CLUNET
Cluster Policy Guidelines Report

What is a cluster?

CLUNET DEFINITION (Glossary of terms)
Clusters are flexible networks of small and large companies that complement each other, enhanced by research, development, qualification institutions and additional centres of competence that build competitiveness thanks to close supply linkages and cooperative relationships.

2

Experience from CLUNET Partners

"The Italian term *Industrial district* indicates the local territorial areas characterised by elevated concentrations of small enterprises with a high specialisation in a particular productive sector and with a particular relationship between the enterprises and the resident people." G. Becattini

" AEI (innovating business associations), also called clusters". (Aragon-Spain)

"A competitiveness cluster concentrates at the same location, the talent incorporated within public and private research units, teaching facilities and the expertise of business enterprises, in order to establish working relationships which develop a co-operation environment and promote partnerships within innovative projects." (Brittany-France)

"16 growth industries have been identified. The guiding factors are: a strong cross-regional and cross-national orientation of enterprises, a close collaboration with research institutions, a higher than average degree of linkage within the line of business, a high added value and particular economic growth" (Potsdam- Brandenburg-Germany).

Clusters consist of mutually connected companies of related and different activities, know–how and other institutions and organisations, which provide critical mass of knowledge, technologies, resources and means, important for strengthening competitiveness of single participating companies and of clusters as a whole. (Ljubljana – Slovenia)

A group of associated companies and institutions, geographically defined, focused on a number of activities and linked by common and complementary interests (Madrimasd)

At national level, Poles de Competitivites are associations of companies, research labs and universities, located on the same territory, willing to develop joint/collaborative research and innovation projects; at regional level, PRIDES are thematic regional networks of SME, joining forces to develop not only innovation, but also export, ongoing training, use of ICT, and sustainable development (PACA)

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Foreword

"Since the launch of CLUNET in September 2006 NWDA as coordinator and all the CLUNET partners have made significant progress. The CLUNET project brings together a critical mass of partners from all four corners of Europe and North America to share and exchange their experiences of cluster innovation and development policies. Together they include some of Europe's leading innovation policy makers and opinion shapers and represent over sixty two world class clusters.

We believe that clusters are a unifying policy tool for European innovation stakeholders and that they can form the basis of a common policy exchange language amongst regional partners and form the basis of sustainable trans-national policy co-operation. CLUNET began with a series of co-operation, learning and networking activities between leading policy and programme managers based not only on their own experiences but also on the best practices developed in Paxis and G2G. The results of this exercise have been collated within this "Cluster Policy Guidelines" report. We hope this mapping exercise will facilitate the classification of the cluster policy experience for any European region whether they are at the beginner stage, intermediate stage or already experienced in cluster development. I commend this document to you".

Ian Haythornthwaite, Executive Director Resources, Northwest Regional Development Agency (NWDA)

"This document represents the final deliverable of the CLUNET activity carried out during the first year within the framework of the PROINNO Europe initiative. It summarises the discussions between the 14 partners of the consortium concerning cluster policies. In order to define a "recipe book" of good practices of cluster policies, which can support regional economic assets, partners have carried out a benchmark exercise of the cluster policies identified throughout Europe and amongst the CLUNET partner regions themselves. It provides policy-makers, practitioners and cluster managers an overview of tangible experiences and barriers faced by the various CLUNET regions and stakeholders. It is not a theoretical document that provides yet another catalogue of cluster policies or solutions to regional economic development issues, but rather a more practical guide of what has been proven to work amongst CLUNET partners. The dissemination of this report to regions involved in the European Cluster Alliance and others, through the INNO Learning Platform, will help to build a stronger cluster community in Europe."

Marc Pattinson, Managing Director of inno-TSD and expert of the INNOLearning Platform

"In public policy and, above all, in public management there is a "research tradition" centrally concerned with "best", "smart" or, more simply, "good" practice. Often this line of research proceeds with much difficulty because of methodological obstacles and self-awareness. Yet the goal of "good practice" research-approach - widening the range of practical solutions to socio-economic problems - is very important to achieve, even though the methodological effort required can be very demanding.
The main motivations to implement such an effort are:

a) the desire and necessity to serve practitioners (politicians and public managers) who are themselves not much involved in methodological issues;
b) to widen the range of solutions to problems already successfully faced (at least nominally) in other political, economic and social contexts.

However, what counts as a "good solution" depends much on the local context. No solution does only one thing. There are subsidiary effects that different interests value in different ways. In addition, there are highly local issues of human, financial, social resource availability and political constraints. Much also depends on the capacity in adapting available resources to meet local requirements and discovering and seizing opportunities.

In other words, the difficulty in studying "solutions" is that, by nature, they embody variability. The solutions we look for are, by their own nature, dynamic, and they constantly change shape. To overcome such methodological obstacles is very hard. In order to do that CLUNET project partners adopted a shared methodology for defining the content of the cluster policy fact sheet. The fact sheet was prepared not to ask the broad and fascinating question “What worked?” since that question seeks too big an answer all at once. In the cluster policy fact sheet this question was deconstructed into several sub questions interconnected in such a way that the answer to the more general question creates a framework for understanding the reality of each program/policy investigated. On the basis of this framework the comparison of different policy/programs implemented in different environments is made easier (although not simple) and, in turn, on the basis of the comparison some useful recommendations have been “correctly” drawn.

Since variability of single solutions is one of the main methodological problems to be solved in this kind of analysis, a specific mention must be made on the attempt of detecting, by means of the cluster policy fact sheet, the conditions that made a single policy/program work or, in other words, to identify what, in the case of a good program/policy performance, is principally responsible for creating that success.

Learning from secondhand experience is more complex than ascertaining *whether* a given practice is effective in source environment, as evaluation researchers might have it; it requires methodological insight into *how* observed practices actually mobilise political and managerial action and generate substantively significant effects”.

Professor Riccardo Mussari, University of Siena

1. Presentation of the CLUNET Cluster Policy Mapping Study

1.1 Context of the Cluster Policy Guidelines

1.1.1 PRO INNO EUROPE initiative

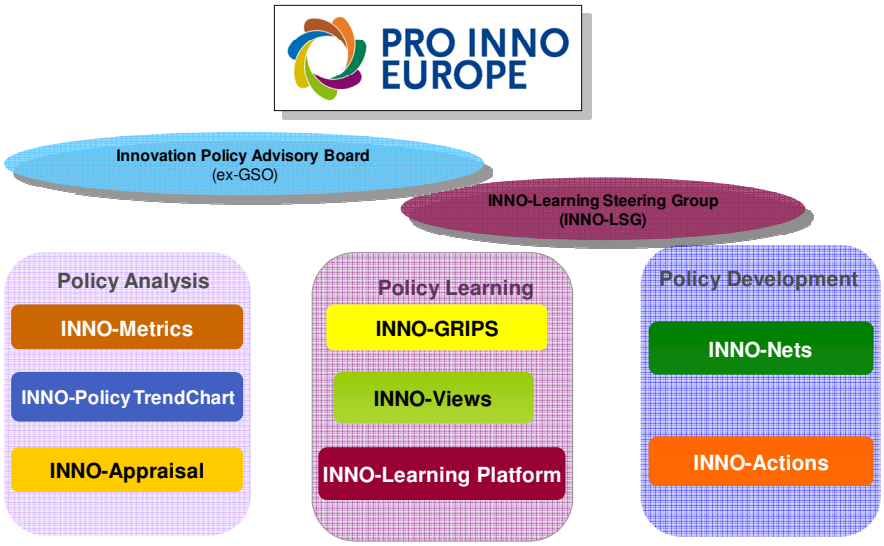


Figure 1: The PRO INNO EUROPE initiative

PRO INNO Europe is an innovation policy initiative intended to become the focal point of innovation policy analysis and development throughout Europe. It consists of three major actions:

- Policy Analysis which will provide a series of criteria and information through the production of the Trend-Chart and the Innovation Scoreboard,
- Policy Learning in order to foster mutual exchanges between the various players and actors,
- Policy Development in order to test and implement innovation policy with the support of national and regional policy makers.

These are complemented by a high level Advisory Board and a Steering Group.

The Innovation Policy Advisory Board has the mission to provide feedback on innovation policy matters, representing national authorities responsible for innovation policy making across Europe. Its mandate is:

- To replace the Group of Senior Officials on Innovation (GSO)
- To provide the Commission's services with feedback on policy analysis of the PRO INNO Europe initiative
- To provide the Commission's services with feedback on policy recommendations from the INNO-Learning Steering Group
- To liaise with national authorities on innovation policy matters

The INNO-Learning Steering Group has the mission to play a leading role in driving the whole learning process under the PRO INNO Europe initiative with the aim to promote policy learning and trans-national policy co-operation in the field of innovation. Its mandate is:

- To provide advice on the strategic orientation of policy co-operation projects under PRO INNO Europe
- To drive the innovation policy learning process under the INNO-Learning Platform
- To draw conclusions on innovation policy learning and provide recommendations for the establishment of future INNO-Nets
- To establish an efficient liaison with the Innovation Policy Advisory Board

1.1.2 The Cluster Alliance

The PRO INNO EUROPE initiative also brings together a number of European projects – INNO-actions and INNO-nets – that have been selected by the European Commission under FP6[1] to challenge and bring new solutions in the framework of the European, national and regional innovation policies. Within this initiative, the INNO-nets are networks that bring together a large number of national and regional policy makers with the aim not only to foster the exchange of good practice and knowledge but also to prepare the background for future coordinated actions and develop pilot projects. During the evaluation of the FP6–Innov-9 call the Commission identified a group of 4 projects targeting the theme of the cluster policy. The innovation policy unit of the DG Enterprise has therefore decided to join these four projects in a "**CLUSTER ALLIANCE**". This alliance brings together 53 regions with a diverse profile and innovation landscape with the objective of bringing new ideas, development and co-operation within the field of innovation but especially in cluster policy.

CLUNET –"Cluster Network" – one of the four selected projects under this cluster alliance brings together **a critical mass of fourteen like-minded partners** from all four corners of Europe and North America to share and exchange experiences regarding their cluster innovation and development policies. Together they represent some of Europe's leading regional innovation policy makers and opinion shapers and represent over sixty-two world class clusters located in some of Europe's capitals and most dynamic and growing regions such as Berlin, Rome, Madrid, Hamburg, Marseilles and England's North West that can make a real impact on the growth and competitiveness of clusters in Europe**.** In addition, the EU Partners decided to invite a leading economic representative from North America (Montreal Metropolitan Community (MMC): the leading region in a network of 22 North American cluster city/regions) to ensure they have access to some of the best and latest policy and project practice concerning the development of competitive clusters across the globe.

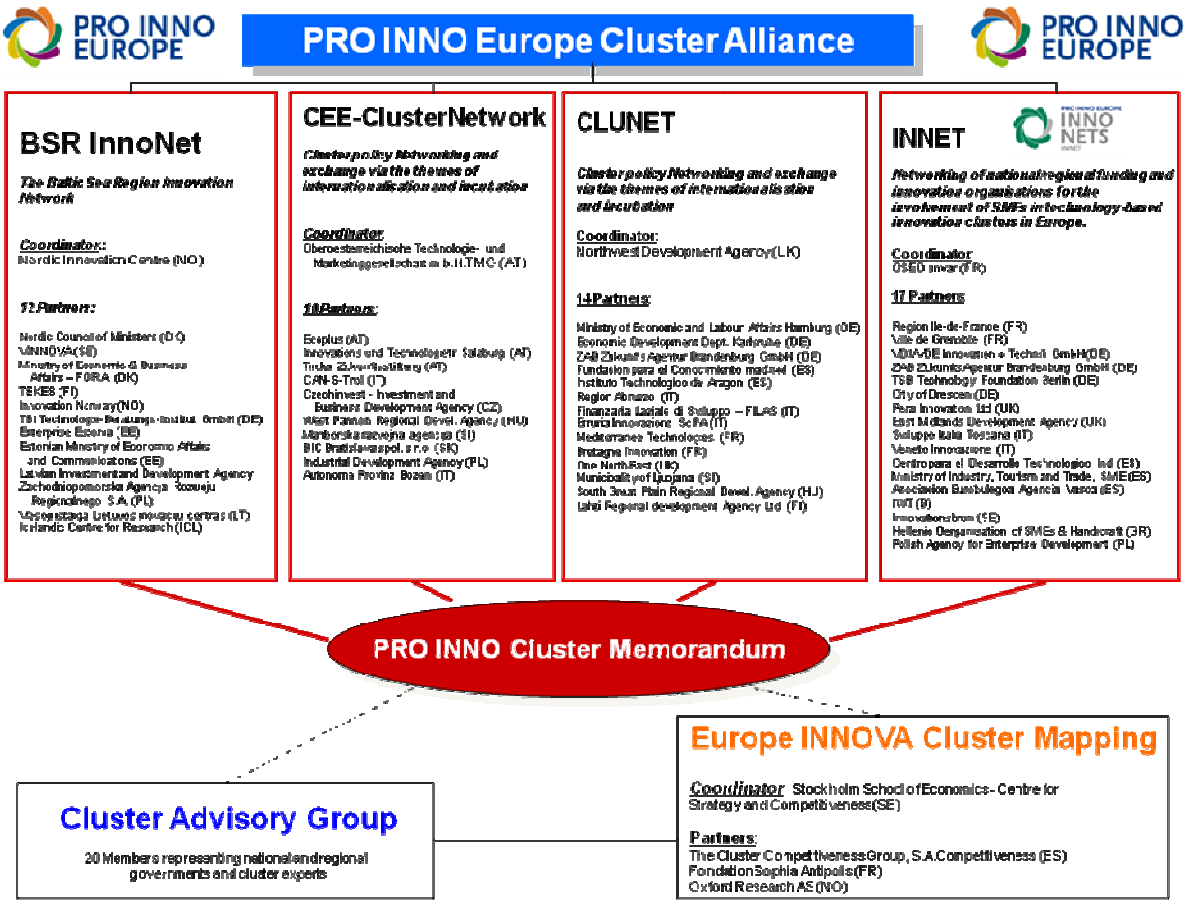


Figure 2: Coherence between cluster oriented projects & programmes

[1] FP6 : Framework Programme for Research an Development 6 (2000-2006)

A high level Cluster Advisory Group has also been set-up regrouping senior European policy makers. This group, supported by the Stockholm Institute of Economics and the Fondation Sophia Antipolis, is preparing a Cluster Memorandum of Understanding that sets out a series of policy recommendations concerning cluster policy development and regional co-operation.

Further policy linkages are being explored through the Europe INNOVA initiative, which has a more sectoral approach towards clusters.

