The role of public authorities in clusters:

A study of cluster policy in European regions

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Summary

This study examines what policy instruments public authorities have for clusters of businesses and institutions. It analyses the policy in North Sea Area regions and places it in a survey. It also examines how clusters develop, focusing specifically on the role of public authorities in this development.

The most used definition of a cluster comes from Porter (1998a: 199):

> "[A] cluster is a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities."

This definition is vague and is interpreted differently by researchers because it does not make a geographic and economic delineation. This makes it difficult in practice to detect clusters, as all industries are ultimately connected. In *Pieken in de Delta* (Peaks in the Delta) and *Koers Noord* (programme to strengthen the geographical economic structure of the Northern Netherlands), there are geographical delineations, but the Key Areas do not have this. A network approach is more appropriate for Key Areas, given that cooperation is required between knowledge and industry.

In the Northern Netherlands, Central Denmark, Northwest Germany, Southeast Scotland and Southwest Norway, I examined whether public authorities choose cluster policy to increase innovative capacity. Almost all programmes have this as an explicit policy objective. It is not necessary to have connections between companies and technological institutes in all clusters of the programmes. Most programmes set this as a requirement, but a few do not.

In the Northern Netherlands, clusters are selected mainly by the national government. The Ministry of Economic Affairs and the Innovation Platform select the Peaks or Key Areas partly on the basis of interviews with experts and stakeholders. There is room here to allow stakeholders to select and support their own regions and sectors, or to satisfy their political following. Clusters were also selected on the basis of interviews with experts in the Innovative Foresight Planning for Business Development project.

Previous research has shown that clusters mostly form without help from the public authorities. Porter and many other researchers assert that the public authorities should refrain from creating clusters themselves. Porter does see a role for the public authorities in strengthening and supporting developing clusters. This can be done by recognizing a cluster and then removing obstacles and inefficiencies and improving labour, infrastructure and rules. However attractive this may seem, there is no reason to link this exclusively to the cluster concept. Businesses outside a cluster would also like to have barriers, rules and poor facilities tackled. The researchers Desrochers and Sautet reject any contribution to clusters by the public authorities (2004: 241): “There is no role for public authorities in cluster development”. Public authorities are not better able to predict future successful sectors, networks and technologies than market players. Clustering should be a bottom-up process, driven by strong leaders from the private sector.

The Cluster Policies Whitebook (2004) distinguishes five different types of cluster policy. First of all, there are broker policies, which are used by all countries, in which consultation and cooperation are stimulated between companies, the public authorities and other institutions. In addition, demand side policies are mentioned, by which the public authorities encourage new ideas and innovative solutions, for example with a more specific procurement policy. Public procurement is hardly used to support clusters. The Central Denmark Region has an example, but in most cases public procurement is unknown as a cluster policy and is also hampered by European tendering rules. Research and development are financially supported by all. In the regions, several programmes run simultaneously to fund the different types of research and development.

The third type is training policies aimed at upgrading skills and competences which are necessary for the clustering of SMEs. For this purpose, Denmark has a training programme for intermediaries and a Competence Platform to link educational institutions and businesses. Measures to promote international relations are mentioned as the fourth type. In Scotland, Norway and the Netherlands, the public authorities promote clusters. Denmark and Germany leave this to the cluster organizations.

The last type of policy, framework conditions, is aimed at creating the general conditions for the success of clusters and innovation. If the framework conditions in

the different regions are compared, it is striking that only Schleswig-Holstein imputes a poor quality of some conditions to itself. The other respondents do not see any hampering conditions in their region which prevent a cluster from developing.

The international partners in the Innovative Foresight Planning for Business Development project select best practices of public authority policy. The partners take these best practices as an example. They can also (partially) adopt policy from one another. If regions place too much trust in best practices from other regions, they undermine their own possible competitive positions, which are based on unique, regional characteristics. Examples of success cannot simply be copied. Clusters are not manipulable or manageable enough for that. A competitive advantage is achieved precisely by distinguishing oneself from competitors.

Contents

Preface

With this study, I complete the Economic Geography programme. This is a Master's Degree programme at the Faculty of Geographic Sciences of the University of Groningen. Prior to the actual thesis, I would like to thank several people for their contribution and support.

