IRE subgroup
‘Regional clustering and networking as innovation drivers’

Design of cluster initiatives
- An overview of policies and praxis in Europe

Learning module 1
Foreword

The IRE network has established a subgroup of regions which look at the development of clusters and networks at the regional level. The cluster subgroup is a pilot action of the European Commission’s Entrepreneurship Action Plan (Key action 06.B – Fostering innovative clusters).

In order to facilitate members’ understanding about the design, establishment, implementation and impact of cluster initiatives, the subgroup will undergo a learning process which is broken down into learning modules. The modules are delivered through six subgroup meetings, which will focus on the following key topics:

1. design of cluster initiatives – an overview of policies and praxis in Europe;
2. internal and external cluster interaction;
3. funding cluster processes;
4. marketing regional-based clusters;
5. monitoring and evaluating cluster outcomes;
6. the future regional cluster policies.

This report covers the first of these modules, namely “Design of cluster initiatives – an overview of policies and praxis in Europe”. The report summaries the main messages and conclusions of a number of recent studies and reports on clusters, cluster initiatives and the development of clusters. The reports referred to are:

- **FINAL REPORT OF THE EXPERT GROUP ON ENTERPRISE CLUSTERS AND NETWORKS**
  EUROPEAN COMMISSION
  ENTERPRISE DIRECTORATE-GENERAL

- **INNOVATIVE CLUSTERS (2001)**
  Drivers of national innovation systems
  OECD
  Enterprise, Industry and Services

- **Regional clusters in Europe (2002)**
  Observatory of European SMEs
  2002 / No. 3

  Örjan, Sölvell, Göran Lindqvist, Christian Ketels

- **The Cluster Policies Whitebook (2004)**
  IKED - International Organisation for Knowledge Economy and Enterprise Development

In its ambition to provide a comprehensive and accessible summary of the most recent studies on the subject the report covers a) the definition and emergence of clusters, b) the rationale for cluster-based development strategies, c) a characterisation of European cluster policies and approaches, d) An overview of the cluster initiatives in the IRE cluster subgroup regions.
# Table of Contents

FOREWORD ............................................................................................................................................. 2  

**TABLE OF CONTENTS** ....................................................................................................................... 3  

1 DEFINITION AND EMERGENCE OF CLUSTERS .............................................................................. 4  

1 WHY CLUSTERS? ................................................................................................................................... 6  

2 CHARACTERISATION OF EUROPEAN CLUSTERS .......................................................................... 7  

3 CLUSTER POLICIES ................................................................................................................................. 8  

3.1 WHAT IS A REGIONAL CLUSTER POLICY? ..................................................................................... 8  

3.2 TYPES OF POLICIES ......................................................................................................................... 9  

4 CLUSTER POLICIES IN EUROPE ............................................................................................................ 11  

4.1 GENERAL APPROACH .................................................................................................................... 11  

4.2 EUROPEAN COMMISSION .................................................................................................................. 12  

4.3 BY COUNTRY .................................................................................................................................... 13  

4.3.1 Member States .............................................................................................................................. 13  

4.3.2 New Member States ..................................................................................................................... 21  

4.3.3 EFTA/EEA Countries .................................................................................................................... 25  

5 THE IRE SUBGROUP – EXAMPLES OF REGIONAL CLUSTER INITIATIVES ......... 26
1 Definition and emergence of clusters

To define a cluster is not a simple task. The concept is used for a variety of different business structures: national-regional-cross-border clusters, clusters of competence, industrial or production systems and innovation systems. It is also used for different purposes: to increase the competitiveness of SMEs, support collective research, rationalise a whole industry, implement environment management system. Even though there is a multitude of definitions most of them share the idea of proximity, networking and specialisation.

Following the research of Malmberg et al (1996), regional clusters are limited geographical areas with a relatively large number of firms and employees within a small number of related industrial sectors. Thus, the clusters are specialised in a small number of industries. This reflects the more general point that economic, entrepreneurial and technological activities in specific industrial sectors tend to agglomerate at certain places.

One of the most used definitions of a cluster is the one of Michael Porter: “Clusters are geographically close groups of interconnected companies and associated institutions in a particular field, linked by common technologies and skills. They normally exist within a geographic area where ease of communication, logistics and personal interaction is possible. Clusters are normally concentrated in regions and sometimes in a single town”.

Porter’s definition was used as a starting tool for the Expert group when they added some elements to the definition: “Clusters are groups of independent companies and associated institutions that are:
- Collaborating and competing;
- Geographically concentrated in one or several regions, even though the cluster may have global extensions;
- Specialised in a particular field, linked by common technologies and skills;
- Either science-based or traditional;
- Clusters can be either institutionalised (they have a proper cluster manager) or non-institutionalised.”

In the report Regional Clusters in Europe Parker’s definition was considered too broad. A hierarchy of different concepts was elaborated differentiating regional clusters from regional innovation systems.

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Definitions and differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional cluster</td>
<td>A concentration of ‘interdependent’ firms within the same or adjacent industrial sectors in a small geographical area</td>
</tr>
<tr>
<td>Regional innovation network</td>
<td>More organised co-operation (agreement) between firms, stimulated by trust, norms and conventions, which encourages firms’ innovation activity</td>
</tr>
<tr>
<td>Regional innovation system</td>
<td>Co-operation also between firms and different organisations for knowledge development and diffusion</td>
</tr>
</tbody>
</table>

1 Final report of the Expert Group on Enterprise Clusters and Networks
2 Observatory of European SMEs 2002, No. 3
The emergence and evolution of clusters can be characterized by six different steps:\(^3\):

1. The birth of a cluster can often be traced to historical circumstances, such as the availability of raw materials, specific knowledge in R&D organisations or traditional know-how, the specific or sophisticated needs of a certain group of (geographically concentrated) customers or firms, and the location of firms or entrepreneurs performing some important new technological innovations that stimulate the growth of many others. The first stage in cluster development often involves new firm spin-offs leading to a geographical concentration of firms in nearly the same production stage.

2. Once an agglomeration of firms becomes established, progressively more external economies are created, forming a cumulative process. The first external economies often include the creation of a set of specialised suppliers and service firms, frequently originating from vertical disintegration of firms, and the creation of a specialised labour market.

3. The formation of new organisations that serve several firms in the growing cluster, e.g. knowledge organisations, specialised education establishments and business associations.

4. The development of external economies and the emergence of new local organisations increase the visibility, prestige, and attractiveness of a cluster. This may result in more firms and skilled employees moving into the cluster, thus raising the attractiveness even further, as well as resulting in a fertile breeding-place for new local companies.