The cluster alliance therefore provides a larger platform for exchanging similar experiences and launching common initiatives between the CLUNET partners and beyond in order to ensure overall coherence. Moreover, the four cluster focused projects will have a wider audience in order to disseminate their outputs. **In this sense the cluster alliance represents some of the key movers and shapers of innovation policy in Europe (and the world) today and will provide the EU with a very valuable and sustainable partnership with which to implement the ambitions set out in the PRO INNO EUROPE initiatives and Cluster Alliance.**

1.2 Objectives of the CLUNET Cluster Policy Guidelines Report

The approach to delivery of the CLUNET objectives is through a series of work packages. The Cluster Policy Guideline report has been delivered through work package 2. Individual partners involved are NWDA (coordinator of CLUNET) and Etruria Innovazione (Work Package 2 leader) supported by external consultants inno TSD (task leader). Published literature and cluster policy documents e.g. The Cluster Policy Whitebook, The Cluster Initiative Green Book, decided the basis on which partners would focus the Cluster Policy Guidelines i.e. experience and operational good practice. The Guidelines are NOT meant to provide a new report on cluster mapping nor a statistical analysis of clusters. Through these CLUNET cluster policy guidelines, the overall aim is to define cluster policy successes that could then be of benefit to the entire consortium by identifying and implementing several common pilot projects.

The **broad objectives of the CLUNET Cluster Policy Guidelines** are:-

- Support the mapping exercise and categorise the cluster policies at the partner level
- Develop an innovative methodology for cluster policy analysis
- Create a common framework of analysis and understanding and exchanges amongst the partners
- Provide an in-depth analysis of the various regional cluster policies
- Evaluate cluster policy/programmes which could be helpful in the definition of a better regional cluster policy
- Provide input to the Advisory Group for the Memorandum of Understanding
- Contribute to the identification of some opportunities of collaboration among partners

1.3 Methodology of the Cluster Policy Mapping

The methodology of the CLUNET cluster policy mapping is based on a 4 step approach using a common definition of the concept of "cluster". It was of a great importance for the CLUNET partners to clarify the concept of " what is a cluster" before going into further detail. The second step consisted of developing a common template – a cluster policy fact sheet (CPFS) – for each partner to report on and map, in a third step, their regional cluster policies. The information has been aggregated into this document.

1.3.1 Definitions used for the CLUNET cluster policy mapping

The diversity of the policy approach and governance schemes within each EU region/country is very extensive. Therefore, in order to overcome this barrier and to analyse/compare the different cluster policy approaches, CLUNET partners have defined a common framework based on the two following definitions:

1. Identifying a shared definition of a cluster fitting the different CLUNET partner contexts

> ***Cluster definition:*** *Clusters are a geographically proximate group of interconnected companies and associated institutions in a particular field linked by commonalities and complementarities. Clusters encompass an array of linked industries and other entities important to competition . . . including governmental and other institutions – such as universities, standard setting agencies, think tanks, vocational training providers and trade associations.*[2]

2. Defining the scope of a cluster policy approach

> **Cluster policy approach definition*:*** In each region, most regional development agencies produce strategic documents that define for a specific period of time the overall vision and expected results, e.g. NWDA Regional Economic Strategy. Such strategic documents define the main sectors and the overall objective in terms of growth, rise in employment and regional economic development.

3. Cluster policy themes identified within the CPFS framework

CLUNET partners have agreed a common policy approach that covers the following range of objectives:

- ***Cluster expansion*****:** overall communication strategy and tools dedicated to the promotion of the cluster organisation (internet, collective marketing, branding, etc.)
- ***Policy action:*** lobbying and creating dialogue between industry, scientific community, and government authorities. Policies that support the governance of the cluster and the development of a cluster community.
- ***Partnership, networking and export (internationalisation):*** links with other companies within and without the cluster
- ***Industrial performances*** : supply chain, production process and co-operation with SMES and large companies

[2] Michael Porter, 1998

- ***Innovation and technology*** : incubation, technology transfer, links between Higher Education Institutions (HEIs) and companies, research exploitation and RTD projects
- ***Skills and training :*** programme to support skills development of the workforce

1.3.2 CLUNET methodology: the CLUNET cluster policy fact sheet (CPFS)

Based on the above definitions, a CLUNET Policy Fact Sheet (CPFS) was designed as a common framework for collecting the different cluster policy approaches in the CLUNET regions.

The creation of the CPFS was the result of many exchanges between the Work Package leader, the task leader, the coordinator, and the regional partners. This process took some time in order to construct the different sections. Leaders looked at other initiatives such as the ARISE project (EU RIS Benchmarking project); in order to analyse problems that partners may face (non homogeneous or unavailable data). Partners also decided to give a regional focus to the analysis to illustrate regional peculiarities and good practice. That is the reason why partners decided to emphasize CPFS as the link between RDAs[3] (or other regional organisations) and clusters. It gave a "regional touch" to the analysis carried out by partners. This regional aspect will provide the dissemination route at the EU level. Indeed it is easier to disseminate regional good practices than national practices.

The purpose of the CPFS is:

- To have a common framework for all the CLUNET partners to collect their cluster policy data/input
- To understand the cluster profiles of the other partners
- To identify transferable and good policies dedicated to the growth of clusters amongst the CLUNET consortium.
- To identify potential collaboration areas for joint-pilot projects between policy (e.g. RDAs[4] or Ministries) and operational levels (e.g. COs[5]).

CPFS therefore provide a common template giving each partner the ability to store the information regarding one specific cluster policy approach. The template details, according to each single perspective, the way the cluster policy is structured, implemented and monitored. Each CLUNET partner was asked to provide all information related to the monitoring of the selected cluster policy with qualitative and quantitative criteria and, performance indicators.

The CPFS is structured into 4 sections:

a. Description of the cluster policy/programme: This first section aims to define the cluster policy/programme. It is subdivided into 3 parts. The first deals with the Cluster policy data. It defines the leading strategic organisation and partners, category and themes (related to CLUNET themes), a short description of the policy, the allocated budget, the duration, the origin and the type of funding... This collates all data allowing brief characterisation of the policy. The second element is the Cluster policy rationale – cluster sectors individual criteria, policy objectives, and policy expected results. The third element deals with the characteristics of the policy to classify the policy types. It records the policy level, the regulatory framework, the type of cluster policy approach and the focus.

b. Description of the cluster targeted / specific sector: This describes the targeted cluster organisation giving the name, description, characteristics, and kind of international relationships as well as detailing maturity, main economical/technological issues, and number of employees of RTD/research centres.

c. Quantitative impact analysis of the cluster policy/programme: This aims to characterise the policy through quantitative impacts as described by the partners, some of whom provided examples of interesting quantitative impacts.

[3] RDAs: Regional Development Agencies
[4] RDAs: Regional Development Agencies
[5] COs: Cluster Organisations

d. Qualitative impact analysis of the cluster policy/programme: Qualitative impacts are based on four aspects – efficiency rating, effectiveness rating, sustainability rating, and transferability, each scored from 1 to 5, where 5 symbolises the highest rating. The ratings take into account networking, marketing, growth and skilsl. Qualitative impacts are often subjective, so additional comments concerning those impacts and explaining the notation were required.

Each partner was asked to provide 3-5 policy fact sheets with identified topics or themes for future potential international collaboration. **At least 2 of them focusing on the core CLUNET project themes, i.e. internationalisation and incubation in the context of cluster development**.

1.3.3 CLUNET policy mapping process

The process followed by each partner, for providing an in-depth analysis of the 3-5 cluster policy/programmes, was as follows:

1. Short description of the selected cluster policy/programme: Budget of the cluster policy approach, duration of the program, funding origin, expected impact in the region etc.
2. Short presentation of the context: cluster information, type of companies, details of the cluster organisation, maturity main issues to be solved at the cluster level (competitiveness, technology, networking etc
3. Selection of one category in which the cluster policy/programme could fit.
4. Detailed list of quantitative indicators, number of companies involved, and number of jobs created, number of patents, number of industrial/technology shows attended etc
5. Qualitative criteria for the selected cluster policy/programme (benefit for the actors/ impact for the regions etc
6. Evaluating the overall efficiency, effectiveness and sustainability of the selected cluster policy.
7. Personal evaluation of the level of transferability with other CLUNET partners.

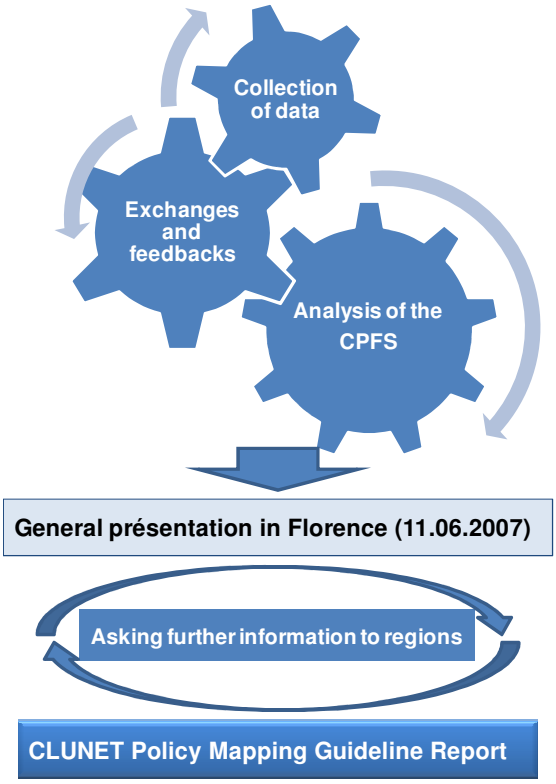


Figure 3: CLUNET policy mapping process

Most of the partners have involved their regional cluster organizations and experts in order to complete the CPFS and obtain the range of data. However, even with a common framework, most of the partners have faced difficulties during the phase of collection of data, and especially within the last section dedicated to the impact analysis. Indeed, the performance of a cluster policy could be defined either through its efficiency (Resources vs. Results), its effectiveness (Results vs. objectives) and/or its sustainability (impacts vs. needs). This approach was initially defined to identify the best cluster policy practices as well as the future themes from which potential collaborations could emerge. However, most of the CLUNET partners faced many difficulties in providing such a level of detail. The main reasons given were the lack of maturity of the cluster policy or, simply, the lack of indicators to follow the impact of the public policy due to a poor monitoring of the policies.

1.3.4 Constraint of analysis and plan of the policy guidelines

The aim of the Cluster Policy Guideline report is to give a broad overview of the diversity of data and experiences collected through the policy mapping exercise. This exercise is not intended to provide an extensive best practice analysis mainly due to the lack of assessment indicators that could provide a fertile ground for analysis.

However, the CPFS's collected and the comparison of the data such as the budget, duration, target and origin of the funding give a realistic view of a number of the cluster policies. This practical view based on facts and figures will provide policy makers with a list of potential recommendations that could be shared when a territory is in the process of setting up a cluster policy.

This Guideline report offers a new approach linking the maturity of the clusters with the type of policy set-up at the regional level. It is an interesting viewpoint since it enables any policy maker to define, according to the level of maturity of its clusters, the best suited policy approaches to reinforce its overall innovation landscape and competitiveness. It could be argued that a number of other routes could be taken to analyse the scope of data collected, such as the type of policies (innovation, internationalisation, governance, etc.) or the nature of the

policies (broker, top-down, training), but this analysis is particularly interesting in that it provides a practical way to use the data and to focus on the type of policy used by the CLUNET regions in the different cluster development phases.

Based on the *Cluster Initiative Green Book*[6] which described four different steps of maturity level for a cluster initiative, the approach taken was to categorise the cluster policies as follows:

- Early stage cluster policy:-To support the early process of development of a formal cluster within a region to stimulate dialogue between industry, public bodies and policymakers.
- Reinforcing cluster policy:-Aimed at building up a stronger resource base over time and a stronger commitment between the partners. They typically aim to formalise the links between the different stakeholders and to seize common opportunities through their linkage.
- Cluster policy :- to exploit all the benefits of a structured cluster which is frequently governed by an established organisation and to aim at providing the stakeholders with the required level of resources to ensure the best return on investment in terms of competitiveness, growth and employment for their territory.

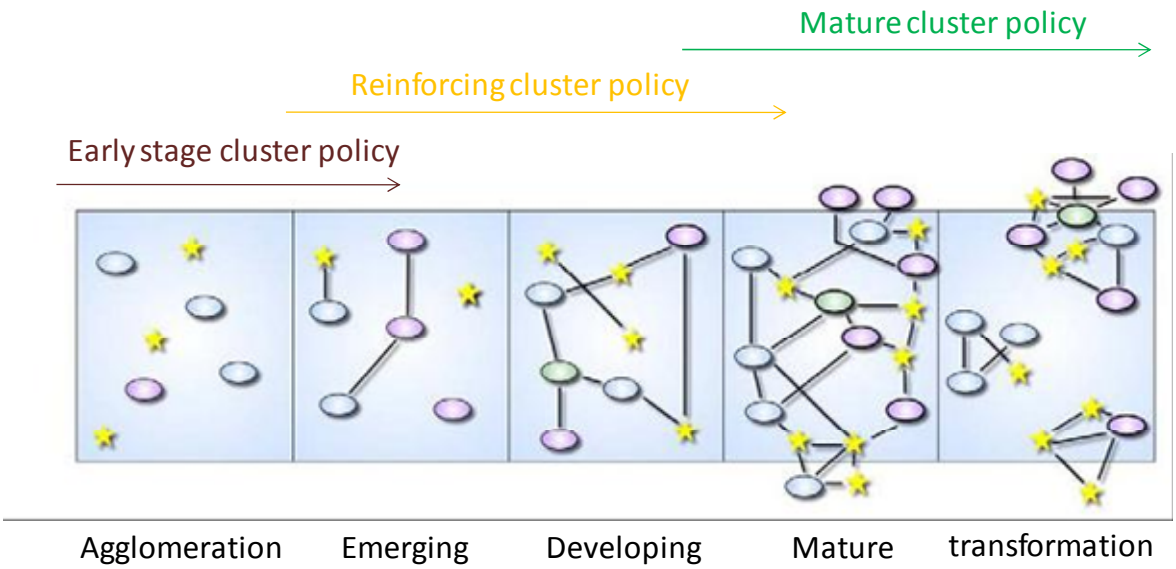


Figure 4: CLUNET cluster policy categorisation

As shown in the above figure, these three cluster policy approaches run in parallel with the cluster life cycle[7] and support this process with different types of approaches and resources.

This Cluster Policy Guidelines report does not detail the cluster "transformation" phase which was not covered by the CPFS. The transformation phase is an interesting area as it marks the point where public sector support for the existing cluster should end and be replaced by funding to support the emergence of a new cluster or clusters. Obtaining a better understanding of the transformation phase and how it could be supported would make an interesting pilot project between policy makers and it will be added to the list of ideas to be further implemented in the CLUNET project.

