the experiments across different regions in the development of its programme. In other countries, the regional level lacks the capacity and/or financing to effectively support a cluster programme. In such cases, the national level has a role of building regional capacity, an important issue in the context of decentralisation trends. For countries where there exist numerous regional level

initiatives, the national government may seek to promote some coherence in the pursuit of national goals or identify opportunities to provide complementary programmes.

Several countries have addressed this national-regional coherence question by actively involving the regional level in selection and funding. Numerous programmes have a regional co-financing requirement, such as Sweden's VINNVÄXT and Visanu programmes, the Centres of Expertise programmes in Finland and Norway, as well as the *Pôles de compétitivité* and SPL programmes in France. All the national programmes in Germany require active regional support in terms of funding and programme implementation. While many programmes seek to build regional capacity in supporting clusters, the Czech Klastry programme is the most explicit in this goal.

Risks

Beyond questions of appropriateness and coherence, there are inherent risks related to the use of public policy to support clusters. These risks concern the strategy of public sector investment, notably the cost of cultivating nascent clusters and the risks of vulnerability due to insufficient diversification of sectors or a high degree of dependence on an anchor firm. In some cases the cluster approach is actually used to address these risks by serving as a vehicle to promote diversification. While addressing these risks in strategy requires strong analysis, there are strategies for designing programmes to reduce some of the common risks inherent to a cluster-type approach.

Structure the programme to minimise the associated risks, such as picking winners and lock-in.

The public sector at national and regional levels is less equipped than the private sector to manage business risks such as predicting movements in highly competitive and rapidly evolving product markets in the context of globalisation. There are also greater risks that cluster groups unduly influence government in their favour (administrative capture) when they become the clear focal point of policy. Furthermore, supporting the strongest existing clusters may reduce the opportunities for innovation that could jeopardise these selected clusters. Instruments that are less industry specific and/or region-neutral can be easier to manage politically. Therefore, national policy makers can take steps to mitigate those risks such as revisiting cluster designations periodically or giving other types of firms an opportunity to compete.

Several OECD country programmes have tried to mitigate these common risks. One strategy used by the programmes is to involve key researchers and firms in the selection process. There are also programmes that are complementary in terms of a cluster's stage of development such that not only the strongest existing clusters receive support. For example, the Oregon

Cluster Network in the United States and the Arena programme in Norway allow clusters in earlier stages of development to participate with the idea that if they develop they may be eligible for programmes with greater resources. In addition, the competitive process of numerous programmes has helped cluster initiatives form that later have grown with other resources. Many candidates not selected by the VINNVÅXT programme in Sweden or the BioRegio programme in Germany were nevertheless able to find alternative resources and develop, therefore the “picked winners”, albeit through a competitive process, were not the only parties to benefit.

Ensure sufficient private sector engagement, as their motivation ensures longevity of partnerships and their skills reactivity to market changes.

Given the risks mentioned above, the role of the private sector in helping to guide regional economic strategies, including cluster-based programmes, is crucial. Cluster programmes can offer tangible benefits to the private sector (e.g., labelling, increased R&D investment or tailored support services) if structured properly. Yet many programmes, particularly in Europe, are heavily driven by the public sector and allow for more limited engagement of public-private partnerships. The programme’s conception, target selection and implementation all need to take the private sector role into account more explicitly.

The more effective strategies to ensure private sector engagement tended to involve the private sector early on. For example, in the United States, the two state examples of Georgia and Oregon illustrated that private actors helped in the design and administration of the programmes. The Oregon Business Council, a non-partisan association of top business executives, helps to develop the Oregon Business Plan Agenda with input from Oregon’s clusters. To ensure that smaller firm needs are heard, they canvass the clusters instead of simply relying on the state’s leading firms for input. In Spain’s Basque Country, the private sector was involved in the dialogue to select the potential clusters as well as in the decision to participate. Even though most programmes do have some sort of competitive selection process to gauge private sector motivation, this has not proven sufficient for long-term private sector engagement.

Set outcome targets, even if it is difficult to evaluate the causal relationship of public policy on private action.

The more the programmes emphasise changes in behaviour or attitudes among firms/entrepreneurs, the more difficult those outcomes are to measure. The easier end of the spectrum is to measure the take up of services by participants, but these statistics usually leave unanswered the question of whether a cluster policy is more effective than another approach to regional

development. The evaluation problem is ever-present but should not prevent an effort to identify specific outcomes, which is one important way to clarify what the programme is trying to achieve and how feasible its ambitions are.