I have been supervised by several persons. Dr. A. E. Brouwer is my supervisor on behalf of the faculty in writing my Master's thesis. The Economics and Business Administration Science Shop (*Wetenschapswinkel Economie en Bedrijfskunde*) made it possible for me to conduct this research by bringing me in contact with Weusthuis en Partners.

I wish to thank Weusthuis en Partners, where I was able to work on the study for six months. The advice and critical notes of Lydia Terpstra were very valuable to me.

The meetings with the consortium of partners from the Northern Netherlands made it possible to get to know the project well.

The support and encouragement of my parents were of course indispensable for the completion of my programmes.

Vincent de Lezenne Coulander
Groningen, June 2009

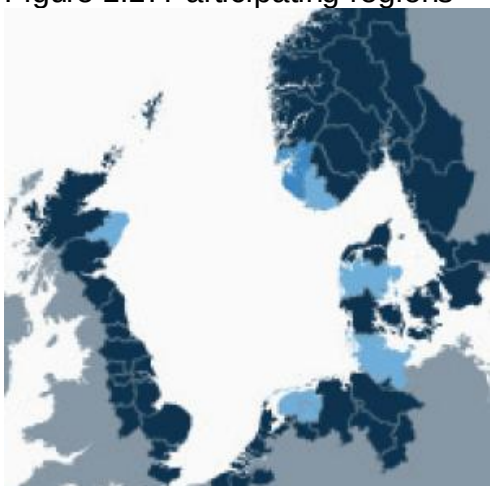
C1 Introduction

In this chapter, a description follows of the background of the study. The definition of the problem stems from this. Next, the purpose will be formulated concisely, after which the research questions and method will be stated.

1.1 General background

Innovative Foresight Planning for Business Development is the title of a European project. It is one of the many projects in which cooperation between regions from different Member States is stimulated. These are part of the Interreg programme, by which the EU wants the common area to develop sustainably and its quality to improve. Interreg is funded through the ERDF (= European Regional Development Fund) and is in its fourth term, running from 2007 to 2011.

Figure 1.1: Participating regions



Source: IFP brochure (2009)

Innovative Foresight Planning for Business Development is a transnational programme, with six participating regions from the North Sea Area (see Figure 1.1). The participants are:

- Rogaland Province, in the southwest of Norway;
- Agder Region, in the south of Norway;
- Region Central Denmark;
- Northern Netherlands;
- IZET, in the north of Germany;
- Scottish Enterprise, in the south and east of Scotland.

The Northern Netherlands is represented by a consortium, consisting of the provinces Fryslân, Groningen and Drenthe, the Chamber of Commerce for the North Netherlands and the Investment and Development Company for the North Netherlands (NOM) (Project Definition, 2008).

Innovative Foresight Planning is described by the organizing partners as a systematically initiated process in which an attempt is made to fathom the long-term future of science, technology, the economy and the Community. The object of this planning process is to develop (new) competitive businesses and jobs (Project Definition, 2008).

The project takes an economic approach to clusters. Four sectors were selected: *Food, Energy, Advanced Technology* and *Financial Services*. The participating regions then entered clusters in those sectors. Table 1.1 is shows which clusters were entered by the participants.

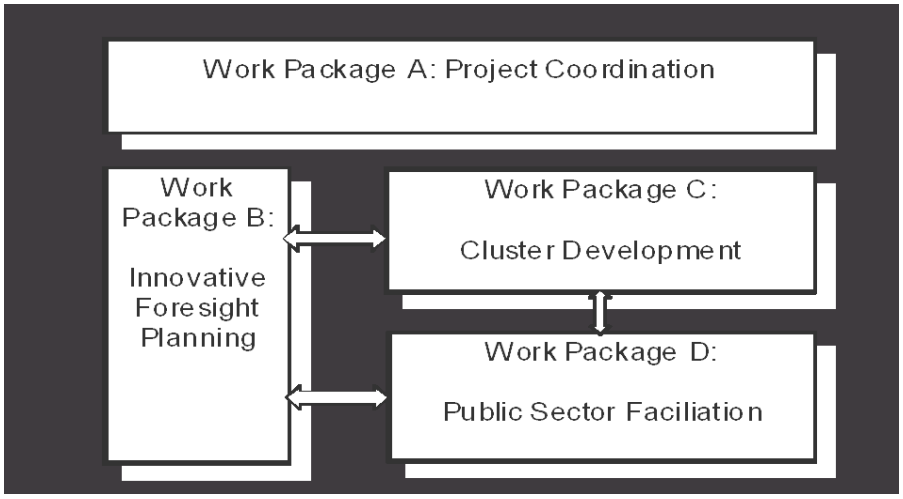
Table 1.1: Clusters of participants, divided among the four sectors