[6] See Cluster initiative green book, 2003
[7] See cluster policy whitebook – p29

2. CLUNET Policy Mapping: Results and Quantitative Analysis

2.1 Introduction

56 Cluster Policy Fact Sheets (CPFS) have been completed during this exercise among the CLUNET consortium and, this section gives an overview of the main quantitative results extracted. The total number of CPFS has been classified under three categories:

- *Specific CPFS* deal with only one of the themes described in the section 1.3.1 (i.e. cluster expansion, policy action, industrial performances, etc.) and cover a specific technological domain. A total number of 28 specific CPFS were submitted by the partners
- *Transversal thematic CPFS* deal with several themes and one specific technological domain. A total number of 15 transversal CPFS were submitted by the partners.
- *7 Multi dimension CPFS* deal with several themes on cross technological domains.

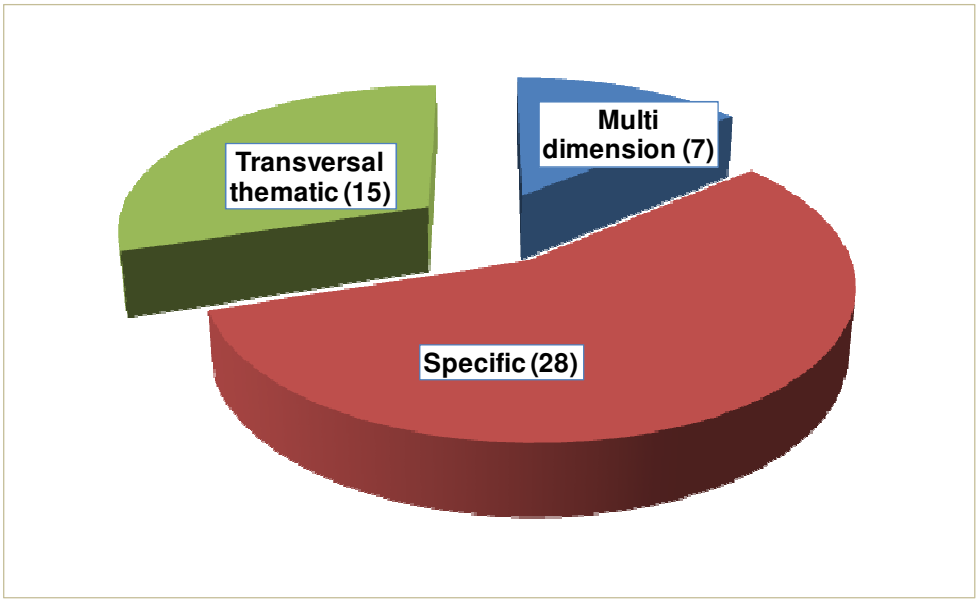


Figure 5: CPFS type repartition

The following quantitative analysis covers only the first two categories since the sample size of the third category is insufficient to enable any possible comparison with other policies.

2.1.1 Definition of themes covered by the CPFS

The CPFS cover 6 thematic areas - Cluster expansion, Policy action, Partnership, Industrial performances, Innovation & Technology, and Skills & Training- and the graph below describes the 28 CPFS which target one specific theme.

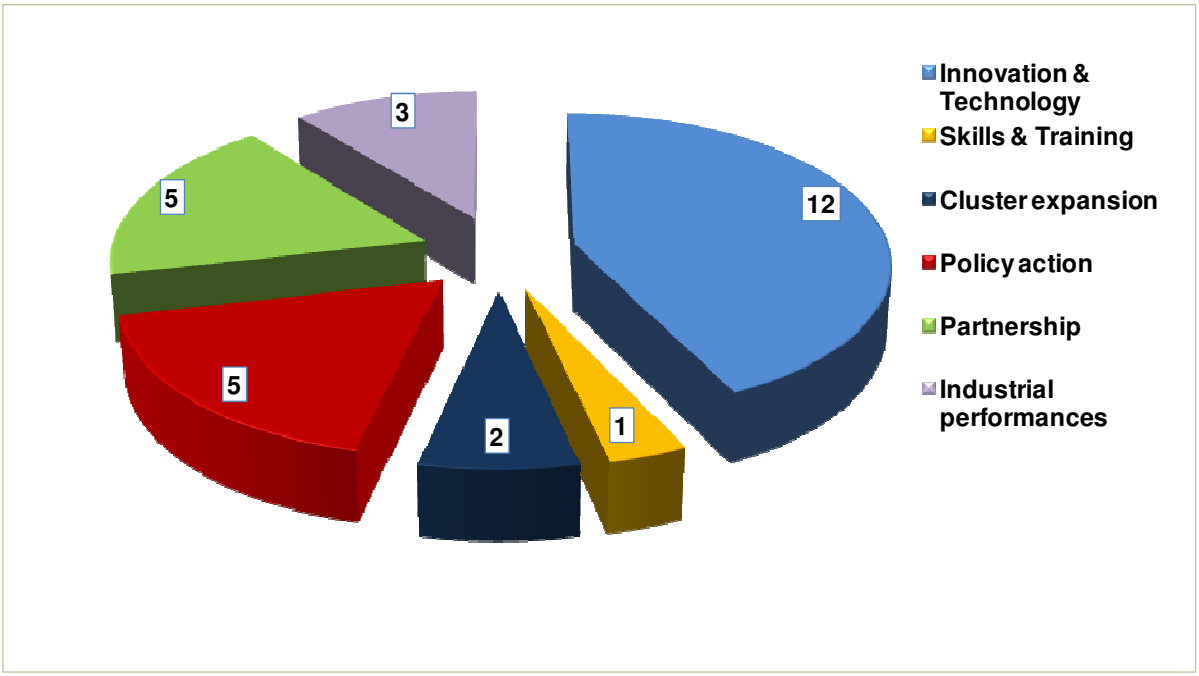


Figure 6: Themes covered by the specific CPFS

Theme analysis is based on the "specific approach" (28 CPFS out of a total of 50 received). CPFS dealing with more than one theme were broken-down when data was easily identifiable. Innovation & technology theme is the most representative (approx. 44% of the CPFS) as it could be transversal and is the cornerstone of the cluster strategy. It confirms that CLUNET focuses mainly on high-tech clusters but traditional industries are also present in the cluster policy. Policy action and partnership (networking inside and outside the cluster), which together represent 37% of CPFS, appears as the second theme, and could be analysed together as they all concern networking which is the principal goal of a cluster policy (preliminary condition to implement an efficient policy). Industrial performance and cluster expansion are less representative, with 3 and 2 respectively. Only one CPFS has been observed for skills and training (unbalanced analysis) indicating that the skills and training is not one of the top priorities of the cluster policy in Europe. Cluster policy is mainly related to innovation and technology since that is the main driver to ensure clustering effect.

2.2 Statistical Analysis of the Cluster Policy Fact Sheets

2.2.1 Repartition covered by the CPFS by region/partner

The graph below presents a breakdown of the number of fact sheets presented by each of the partners

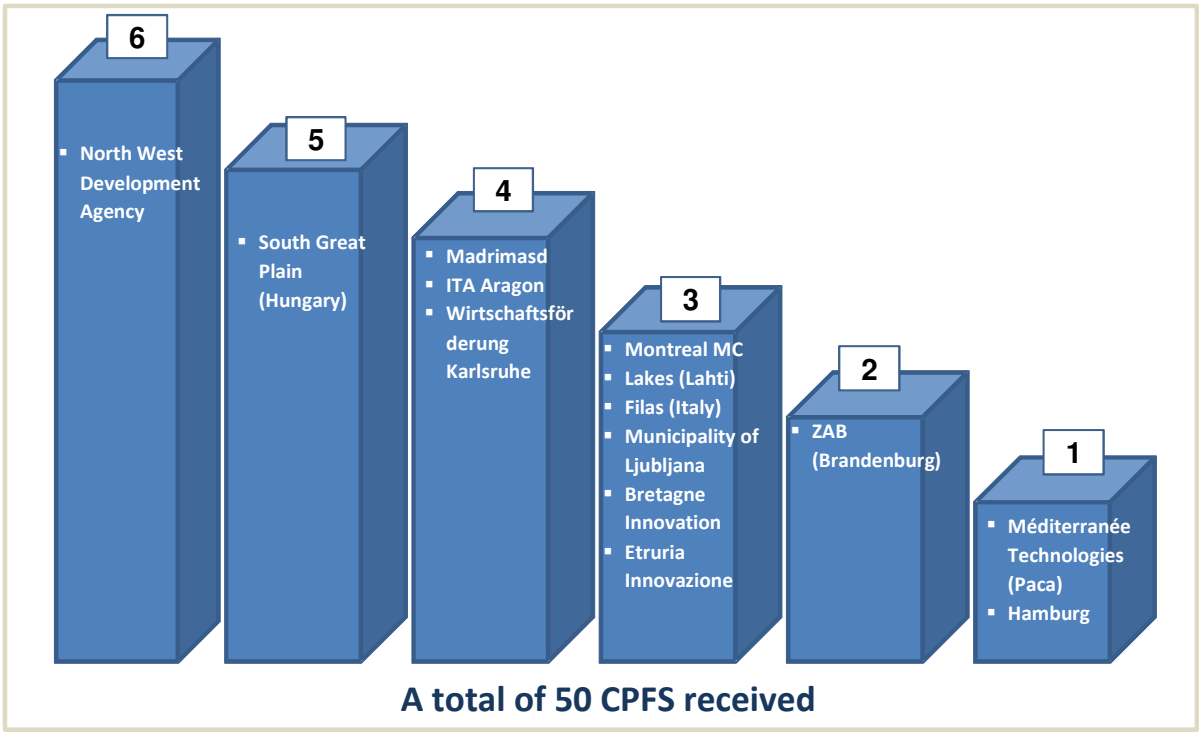


Figure 7: Breakdown of the CPFS by CLUNET partner

2.2.2. Technological domain covered by the CPFS

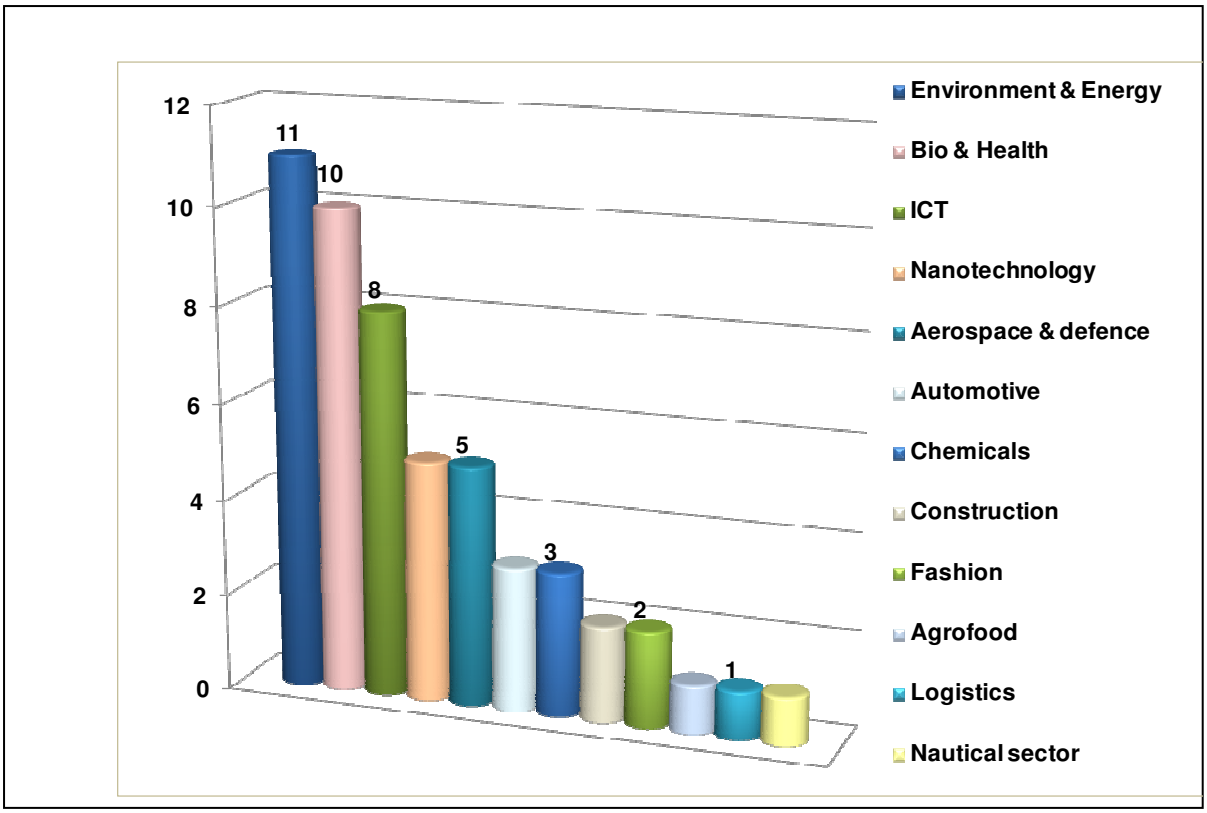


Figure 8: Technological domain covered by the CPFS

Figure 8 illustrates the **12 key technological groups identified in the CPFS.**

The two technological domains of **Environment-energy and Bio-health can be identified as covering a total of 40% of all the CPFS collected among the partners** and the first four areas are research intensive areas which are in line with the strategic domains targeted by within the "European Research Area" and its instrument, i.e. Framework Programme (FP) and the Competitiveness and Innovation Programme (CIP). However; traditional domains such as construction (which includes mining and stone/ marble) are also represented and are important economical activities in terms of employment and GVA within the regions that need to be thoroughly investigated in order to ensure their metamorphosis and competitiveness in a globalised economy. Some very interesting policies emerged to ensure a soft transition from traditional to innovative sectors. This technological domain analysis also illustrates the complementarities and similarities between the CLUNET regions since the first five technological domains are shared between 13 regions out of 16-part of the CLUNET exercise to identify potential future collaboration.

These observations only apply to those clusters for which CPFS documents have been completed. A full list of all the cluster initiatives being supported by the CLUNET partners has been produced to test the conclusions on the relative importance of Environment-Energy and Biohealth plus the mix between "traditional" and "innovative" sectors. For instance in the Northwest of England the original 1999 Regional Economic Strategy differentiated between seven "emerging" sectors such as biotechnology and environmental technologies and seven "established" sectors such as textiles and chemicals. In practice, once the cluster development initiatives matured, NWDA found that the emphasis within the "established" sectors was on the growth sub-sectors which had a high level of innovation such as advanced flexible materials (technical textiles) and specialty chemicals.