5. The creation of non-market, relational assets that foster an untraded circulation of information and knowledge, through e.g. informal collaboration, and help with coordinating economic activity. Thus, mature regional clusters may contain ensembles of specific, differentiated, and localised relations between persons and organisations that are coordinated by routines or conventions that often only work in the context of proximity.

6. Although a cluster can renew its success for decades or become part of a new cluster, many regional clusters sooner or later enter a period of decline. Cluster decline is often seen to reflect a situation of technological, institutional, social and/or cultural ‘lock-in’ in business behaviour.

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\(^3\) Observatory of European SMEs 2002, No. 3
Design of cluster initiatives - An overview of policies and praxis in Europe

1 Why clusters?

In the last ten years, clustering has emerged as a new concept for economic development. A number of countries are officially basing their economic development strategies on cluster theories. A much larger number of countries and regions are inspired by cluster theories and use elements of it to foster growth.

Although still a new phenomenon as an economic development strategy there is a number of European cluster success stories showing that significant positive effects can be achieved when implementing cluster concepts in a consequent manner. In particular, many industries of Northern Italy are mentioned as role models for clusters. Well-known clusters in Northern Italy are furniture and shoe making in the Veneto region and ceramics in Emilia-Romagna. As second cluster stronghold is Austria. In the regions of Styria and Upper Austria regional economic development is entirely cluster-based. A particularly strong cluster in both regions is the automobile sector.

The success stories show that clusters, by increasing the competitiveness of individual companies, provide macroeconomic benefits, some of which are:

- **Raising attractiveness of regions** - Network and cluster establishments will help stimulate competence development within the region as well as motivating people not to migrate. This will also have a positive effect on inward investments in the region as it creates a positive job effect and can inspire other companies to move into the region.
- **Increasing need-orientation of business supporting services** - Effective clusters and networks that also strongly work in the field of RTD and will therefore work together with research institutes and universities. Therefore, they contribute to further develop the regional competence and research infrastructure.
- **Securing employment and fostering entrepreneurship** - The production sector in Europe is a large provider of jobs and contributor to the GDP; much of this comes from SMEs supplying the large end producers.

In The European Charter for Small Enterprises in 2000 the Member States declared that “Europe’s competitiveness depends on its small enterprises: these are the main drivers for innovation, employment as well as social and local integration”.

Therefore, the best possible environment for small enterprises should be promoted. And to go further by affirming that: “We will foster the involvement of small enterprises in inter-firm co-operation, at local, national, European and international level as well as the co-operation between small enterprises and higher education and research institutions”.

Bearing this in mind, sub-national and national policy makers are increasingly interested in enterprise clusters and networks. This because enterprise clusters represent efficient structures for stimulating the competitiveness, productivity and innovation of small enterprises.

The Expert Group on Enterprise Clusters and Networks stated a number of advantages with clusters even though some of the advantages were seldom checked with scientific performance indicators.

Clusters are generally built up spontaneously by the local business players, who want to take advantage from the synergy of several factors existing in the geographic area: the presence of
clusters and suppliers, the access to qualified labour force and know-how, the availability of specific natural resources and infrastructure, low transaction and communication costs due to geographical proximity, the vicinity of universities, training centres and research institutes, and the presence of financial institutions and other private and public organisations.

Clusters constitute important knowledge spillovers for businesses. The physical proximity of the factors outlined above furthers the creation of formal and informal linkages and networks among firms, higher education and research institutions, financial establishments, public agents and other local organisations, where information can easily flow and propagate. Easier contacts are established with public administrations, allowing them to adapt the infrastructure of the cluster to the businesses needs. All these contribute to facilitating the innovation process. Indeed, to guarantee their survival in these very competitive environments, cluster firms are obliged to develop innovative strategies and to build in the necessary capacities to implement them. Innovation is not just the sole preserve of universities or research centres, it is mainly the result of a series of businesses initiatives and experimentation. In a cluster, enterprises voluntarily or involuntarily learn from each other and copy each other. In such contexts, making mistakes is allowed and is part of the learning process.

At a higher level, clusters have proved to be attractive to the regions hosting them. They contribute to their economic growth and social wealth. As Porter stated, prosperity depends upon the productivity with which a region allocates its resources (manpower, natural resources, infrastructure, etc) to produce goods and services. And productivity rises because of innovation. As demonstrated above, clusters can form the perfect environment to enhance competitiveness. Clusters can improve productivity by allowing firms to take advantage of specialised suppliers, local know-how, information, skills and education. The proximity of customers, competitors, suppliers, universities and research institutions provided impetus the creation and exchange of information and increases opportunities for innovation. These in turn favour the growth, the high employment, and the attractiveness of the regions.

The conclusions of the Expert Group are that the cluster has a positive influence on:

- Innovation and competitiveness;
- Skill formation and information;
- Growth and long-term business dynamics.

## 2 Characterisation of European clusters

During the mapping of clusters in *Regional Clusters in Europe* and in the *Final Report of the Expert Group on Enterprise Clusters and Networks* there were difficulties in getting complete and accurate figures. This is mainly due to the fact that many countries haven’t completed a cluster mapping exercise.

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of Clusters Identifies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>Flanders: 14 VIS</td>
</tr>
<tr>
<td></td>
<td>Wallonia: 9 economic and technological clusters</td>
</tr>
<tr>
<td>Denmark</td>
<td>12 mega-clusters</td>
</tr>
<tr>
<td></td>
<td>29 clusters of competence</td>
</tr>
<tr>
<td>France</td>
<td>100 existing clusters + 80 emerging clusters</td>
</tr>
</tbody>
</table>

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*Observatory of European SMEs 2002, No.3*
### Design of cluster initiatives - An overview of policies and praxis in Europe

<table>
<thead>
<tr>
<th>Country</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spain</td>
<td>Hundreds of clusters</td>
</tr>
<tr>
<td>Italy</td>
<td>199 industrial districts</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>12 large conglomerate of interlinked industry groups</td>
</tr>
<tr>
<td>Portugal</td>
<td>Some key sectors identified, constituting 33 regional clusters</td>
</tr>
<tr>
<td>Austria</td>
<td>45 clusters</td>
</tr>
<tr>
<td>Finland</td>
<td>10 national clusters, Several regional and local clusters</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>154 clusters</td>
</tr>
<tr>
<td>Estonia</td>
<td>1 cluster</td>
</tr>
<tr>
<td>Hungary</td>
<td>19 clusters</td>
</tr>
<tr>
<td>Latvia</td>
<td>4 clusters</td>
</tr>
<tr>
<td>Poland</td>
<td>20-30 clusters</td>
</tr>
<tr>
<td>Slovenia</td>
<td>9 potential clusters + 12 needing more time and support</td>
</tr>
<tr>
<td>Norway</td>
<td>6 national clusters, 62 regional clusters</td>
</tr>
</tbody>
</table>

Most of the clusters are rather young. A large majority of them were created after 1970. Also most of the clusters are still growing. Many of the clusters have increased the number of employees over the last ten years as well as a growing number over firms. The firms in the clusters can mainly be characterised as SMEs. In most cases SMEs are the dominating type of firms. Over the last ten years this has been increasingly the case.