Partner	**Modern Food**	**Energy**	**Advanced Technology**	**Finance Services**
Rogaland Consortium	X	X		X
Agder Region	X	X	X	
Region Central Denmark	X	X	X	X
IZET			X	
Northern Netherlands	X	X	X	
Scottish Enterprise		X		

Source: Project Description (2008: 29)

The project is structured as four work packages, as shown in Figure 1.2.

Figure 1.2: Structure of the work packages



Source: Project Description (2008: 23)

The Northern Netherlands is the leader of Work Package D: *Public Sector Facilitation*. Its aim is to examine how the policy tools of the public authorities affect companies and institutions in the chosen clusters. For this purpose, a survey is made of the existing policy documents and tools (Activity D1) and best practices are collected (Activity D2). The participants also examine how public authorities can facilitate future developments in the clusters. The end product of this effort is a *policy toolbox*. This is a structured collection of documents that systematically facilitate IFP for the business world and public authorities. It gives the public sector and the clusters the tools they need to convert the knowledge gained from IFP into actions (Project Description: 47).

Table 1.2 shows how the activities in Work Package D are divided.

Table 1.2: Activities of Work Package D

Act. No.	Activity Description	Dead line
D1	Survey of public policy tools	Dec. 2008
D2	Best practices, evaluation and assessment of public policy tools	June 2009
D3	SWOT analyses	June 2009
D4	Application of IFP to region	Dec 2010
D5	Development and implementation of the (online) policy toolbox	Dec. 2010
D6	Development of regional and trans-regional networks	June 2011
D7	Embedding and mainstreaming the developed tools and practices	June 2011

Source: Project Description (2008: 49)

1.2 Definition of the problem, aim and question

The aim of the EU Interreg B programme is to promote creative, innovative projects in which national, regional and local authorities cooperate transnationally in sustainable regional development. The North Sea Region is one of the designated areas in which an attempt is made to integrate large groups of European regions. Six regions around the North Sea have meanwhile set up the Innovative Foresight Planning for Business Development project for clusters in four sectors: Food, Advanced Technology, Energy and Financial Services. The Northern Netherlands as the leader of Work Package D examines how public authority policy affects the clusters in the regions. The policy is assessed and a survey is made of it.

The development of clusters has to be studied, with a specific focus on the role the public authorities play in this. The role of the public authorities in the Northern Netherlands and the IFP project has to be tested against the theoretical concept of clusters.

Objective

To map out the policy of public authorities in six regions in relation to the facilitation or stimulation of industry and clustering, and to examine the extent to which the policy is in line with the theoretical concept of clusters.

Research questions

- What role do public authorities play in the development/facilitation of clusters?
- What categories of business-stimulating interventions/measures can be distinguished?
- What is the structure of the policy of public authorities in the various countries for the development/facilitation of clusters?
- What levels of public authorities and other institutions are involved in this policy?
- What public authority policy is pursued in the regions to develop/facilitate clusters?
- Is the role the public authorities have in the Northern Netherlands in line with the role attributed in the cluster concept?

1.3 Reader's guide

The thesis comprises seven chapters. This introductory chapter is followed by the theoretical framework. Studies have already been made and literature published about clusters, cluster formation and types of cluster policy. This framework provides for a delineation of the subject and forms the basis for the study. The work concludes with expectations of the role of public authorities.

The third chapter deals with the methods used in the study and the order in which they were used. In Chapter 4, this framework is applied to the Northern Netherlands and the Innovative Foresight Planning for Business Development project. The structure of public authority policy and the actors involved in the six European regions selected are dealt with in Chapter 5. The application of the different types of cluster policy in the regions is discussed in Chapter 6.