Only a few of the programmes studied had a clear evaluation approach when establishing the programme. For example, Norway's new Centres of Expertise programme includes three stages of evaluation and reporting: annual reports from projects and other management reports, a main evaluation after five years in operation and a management related evaluation. Sweden's Visanu programme included interactive research initiatives that tracked certain clusters closely and over time to better understand how they were functioning. Finland's Centres of Expertise have been in place for several years and evaluations regarding performance on key indicators are on-going. Several programmes include regular reporting as a condition for on-going funding.

Future research

There are still many unanswered questions regarding the benefits of clusters themselves as well as the effectiveness and efficiency of cluster policies seeking to influence their development. These questions are even more pressing given the rapid changes in industry transformation as well as the continued proliferation of policies at all levels of government in OECD countries. A number of themes merit additional consideration by researchers and international organisations such as the OECD.

Do cluster policies have an influence on the transformation of industries with globalisation? As industries transform and OECD clusters seek to keep pace with these transformations, public policy may help, may hurt or simply be marginal to the overall picture. OECD countries are interested in how policies can help regions, especially those highly exposed to international competition, best manage off-shoring and other processes related to globalisation. In general, the cluster model seems still to have a role to play in traditional manufacturing activities, offering a means to build critical mass among SMEs, increase the flow of information on new technologies, improve product quality and upgrade workforce skills. At the same time, the ability of firms to make external linkages cannot be ignored and regional strategies need to take account of these economic realities. For example, in Veneto, Italy, many cluster members are off-shoring aspects of operations to a common area in Romania. Off-shoring is not only a major concern for textiles, as higher value added services and even R&D functions are migrating. Public policy may be able to facilitate the identification of off-shoring partners or organise support in such contexts so as to help the region best manage the impacts of these trends.

What are the goals and instruments of policies to promote innovation, understanding that the term innovation is used as a motivation to describe a wide range of activities in regions? The term has been introduced into regional development policy only recently but has now become a key component and objective of policy. Yet, the precise goals are often not clear and the link between success in innovation policy and regional outcomes is not so easy to detect and measure. This is clearly the case for the cluster policies reviewed in this report, which have included innovation as a goal but without a clear set of indicators to assess impacts either on firms or on the region as a whole. Therefore international organisations like the OECD and the EU can help fill the information gap at the sub-national level to better understand innovation processes at the regional level and their relationship to policy.

What are the long-term impacts of these policies? Helping actors come together does not mean that they will stay together. One of the perceived benefits of cluster programmes as a policy is that, once actors come together with the aid of public intervention and financing, this momentum will continue when public support stops. This catalytic public sector role is an attractive approach for many reasons, notably because this upfront investment in developing partnerships is expected to reap benefits to the regional economy over the long term. While some research results exist on the successes and failures regarding the longevity of basic SME networking programmes, there is not considerable information on larger scale cluster programmes.

Notes

1. The OECD, in conjunction with Nutek, the Swedish Agency for Economic and Regional Growth, is currently conducting a study on regional level strategies to help address this gap.
2. Evaluation being a critical issue, The Competitiveness Institute, a not-for-profit alliance of cluster practitioners, seeks to address this topic through symposiums and a forthcoming publication.
3. Reports may be obtained from Nutek, the Swedish Agency for Economic and Regional Growth.