Numerous activities generally take place inside the geographic boundaries of the clusters. Most often applied R&D and supporting services are performed inside the clusters. Administrative and strategic activities (such as strategy formulation and logistics management) are also often carried out by firms in the cluster. On the other hand, capital equipment production is carried out in very few clusters. However, the main picture reveals quite ‘self-contained’ clusters that perform most of the main activities along the value chain of their dominating sector, except for the production of machinery.

### 3 Cluster Policies

#### 3.1 What is a regional cluster policy?

As seen in the first chapter the several concepts of clusters also holds true for cluster policy. In essence, cluster policy is not an isolated, independent and well-defined discipline. It embraces all policies that affect the development of clusters, taking into account the synergies and interchanges between these policies. Many policies labelled under different headings (regional policy, industrial policy, innovation policy, etc.) are in fact cluster policies in the sense that they contribute to create an environment of co-operation among the stakeholders at local and/or regional level. Consequently, countries that do not have officially labelled “cluster policy” might still have many policies impacting on clusters.

From previous research cluster policy can mainly be divided into two types:
- To support the growth of existing or embryonic regional clusters
- To let the knowledge of how industrial development occurs in clusters inform policy making in general.
Those two approaches imply some characteristics:

- Cluster policy entails a shift of focus from individual firms to local/regional systems of firms and firms’ value adding environment.
- Cluster policy also means less reliance on large firms and more interest in local agglomerations of SMEs.
- This kind of policy also concentrates on indigenous growth processes in contrast to efforts to attract inward investments.
- The notion of regional clusters may also bring forth a policy based on the idea of ‘picking the winners’, as the focus is on stimulating the already strong or potentially strong parts of regional industry. The ‘picking’ can be organised as a bottom-up process involving local authorities, industry and experts.
- The notion of clusters also leads to stimulating social processes, e.g. encouraging trust-based interaction to increase the flow of knowledge between local players, rather than intervening, for instance, through financial incentives.
- Finally, the idea of clustering points to the role of public authorities as facilitator or broker between companies, and between companies and the knowledge infrastructure.

Finally, according to Boekholt and Thuriaux (1999), “cluster policy is about stimulating the links to the local business environment through public-private dialogues, defining joint research needs, co-development between contractors and suppliers and so on”.

### 3.2 Types of policies

The presence of potential benefits from cluster initiatives does not in itself suffice as rationale or justification for policymakers to interfere. The key question is whether and how policymakers can add value through appropriate measures, beyond the outcomes that markets and market actors produce on their own. There are some evidences that policymakers should restrain from interfering in clusters initiatives. The realisation of an identified policy objective does not necessarily require a public policy measure. In some instances, private actors will, and should, undertake these roles spontaneously. As for outright policy intervention, the fundamental question is whether and how policy can be expected to add value beyond what other actors achieve independently.

Mainly the potential benefits of policy intervention come from three failures:

- Market failure: Mainstream economics long ago cast market failure as a fundamental rationale for policy action. This remains an important motivation for cluster policy as well. Knowledge creation, for example, is strongly affected by market imperfections in the form of asymmetric information, externalities and free-rider problems and economies of scale.
- Government/policy failure: governments and other public bodies are not necessarily efficient or impartial. Clearly, market failure should only be addressed if governments can be presumed to do better than markets.
- Systematic failure: Systemic failure occurs when there is a mismatch or inconsistency between these interrelated institutions, organisations, or playing rules. Both public and private institutions produce knowledge and products that are of a public as well as private nature. Shaping appropriate and effective conditions for the two kinds requires interaction and coordination between different kinds of institutions. Market
conditions, firms, public institutions, etc., interact, and failures may arise because of contradictions or inconsistencies in their capacities and playing rules.

The Cluster Initiative Greenbook distinguished between six categories for cluster initiatives: (i) cluster expansion; (ii) innovation and technology; (iii) education and training; (iv) commercial cooperation; (v) policy action; and (vi) research and networking. Continuing on this work in the Cluster Policies Whitebook five kind of approaches were identified for cluster policies:

- **Broker Policies**: The aim of Broker policies is to enable value-enhancing dialogue and collaboration beyond what would be achieved in the absence of such initiatives. They may be rationalised by the spectrum of market, government and systemic failures. Market forces may under-supply certain interactions or the emergence of supportive services, but there may also be counterproductive activities on the part of public actors and inconsistencies in the interplay between constituents. Different actions can be undertaken:
  - Public authorities can support the establishment of linkages between firms through the creation of platforms for dialogue,
  - Measures that strengthen science-industry interplay, e.g., by allowing specialisation and local adaptation in university-industry linkages including experimentation with reward systems and other incentive structures so as to promote linkages to local industry.
  - Support of knowledge-enhancing organisational linkages through public-private partnership.
  - Standard statistics fail to cover many structures and linkages that are crucial for measuring and understanding cluster developments. There is a rationale for specific public efforts to collect and organise relevant statistics.

- **Demand Side Policies** should aim at increasing openness to new ideas and innovative solutions. One instrument for that is Public Procurement. If properly used, public procurement has a strong potential for developing and strengthening clusters, especially when pursued consistently over extended periods of time. Although public procurement strategies are now regulated by international trade agreements, and also by other national and supra-national laws as in the European Union, their potential impact as cluster catalysts remains huge.

- **Training**: There is a rationale for policies aimed at upgrading skills and competencies which are essential for effective clustering of SMEs. Apart from catalysing inter-firm networks and university-industry linkages, cluster processes may strengthen the incentives for SME to upgrade their internal competencies, in part because needs and payoffs become more apparent. Special programmes may still be needed to realise and sharpening such efforts. The rationale is a combination of imperfections in information, credit constraints in SMEs coupled with indivisibilities in competence upgrading, and the lack of universities and other public or private training institutions providing educational services tailored to the specific needs of SMEs.