Chapter 7 closes the study with conclusions and several recommendations for cluster programmes.

C2 Theoretical framework

This second chapter deals with the theoretical framework of the thesis. The concepts from the definition of the question are presented, which gives direction to this study. Many studies have already been made of clusters, cluster formation en types of cluster policy. The theories ensuing from them are used to delineate the study. Four expectations arise from this framework to test the role of the public authorities against the theory of clusters. These expectations are tested in the Northern Netherlands (see Chapter 4) and the European regions (see Chapter 5).

2.1 Cluster concept

The cluster concept became known through the work of Michael Porter, an American professor at Harvard Business School. His approach to clusters can be found in the policy and strategy of public authorities and businesses. He describes the comparative advantages for regions and businesses when there is a geographical concentration of several related businesses and institutions (Ten Berge, 2008).

The geographical concentration of economic activities, as in clusters, has been part of economic development policy for a long time. Examples of such approaches are industrial districts (Marshall), the advantages of conurbations (Weber), growth poles (Perroux) and industrial complexes (Chardonnet). Marshall's concept of industrial localization is used by scientists including Porter and Paul Krugman. In his work, Krugman describes how industrial production is geographically divided. Porter examined why the industry in one country is more competitive than the industry in another country. Both authors state that the more an industry is geographically concentrated in a country, the more competitive that industry can be internationally (DTI, 2001).

The most used definition of a cluster comes from Porter (1998a: 199):

> "[A] cluster is a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities."

Despite the existence of this definition, there is confusion regarding the definition of clusters. This can be explained by the fact that Porter and other economists as well use several definitions (Martin and Sunley, 2003: 12). The term is explained differently by researchers, and researchers themselves make changes to the

definition. The definition is accused of being too vague, especially because it lacks a geographical and economic delineation. Geographical proximity is not specified. Clusters can be found on almost all geographical scales: large economies and small economies; rural and urban areas; countries, provinces, regions and cities (Porter, 1998a: 204). Economic delineation is lacking as well. The *interconnected companies and associated institutions* can be linked vertically as well as horizontally. Vertical indicates the depth of a cluster: customers and suppliers. Horizontal indicates the width of a cluster: similar products and services, the use of similar specialized inputs, technologies or institutes and other linkages (Martin and Sunley, 2003: 10). In this way, many industrial classifications and specializations are covered by the cluster concept, as in practice there are few businesses that are not connected with other businesses. That is why Porter states that a cluster should be defined with all businesses, industries and institutes in it with strong links. He does not, however, give any method for measuring links, nor does he say where the line should be drawn between strong and weak links. Nevertheless, the definition given by Porter is adhered to in this study, as academic literature and policy reports also adhere to it.
In theory and practice, a cluster is often confused with a network. The two terms can overlap. That is why it is important to indicate the difference between the two. In a network, there is cooperation between businesses and/or institutions, but they do not need to be geographically concentrated. In a cluster there is geographical concentration but not necessarily with a system of cooperation (Visser, 2000).

This unclear use of the term 'cluster' is tested in the first expectation: The terms clusters and networks are used incorrectly in the policy. The cluster programmes for the Northern Netherlands are tested against this expectation.