Bibliography

- Andersson, Thomas et al. (2004), *The Cluster Policies Whitebook*, International Organisation for Knowledge Economy and Enterprise Development, Malmö, Sweden.
- Barkley, David and Mark Henry (2001), *Advantages and Disadvantages of Targeting Industry Clusters*, REDRL Research Report 09-2001-01, Regional Economic Development Research Laboratory, Clemson University, Clemson, SC, September 2001.
- Beffa, Jean-Louis (2005), "Pour une nouvelle politique industrielle" (Towards a New Industrial Policy), Report submitted to the French Government January 15, 2005.
- Blanc, Christian (2004), "Pour un écosystème de la croissance" (An Ecosystem for Growth), Report submitted to the Prime Minister, National Assembly.
- Brusco, Sebastiano (1982), "The Emilian Model: Productive Decentralisation and Social Integration", *Cambridge Journal of Economics*, Vol. 6(2), pp. 167-184.
- Bergvall, Daniel et al. (2006), "Intergovernmental Transfers and Decentralised Public Spending", *OECD Journal of Budgeting*, Vol. 5, No. 4, OECD Publications, Paris.
- Coe, N.M., M. Hess, H.W.C. Yeung, P. Dicken and J. Henderson (2004), "Globalizing Regional Development: a Global Production Networks Perspective", *Transactions of the Institute of British Geographers*.
- Conference Board of Canada (2004), *Clusters of Opportunity, Clusters of Risk*, The Conference Board, Ottawa, Canada.
- Cooke, Philip (2004), "Regional Knowledge Capabilities, Embeddedness of Firms and Industry Organisation: Bioscience Megacentres and Economic Geography", *European Planning Studies*, Vol. 12, pp. 625-641.
- Cortright, Joseph (2006), *Making Sense of Clusters: Regional Competitiveness and Economic Development*, The Brookings Institution, Washington, DC.
- Cortright, Joseph and Heike Mayer (2002), *Signs of Life: The Growth of Biotechnology Centres in the US*, The Brookings Institution Center on Urban and Metropolitan Policy, Washington, DC.
- CzechInvest (2003), *Cluster Funding: A comparative study of the methods for financing uses in the establishment of industrial clusters in the EU and countries about to join the EU*, unpublished report.
- Department of Trade and Industry, United Kingdom (DTI) (1998), *Competitiveness White Paper: Our Competitive Future – Building the Knowledge Driven Economy*, DTI Publications, London.
- DTI (2001), *UK Business Clusters in the UK: A First Assessment*, DTI Publications, London.
- DTI (2004), *A Practical Guide to Cluster Development*, a report to the Department of Trade and Industry and the English RDAs by Ecotec Research and Consulting, DTI Publications, London.

- Dunning, John (1992), "The Competitive Advantage of Countries and the Activities of Transnational Corporations", *Transnational Corporations*, Vol. 1.1.
- Enright, Michael (1998), "The Globalisation of Competition and the Localization of Competitive Advantage: Policies toward Regional Clustering", Paper presented at the Workshop on Globalisation of Multinational Enterprise Activity and Economic Development, University of Strathclyde, Glasgow, Scotland, 15-16 May 1998.
- Ernst, Holger and Nils Omland (2004), "Vitalisation of Industry through the Promotion of Knowledge Intensive New firms: The Case of German Biotechnology", Presentation made at the Japan Institute for Labour Policy and Training, Tokyo, Japan, 26 March 2004.
- Ernst and Young (2005), *Étude relative à l'implication des PME et des SPL dans les Pôles de compétitivité* (Study of the Involvement of SMEs and Local Production Systems in the Competitiveness Clusters), Draft report to the DATAR.
- EC and Enterprise Directorate-General (2002), *Regional Clusters in Europe: Observatory of European SMEs* (No. 3/2002), European Commission, Brussels.
- EC and Enterprise Directorate-General (2003a), "Background Paper on Cluster Policies", prepared for the Trend Chart Policy Workshop, *Innovative Hot Spots in Europe: Policies to promote trans-border clusters of creative activity*, held in Luxembourg, 5-6 May 2003.
- EC and Enterprise Directorate-General (2003b), "Background Paper on Methods for Cluster Analysis", prepared for the Trend Chart Policy Workshop, *Innovative Hot Spots in Europe: Policies to promote trans-border clusters of creative activity*, held in Luxembourg, 5-6 May 2003.
- EC and Enterprise Directorate-General (2003c), *Thematic Report: Cluster Policies*, Brussels.
- EC and Enterprise Directorate-General (2003d), *Theme-specific Country Report – Denmark*, European Trend Chart on Innovation.
- EC and Enterprise Directorate-General (2004a), *Annual Innovation Policy Trends and Appraisal Report – Denmark*, European Trend Chart on Innovation.
- EC and Enterprise Directorate-General (2004b), *Annual Innovation Policy Trends and Appraisal Report – Germany*, European Trend Chart on Innovation.
- Gordon, I. and McCann (2000), "Industrial clusters: Complexes, agglomeration and/or social networks?", *Urban Studies*, Vol. 37(3), pp. 513-532.
- Holm Dalsgaard, Mette (2001), "Danish Cluster Policy: Improving Specific Framework Conditions", in OECD (2001), *Innovative Clusters – Drivers of National Innovation Systems*, OECD Publications, Paris.
- Higher Education Policy Institute (2004), "Research and regions: an overview of the distribution of research in UK regions", Centre for Policy Studies in Education, University of Leeds.
- Kodama, Toshihiro (2004), "Cluster Promoting Initiatives in Japan", presented at the conference *Innovation and Regional Development*, sponsored by the OECD, EU Erik Network and the Tuscany Region, Florence, Italy, November 2004.
- Krugman, Paul and A.J. Venables (1990), "Integration and the Competitiveness of the Peripheral Industry", pp. 55-77, in Bliss, C. and J. Braga de Macedo (eds.), *Unity with Diversity in the European Economy*, Cambridge University Press/CPER, Cambridge/London.