- **Promotion of international linkages**: A distinct area of cluster policy is that of promoting international linkages. This is not really a new policy, but it may be seen as an extension of instruments traditionally applied in industrial policy. The elimination of trade barriers and strengthening of transport and communication systems, along
Design of cluster initiatives - An overview of policies and praxis in Europe

with the harmonisation of market regulations have, however, greatly improved conditions of resource flows and enhanced specialisation of value chains across national borders

- **Broader Framework Policies**, finally, should put in place an over-riding playing field marked by effective and consistent rules for inter-actor transactions. Broader framework conditions equally influence the success factors for clusters and innovation. Relevant framework conditions include macroeconomic stability, well-functioning product markets (goods and services), factor markets (labour and financial markets), education systems, and physical, institutional and judicial infrastructure, including a governance system that is able to sustain effective and consistent playing rules for innovation, the existence of an appropriate communications and transport infrastructure. Social capital and attitudes that influence trust in transactions may likewise be included. The shaping of such factors naturally goes beyond the domains of cluster processes and cluster policies.

4 Cluster Policies in Europe

4.1 General approach

In this section we will make an overview of the Cluster Policies existing today in Europe, both at a community level and at a national level. As we have seen in previous sections there are several definitions for clusters as well as for cluster policies. This lack of clear definitions makes it complex to clearly identify the different cluster policies. In the Cluster Policies Whitebook they stated that given the number of measures encompassed, and the difficulties to define sharp limitations for relevant policies, no attempt is made to estimate what number of policy interventions exists. Nevertheless the summary of their findings on a world-wide scale is shown in table below

<table>
<thead>
<tr>
<th>Systemic and market failures</th>
<th>Policy response</th>
<th>Countries’ focus in cluster-based policy making</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inefficient functioning of markets</td>
<td>Competition policy and regulatory reform.</td>
<td>Most countries.</td>
</tr>
<tr>
<td>Informational failures</td>
<td>Technology foreseen</td>
<td>Netherlands, Sweden.</td>
</tr>
<tr>
<td>Strategic market information and strategic cluster studies.</td>
<td></td>
<td>Canada, Denmark, Finland, Netherlands, United States.</td>
</tr>
<tr>
<td>Limited interaction between actors in innovation systems</td>
<td>Broker and networking agencies and networks.</td>
<td>Australia, Denmark, Netherlands.</td>
</tr>
<tr>
<td>Provision of platforms for constructive dialogue.</td>
<td></td>
<td>Austria, Denmark, Finland, Germany, Netherlands, Sweden, United Kingdom, United States.</td>
</tr>
<tr>
<td>Facilitating cooperation in networks cluster development schemes.</td>
<td></td>
<td>Belgium, Finland, Netherlands, United Kingdom, United States.</td>
</tr>
<tr>
<td>Institutional mismatches between public knowledge infrastructure and market needs</td>
<td>Joint industry-research centres of excellence.</td>
<td>Belgium, Denmark, Finland, Netherlands, Spain, Sweden, Switzerland.</td>
</tr>
<tr>
<td>Facilitating joint industry-research cooperation.</td>
<td></td>
<td>Finland, Spain, Sweden.</td>
</tr>
<tr>
<td>Human capital development.</td>
<td></td>
<td>Denmark, Sweden.</td>
</tr>
<tr>
<td>Technology transfer programmes.</td>
<td></td>
<td>Spain, Switzerland.</td>
</tr>
<tr>
<td>Missing demanding customers.</td>
<td>Public procurement policy.</td>
<td>Austria, Netherlands, Sweden, Denmark.</td>
</tr>
<tr>
<td>Government failure</td>
<td>Promotion.</td>
<td>Most countries.</td>
</tr>
<tr>
<td>Rationalising business.</td>
<td></td>
<td>Canada, Denmark, Finland.</td>
</tr>
<tr>
<td>Horizontal policy making.</td>
<td></td>
<td>Canada, Denmark, Finland.</td>
</tr>
<tr>
<td>Public consultancy.</td>
<td></td>
<td>Canada, Netherlands.</td>
</tr>
<tr>
<td>Reduce government interference.</td>
<td></td>
<td>Canada, United Kingdom, United States.</td>
</tr>
</tbody>
</table>

During the mapping of cluster and networking policies by the Expert Group they reckon that few countries have already developed a genuine cluster policy. However, with the growing
recognition that cluster-form organisations could help enhance the competitiveness and innovation capabilities of SMEs, countries are more eager to support the creation and/or the development of clusters. There are numerous initiatives currently being developed at all levels: national, regional, local, supranational. These are, however, not often taken in a structured way. The national approaches to cluster policy are very diverse. Two main reasons may explain the diversity. First, the national and regional contexts differ, and policies must be adapted to the diverse contexts. The policies have to be embedded in different business environments, cultural and institutional frameworks, as well as different governance systems. To consider such diverse contexts, the policies approaches have to differ. Second, the cluster concept is very flexible and therefore does not provide a useful guide for policy-makers in their efforts to design and implement policies. A key weakness is a lack of clear cluster boundaries.

The majority of the countries have not developed a strategic approach on cluster-form organisations. In most cases, they still need to:

- Plan to carry out mapping studies on clusters, identify regions, sectors of activity, technologies that would benefit from cluster-form organisations and integrate them in their overall strategy on economic and social growth
- Identify barriers and limiting factors to cluster development and organise regular revision of their existing policy measures
- Obtain their governments. long-term commitment
- Raise awareness on the potential benefits of clusters among the players concerned

Despite the individual difference in the countries surveyed, we are looking at the same trends in all the countries. In the Member States, policies towards cluster development are generally issued by national governments with the co-operation of regional or local governments. While, most of the time, national authorities focus on designing and co-ordinating cluster policies, creating the general framework conditions and developing R&D programmes, regional authorities, on the other hand, take on the implementation phase. Regional administrations are indeed better placed to assess and respond to cluster-specific needs.

The main focus of national or regional authorities is currently on fostering innovation and high, and knowledge-based, technology. Very substantial private and public funds are directed to finance R&D co-operation programmes and the commercialisation of research applications. The development of a culture of networking and collaboration is another important centre of attention. They instigate the creation of platforms to drive exchanges between cluster firms, education and research centres, financial institutions and governmental and non-governmental organisations.

### 4.2 European Commission

There have been several projects initiated by different Directorates-General of the European Commission to provide a framework for exchange of information, experience, competence and good practices. The Euro Info Centres Network (EIC) could be considered as a European cluster where the local companies are linked together through the different activities of their EIC. Other examples of initiatives are inter-regional collaboration for innovation (i.e. PAXIS,
RITTS/RIS), sustainable development in SMEs (EMS), several studies on industry or SME networks (i.e. Tourism network, inter-enterprise relations, etc).