Conclusions
C1:- Cluster policy covers a wide range of sectors from traditional to research intensive areas

2.2.3 Policy level of implementation

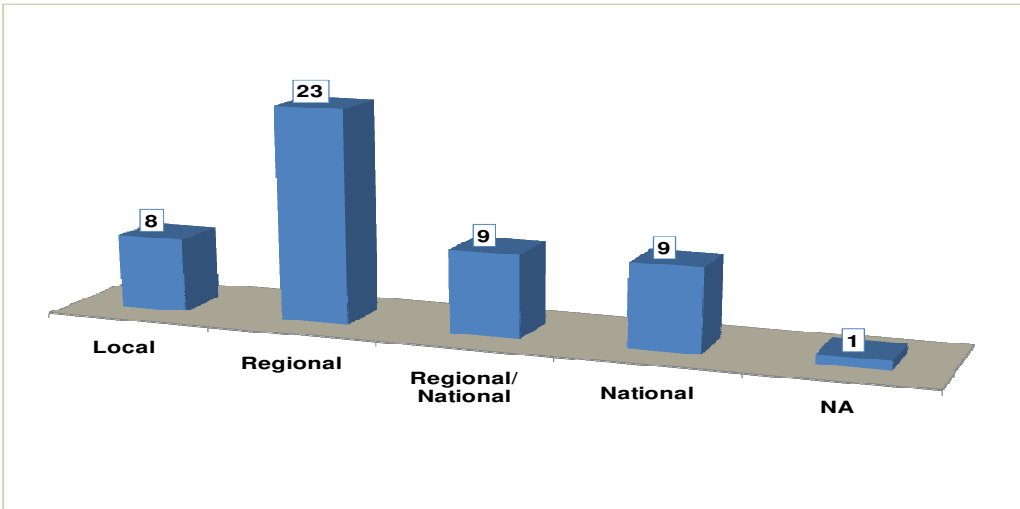


Figure 9: Policy level of implementation

It is important to distinguish the regulation level and the implementation level of the policies. In this exercise, various partners provided the institutional level of the policy governance and implementation. Since most of the partners have a regional coverage, this result was predictable in that most of the CPFS are implemented at the regional level (54%).

The policy level also depends on the decentralisation process at the national level and the political authority of regional councils. In England, for instance, UK Central Government set the overall architecture of the cluster strategy but the RDA's are autonomous in deciding the full governance for implementation. Seven of the CPFS clearly mention this link as an important issue to ensure correct implementation of the cluster policy.

From Figure 9, it can be identified that cluster policies are also launched at every level from the top national level to the local one. The **local level mainly corresponds to the large cities with a certain funding capacity** such as the Montreal Metropolitan Community (3), Karlsruhe (1) and also the municipality of Ljubljana (1). For Brittany, the local level corresponds to a "tailor made" solution for specific aspects such as incubation. **Local policy level tends to be more directed to local technological potential and special needs.**

However, the diversity of levels involved in the cluster policy also raises the issue of the co-ordination between the various institutional layers and the actual efficiency of the policy. It is important to ensure a certain coherence from the top level down- which shows synergy with operational delivery in large companies. Cluster policy and funding needs the same level of co-ordination and it is important to ensure a structured governance and strategy of the public funding.

Conclusions
C2:- All policy levels are involved in the support of the clusters but regional level seems to be the most appropriate to ensure a balance between proximity and sufficient funding resources

2.2.4. Programming period of the cluster policies

Each partner was asked to provide in each of the CPFS the duration of the cluster policy which, in the analysis, corresponds to the funding cycle and the forecasting of resources and activities for a certain period. Based on the different experiences, each partner has identified an average programming period which is detailed in the figure below.

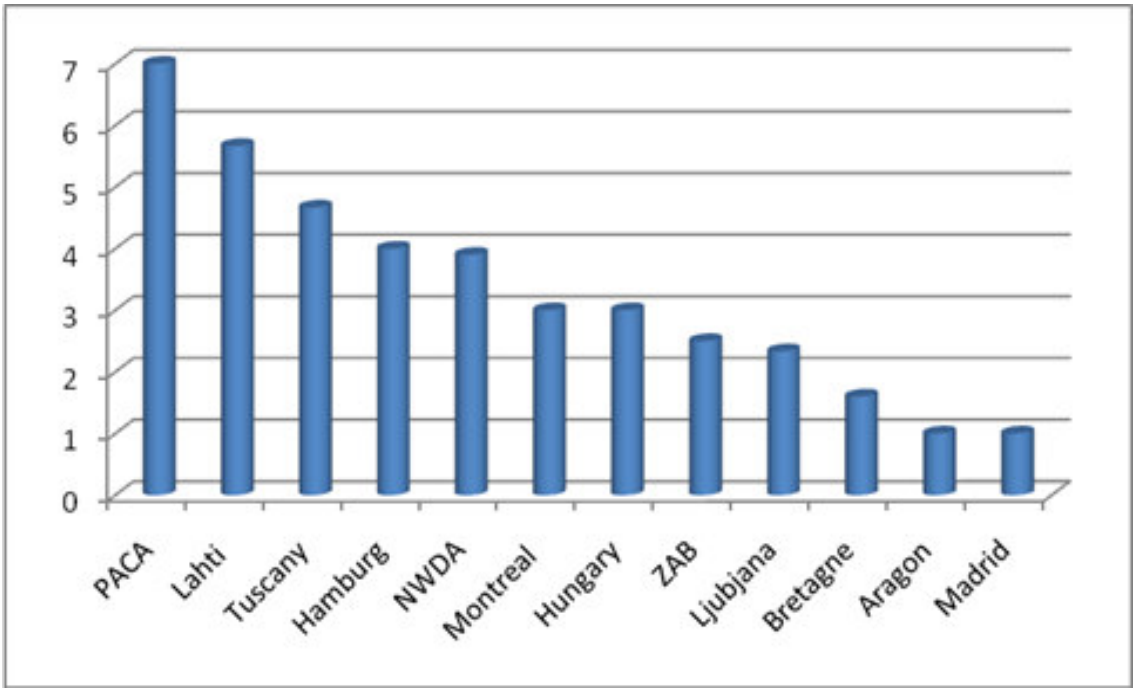


Figure 10: Average duration of the cluster policy (in years)

To be efficient, a minimum duration period needs to be respected to follow the different stages of development of a cluster policy from the set-up to the impact analysis. On average the programming period of a cluster policy is 3.3 years. This corresponds to the average duration of almost all economic policies (public authorities' decision making). The cluster policy must be linked and developed in parallel with other economic research support policies and therefore needs a long or medium term vision. The shortest duration example in funding cycle is that of the Innovation Circles in Madrid where funding has been renewed annually since 1999. Also the specification of a minimum period correlates with the trust and involvement of the stakeholders.

In the case of NWDA, and the other English RDAs, funding for cluster development is determined by the commitment by Government to RDA funding and to each Regional Economic Strategy (RES) cycle. The RES has a 20 year vision but is updated every three years. NWDA is currently taking steps to align the cluster development programme to the RES cycle but it is not possible to make a commitment of more than 3 years to funding a specific cluster initiative as no details of what will be in the next RES are provided. However, it is recognized that cluster development is a long term process that will probably continue through several cycles of the RES.

Conclusions
C3:- An average programming period of 3 years is usually required to ensure enough visibility of the activities and results expected from the cluster policy.

2.2.5. Budget and level of funding of the regional cluster policy

Further analysis of the CPFS consisted of comparing the level of funding allocated to cluster themes.

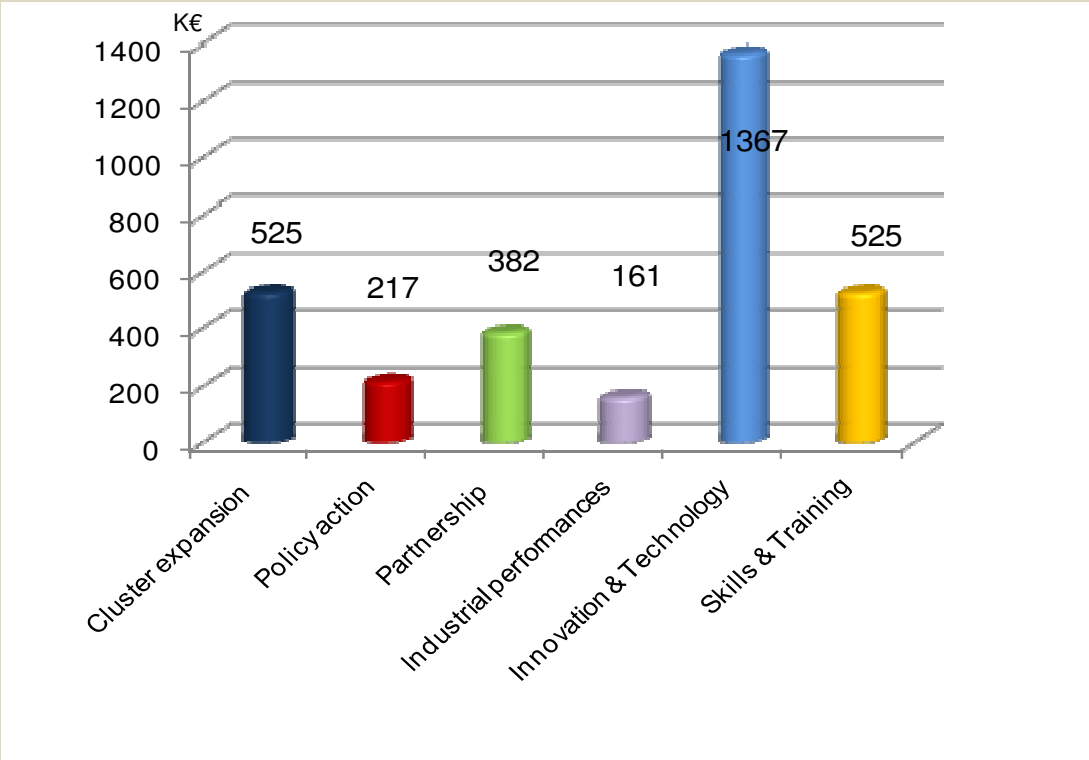


Figure 11: Average budget allocated per theme in K€

As shown, maximum budget is allocated, on an average basis, to the Innovation and Technology theme. This theme represents the most important share of activity, the main acknowledged reason being that the vast majority of the regions link their cluster policy directly to the performance of their innovation system. It is important to note that the amount for "innovation and technology" does not include extra funding availability for specific RTD projects.

It can be concluded that an overall cluster policy requires around 2 M€ of public funds. The different transversal fact sheets have shown that three regions have invested this amount of money for an overall cluster policy covering all the themes:-

- NWDA Envirolink : 1.5 M€/year
- Hamburg aerospace : 1.4 M€ /year
- Montreal : 1.68 M€ /cluster

Conclusions
C4:- An overall transversal cluster policy requires approximately 2 M€ per year of public and private funding (excluding RTD projects)

2.2.6 Origin and type of funding

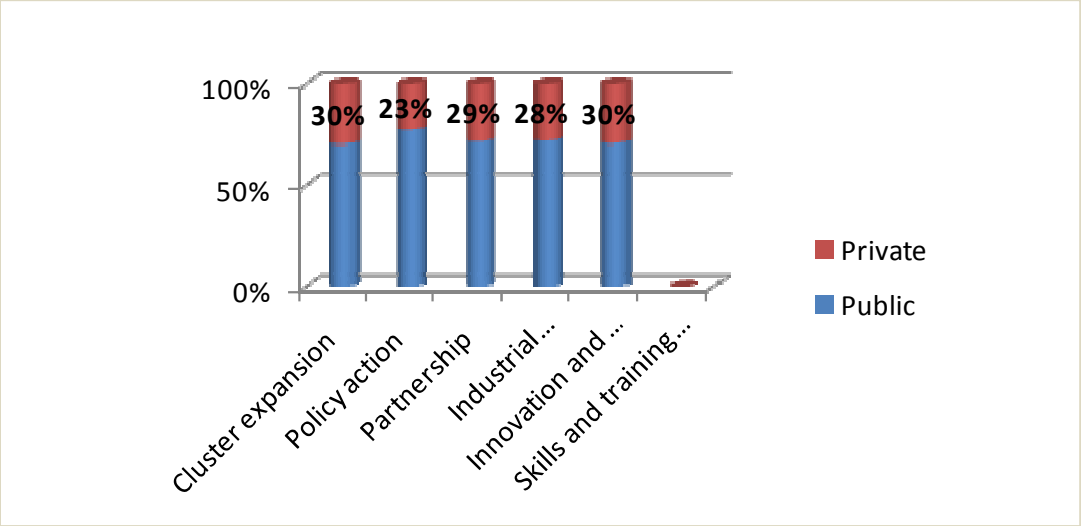


Figure 12: Origin and type of funding

Cluster policies are mainly financed by public sources. This public funding is in general used to leverage and mobilise additional funds (act as a financial guarantee). Within the above figure, the average amount of private co-funding is around 30% and the "policy action" theme usually has less private funding since it is generally a public action with no direct impact on the private sector. However, some specific cases have been identified such as Karlsruhe city which has been able to raise 100% of private financing for the set-up of a discussion platform on renewable energies called –**EnergieForum.** Different origins of funding imply continuous monitoring of impact for the provision of feedback to funding partners. The regions boasting the highest budget are those which succeed in diversifying funding sources. Clusters can of course generate sources of finance instead of searching for external finance; such sources include the exploitation of paid services.

Conclusions
C5:- Most of the partners use innovation and technology as the main driver to set-up cluster policy between their regional stakeholders.
C6:- Private funding may represent one third of the total amount of funding dedicated to the cluster policy

3. Early Stage Cluster Policy: Approach towards Agglomeration Clusters

Quantitative analysis has been complemented by qualitative analysis based on the type of policies implemented by the partners. The following sections outline, according to the level of maturity of the clusters and the objective of the policy, the approaches developed by the CLUNET partners to support a coherent development of their clusters. It specifically illustrates how policy makers have introduced "early stage" cluster policy to support the first phase of agglomeration of a cluster's life.

3.1 Policy 1: Detect potential clusters

Origin of the policy:

- ✓ Address market failure
- ✓ Avoid sector parcelling
- ✓ Focus public funding in high potential growth sectors

Description of the policy:

1- The first step is the identification of sectors and/or SME's willing to go forward in the development of stable mechanisms of co-operation.

2- Having identified some potential for cluster activity, interviews, meetings and workshops are held in order to bring together companies, technological centres and universities. The goal of such meetings is to actively identify the target sectors and companies that would make up the cooperative platforms

3- Understand individual objectives.-create a consensus on collective objectives and formalise the consensus into a framework document or action plan

➔ **A Cluster can be initiated by beneficiaries themselves , particularly companies**

Process Industries Cluster (NEPIC) - North of England (UK)
Budget: £500K/year
Duration: 3 Years
Policy level: Regional

Summary:
The initial concept was to find a way to get better co-operation across and between regional businesses through engagement with the most senior people in each company of each region. Some fifty leading CEOs defined the areas where business improvements would yield the greatest value added – putting themselves into teams to address these needs.