- Lainé, Frédéric (2001), “Une approche statistique des systèmes productifs locaux” (A Statistical Approach to Local Production Systems), in *Réseaux d’entreprises et territoires : Regards sur les systèmes productifs locaux* (Networks of Firms and Regions: Local Production Systems), DATAR, la Documentation Française, Paris.
- Loughlin, John (2000), “The Regional Situation in the Year 2000”, Assembly of the European Regions, Brussels.
- Lublinski, Alf Erko (2003), “Does Geographic Proximity Matter? Evidence from Clustered and Non-clustered Aeronautic Firms in Germany”, *Regional Studies*, Vol. 37, pp. 453-467.
- Lundvall, Bengt-Åke and Björn Johnson (1994), “The Learning Economy”, *Journal of Industry Studies*, Vol. 1, pp. 23-42.
- Markusen, Anne (1996), “Sticky Places in a Slippery Space: A Typology of Industrial Districts”, *Economic Geography*, Vol. 72, pp. 293-313.
- Martin, Ron and Peter Sunley (2003), “Deconstructing Clusters: Chaotic Concept or Policy Panacea?”, *Journal of Economic Geography*, Vol. 1, pp. 5-35.
- Ministry of Economy, Trade and Industry (METI) (2005), *Report on Industrial Cluster Programme*, evaluation report submitted to METI by the Industrial Cluster Study Group.
- National Governor’s Association (NGA) (2001), *National Governor’s Guide to Cluster-Based Economic Development*, Washington, DC.
- Organisation for Economic Co-operation and Development (OECD) (1999a), *Boosting Innovation: The Cluster Approach*, OECD Publications, Paris.
- OECD (1999b), “Report on Innovation and Territories: Upgrading Knowledge and Diffusing Technology in a Regional Context”, OECD internal document DT/TDPC(99)8, 17 May 1999.
- OECD (2001), *Innovative Clusters: Drivers of National Innovation Systems*, OECD Publications, Paris.
- OECD (2004), *OECD Territorial Reviews: Montreal, Canada*, OECD Publications, Paris.
- OECD (2005), *Building Competitive Regions: Strategies and Governance*, OECD Publications, Paris.
- OECD (2006), “The Changing Nature of Manufacturing in OECD Countries”, OECD internal document DSTI/IND(2006)1, 13 February 2006.
- Pietrobelli, Carlo and Roberta Rabellotti (2002), *Business development service centres in Italy, An empirical analysis of three regional experiences: Emilia Romagna, Lombardia and Veneto*, Prepared for the Restructuring and Competitiveness Network, United Nations ECLAC, Santiago, Chile.
- Porter, Michael (1990), *The Competitive Advantage of Nations*, The Free Press, New York.
- Porter, Michael (1994), “The Role of Location in Competition”, *Journal of the Economics of Business*, Vol. 1, No. 1.
- Porter, Michael (2003), “The Economic Performance of Regions”, *Regional Studies*, Vol. 37, pp. 549-578.
- Power, D and M. Lundmark (2004), “Working through Knowledge Pools: Labour Market Dynamics, the Transference of Knowledge and Ideas, and Industrial Clusters”, *Urban Studies*, Vol. 41, pp. 1025-1044.

- Reich, Robert (1991), *The Work of Nations: Preparing Ourselves for 21st Century Capitalism*, New York, Alfred A. Knopf.
- Rissanen, Juho and Jukka Viitanen (2001), *Report on Japanese Technology Licensing Offices and R&D Intellectual Property Right Issues*, The Finnish Institute in Japan.
- Roelandt, Theo J.A. and den Hertog, Pim (1999), "Cluster Analysis and Cluster-based Policy Making in OECD Countries: An Introduction and Theme", in *Boosting Innovation: The Cluster Approach*, OECD Publications, Paris, France, pp. 9-23.
- Romer, Paul M. (1990), "Endogenous technological change", *Journal of Political Economy* 98(5), pp. 71-102.
- Rosenfeld, Stuart (2001), "Networks and Clusters: The Yin and Yang of Rural Development", in the conference proceedings *Exploring Policy Options for a New Rural America*, Federal Reserve Bank of Kansas City, Kansas City, Missouri, pp. 103-120.
- Saxenian, AnnaLee (1994), *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*, Harvard University Press, Cambridge, MA.
- Sforzi, Fabio (1990), "The Quantitative Importance of Marshallian Industrial Districts in the Italian Economy", in Pyke et al., *Industrial districts and inter-firm co-operation in Italy*, IILS, Geneva.
- Sölvell, Örjan, Lindqvist, Göran and Christian Ketels (2003), *The Cluster Initiative Greenbook*. Ivory Tower AB, Stockholm, Sweden.
- Storper, Michael (1997), *The Regional World*, Guildford Press, New York.
- Storper, Michael and Anthony Venables (2004), "Buzz: Face-to-Face Contact and the Urban Economy", *Journal of Economic Geography*, Vol. 4, Issue 4, pp. 351-370.