### 4.3 By country

#### 4.3.1 Member States

**Belgium**

<table>
<thead>
<tr>
<th>Responsible Authorities</th>
<th>Cluster Policies or Initiatives</th>
<th>Main Objectives</th>
<th>Main Areas of Focus</th>
<th>Financial Support</th>
<th>Results &amp; Examples of Clusters</th>
</tr>
</thead>
</table>
- Strategic advice & studies  
- R&D co-operation schemes | Public structural funds (+/- € 450.000 in 2x2 y). Selection process of the projects: call for tender | Digital Signal Processing Valley |
| Walloon Region | Contrat d’avenir pour la Wallonie (economic clusters)  
Prométhée Programme (technological clusters) | Creating regional industrial dynamic  
Supporting technology-based development | - Training & education schemes  
- Platform for information exchanges  
- Cluster animation (sector expert, methodology)  
- Training schemes  
- Platform for information exchanges | Public subsidy (+/- € 150.000 p.a.) Selection process of the projects: call for tender | 4 pilot projects of economic clusters, i.e. Walloon Aeronautical Cluster (EWA)  
5 pilot projects of technological clusters |

The three Regions of the Federal State of Belgium (Flanders, Wallonia and Brussels-Capital) hold autonomous responsibilities for developing approaches and instruments in the field of economic development and technology policies. In the two main Belgian Regions, Wallonia and Flanders, policies have recently been developed to support clusters and networks in a formalised way. In the region of Brussels-Capital, however, no clusters have been identified and no cluster policies envisaged.
In Flanders, the current official concept for clusters is the ‘VIS’ (Vlaamse Innovatiesamenwerkingsverbanden, Flemish co-operative networks for innovation). The scheme is part of a programme to support “collective innovation” in a Governmental Decision on “Flemish Innovation Co-operation”. VIS are “structured groupings of mainly enterprises, possibly with the participation of other types of organisations, active in the four following areas: collective research; technology advice; thematic innovation stimulation and sub-regional innovation stimulation”.

Cluster policy in Wallonia is still in a pilot phase. There are two concepts at work: “economic clusters” and “technological clusters”, the main difference between them being the emphasis on key technologies and innovative R&D activities for the latter.

**Denmark**

<table>
<thead>
<tr>
<th>Responsible Authorities</th>
<th>Cluster Policies or Initiatives</th>
<th>Main Objectives</th>
<th>Main Areas of Focus</th>
<th>Financial Support</th>
<th>Results &amp; Examples of Clusters</th>
</tr>
</thead>
</table>
| Ministry of Economic & Business Affairs | Clusters of competence | Supporting high potential clusters | - Networking & collaboration platforms  
- Infrastructure investments  
- Joint marketing and branding  
- Venture capital funds  
- Measures to attract foreign firms | Public subsidy (€ 25 million per region until 2001)  
Selection process of the projects: call for tender | Medicon Valley  
NorCom Wireless Communication Cluster |

The Danish mega-cluster project was initiated in the early 1990s and again in 1999. At the regional level, the Ministry of Economic and Business Affairs has, in co-operation with the Danish counties and municipalities, initiated a process targeting the regional development of western Denmark, the peninsula of Jutland and the island of Funen. Improving the business conditions of the clusters of competence located in Jutland and Funen is an important priority to be addressed by the work to be carried out in the future.

**Germany**

<table>
<thead>
<tr>
<th>Responsible Authorities</th>
<th>Cluster Policies or Initiatives</th>
<th>Main Objectives</th>
<th>Main Areas of Focus</th>
<th>Financial Support</th>
<th>Results &amp; Examples of Clusters</th>
</tr>
</thead>
</table>
- Infrastructure investments  
- Venture capital for start- | Public subsidy (€ 25 million per region until 2001)  
Selection process of the projects: call for tender | 3 regions, i.e.  
BioRegio München |
Federal Ministry for Education and Research | EXIST - University based start-ups (1998-2001) | Promoting a culture of entrepreneurship at higher education institutions | Increasing knowledge spillovers & innovative start-ups | Public subsidy (budget: €15.34 million p.a.) | Selection process of the projects: call for tender | 5 regions

Until recently the German approach to technology policy rarely included a regional aspect. Regional policy generally tended towards compensating regional disparities rather than strengthening existing clusters for the purpose of international competitiveness. This made the German government change direction and they introduced three contests:

- The Federal Ministry for Education and Research (BMBF) launched the BioRegio contest in 1996. The contest was directed at Germany's well-advanced regions with the potential to become competitive on an international scale.
- The "EXIST - University-based start-ups" programme was launched in December 1997 by the Federal Ministry for Research and Education (BMBF) to improve the entrepreneurial climate at higher education institutions by promoting networking.
- The InnoRegio contest was created in 1999 to focus on the promotion of innovation and networking in the regions of the new federal states in eastern Germany. The objective is to enhance the competitiveness of the economy and to improve the employment situation in eastern Germany.

**Greece**

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<tr>
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</tr>
</thead>
</table>
| Ministry of Development | National Initiative of Small and Medium Enterprises | Increasing competitiveness of SMEs by forming cluster organisations | - Cluster management
- Networking & co-operation platforms
- Joint production system
- Joint market research services | Public subsidy Selection process of the projects: call for tender | 23 clusters, i.e. Solarnet |

In 1997, for the first time in Greece, the Ministry of Development launched the idea of small and medium-sized companies grouping together in order to develop cluster organisations.
The clusters formed were financed under the National Initiative of Small & Medium Enterprises (SMEs), according to the specifications set in the tender document. The aim of the Ministry was to promote companies “competitiveness in the fields of manufacturing, marketing and technology transfer”. The participants were mainly small and medium enterprises from diverse business environments and education and research institutes.

Spain

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<thead>
<tr>
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<th>Results &amp; Examples of Clusters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Government of Galicia . Department of Industry</td>
<td>Galician Cluster Policy</td>
<td>Increasing competitiveness of the region Promoting cluster formation</td>
<td>- Cluster management - Co-operation projects - R&amp;D co-operation schemes - Training &amp; education schemes - Joint market research</td>
<td>Regional funds</td>
<td>4 clusters, i.e. Galician Automotive Industry (CEAGA)</td>
</tr>
</tbody>
</table>

In the table above it’s just one example from one region. In Spain, cluster policy is a Regional Government initiative. Each region has developed its own set of actions. The public sector’s level of intervention varies from low to high, depending on the region.

Sweden

A new national programme for clusters and innovation systems is about to start in Sweden in autumn 2001. A cluster programme will run in the period 2002 - 2004. The main purpose is to strengthen the policies of regional and industrial development, as the programme is meant to form a basis for other long-term actions to support the development of different innovation systems and clusters, both at the national and regional level. The cluster programme is seen to enlarge the strategy of networking in order to facilitate the industrial transformation and ability for Swedish companies to compete globally. The cluster programme emphasises several measures:
- The programme will be supported by analyses.
- The programme will work to identify threats and opportunities for industrial development as regards the efficient working of innovation systems and clusters.
- The programme will support the examination of quality, the performance of R&D and the creation of networks in clusters. The cluster will also be closely connected with the regional growth agreements between Swedish regions and the government.