PLASEC policy – Aragon
Budget: 800K€
Duration: 2 Years
Policy level: Regional

Summary:
PLASEC was set up as a pilot project for the identification of technology clusters existing in the region. It was focused on going more deeply into schemes of greater co-operation between SMEs and the scientific-technological and economic actors. Such inter-firm co-operation allowed the identification of sectors that could become technology clusters.

PLASEC set some mechanisms to foster the creation of sectoral platforms, trying to give SMEs more innovating behaviour. These platforms were mainly composed of businesspeople and regional R&D representatives from Aragon. According to the policy design, the platforms aimed to become long-life clusters, surviving Innovaragon program.

IAT (Instituto Tecnológico de Aragón) promoting cluster creation – Aragon
Budget: Up to 236K€
Duration: 2 Years renewable
Policy level: Regional

Summary:
The Microsoft Technology Centre and a group of SME's were interested in creating an association to be more competitive and to take advantage of specialisation. Meetings were held to establish their interest and to design the best way to create the cluster.
ITA, executing the major lines of local government strategies promote the creation of a framework and infrastructure to foster SME association around a given technology.

➔ **Public sector as a catalyst for setting-up clusters**

Innovation circles – Madrid (Spain)
Budget: 200K€
Duration: 1 Year renewable
Policy level: Regional

Summary:
Innovation Circles are funded by the Regional Plan for Scientific Research and Technological Innovation in the framework of annual agreements between the Regional Government, business associations and research institutions.
Innovation Circles are sectoral collaborative frameworks between research and enterprise supporting clustering processes in the region.
Their main objective is to reinforce networking between companies and research groups.

➔ **How policy makers can detect potential clusters**

The choice of the sector depends on its strategic importance to the regional/national economy and its links and contribution to the goals of the European Union – constant development of adequate knowledge on a specific technological area, growth of competition and employment in a particular sector.

➔ **Is there a critical mass of techno & actors to be representative?**

- Aragon's objective: bring together 10% of companies working on the same topic.
- ANMOPYC cluster gathers companies from all Spain

➔ **Bottom-up vs. policy driven strategies**

- 13 CPFS from 50 have a bottom-up strategy
- *Detection by call for tenders– Reactive detection strategy The risk is the non-attendance of excellence clusters but this can be partially overcome by other financial incentives (France)*
- *The approach is "bottom-up" and tries to support the promotion of (international) linkages while following a certain scientific-led "demand side policy". However, since the network structure is kept very open and flexible there is not THE cluster policy approach to be strictly followed. Also, science is the guiding rationale behind the network. (Karlsruhe)*

➔ **Are there criteria to define industrial or technological sector ability to become a cluster?**

Cluster definition preliminary studies – North West Development Agency (UK)
Budget: £75K/ Year
Duration: Rolling 3 Years
Policy level: Regional (Regional implementation of national policy)

Summary:
The priority sectors for cluster development are defined by the Northwest Regional Economic Strategy (RES) which is reviewed every three years. The current RES was produced in 2006. The priority sectors in the RES are determined by the regional baseline data and by the use of selection criteria.
Sectors that should be prioritised for cluster development are those most able to:

- Be significant in terms of Gross Value Added (GVA) for the region
- Have sub-sectors with global growth potential
- Be externally tradable
- Have strong cross-sector growth potential
- Be amenable to intervention
- Be nationally / regionally significant

➔ **Should we define the geographical limits of clusters?**

- There are no geographical limits but, most cluster partners are located within regional limits.
- Some of the regional boundaries do not fit neatly with economic boundaries.
- What generally limits the geographic spread of a cluster is the travel time to networking and other events which will vary with the size of the business - SMEs are generally more reluctant to travel than large companies.
- In France, the government encourages inter-regional clustering, based on economic and technological coherence more than administrative limits;
- Territorial proximity is a key factor of the success of animation and partnership activities

Automotive Engineering Network Southwest (AEN) – Karlsruhe (Germany)
Budget: Still to be defined
Duration: Still to be defined
Policy level: Local/ regional

Summary:
The AEN has been initialised by the City Government of Karlsruhe; the level of policy therefore is first of all local/regional but also interregional activities (trade fairs, congresses) with members from the Lower Rhine Valley.

Recommendations
R1:- Cluster creation requires formalisation, e.g. Documents of initial concept and agreement between its members that define the cluster objectives (Memorandum of Understanding), its economical and geographical boundaries, and the level of co-operation/competition.

3.2 Policy 2: Understand cluster needs

Origin of the policy:

- Select the appropriate sectors with growth potential
- Understand the needs of the various cluster stakeholders
- Design an appropriate cluster policy according to the top priority of the sectors

Description of the policy:

This type of initiative enables policy makers to evaluate clusters' degree of maturity and understand their needs before undertaking any policy of cluster support. Different needs could be identified and according to the cluster boundaries and maturity level, the public institutions could provide different support schemes adapted to their level of agglomeration and networking as well as to the regional conditions. It is important to understand the requirements of policy makers before putting forward any new support scheme. In order to do so, many partners have developed a bottom-up approach in the development of their policies

A strategy based on the analysis of demand – Tuscany (Italy)
Budget: NA
Duration: NA
Policy level: NA

Summary:
Tuscany Region, after a specific Forum (organised in 2001) and some thematic meetings both on industrial district level and on provincial base, has elaborated a strategy for the development of innovation based on the analysis of demand and development potential of the territory.
This strategic approach is a condition to assure a coherence of actions characteristic of regional demand.

The French Poles of Competitiveness
National call for Competitiveness Clusters in 2005
Duration: 3 years
Policy level: National

Summary:
The different territories and stakeholders had to structure themselves into clusters, identify their boundaries and needs for the future. The main selection criteria was based on high value added projects, international visibility of poles, partnerships and mode of governance, as well as compliance with the economic development strategy.

Recommendations
R2:- Cluster needs should be identified considering the context, specificities of the territory and of the sectors. Evidence of need, demand and opportunity are required for each of the priority sectors using the following:

- **Sector/cluster mapping studies involving consultation with industry and HEIs**
- **Development of Strategy and Action Plans involving consultation with industry and HEIs**
- **Boards/Steering Groups for RCOs and projects**
- **Participation in networking events**

3.3 Policy 3: Support Innovation and technology excellence

Origin of the policy:

- Need for an increase in regional competitiveness and position in international technology and market competition
- Insufficient knowledge transfer from science to business and vice versa: Improve researcher´ understanding of the technology needs of industry
- Insufficient upper level management skill
- Productive re-conversion, through the valorisation of specialisations
- More strategic and widely shared view of the technologies and skills that can provide competitive advantage

Description of the policy:

- The policy involves collective projects, technological platforms and industrial performances. It will be important to develop research and industry co-operation, as well as to carry out research exploitation.
- Development of a service and co-operation culture in the public research sector
- Involve a technological leader in clusters initiative
- RDT collaborative projects that received a brand name from clusters, numbers of projects

➔ **Development focused on competitive topic or on traditional sector with sub-sectors that have the potential to grow**

The figure below describes the technological paths that the North West Clusters have followed since the start of the Industrial Revolution in the UK. It shows the importance of a cluster policy that bases its development on the existing industrial strengths and new sub-sectors emerging from more traditional sectors such as cotton and the overlaps between traditional sectors.

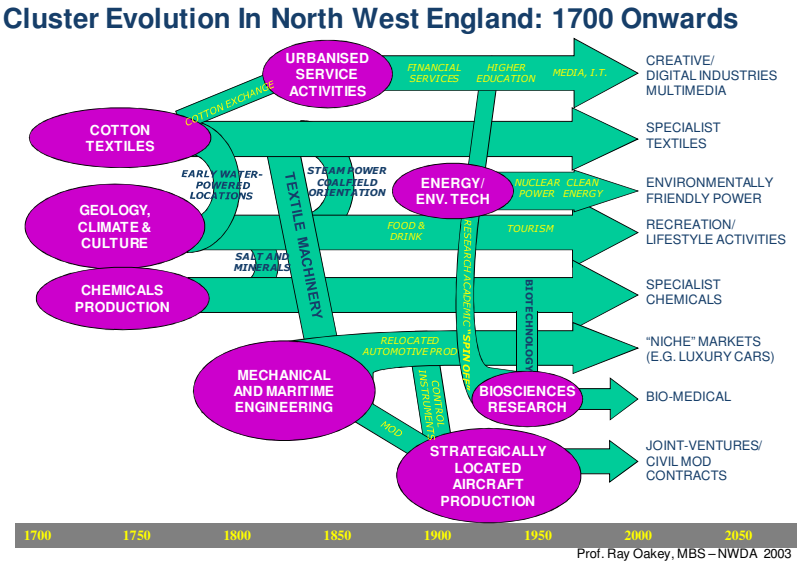


Figure 13: CLUNET policy mapping process

➔ **Foster collaboration through innovation and technology platform/projects**

I – TECHMED (Innovative and supporting technologies in medicine) – City of Ljubljana
Budget: 600K€
Duration: 2 years
Level of policy: National

Summary:
The establishment of a technological platform for innovative and supporting technologies in medicine on a national and European level in order to contribute to the goals of the European Union, through constant development of adequate knowledge on a specific technological area, growth of competition and employment in a particular sector. Objectives are to:

- Establish an efficient public-private partnership and to unite key stakeholders, who have a joint vision of technological development for a particular sector, under the leadership of industry.
- Focus on Integration of SMEs into economy and science and on supporting SMEs in the research area.
- Define the necessary research and technical priorities for medium-term and long-term period in a particular sector (SRA)

Technological Innovation– Tuscany
Action-line 3: industrial applications of optoelectronic technologies
Budget: 1.514.000 €
Duration: 2 years
Level of policy: National

Summary:

The programme of innovative actions "Technological innovation in Tuscany" aimed to stimulate the process of technology transfer and the spread of innovation in specific sector-based and technological contexts of the Tuscan economy. This was to be achieved through the creation of three sector based clusters (fashion, optoelectronic and biotechnology) and one specific area based cluster(western Tuscany) structured between companies, universities, research centres, the public sector (local public instructions), innovation centres, company service providers, training agencies, social factions (workers and trade unions etc.) and financial organisations.

Recommendations
R3:- Identify and involve technological or industrial leading actors of the given sector / technology
R4:- Support innovation and technological development in growth sub-sectors emerging from traditional sectors and services and their overlaps

3.4 Policy 4: Support SMEs involvement

Origin of the policy:

- Increased investment by SMEs in R&D
- Improve the international competitiveness of companies through greater innovating capability
- Insufficient level of co-operation between larger companies, scientific institutions and SMEs
- Strengthen local supply and innovation chains

Description of the policy:

➔ **To mobilise SMEs, the cluster has to understand the added value of participation for each type of participant**

NanoMat - Competence Network for Nanotechnology Materials – Karlsruhe (Germany)
Budget: NA
Duration: NA
Policy level: Supra-regional

Summary:
Under the working title "NanoMat für kleinere und mittlere Unternehmen", NanoMat is currently engaged in organising a target -oriented sub-cluster with a special focus on SMEs. Normally SMEs are not able to participate in the new developments being generated by nanotechnology related new materials. NanoMat's prime goal is to bring together SMEs and scientific expertise in the field. Nearly 700 German SMEs which already are or will be engaged in applying nanotechnology for their business purposes in the near future have been identified. In order to characterise them NanoMat consulted all SMEs using a standardised questionnaire. CEO's of these "Nano-SMEs" have already been invited and brought together in an initial conference "Zukunftsfeld Nanotechnik - Marktchancen und Probleme kleinerer und mittelständischer Unternehmen" in Karlsruhe (April 2007). Motivated by the success of this meeting, several follow-up workshops are in preparation providing regular face to face contact between SME-Managers and nano-scientists.

➔ **Clusters focusing on non-technological collaboration to involve SMEs**

"*The lesson learnt has been that co-operation between companies might be easier in non-technological areas i.e. in commercial or market-related ones. For instance, targeting a market and/or a client, doing joint purchases which might save money to companies, etc...*" *(Aragon)*

"It will become more and more important to be part of clusters to find the right partner, to become big enough to be a partner of an international company or an OEM like Daimler-Chrysler " - (Karlsruhe)

Recommendations
R5:- Involvement of SME support organisations is a key step to ensure the development of a relevant, innovative and competitive supply chain on the global market.
R6:- Use "non technological collaboration" incentives to involve SMEs in order to overcome the barriers of competition that usually exist between them.
R7:- Involve existing SME associations to ensure an efficient networking with small companies

3.5 Policy 5: Create a consensus and mobilise actors

Origin of the policy:

- Lack of collaboration between industry, scientific actors and public bodies
- Lack of transparency of public support organisations
- Encourage the identification of key sectors, consensus on sectors / technology where public funds must be concentrated ;
- Consensus and mobilisation by innovation and technology excellence
- Clusters act as a meeting point and stimulus between institutions, entrepreneurs and scientific and technological research

Description of the policy:

➔ **Involve strategic actors in cluster management structures**

Municipalities, districts, regional councils, and RDAs are the strategic actors that actively work to improve levels of employment and economic growth. Clustering is one of the tools available to foster economic development and has to be linked to other economic development support policies. The crucial challenge for policy-makers is the design of actions to encourage and support relationships among the different actors.

The stimulus of local nodes of governance should be carefully balanced with the need for coordinating the strategies and integrating the local sources of innovation - RIS's policy instruments (Tuscany).

It has been necessary to define models of participation, as well as describe different levels of commitment. In addition, a project assignment system and a conflicts mitigation system were defined (Aragon – ITA)

Lahti Science and Business Park Ltd (LSBP) – Finland
Budget: 10K€/ year
Duration: Variable
Policy level: Regional

Summary: Environmental cluster is divided into the action groups according to 5 technological fields. Actions are coordinated by a Management Group (MG), which defines development needs for financing bodies.
Management Group:
- To coordinate actions and to make proposals about focus areas
- To decide about allocation of resources
- To allocate and propose project proposals

Action groups (assembling according to the needs):-
- To implement main actions of the cluster
- To collect together actors of the action field and to foster co-operation between the action groups
- To identify and make initiatives about development actions and investments
- To coordinate and supervise running projects

➔ **There must be consensus of strategic objectives and cluster policy implementation.**

Agreement between local government and companies association – Aragon
Budget: Up to 100K€/ year for regular cost
Duration: 3 Years renewable
Policy level: Regional

Summary: Tools were not ready when cluster was launched. There was a set of general objectives, but no real tool had been prepared. From cluster launching to the moment the tools were ready, there was a gap that caused a loss of interest in cluster companies.