Table of Contents

Executive Summary	11
Introduction	17

Part I

Synthesis Report

Chapter 1. Why Are Cluster Policies Popular, Again?	23
Introduction and key points	24
Clusters and related concepts: moving beyond definitions	25
Theoretical cluster benefits and risks	30
Globalisation and the nature of clusters	34
From theory to policy	36
Notes	37
Chapter 2. Where Do the Programmes Originate?	39
Introduction and key points	40
Regional policy: capitalising on local assets	41
S&T/innovation policy: from research to economic growth	46
Industrial and enterprise policy: supporting groups not firms	52
Linking objectives across policy streams	60
Changing objectives over time	62
Chapter 3. How Do Programmes Pick Participants?	71
Introduction and key points	72
Policy targets: what is the real problem?	75
Identification methods: analytic and strategic choices	78
Selection mechanisms: matching programme goals with targets ...	81
Chapter 4. What Instruments Do They Use and How?	87
Introduction and key points	88
Categories of instruments	92
Programme duration and funding	101
Linking across programmes, instruments and clusters	104
Notes	108

<i>Chapter 5. Who Does What? Governance</i>	109
Introduction and key points	110
Central level governance: co-ordinating at the top	114
National/regional articulation: managing the relationship	117
Missed opportunities: common examples	122
Private sector participation: cultivating long-term engagement	123
<i>Chapter 6. What Have We Learned?</i>	125
Introduction and key points	126
What are we evaluating?	127
Lessons learned	131
Future research	137
Notes	138
Bibliography	139

Part II

Case Studies

<i>Chapter 7. Canada</i>	145
<i>Chapter 8. Czech Republic</i>	155
<i>Chapter 9. Finland</i>	169
<i>Chapter 10. France</i>	183
<i>Chapter 11. Germany</i>	199
<i>Chapter 12. Italy</i>	213
<i>Chapter 13. Japan</i>	225
<i>Chapter 14. Korea</i>	241
<i>Chapter 15. Netherlands</i>	255
<i>Chapter 16. Norway</i>	267
<i>Chapter 17. Spain: The Basque Country</i>	281
<i>Chapter 18. Sweden</i>	295
<i>Chapter 19. United Kingdom</i>	313
<i>Chapter 20. United States: Georgia</i>	323
<i>Chapter 21. United States: Oregon</i>	339

List of boxes

1.1. Related terms	26
2.1. IDB and UNIDO: cluster and value chain support	57

2.2. EU policies supporting clusters	63
2.3. Denmark's cluster policy	67
3.1. Quantifying clusters	79
3.2. Cluster audit in Montreal	85
4.1. Denmark's Network programme: brokers and scouts	95
5.1. Australia's Regional Partnership programme	120
6.1. Web-based cluster evaluation surveys	128
8.1. CzechInvest: combining business development with FDI attraction	159
13.1. Technology Advanced Metropolitan Area (TAMA): Japan	227
15.1. Point One: nanoelectronics and embedded systems (Netherlands)	263
18.1. BioFuel region	305