Portugal

The Integrated Innovation Support Programme (PROINOV) has innovation and clusters as key words. An important aim is to develop innovative clusters, starting from a defined group of national clusters, which often involve the concentration of players in a specific region.
Increased collaboration between firms, and with business associations, and education, innovation, R&D, financial and interface institutions should develop clusters. Clusters are developed by attempts to construct a common vision among relevant players, identification of priorities for action, improvement of the interfaces in the innovation system in the clusters, encouragement of co-operation between cluster members, and support of the development of products and services. A main task is to improve product quality, innovation and customer contacts in traditional clusters.

**France**

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</tr>
</thead>
</table>
- Networking & collaboration platforms  
- Joint production system  
- Platform for information exchange  
- Joint marketing & branding | Public subsidy (budget: € 3,6 million) Selection process of the projects: call for tender | 100 cluster projects, i.e.  
- Bresle Glass Valley, Spectacle Manufacturers of Jura |

France has always had a substantial number of enterprise conglomerates. However, since 1997, the “Datar” (Délégation à l’Aménagement du Territoire et à l’Action Régionale) an interdepartmental service depending on the Prime Minister, has engaged a specific policy to support SPLs. An SPL - Système Productif Local (Localised Productive System) - is a productive organisation based in a territory corresponding to a regional employment area, and which focuses on a shared know-how. The policy seeks to favour co-operation of firms within SPLs. It consists not only in reviving the existing SPLs but also in fostering the creation and development of new ones. Hence the distinction between constituted SPLs and emerging SPLs. Following this definition, 100 constituted and 80 emerging clusters have been identified.

**Ireland**

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</tr>
</thead>
</table>
| Enterprise Ireland & Industrial Development Agency | Industrial policy | Targeting growth sectors  
Attracting overseas firms | - Strategic advice  
- Research  
- Training & education facilities  
- Infrastructure investments  
- Rationalisation of production system | Public subsidy |  |
Ireland’s clustering policy primarily involves targeting growth sectors at national level. These targeted sectors include electronics, international services, consumer and functional foods, pharmaceutical and biotechnology. Strategies are developed that aim to attract overseas industry and build up an indigenous industry in the targeted sector. A range of developmental instruments is used to increase Ireland’s presence in these sectors.

**Luxembourg**

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<th>Financial Support</th>
<th>Results &amp; Examples of Clusters</th>
</tr>
</thead>
</table>
| Ministry of Economy     | Technology policy: initiative to groups firms into technology clusters (2000) | Supporting competitiveness of firms via technology development | - Identification of key technologies  
- Cluster management (Luxembourg Agency for Innovation and Research)  
- Innovation aid programmes  
- International networks & partnerships  
- Platform of information exchange | Public subsidy | SurfMat |

In 2000, the Ministry of Economic Affairs launched an initiative to encourage the grouping of companies into technology clusters. The configuration of these groupings can be very heterogeneous: small or/and large companies with the same or with different activities research centres, universities, etc. Their aim is to reinforce the competitiveness of their members by joining their forces in order to co-operate on common interests.

**The Netherlands**

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<th>Results &amp; Examples of Clusters</th>
</tr>
</thead>
</table>
| Ministry of Economic Affairs | Ad-hoc cluster policy | Supporting cluster competitiveness  
Increasing innovation capacity of cluster firms | - Ministry of Economic Affairs acting as a broker between relevant parties & lobbying for political support from different | No budget line for cluster policy. | Genomics Katalyse ECP.nl9 |
The Netherlands has a long tradition of cluster policy at national level, but this has been implemented in a relatively ad-hoc manner. The role of the Dutch government has been to create the framework conditions, to act as an organiser or a broker and a demanding market partner. So far there have been no instruments or budget line to carry out a cluster policy. There are also regional initiatives for clusters and firms networks, but these are usually implemented as stand-alone projects.

**Italy**

There is no particular legislation to support local clusters. The legislation affecting SMEs can be applied independently of the fact that the SME is part of a cluster. Occasionally, some regional governments support local agencies that are working in the area of cluster competitiveness, export, marketing, promotion, R&D or related topics. Such agencies are normally partly financed by local governments (municipalities, provinces, chambers of commerce). They are usually public-private ventures, where the public support is reduced when the activities increase.

**Austria**

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<tr>
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<th>Results &amp; Examples of Clusters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Government Implementation: Provincial Governments</td>
<td>Strategic Programme Upper Austria 2000+</td>
<td>Increasing the competitiveness</td>
<td>- Cluster management (regional agency)</td>
<td>Public subsidy (Austrian Future Fund: € 27.7 million over 5 year period)</td>
<td>Automobile Cluster</td>
</tr>
<tr>
<td></td>
<td>Strategic Programme Vorarlberg 2005+</td>
<td>Increasing innovation capacities of SMEs</td>
<td>- R&amp;D and technology transfer cooperation programmes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Promoting cross-border cooperation between clusters in neighbouring provinces</td>
<td>- Training &amp; education schemes</td>
<td></td>
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</tbody>
</table>

Beginning in the early 1990s, today Austria can look back on a decade of experience in institutional cluster policy. Each cluster can count on public support in terms of cluster
management and cluster funding. There are 45 clusters in Austria: 28 were built and supported by the Federal Government, 17 are attributed to regional initiatives. A further twelve are still in the build-up phase. Cluster development in Austria operates at different levels: regional clusters, nation-wide clusters and industry-research linking competence centres. Regions are entitled to conduct innovation and technology policies.

Finland

The basic idea of cluster-based policies has been to provide favourable framework conditions to firms, to promote the functioning of markets, and to concentrate on areas where the market fails (R&D, education, infrastructure services). Policies have aimed at upgrading and creating advanced and specialised factors of production and avoiding interventions in the product market. The appropriate roles of policies can be summarised as follows:

- Establish predictable and stable operational environment for firms;
- Create a context that encourages innovation;
- Enhance networking especially in technology policies;
- Create and communicate a clear economic vision to all actors in the economy.

United Kingdom

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<thead>
<tr>
<th>Responsible Authorities</th>
<th>Cluster Policies or Initiatives</th>
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</tr>
</thead>
</table>
| National Government     | Cluster development & Innovation policies (2000) | Increasing regional economic prosperity | - Set up of a Ministerial-led Cluster Policy Steering Committee to identify barriers to cluster development and to recommend new cluster policies.  
- Cluster management (local public agents) - Mapping studies - Innovation programmes - Training schemes - Infrastructure investments - Platform for information exchange - Market research | The East Midland Clothing and Textile Cluster | Encluster |

The UK Government’s cluster policy is to create the conditions to encourage the formation and growth of clusters, to see that national and regional priorities do not inadvertently place barriers to cluster development, and to ensure that research and innovation support programmes build on existing strengths so as to work with the grain of cluster development. The Government does not see a role for itself in artificially creating clusters; they believe that they must be business-driven.