➔ **Use cluster to do lobbying at the national / international level**

ANMOPYC – Aragon
Budget: 3 M€ for the national call
Duration: Undefined
Policy level: National

Summary: The cluster is working as a national lobbying body as a permanent member of AENOR (official entity in charge of certification and standardization). ANMOPYC also has relationships with other associations (both national and international) working in the same sector.

Organisation of Environmental Technologies and Services (ETS) cluster bodies - North West (UK)
Budget: Undefined
Duration: Undefined
Policy level: National

Summary : Five years ago a UK wide organisation of ETS cluster bodies was created in order to share best practice, benchmark performance and to act as a unified voice of the sector with national agencies. This organisation is hosted by Envirolink, the regional cluster organisation for ETS in the Northwest

➔ **Try to separate the private sector and public sector management structures**

Based on NWDA experience, two different bodies for public and private organisations have been created to ensure the governance of the sectors and cluster policy. The Regional Cluster Organisations are mostly privately oriented whereas the Sector Skills and Productivity Alliances (SSPAs) represent all governmental and public bodies involved in skills development policy. This split between these two bodies enables the RCOs to be efficient in their decision making process. It is important for them to keep enough independence to direct their funding and actions according to the issues faced by businesses

➔ **Identify a public leader to animate the cluster policy and play the role of interface between private and public sphere**

- Tuscany-Etruria Innovazione
- PACA – Méditerrannée Technologies (France)

- Brittany – Brittany Innovation (France)
- Aragón - ITA (Instituto Tecnológico de Aragón) – (Spain)
- North West - Northwest Regional Development Agency (UK)
- Brandenburg - ZukunftsAgentur Brandenburg GmbH (Brandenburg Economic Development Board) – (Germany)
- University of Szeged – South Great Plan (Hungary)
- Lazio – Filas (Italy)
- Montreal – Montreal Metropolitan Community (Canada)
- Madrid - Fundación para el Conocimiento Madri+d (Spain)
- Lahti - Lahti Science and Business Park Ltd (LSBP)/ Lakes Ltd (Finland)
- Ljubljana – None Applicable
- Hamburg – None Applicable
- Karlsruhe – None Applicable

Recommendations
R8:- Link cluster policies to other economic development policies / tools;
R9:- Lobbying and creating dialogue between industry and government authorities, at regional, national and international levels;
R10:- Relevance of existing and tested partnerships in order to enhance and develop clustering processes and thus to spread innovation

3.6 Policy 6: Merge various funding sources

Origin of the policy:

- Increase complementarities between cluster policy and general economic development strategies;
- Use funds allocated to clusters as financial leverage;
- Identify all funding opportunities to increase cluster policy impact
- Identify what type of funding should support the process and who will be the main funding partners within the regional stakeholders

Description of the policy:
The funding sources identified by CLUNET partners include:-

- Funding from central government directly to RDA's and the Knowledge Base (Higher Education Innovation Fund (HEIF))
- Direct regional funding (DOCUP operational programme document)
- Funding from regional European Programmes such as structural funds (European Social Fund (ESF)and European Research and Development Fund (ERDF))
- Direct EU funding thorough the calls for proposals (Regions of Knowledge, FP7,CIP etc)

"Pôle de Compétitivité" National Policy – France
Budget: 830M€ for the 66 pôles
Duration: 3 Years
Policy level: National

Summary: The process of Competitiveness clusters ("pôle de compétitivité") creation has its origins in a national political desire. Clusters are up to 80% public funded. What the longevity of competitiveness clusters will be with restricted public funding or without public funding is as yet unknown

Research and Technological Innovation Fund – Hungary
Budget: Mandatory contributions of all companies registered
Duration: 3 Years cycle
Policy level: National

Summary: The Fund provides stable and reliable financing for RTDI activities. The independent government fund is envisioned to promote demand driven innovation and the knowledge based competitiveness of companies. The Fund is financed by mandatory contributions of all companies registered in Hungary, matched yearly by the government budget. The so-called innovation contribution, based on the (adjusted) net turnover, for medium size and large companies grew from 0.2% in 2004 to 0.3% by 2006. Micro-enterprises and small-size enterprises are exempt from paying a contribution. Direct R&D expenditures, both intramural and ordered from public R&D units, can be deducted from the contribution thus stimulating innovation activities. The company payments into the transparent, dedicated RTDI Fund are used for the direct or indirect benefit of the private sector, as stipulated in the legislation creating the fund. It is also a legal requirement that resources of the Fund be spent through competitive calls, and at least 25% should be allocated to regional innovation purposes.

"Impuls-Network" – Potsdam- Brandenburg (Germany)
Budget: Up to 150K€/ year/ Network
Duration: 3 Years
Policy level: Regional

Summary: The aim of the Impuls-network is to strengthen local/regional competences of the industrial sectors by supporting existing and recently founded local/regional networks aligned to the manufacturing industry and/or industry-oriented services in Brandenburg. The funding is based on either the assignment of a network manager to already existing networks, who need strategic management or consulting services. In the NEW Impuls-programme the financial aid is on a decreasing scale (90, 70, 50%), which minimises the equity financing at the beginning of network.

Based on the CLUNET partner's experience, a set of policies to support the cluster agglomeration phase have been outlined showing issues that need to be tackled in the development of a cluster's early stage policy:

- Detection of the potential clusters and, identification of their boundaries, needs and context
- Technological and innovation excellence must define the top priority sectors
- Create consensus and mobilise actors around the new policy
- Ensure the involvement of SMEs as the main target of the cluster policy
- Bridge different sources of funding from the public institutions in order to avoid overlap and gaps

These important issues need to be resolved in the first stage development of a cluster policy especially in the context of clusters that are not yet structured (in its agglomeration phase) and that require public intervention. It also provides some methodological elements that might be transferable from one region to another even if the economical conditions and needs of industry vary widely and need to be thoroughly evaluated.

Recommendations
R11:- Clearly identify and promote potential financial funding sources
R12:- Anticipate financial needs as some sources (e.g. EU funds) can take several months to be obtained
R13:- Increase transparency of the support for cluster participants

4. Reinforcing Cluster Policies: Approach Towards Emerging/ Developing Clusters

Many of the cluster policies identified in the previous chapter will continue to be relevant to clusters at this level of maturity, for example support for involving SMEs will be enhanced and will take on different aspects, as will encouraging their participation in projects (RTD for example) with other cluster partners.

At this stage in development, clusters have now been identified and their geographical limits defined. The opportunities and potential are identified (evaluation of economic and technological potential) along with their feasibility (implication of leaders, willingness to participate, and availability of financial resources). Therefore a new set of "reinforcing" cluster policies have been identified in the CLUNET regions that support clusters in this phase of growth and development.

4.1 Policy 7: Develop clusters dedicated infrastructures

Origin of the policy:

- Promote the creation of a framework and infrastructure to foster SME association around a given technology
- Improve the quality of equipment at public R&D institutes and decrease the average age of R&D infrastructure
- Create collective research infrastructures

Description of the policy:

The following examples of infrastructure highlight the importance of incubators and science parks in cluster development.

Thematic science park – Tuscany (Italy)
Budget: 9, 9M€ for the overall regional programme
Duration: 6 Years
Policy level: Regional

Summary: The Toscana Life Sciences (TLS) Foundation has created a Science Park with the aim of offering equipped buildings, services and financing opportunities, thus creating a fertile ground for the development of new biotech companies focused on pharmaceutical, biotech, diagnostic and innovative biomedical technologies.
The TLS Foundation has set up a bio-incubator to nourish and catalyse the formation of start-up and spin-off companies. The bio-incubator is supported by the TLS Science Park, beside the equipped labs and office rental, provides incubated companies with a full package of services, ranging from General Services, linked to day-to-day research activities, to Consultancy Services in line with company business management needs.

The Programme of Cooperative Research Centres – Hungary
Budget: From 1,35M€ to 7,2M€ for a Cooperative Research Centre
Duration: 3 Years
Policy level: National

Summary: This measure supported the development of technological partnerships and networks and assisted research and technology transfer between public research institutes and companies. New Co-operative Research Centres (CRCs) have been developed via the support for portfolios of research projects in co-operation. These are long-term (minimum 3, but preferably 6-9 years long) strategies for research, education and knowledge and technology transfer; and will be developed in co-operation partnerships between tertiary education, research institutes of the Hungarian Academy of Sciences and other non-profit research institutions and a minimum of 5 companies (at the time of formation of the CRC). CRCs focus their activities on industrial research and pre-competitive development, applicable in practice and aimed at resolving complex multi-disciplinary practical problems. The CRCs are separate units in terms of financial and management aspects, but operate within the lead organisation (e.g. universities accredited by the Hungarian Accreditation Committee or public research institutions).

Incubation infrastructures fostering clusters' policy – North West (UK)
Budget: £255 000
Duration: 2 Years for public funding
Policy level: Regional

Summary: A vehicle for a regionally integrated process, to drive a sustainable increase in regional GDP by nurturing and accelerating the growth of early stage businesses in the North West's priority sectors:

- Stimulating the development of a mutually-supporting regional community of business incubation players
- Acting as a gateway to channel firms and entrepreneurs seeking business incubation to the most appropriate part of the Region's knowledge-based incubation infrastructure
- Delivering ongoing training and continuing professional development for business incubation managers and staff
- Organising programmes of learning and best practice review in business incubation for the Region's business support community, drawing on regional, national and international experience
- A dedicated website explaining incubation, detailing good practice, and signposting and linking to key incubation initiatives within and out with the Region

Recommendations
R14:- Facilitate coherence between strategies and infrastructure that will foster knowledge sharing, innovation conditions and a higher competitiveness
R15:- Focus investment on support infrastructure that will enable a higher degree of networking between all research and technological stakeholders

4.2 Policy 8: Aligning governance with the cluster development plan

Origin of the policy:

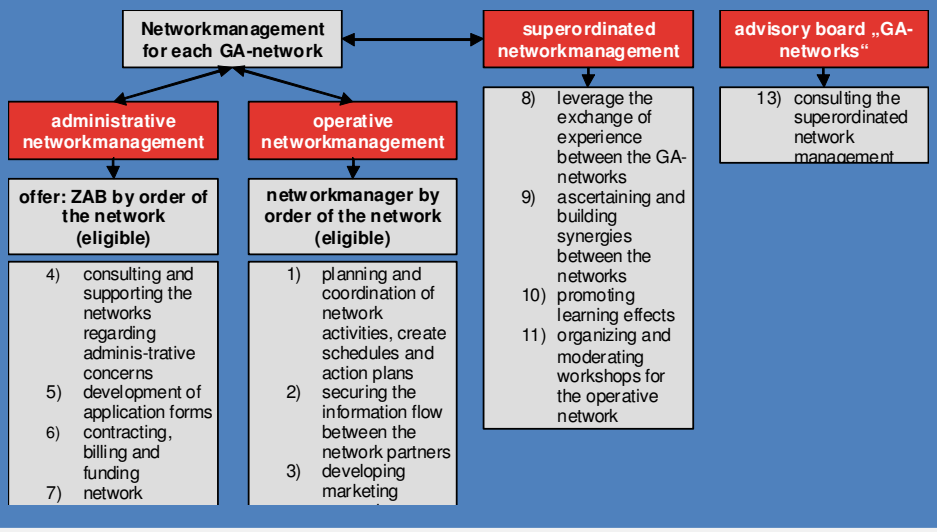
- Convert cluster initiatives into a partnership: formalise the consensus
- Create a structure that will implement and monitor cluster activities
- Put together technical and management competences in the same structure. Define the strategy, and put impact measures in place

Description of the policy:

➔ **How to ensure the development of a governance structure will foster the links between clusters and provide a legacy**

LogistikNetz Berlin –Brandenburg – Germany
Budget: Up to 714K€
Duration: 3 Years
Policy level: Regional

The cluster management in Brandenburg is divided into three management areas: the operative network management, the administrative network management and the super-ordinated network management. The outlined allocation of responsibilities allows an effective and efficient accomplishment of the network's complex needs and tasks. The managerial application areas are closely coupled in order to enable direct communication and allow a goal-oriented problem solving.



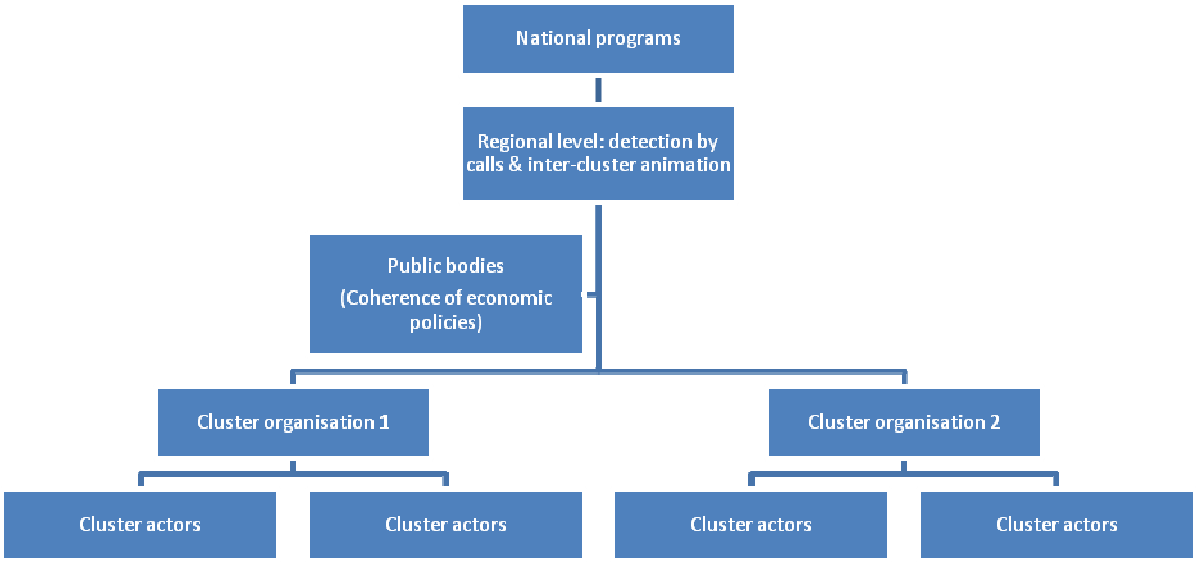


Figure 14: Cluster organisation

➔ **What should be the role of local governments / inter-regional animators in cluster governance structures?**

"Local government enforces the cluster activities from the steering committee, where it has 50% of the votes." (Aragon)

Agreement between local government and companies association – Aragon
Budget: NA
Duration: 3 Years
Policy level: Regional

Summary: Local government defined a strategic plan for this sector, containing some clear objectives. Signing the cluster agreement was the way to achieve such objectives. In this way, the cluster was the entity in charge of identified requirements and opportunities, and gathering effort to implement the defined strategic plan. Local government strategic objectives (employment) may differ to cluster's participants' objectives (profitability)

➔ **Propose agreed development plans defining objectives, role of participants and expected impact**

Recommendations
R16:- Clusters have to provide strategic plans before asking for Ministry help / tendering a national / regional call for projects.