List of tables

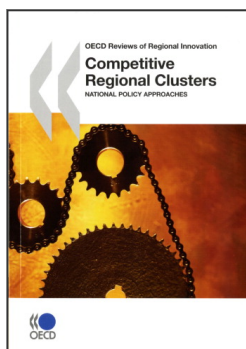
0.1. Programmes of case study countries	18
1.1. Characteristics of science-based and traditional clusters	28
1.2. Cluster dimensions	29
1.3. The economic weight of clusters: selected countries	30
1.4. Theoretical benefits of clusters	33
2.1. Policy trends supporting clusters and regional innovation systems	41
2.2. Targeted sectors: Sweden, France, Italy and Canada	48
2.3. Characteristics of BioRegio winning regions (initial round)	49
2.4. Targeted sectors: Spain (Basque Country), US (Oregon) and Finland	53
2.5. Priority clusters identified by UK Regional Development Agencies	54
2.6. Selected EU programmes supporting clusters and regional specialisation	64
3.1. Targets and selection mechanisms of case study countries	73
3.2. Rationale for different selection mechanisms	82
4.1. Instruments and budgets of case study countries	89
4.2. Instruments promoting regional specialisation and clusters	92
4.3. Japanese Industrial Cluster programme typology	101
4.4. Complementarity of Japanese and Swedish cluster programmes	105
5.1. Considerations for level of cluster policy intervention	111
5.2. Governance considerations for case study countries	112
5.3. Cluster-informed policy options	121
7.1. Funding for NRC cluster initiatives: Central and Western initiatives	150

7.2. Funding for NRC cluster initiatives: Atlantic initiatives	151
8.1. Eight Czech statistical clusters	163
9.1. Objectives of the Finnish Centres of Expertise programme	174
9.2. National Cluster programme targets: Finland	175
11.1. Budgets of cluster-based programmes in Germany	205
11.2. Characteristics of winning regions for BioRegio	207
11.3. Instruments of the BioRegio programme	209
12.1. Budgets for Italian Technological Districts	220
12.2. Criteria for Italian industrial districts	221
13.1. Industrial Cluster programming stages: Japan	232
13.2. Region types served by Japan's Industrial Cluster programme	234
13.3. Instruments in Japan's Industrial Cluster programme	236
14.1. Planning phases for Korea's Plan for Balanced National Development	245
14.2. Targeted areas in Korea's 2010 Industrial Vision	246
14.3. Multi-year budget for Korea's Innovative Cluster Cities	248
14.4. Budget breakout 2005, Korea's Innovative Cluster Cities	248
14.5. Cluster focus by city: Korea	249
14.6. Innovative Cluster City participants	250
14.A1.1. Projects for Innovative Cluster Cities	253
15.1. Netherlands: funding for region-specific economic policy	261
17.A1.1. Cluster associations in Spain (Basque Country)	292
18.1. Spending on business policy and related economic development: Sweden	302
18.2. VINNVÄXT clusters: Sweden	303
19.1. Funding sources of UK Regional Development Agencies	315
19.2. Budgets for UK Regional Development Agencies	318
20.A1.1. Georgia Research Alliance centres	337
21.1. Oregon key industries	347

List of figures

1.1. Manufacturing employment by key activity: G7 countries, 1970-2001	35
2.1. Finland's Centres of Expertise	45
2.2. Intersection of policy streams	60
3.1. Types of policy targets	76
4.1. Cluster initiative objectives from GCIS	97
4.2. Complementarity of Norwegian cluster programmes	106
7.1. Organisational chart: Canada	148
7.2. NRC cluster programme goals by development phase	153
8.1. Organisational chart: Czech Republic	158
8.A1.1. Map of Czech clusters	168

9.1. Organisational chart: Finland	173
9.A1.1. Map of Finnish Centres of Expertise.	182
10.1. Organisational chart: France	186
10.A1.1. Map of French <i>Pôles de compétitivité</i> clusters	197
10.A1.2. Map of SPLs (industrial districts) in France	198
13.A1.1. Map of Japan's Industrial Cluster programme	238
13.A1.2. Map of Japan's Knowledge Clusters	239
14.1. Organisational chart: Korea	243
15.1. Organisational chart: Netherlands	258
15.A1.1. Selected clusters in the Netherlands	266
16.1. Organisational chart: Norway	270
16.2. Evaluation system for the Norwegian Centres of Expertise	276
16.A1.1. Norway Arena programme clusters	278
16.A1.2. Norway NCE programme clusters	279
17.1. Organisational chart: Spain (Basque Country)	284
18.1. Organisational chart: Sweden	298
18.A1.1. Map of Swedish cluster programme participants	311
20.1. Organisational chart: US (Georgia)	325
21.1. Organisational chart: US (Oregon)	342



From:
Competitive Regional Clusters
National Policy Approaches

Access the complete publication at:
<https://doi.org/10.1787/9789264031838-en>

Please cite this chapter as:

OECD (2007), "What Have We Learned?", in *Competitive Regional Clusters: National Policy Approaches*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/9789264031838-9-en>

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to rights@oecd.org. Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at info@copyright.com or the Centre français d'exploitation du droit de copie (CFC) at contact@cfcopies.com.