### 4.3.2 New Member States

**Bulgaria**

<table>
<thead>
<tr>
<th>Responsible Authorities</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Economic Affairs</td>
<td>Study: “Capacity Building for Accelerated Growth of the SME sector in Bulgaria”: under the EU PHARE programme</td>
<td>Developing a cluster strategy</td>
<td>- Identifying sector of activity for Clusters - Establishing institutional support and training schemes</td>
<td>Public funds – Czech Moravian Guarantee &amp;</td>
<td>5 clusters identified</td>
</tr>
</tbody>
</table>

Clusters are new concepts for the New Member States, including Bulgaria. In 2001, a study under the PHARE project .Capacity Building for Accelerated Growth of the SME sector in Bulgaria. was carried out, identifying 5 potential clusters. A strategy for cluster development is proposed as a follow-up to the PHARE project. The objectives would be to identify sectors of activity where the cluster model adds value, to establish institutional support for clusters (management bodies, policies, co-ordination activities, etc.) and to implement training programmes

**Czech Republic**

<table>
<thead>
<tr>
<th>Responsible Authorities</th>
<th>Cluster Policies or Initiatives</th>
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<th>Main Areas of Focus</th>
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<th>Results &amp; Examples of Clusters</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Government</td>
<td>COOPERATION Programme under the SME support</td>
<td>Creating &amp; developing clusters</td>
<td>- Identification of key sectors of activities - Education</td>
<td>Public funds – Czech Moravian Guarantee &amp;</td>
<td>39 projects supported in 2002</td>
</tr>
</tbody>
</table>
The cluster policy in the Czech Republic is an integral part of the general policy on support to SMEs approved by the Czech Government in December 2000 for the period 2001-2004. Initiatives to promote the establishment of SMEs clusters are mainly undertaken under the COOPERATION programme, elaborated by the Ministry of Industry and Trade.

### Estonia

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</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Economic Affairs &amp; Communication</td>
<td>Competence Centre Programme (beginning 2003)</td>
<td>Creating science-industry competence centres</td>
<td>- Based on calls, no pre-selected areas of focus</td>
<td>Public subsidy: 50 - 60%, Private contribution: 40 – 50 %</td>
<td>Other mechanisms</td>
</tr>
<tr>
<td></td>
<td>Technology Programmes (planning phase)</td>
<td>Special focus on key technologies/scientific fields</td>
<td>- Identification of 3 key technologies (bio., information &amp; material technology)</td>
<td></td>
<td></td>
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</tbody>
</table>

During the first ten years of being newly independent, Estonian economic policy was focused on macro-economic reforms and economic stability. The current policy is mainly based on horizontal measures, related to entrepreneurship, export promotion, innovation and R&D support, foreign direct investments and access to capital. Future development of state measures will partly be realised through the cluster approach, as revealed by the Estonian R&D Strategy “Knowledge-based Estonia”.

### Hungary

The first Hungarian cluster appeared two years ago. Cluster policy, which is still at an early stage, issues from the national and regional governments. At the national level, cluster development policy is the responsibility of the Ministry of Economy and Transport. The policy follows a top-down approach and looks at improving the competitiveness of the enterprises, developing co-operative production system and networking, strengthening the innovation capabilities of the subcontractors of the present multinationals and exchanging information and raising awareness. Under the Szechenyi Plan’s RE-1 sub-programme 2001-2002, aiming at establishing regional clusters, the central government allocated €1.4 million to the Hungarian clusters.

### Latvia
Since 2000, Latvian industrial policy has increasingly focused on clusters as an instrument to enhance industrial competitiveness. It looks at organising a dialogue between the State and industry to improve the overall business environment and at delivering more direct assistance to cluster development in areas that have been identified as priorities due to their potentials in terms of knowledge-intensive and competitive advantages.

**Lithuania**

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</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Economic Affairs</td>
<td>Preparatory work: “Analysis of Preconditions for Clustering in Lithuania and Guideline Development” (2002)</td>
<td>Identifying cluster rudiments</td>
<td>- Strategic advice and to establish a dialogue between the state and the industry</td>
<td>Public subsidy</td>
<td>4 clusters identified</td>
</tr>
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</table>

As present, cluster support policy has not been developed at state level. However the preparatory work for developing such a policy is underway: studies in several industry sectors have been carried out in an effort to detect cluster rudiments, several workshops have been organised for businesses with the aim of presenting the cluster concept and its advantages, and encouraging companies to co-operate. There is a clear understanding at the Government level that the formation of clusters is a “bottom up” approach.

**Poland**

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<th>Financial Support</th>
<th>Results &amp; Examples of Clusters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polish Foundation for SME Development &amp; Promotion</td>
<td>SME Clustering and Networking Programme (1998) under the EU PHARE programme</td>
<td>Promoting cluster development</td>
<td>- Training of network brokers</td>
<td>Public funds</td>
<td>Preparation of cluster plans for the 16 voivodships. No follow up</td>
</tr>
</tbody>
</table>
The purpose of the project (realised in 1998) was to train network brokers as a preparatory action for SME Clustering/Networking. The project was realised in all 16 voivodships. 16 network brokers were trained and 16 cluster plans were prepared. The project was financed by Phare STEP-1 and co-ordinated by the Polish Foundation for SME Development and Promotion.

**Romania**

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</tr>
</thead>
</table>
| National Government     | Study for an Action Plan for cluster development | Developing the SME sector | - Identification of market failures  
- Simplification of administrative procedures, tax system  
- Access to finance and information | | |

In order to develop the SME sector, the Romanian Government has issued an Action plan which aims to remove some of the burdens restricting the creation and growth of businesses (company registration and authorisation procedures, legal framework, taxes and duties system, access to finance and information). The strategic lines of action are:
- The creation of a friendly business environment for the setting up and development of SMEs;
- The improvement of SMEs’ access to foreign markets;
- The development of SMEs’ productive and innovative activities and the increase of SMEs’ competitiveness on various markets;
- The promotion of entrepreneurial culture.

The last two action lines above are directly related to the clustering policy that the national government intends to develop and implement.

**Slovak Republic**

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</table>
Identifying cluster rudiments | | | |
In the framework of the European Charter for Small Enterprises, the Slovak Ministry of Economic Affairs has initiated an implementation plan aiming at strengthening the technological capacity of small-sized enterprises. Clusters and networks are seen as a useful mean to foster technology co-operation between small enterprises, research and higher education institutions and to disseminate knowledge. A cluster-mapping exercise has been planned to identify clustering seeds in the country and assess future possible actions.