4.3 Policy 9: Create a common Clusters communication strategy

Origin of the policy:

- Improve cluster international visibility / recognition
- Collective communication activities for cluster organisations
- Support regional image / excellence

Description of the policy:

- The policy is an overall communication strategy with tools dedicated to the promotion of the cluster organisation (internet, collective marketing, branding, etc.). The cluster communication strategy is based on the preparation of a marketing plan
- Communication plans implementation- organise and run international sector events in the region to raise awareness of international opportunities e.g. Meet the Buyer events; seminars focusing on opportunities in emerging markets; international supply chain opportunities; research collaborations. This action should be in line with the internationalisation strategy

Automotive Engineering Network Southwest (AEN) – Karlsruhe
Budget: Need to define
Duration: Need to define
Policy level: Local

AEN communicates via internet platform, regular newsletters, common presence on exhibitions and information events. AEN is a "brand" which is well known in the region and beyond.

Valorial – the food of tomorrow- competitiveness cluster – Brittany
Budget: 100K€
Duration: 1 Year
Policy level: National/ Regional

Summary: International visibility was one of the selection criteria for the creation of Competitiveness clusters. Valorial gave a brand name to 2 collective actions. One of them was a mission to Japan on food security to present Breton competences on preventing and managing food risks. During this mission which aimed at creating partnerships, exchanging best practices and building bases for a commercial and non commercial co-operation, a press conference was organized in addition to four company visits (milk products, sweets, catering chain, fish transformation and frozen food) and the participation to the trade fair FOODEX..

Recommendations
R17:- Use a common branding and marketing strategy for the overall clusters
R18:- Provide information on economies of scale to stakeholders on communication matters (e.g. common participation in conferences)
R19:- Attract Foreign Direct Investment (FDI) through common communication strategies

4.4 Policy 10: Foster clusters' Business intelligence/ Technology watch

Origin of the policy:

- Promote direct access for business to the knowledge capital of the region.
- Provide collective services e.g. market surveys or technology watch
- Improve awareness of environmental, technology and business drivers to better inform judgements about future market opportunities

Description of the policy:

Innovation Circles – Madrid (Spain)
Budget: 200K€/ year
Duration: Yearly renewable
Policy level: Regional

Summary: Innovation Circles are sector collaborative frameworks between research and enterprise supporting clustering processes in the region. Innovation circles cover four technological areas supporting SMEs to:

- Obtain information on technologies avalable.
- Obtain analytical industrial information in order to efficiently meet the challenges resulting from global technological changes
- Forecast technology trends

KNOCK project – Tuscany (Italy)
Budget: NA
Duration: NA
Policy level: NA

KNOCK aimed to plan and prototype a network of service centres for co-ordination and knowledge management in SMEs, thus promoting innovation, technology transfer and decision making support in south Tuscany. The service and co-ordination centre must: collect, produce and manage knowledge and information inherent to the local production system; bring together SMEs and associations with institutions and the world of research; promote and support innovation and technology transfer; activate services related to support of entrepreneurship and production; possess and develop computerised and technological instruments to support the above activities.
The KNOCK project has been selected as a good practice by the European Commission and presented during the conference "Regions for economic change" on March 2007.

Recommendations
R20:- Use technology watch and trends to define clusters' unique selling points (USP's) within the global market
R21:- Monitor evolution of the clusters' life cycle and foster collaboration between stakeholders accordingly

4.5 Policy 11: Enhance technology transfer activities in clusters

Origin of the policy:

- Increase the overall industrial performance of the cluster's stakeholders.
- Use efficiently all infrastructures that support innovation and technological development
- Define new financial support schemes to enhance collaborations between RTD stakeholders and supply chain actors
- Support the process of research exploitation and turn research ideas in business opportunities

Description of the policy:

Regional Programme of Innovative Actions (RPIA) "Technological Innovation In Tuscany "– Tuscany (Italy)
Budget: 9, 9M€
Duration: 6 Years
Policy level: Regional

Summary: The programme of innovative actions "Technological innovation in Tuscany" aimed to stimulate the process of technology transfer and the spread of innovation in specific sector-based and technological contexts of the Tuscan economy. This was to be achieved through the creation of **3 sector based clusters (fashion, optoelectronic and biotechnology) and 1 specific area based cluster (western Tuscany)** structured between companies, universities, research centres, the public sector (local public instructions), innovation centres, company service providers, training agencies, social factions (workers and trade unions etc.) and financial organisations.
Concerning the strategy aiming at supporting cluster and network development, the criteria are based on the experience gained with the Tuscany High Technology Network (THTN). In 1994 the Regional Government of Tuscany activated an innovation policy through the Tuscany High Technology Network (THTN) with the law 99/1993. This network, allowed for co-operation between centres of research and advanced industry in the three university areas of Florence, Pisa and Siena identified as the technological poles of the network, and between the world of research and the world of firms and companies aiming to stimulate to innovative inputs in the productive system. The overall aim of the network was to form the basis for improvements in levels of competitiveness in the regional system, forming a relationship between institutions, entities and companies.

NanoMat - Competence Network for Nanotechnology Materials – Karlsruhe (Germany)
Budget: undefined
Duration: undefined
Policy level: Regional/ National

NanoMat supports and organizes yearly conferences and workshops in order to stimulate the "trialogue" between science, industry and governmental authorities. In 2006 e.g. NanoMat was responsible for "NanoDe", Germany's leading governmental conference in the field of nanotechnology promoted by the German Ministry for Education and Research (BMBF). Also in 2006, NanoMat organized the scientific programme for "NanoFair", an international conference devoted to the exchange of knowledge between science and industry. An upcoming event will be the "NanoMatSzene" in May 2007 (which surroundings will also be used for the realisation of CLUNET's German National Policy Workshop).

Incubation – North West of England
Budget: £255 000
Duration: 2 Years for public funding
Policy level: Regional

The NWDAs regional innovation strategy recognises business incubation's vital role in enabling the development of businesses and converting business ideas into commercial reality. Following significant investment in incubation facilities the NWDA commissioned research to develop an incubation strategy - Incubation North West – A framework for knowledge-based incubation in England's North West. The results of this research highlighted the need for a regional business incubation co-ordination facility to link and integrate knowledge-based and wider business incubation activity across the region.

This section shows that it is important to capitalise on the early stage development of clusters. Stakeholders are now committed to a network that enables policy makers to leverage new activity and to accelerate the process of clustering. The analysis of the CPFS has shown that the main issues for these "reinforcing" policies are to:

- Accompany the creation of a sustainable organisation with a legitimacy towards the different cluster stakeholders
- Ensure the development of a common branding and communication strategy which all stakeholders will acknowledge
- Develop the clusters business intelligence / technology watch to define within the global market the cluster's position and unique selling points
- Enhance technology transfer and innovation to reinforce the links between RTD stakeholders

Based on the CLUNET partner's experience, the above issues give an illustration of the main drivers of a cluster policy aimed at accompanying clusters that are in the phase of development and growth. Although it does not provide an exhaustive view of the "reinforcing" policies, it underlines the importance for policy makers to foster the development of a common governance scheme/organisation and a common identity and branding.

Recommendations
R22:- Technology transfer requires a broad set of activity from networking to financial support schemes in order to facilitate the development of knowledge based activity

5. Mature Cluster Policies: Approach Towards "Institution for Collaboration" Clusters

This final section of the qualitative analysis aims to describe the most "mature" cluster policies identified by CLUNET partners. The policy makers now face a critical mass of actors with identified economical and technological boundaries acknowledged by all stakeholders with an internal dynamic of new firm creation through start-ups, joint ventures, spin offs. These mature cluster policies require a strong resource base over time as they usually address a range of activities and require a formal commitment from the stakeholders.

In the quantitative analysis, these policies have been identified in the "transversal policy fact sheets" that have a specific allocation of funding to address most of the six themes. Evaluation and monitoring of the cluster policy has also been included in this section since there is no specific CPFS on that topic. Only the most mature policies address this issue. It is acknowledged within the public sector that closer monitoring must be given to the analysis of the impact of public money therefore suggested approaches are given in this chapter to offer best practice ideas.

5.1 Policy 12: Contractual process with "Institution for Collaboration" clusters

Origin of the policy: The most advanced cluster policy creates the conditions of *networking* that have a single lead organisation to govern and direct the public-private action. These usually cover a specific sector e.g. Envirolink in NWDA or the aerospace cluster in Hamburg. The lead organisation develops the trust and confidence of stakeholders and particularly with the private sector and therefore has the capacity to launch a series of cluster initiatives. It is important to note that in most cases, the cluster director is an experienced person from the industry with an established track-record.

This cluster organisation is therefore fundamental to the success of the cluster policy implementation since it provides policy makers with a governance body with the capacity to discuss and negotiate collectively the type and nature of initiatives to be further implemented with "public and private money".

Most regions have developed a contractual approach co-signed by the funding agencies which cover all the actions required to ensure sustainability, growth and competitiveness of the targeted cluster known as an "Institution for Collaboration"

In order to ensure efficiency, a greater impact, and a better follow-up of the cluster policy, the framework of the contractual agreement between the policy makers and cluster lead organisation needs to be sufficiently detailed outlining activity, budget and performance indicators.

Description of the policy:

Implement a process to support the development of a binding contractual agreement between the regional policy makers and the cluster based organisation

Montreal Metropolitan Community – Aerospace / ICT / LSH cluster –
Budget: 800K£/year
Duration: 3 Years Renewable

To put forward a development strategy for its existing metropolitan clusters, which, for the most part, have been unable to take advantage of the business synergy among the various players in the productive cluster system. The MMC's role is not to create new clusters, but to find clusters that are already active in the metropolitan area and activate them by supplying appropriate tools and opportunities to meet. The MMC role is to create a ripple effect on the Montreal metropolitan area's economic and social vitality and provide the MMC's five administrative regions with a concerted, integrated approach for strengthening their competitive advantages**.**

- **Rationale**: Innovation, productivity, competitiveness and prosperity are all interrelated. As a result, the competitiveness strategies of big cities increasingly rely on the development of innovative clusters, that is, a geographic concentration of firms and institutions working in a particular industry. The physical proximity of the players fosters interaction and a free-flowing exchange of ideas and knowledge.

- **Cluster sectors individual criteria**: Competitive clusters are those in which one or more segments or sub-clusters have successfully penetrated foreign markets or developed international reputations. Competitive clusters act as economic engines and are of national importance. They include world leaders in their respective fields.

- **Policy objectives**: The challenge facing the Montreal Metropolitan Community (MMC) is to put forward a development strategy for its existing metropolitan clusters, which, for the most part, have been unable to take advantage of the business synergy among the various players in the productive cluster system. The MMC's role is not to create new clusters, but to find clusters that are already active in the metropolitan area and activate them by supplying appropriate tools and opportunities to meet.

- **Policy expected results**: The goal of this large-scale undertaking is twofold: create a ripple effect on the Montreal metropolitan area's economic and social vitality and provide the 82 municipalities in the MMC's five administrative regions with a concerted, integrated approach for strengthening their competitive advantages.

NWDA – Envirolink (Environment cluster)
Budget: 1.2M€ per year
Duration: 6 years

Envirolink has the objective to improve the profile and competitiveness of the regions energy and environmental technologies & services (ETS) sector and to help them find and win new business regionally, nationally and internationally. Therefore, their cluster initiatives aim at:

- improved profile for the ETS sector and the organisations within it
- improved understanding of the importance of this sector to UK competitiveness
- increased investment by SMEs in R&D
- increased number of companies trading internationally
- increased number of exporting SMEs entering new markets
- increased number of university and business collaborations and consortia

Hamburg – Aerospace Cluster
Budget: 1.4 M€ per year
Duration: 4 years
Policy level: Regional

Hamburg has an efficient cluster policy in order to increase the workforce in the metropolitan region of Hamburg from 35,000 up to 39,000 employees within the aviation industry. The contractual agreement made between the clusters and the Hamburg metropolitan region aims at:

- Ensuring sustainable economic growth and employment in the aviation industry
- Securing and enforcing the industrial base for the manufactures and the SME supply chain
- Improvement of international competitiveness
- Strengthening the capability for research and innovation
- Enhancing the future position of Hamburg as a major place for the civil aviation industry
- Building a centre of competence "Cabin Interiors" and "New Materials"
- Programs for education and further training

Recommendations
R23:- Define within the contractual agreement a detailed action plan of cluster initiatives with objectives, expected impacts and a set of indicators
R24:- Negotiate the contractual agreement with one legitimate cluster lead organisation
R25:- Obtain an official signature of the contractual agreement between the funding bodies and the cluster lead organisation

5.2 Policy 13: Internationalisation, transnational co-operation, creation of links among clusters

Origin of the policy:

- Strong dependence from a few big enterprises with external capital; strong competition with new EU member Countries.
- Create links between mature clusters and develop common transnational programmes
- Access new markets and create links with other international clusters
- Promote and reinforce the joint participation in the EU FP (Framework Programme) and other relevant EU and international financing schemes.
- Foster new co-operation to widen the scope of activity and innovation opportunities

Description of the policy:

With Cluster based organisations regional policy makers can then develop an overall approach that will cover expansion, lobbying, branding, internationalisation and networking.It is important for clusters that are well structured in terms of governance and decision –making processes to foster, for the sake of their own stakeholders, the link with other sectors at international level. Cluster organisations will also benefit from the support of their public bodies at international level such as United Kingdom Trade Investment (UKTI) or the French Embassy network. The objectives are to:-

- Attract inward investment and improve international recognition
- Develop new links with other innovative sectors and access to new competences
- Launch new RTD projects and develop innovative applications in other fields and sectors
- Maintain an international recognition of local competences
- Foster international trade and exports through strategic alliances
- Develop international supply chains through partnership with emerging/high-growth markets.

A number of partners have used different schemes to support the internationalisation of their clusters and stakeholders.

➔ **Attract inward investors to the region's sectors using clusters as unique selling points**

Developing internationally competitive sectors –North West (UK)
Budget: £9, 5M for all RES sectors
Duration: 3 years
Policy level: National/ Regional

The RES identified six priority internationally competitive sectors. Each Cluster Organisation (CO) will develop internationalisation action plans ensuring that, where appropriate, these plans encompass all international opportunities including: inward investment; global outward investments; trade; international innovation programmes and international supply chains.

➔ **Support cluster internationalisation**

Help companies in priority sectors access international marketing. The support should drive an increase in the number of trade advisors embedded in the regional cluster organisations. The task of supporting internationalisation will demand the development of international supply chains thus aiding companies to gain access to global innovation. It will also be necessary to undertake studies in emerging markets to identify opportunities for RES priority sectors.

CLOE (Clusters linked over Europe) – Karlsruhe (Germany)
Budget: undefined
Duration: 4 years
Level of funding: European
AEN is part of INTERREG IIIC's "CLOE (Clusters linked over Europe)" and with that linked to international partners. Members with international experience support other AEN-members in taking part in international exhibitions like the SAE-Congress in Detroit. There are some contacts to other Automotive Networks (ex. Graz) or the CVC Commercial Vehicle Cluster around the Daimler-Chrysler factory in Wörth. Through CLOE, the city of Karlsruhe has been able to create a sustainable network of clusters organisations.

Fostering participation in EU programmes – North West (UK)
Budget: 810K€ per year
Duration: 4 years
Policy level: Regional

Providing access to global innovation by developing Frameworks NW to cover the promotion of the Seventh Framework Programme and also the new Competitiveness and Innovation Programme (CIP). This is an extension of an existing programme. The provisional budget for FW7 is Euro 50.5 bn for 2007-2013.

Aviation cluster - Hamburg (Germany)
Budget: 600 k€
Duration: 4 years
Policy level: regional

Part of the support policy of the Aviation cluster concerning international co-operation, allocates 600 K€ on 4 years to develop/ to increase

- Co-operation inside the aviation industry SME associations and among the SME organisations, authorities and chambers of crafts and commerce
- Networking with international aviation clusters in France, Netherlands and England
- Participation in EC-Projects

Memorandum of Understanding – FILAS (Lazio Region)
Budget: None applicable
Duration: None applicable
Policy level: Regional

Filas has carried out activities to enhance transregional and international co-operation. In November 2006, the Media Development Authority of Singapore (MDA) and the Finanziaria Laziale di Sviluppo SPA (FILAS) signed a Memorandum of Understanding to provide for both parties to co-operate in the fields of digital technologies and applications. In March (2007), another MoU was signed between FICCI (Federation of Indian Chamber of Commerce and Industry) and Filas for identifying and promoting opportunities for joint projects and co-production arrangements in the cinematographic, audiovisual and media sectors through industry coproduction and networking meetings.

➔ **Develop international human resources**

Help sectors develop an internationally comparable skills base. This development should also include running a key players sector pilot to attract key individuals of the highest scientific calibre to the region's priority sectors/research base.

Create organisations with high productivity, value and skills – North West (UK)
Budget: NA
Duration: 3 years
Policy level: regional

Summary:
Northwest Regional Development Agency has developed a mentoring programme for graduates and new entrants, working with HEIs to ensure degree courses meet industry needs also working at a national level to raise the profile of sectors to ensure they attract the brightest and the best graduates.

Recommendations
R26:- Internationalisation policy incorporates promotion of international linkages, sector focused marketing strategies, trade development, promotional activities and skills development.
R27:- Involve various public bodies in a common internationalisation strategy with centralised funding.

5.3 Policy 14: Evaluation and monitoring of the cluster policy

Origin of the policy:

- The cluster approach has been difficult to monitor and control
- Provide the necessary level of information to clusters for better governance
- Better understand cluster processes and mechanisms
- Regional governments and development agencies are unable to assess the effectiveness of cluster-based programs and initiatives

Description of the policy:

- Ensure an impact assessment of public policy based on the return on investment in terms of GVA, employment, etc.
- Ensure a proper governance scheme of public policy
- Direct efficient future actions for efficiency and effectiveness
- Formal contractual agreements between cluster organizations and regional policy makers allow for successful monitoring evaluation and dissemination

With the launch of the "Pôles de Compétitivités" the French Government has made regional clusters an important element of its policies for growth and employment. And France is not alone among its European partners: Some Spanish regions, Catalonia and the Basque country in particular, have used cluster methods for many years, as have Denmark and the Netherlands. Sweden, the United Kingdom, German regions, and Finland have adopted this approach more recently and there are many examples outside Europe of countries applying similar ideas.
Evaluation is becoming an increasingly important theme in these initiatives. Data is needed to more systematically select appropriate clusters and themes and to evaluate the impact of these actions.

ARISE FP6 funded project - Led by Mediterranée Technologies
Budget: 800K€
Duration: 3 years
Level of funding: European- FP6

ARISE brings together six partner regions which are some of the leading European innovative regions and have already been involved in various levels of regional innovation strategy developments the last 15 years. Led by PACA Region (Provence Alpes Cote d'Azur), the ARISE consortium gathers together the Stockholm Region (represented by Kista Science City), Lower Austria, Kent (represented by Technology Enterprise Kent), Tuscany Region and Lithuania. The ARISE project aims to use benchmarking as a tool to stimulate innovation and technology policies. The project is to develop a mechanism to detect measure and satisfy innovation needs expressed by the economic actors; to establish inter-regional comparisons based on qualitative and quantitative indicators; and to build interregional innovation system networks among the participating regions. As main results, the ARISE member regions expect to provide policy makers with methodologies and tools to assess the impact of current and future innovation policies, and to create a new dynamism amongst innovation movers and shakers to help them become key actors in the improvement of regional competitiveness across Europe. A trans-national Steering Group will be established to ensure that senior policy makers make a direct contribution to the success of the project, and to make sure that the ARISE recommendations are implemented.

Cluster Greenbook – Not within the scope of CLUNET

To finally evaluate cluster policies, an array of indicators has to be used. Economic goals, such as the cluster's employment and salaries growth, are ultimate goals of cluster policies but because they are also influenced by many other factors they are problematic short-term indicators. Changes in business environment quality, especially in those areas targeted by cluster initiatives, are another candidate for evaluation and more directly related to policies. Finally, operational performance is a direct reflection of cluster policy quality although it is not a policy goal in itself. Through international surveys of cluster initiatives (www.cluster-research. org) data is available enabling benchmarking of cluster initiatives against the operational best practice in the field.

Cluster observatory – Within the overall Pro-Inno Europe initiative

To evaluate the potential for cluster growth and to inform policy, information about performance outcomes is not enough. It is critical to understand the business environment conditions at a specific location that make it more or less feasible for companies in the cluster to reach high levels of productivity and innovation. Such data is, however, hard to source across the different dimensions that matter. “Hard" statistical data on issues like infrastructure or R&D spending and survey data that solicit the subjective views of companies are useful. The not-for-profit Foundation Clusters and Competitiveness, an initiative of the Catalan government and other European regions, has created a survey tool that enables regions to create such data (www.clustercompetitive-ness. org). It helps to take stock of how the managers that take decisions in companies view their location to inform effective efforts to upgrade the cluster environment.

Recommendations

R28:- Include strict guidelines on monitoring and evaluation requirements within the framework of the cluster policy

R29:- Monitor the performance of the cluster policy through regular policy evaluation cycles

R30:- Use data and indicators to ensure better governance of cluster initiatives with the cluster

6. Recommendations and Conclusions

6.1 Recommendations

R1:- Cluster creation requires formalisation, e.g. Documents of initial concept and agreement between its members that define the cluster objectives (Memorandum of Understanding), its economical and geographical boundaries, and the level of co-operation/competition.
R2:- Cluster needs should be identified considering the context, specificities of the territory and of the sectors. Evidence of need, demand and opportunity are required for each of the priority sectors using the following:

- Sector/cluster mapping studies involving consultation with industry and HEIs
- Development of Strategy and Action Plans involving consultation with industry and HEIs
- Boards/Steering Groups for RCOs and projects
- Participation in networking events

R3:- Identify and involve technological or industrial leading actors of the given sector / technology
R4:- Support innovation and technological development in growth sub-sectors emerging from traditional sectors and services and their overlaps
R5:- Involvement of SME support organisations is a key step to ensure the development of a relevant, innovative and competitive supply chain on the global market.
R6:- Use "non technological collaboration" incentives to involve SMEs in order to overcome the barriers of competition that usually exist between them.
R7:- Involve existing SME associations to ensure an efficient networking with small companies
R8:- Link cluster policies to other economic development policies / tools;
R9:- Lobbying and creating dialogue between industry and government authorities, at regional, national and international levels;
R10:- Relevance of existing and tested partnerships in order to enhance and develop clustering processes and thus to spread innovation
R11:- Clearly identify and promote potential financial funding sources
R12:- Anticipate financial needs as some sources (e.g. EU funds) can take several months to be obtained
R13:- Increase transparency of the support for cluster participants
R14:- Facilitate coherence between strategies and infrastructure that will foster knowledge sharing, innovation conditions and a higher competitiveness
R15:- Focus investment on support infrastructure that will enable a higher degree of networking between all research and technological stakeholders
R16:- Clusters have to provide strategic plans before asking for Ministry help / tendering a national / regional call for projects.
R17:- Use a common branding and marketing strategy for the overall clusters
R18:- Provide information on economies of scale to stakeholders on communication matters (e.g. common participation in conferences)
R19:- Attract Foreign Direct Investment (FDI) through common communication strategies
R20:- Use technology watch and trends to define clusters' unique selling points (USP's) within the global market
R21:- Monitor evolution of the clusters' life cycle and foster collaboration between stakeholders accordingly
R22:- Technology transfer requires a broad set of activity from networking to financial support schemes in order to facilitate the development of knowledge based activity
R23:- Define within the contractual agreement a detailed action plan of cluster initiatives with objectives, expected impacts and a set of indicators
R24:- Negotiate the contractual agreement with one legitimate cluster lead organisation
R25:- Obtain an official signature of the contractual agreement between the funding bodies and the cluster lead organisation
R26:- Internationalisation policy incorporates promotion of international linkages, sector focused marketing strategies, trade development, promotional activities and skills development.
R27:- Involve various public bodies in a common internationalisation strategy with centralised funding.

R28:- Include strict guidelines on monitoring and evaluation requirements within the framework of the cluster policy
R29:- Monitor the performance of the cluster policy through regular policy evaluation cycles
R30:- Use data and indicators to ensure better governance of cluster initiatives with the cluster managers

6.2 Conclusions

C1:- Cluster policy covers a wide range of sectors from traditional to research intensive areas

C2:- All policy levels are involved in the support of the clusters but regional level seems to be the most appropriate to ensure a balance between proximity and sufficient funding resources

C3:- An average programming period of 3 years is usually required to ensure enough visibility of the activities and results expected from the cluster policy.

C4:- An overall transversal cluster policy requires approximately 2 M€ per year of public and private funding (excluding RTD projects)

C5:- Most of the partners use innovation and technology as the main driver to set-up cluster policy between their regional stakeholders.

C6:- Private funding may represent one third of the total amount of funding dedicated to the cluster policy

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Author: Department of Trade and Industry and the English RDAs by Ecotec Research & Consulting

Title: "**The Cluster Policies Whitebook**" - 2004
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8. Annexes

8.1 Model of Cluster Policy Fact -Sheet

Cluster policy Fact Sheet Template

Contents

The project fact sheet could be structured in 4 sections:

a. Description of the cluster policy/program
b. Description of the cluster targeted / specific sector
c. Quantitative impact analysis of the cluster policy/program
d. Qualitative impact analysis of the cluster policy/program

Each of them containing the following information:

Part A

A1. Cluster Policy data

Title: Leading strategic organisation - related to the definition of the policy

Partners:

Category/Theme: *Select one of the theme below that corresponds to the policy described*

1) Cluster expansion: overall communication strategy and tools dedicated to promote the cluster organisation (internet, collective marketing, branding, etc.)

2) Policy action: Lobbing and creating dialogue among industry, scientific community, and government authorities. Policies that support the governance of the cluster and the development of a cluster community.

3) Partnership, networking and export (internationalisation): links with other companies within and outside the cluster

4) Industrial performances: supply chain, production process and cooperation with SMES and large companies

5) Innovation and technology: Incubation, technology transfer, Links between HEIs and companies, research exploitation, RTD projects

6) Skills and training: program to support skills development of the work force

Short description: *(5-10 lines description)*

Keywords:

Amount of budget dedicated to the policy:

Origin and type of funding: Public/private/mixed

Duration:

Start Date: day/month/year / End Date: day/month/year or funding cycle

A2. Cluster Policy rationale

Rationale: Describe the rationale in 5-10 lines (e.g.: Market failure, government/policy failure, systematic failure, government objectives)

Cluster sectors individual criteria: Any individual pre-studies/observatories/ evaluation before the launch of the policy.

Policy objectives:

Policy expected results:

A3. Characteristics of policies

Level of policy: Regional/ National/ Other

Regulatory framework: Existence of national law / regional law/ Other

Type of cluster policy approach: Broker policies, Demand side policies, training, promotion of international linkages, broader framework policies, top-down, mixed, bottom-up

Focus: to be specified for each policy approach

Part B
Description of the cluster targeted/ specific sector

Name of the cluster organisation:

Description of the cluster organisation:

Characteristics of the cluster organisation: Cluster Facilitators/Enablers/ /Formalised organisation ….

Kind of external relationship: Relationships with policy makers, relationship with other clusters

Short description (Sector, location, etc.) :

Maturity of the cluster: this implies a formalisation of the cluster creation. Existence of documents of birth …

Main economical/technological issues:

Number of companies: organisations/firms and for each one quantitative information ((number of employments, cash flow, % investment in R&S….) in order to have a dimensional picture of cluster, referred to single companies

Number of research centre/RTD organisation:

Part C

Quantitative Impact analysis of the cluster policy/program

Description of quantitative impact:

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Number of companies/actors involved:

Results achieved according to the policy theme:

See Example for Partnership and networking:

- Number of Establish networks among firms
- Number of meeting with companies
- Number of international show attended by companies or cluster organisation
- Participation of regional companies to international events
- Number of Common booth
- Etc.

Actual impact:

Example of monitoring indicators for Partnership and networking:

- Number of collaboration/cooperation agreement
- Number of joint projects at regional/international levels
- Rise of the level of exportation
- Etc.

Part D

Qualitative Impact analysis of the cluster policy/program

(See paragraph 3- task force for evaluation..)

Description of qualitative impact: (on networking, marketing, growth, skills, etc.)

Efficiency rating (Resources VS Results): ……..1……..2……..3……..4……5

Effectiveness rating (Results VS Objectives): ……..1……..2……..3……..4……5

Sustainability rating (impact VS needs): ……..1……..2……..3……..4……5

Transferability rating: ……..1……..2……..3……..4……5

Comments: (please describe the above qualitative rating, the strengths and weaknesses of the policy, the barriers faced and issues around it that might be relevant to other policy-maker)

Important: Each cluster policy should be identified considering not transferable context elements (specificities of territory etc.) . Once those elements have been identified it will be possible to select what will be transferable. In other words: the process should start form untransferable elements to identify the transferable ones.