**Slovenia**

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</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Economic Affairs</td>
<td>Cluster Programme (2000-2003) under the Industrial Policy</td>
<td>Raising awareness on clusters benefits Strengthening the government’s cluster policy</td>
<td>- Promotion of a culture of enterprise co-operation &amp; networks - Supply and production chains upgrading - R&amp;D co-operation schemes - Joint marketing &amp; branding - Organisation and IT infrastructure investments</td>
<td>Public subsidy</td>
<td>15 cluster projects in 2002, i.e. Toolmakers Cluster of Slovenia (TCS)</td>
</tr>
</tbody>
</table>

In Slovenia, clustering is seen as a tool for boosting innovation and strengthening businesses’ competitiveness. The clustering process started with a study on the identification of potential clusters (November 1999 - March 2000). The study concluded that there are no “real” clusters in Slovenia: co-operation and networking are in fact relatively weak. The Ministry of Economy initiated a Cluster Programme for the period 2000-2003. The three pilot projects launched in 2001 following a call for tender provided further substance to strengthen the government cluster policy: the positive experience which resulted from them contributed to create a new culture for enterprise co-operation and networks. In 2002, three incentives to support cluster development were introduced. The first focused on the linkages of enterprises and the specialisation in production chains, the second concentrates on promoting cluster development and third on developing local clusters of micro and small enterprises. Several other incentives also supported cluster development, among them the development of technology centres and technological networks. The intermediate results of the Cluster programme to date have been encouraging. Three pilot clusters have been institutionalised and are running (the tool industry cluster, the transport/logistics cluster and the car industry cluster). In 2002, the Ministry of Economic Affairs supported eight new cluster development initiatives.

### 4.3.3 EFTA/EEA Countries

**Iceland**
Clusters are considered in Iceland as a national phenomenon with a regional focus. There is currently no specific cluster policy in Iceland but the motivation behind the two existing clusters (health technology and fishery industry) is to bring together all the organisations involved for co-operation.

Norway

The REGINN (regional innovation system), an experimental programme lasting four years (1998-2002), is the first policy tool in Norway focusing on regional clusters. It aims to stimulate co-operation between firms in specific sectors and regionally located research institutions, in order to foster innovation capabilities in important clusters of the region.

5 The IRE subgroup – examples of regional cluster initiatives

The IRE cluster sub-group members represent regions with a profound interest in the development of clusters as an instrument to promote economic development. Some of the sub-group members are experienced in cluster policies and in the implementation of cluster strategies, some have only started developing cluster policies.

This chapter is dedicated to describe concrete cases of cluster development carried out at the regional level. The cases stem from the IRE sub-group members. Hereby we hope to provide some inspiring real-life examples of how cluster policies of Europe today are turned into action and success in regions.

Upper Silesia (Poland)

The Upper Silesian region has approx. 4.7 million inhabitants. The biggest city is Wroclaw. Major companies can be found in the Manufacturing and building industries. The region has 11 institutions for higher education and 2 Polish Academy of Sciences research institutes.

Identified cluster are:
- Production of chemicals, chemical articles, and synthetics,
- Production of machines and equipment
- Production of machines and electric apparatus
- Production of mechanic vehicles, trailers and semi-trailers
• Production of gum and plastic articles
• Production of non-metal goods
• Production of metal finished goods
• Production of food and beverages
• Textile industry
• Production of cast and steel and iron alloys

Two Centres for Advanced Technologies and several centres of excellence are currently developing integrated research teams with strong links to industry in the fields of
• Biotechnology including bioengineering and health technologies.
• Technologies for energy sector including technologies of energy production from renewable sources, combustion and thermal recycling of waste as well as energy saving.
• Technology for environment protection including biogeochemical engineering and waste management.
• Information and telecommunication technology.
• Production and processing of materials including advanced materials.

Rohne-Alpes (France)

The Rhône-Alpes region, centred on the city of Lyon, has a population of around 5.6 million, with a research and science base second only to that of Paris. There is some 20,000 research staff in the region (7,000 of them in the private sector) and about 180,000 higher education students. Main cluster are:

• Life sciences
  Biotech, bioservices and pharmaceutical industries: 100 companies. Medical devices: 300 companies. 18,000 students, 8,000 researchers

• Automotive and industrial vehicles
  The region is prominent in the European automotive sector. It has 17% of the national automotive industry, 950 production sites and 102,500 employees

• Renewable energies
  Rhone-Alpes region has the majority of RES (Renewable Energy Sources) installations and the greatest part of French RES specialised companies

• Acoustic
  Rhone-Alpes is the first French region in Acoustic / Vibrations
  The cluster includes 124 companies (out of 413 in France)

• Aeronautic
  The cluster comprises 500 companies well recognised in their specific fields. This is 25% of the total subcontracting potential in France

• Lyon games
  The Lyon Game cluster includes more than 50 game industry companies and supports them with concrete initiatives

• Mechanical and screw cutting cluster
  Haute-Savoie represents the most important concentration of screw machining companies in the world

Funen (Denmark)

Funen County is a small island kingdom situated in the heart of Denmark. The main island Funen is Denmark's second-largest island and together with some 90 other large and small
islands they constitute Funen County. **Population** is 473 500. **Major companies include** Odense Steel Shipyard, GASA Odense, Danish Crown, Roulunds Group, Marius Pedersen, Micro Matic and Skanska Denmark. Key clusters include:

- **bioTEAMsouth (Biotechnology and life sciences)**
  Cluster members represent research areas: proteomics, bioinformatics, stem cell technology, nanobiotechnology, genomics and pharmacology. Expertise ranges from technology development to product testing – value chain

- **RoboCluster (Robotics and automation technology)**
  4frontregion is a leader in robotics and automation research and development. There is a unique collaboration between University of Southern Denmark and industry – value chain

- **BizzKIT (Communication and IT)**
  A strong networks and associations of IT and communication businesses. The cluster initiative includes a focused research cooperation

- **Horticulture**
  Denmark is a leader in commercial horticulture and Fyn is the region of horticulture in Denmark. The cluster includes research and knowledge centres in the region and there is a cooperation with University of Southern Denmark

- **TCM Denmark (biotech cluster and horticultural cluster)**
  TCM Denmark’s aim is to modernise research and development of Traditional Complementary Medicine TCM based on plants. Together the TCM Denmark consortium partners have leading competencies and facilities in all the relevant areas: Research, development, agricultural production, processing, testing and international marketing of TCM-products

- **FilmFyn**
  A public/private company investing in Danish film productions and documentaries