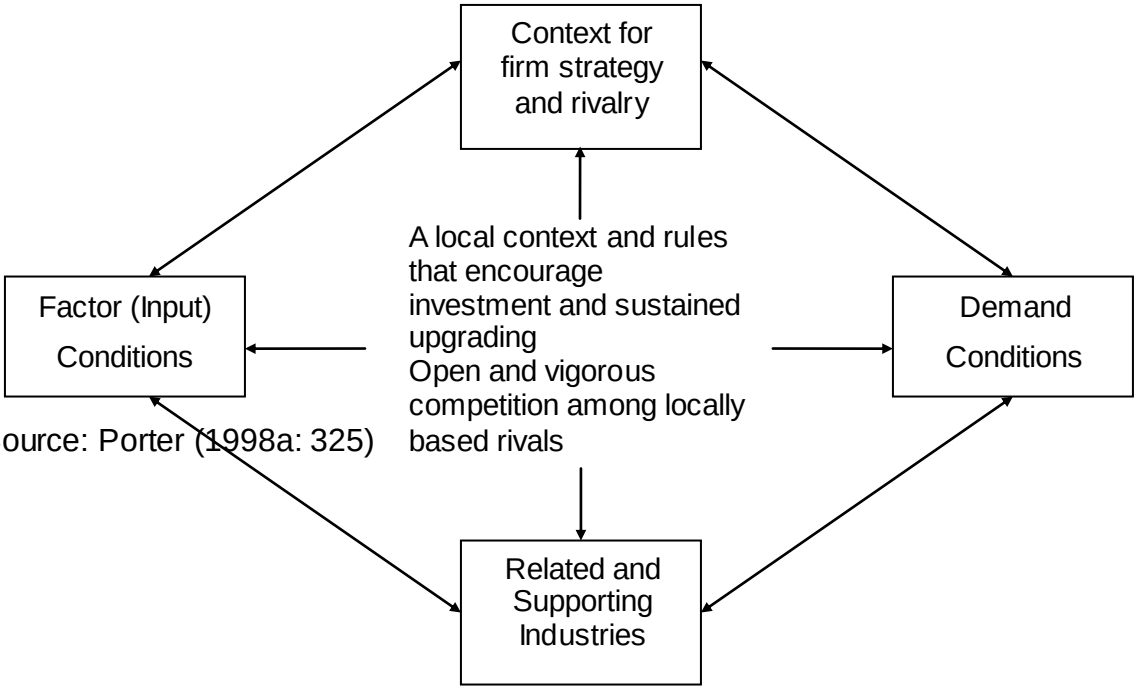
2.2 The environment of businesses

Porter indicates the micro-economic environment of businesses in a diamond, the *competitive diamond* (see Figure 2.1). In the diamond, he gives four determinants of the competitive strength of businesses. *Factor conditions* are generic factors available for all activities, such as roads, airports and sea ports, and the supply of labour. *Demand conditions* refer to the domestic demand for products of a specific industry. *Related and supporting industries* are the available related and complementary businesses, such as logistics companies and production suppliers.

The last determinant, *context for firm strategy and rivalry*, describes how an industry is created and organized and what its competitive nature is.

The interactions between these factors determine the competitive strength of businesses. If these interactions are developed and intensive, the productivity of the businesses concerned will be greater. A high intensity of interactions is promoted if the businesses are clustered, says Porter (1990).

Figure 2.1: Porter's competitive diamond



Source: Porter (1998a: 325)

2.3 Formation of clusters

Clustering is the result of a set of strategic choices made by businesses to create a competitive advantage. The businesses in a cluster obtain advantages by sharing assets, staff, knowledge and technology, through better arrangements with suppliers, and through enhanced confidential relationships (Desrochers and Sautet, 2008: 816). Cluster policy then enhances merely the strategies of businesses to approach problems collectively, without individual solutions. According to this approach, the clustering process is carried out by businesses and the free market, in which there is little room for involvement (and procurement) by the government (Porter, 1998a).

According to Porter (2000: 26), most clusters form independently of the public authorities and sometimes even in spite of interference by the public authorities. He nevertheless gives enough reference points for policy interventions of the public authorities. For instance, a public authority may strengthen and support developing clusters, but should not create clusters. Support is justified only if the major parts have been tested successfully in the market. Room for contributions from public authorities can be found in recognizing clusters and then removing obstacles and inefficiencies and improving labour, infrastructure and rules (Porter, 2000: 26).

2.4 Attractiveness of clusters

Benneworth and Charles (2001: 390) describe how clusters have become popular by enhancing innovative achievements. In the 1980s and 1990s, it became evident that successful regions and countries had networks of cooperating businesses, which created a competitive advantage by continuously innovating and becoming market leaders. The striking feature of these networks was the connections between businesses and technological institutes, which enabled technology to be converted into innovative ideas and products. The idea of connections was taken over from these successful regions. These connections could be put in place in less successful countries to improve their economic performance. Porter states that clusters affect competition and create a competitive advantage in three ways (1998b, in Kuah, 2002: 209-210):

- Increasing the productivity of businesses in the cluster;
- Controlling the direction and speed of innovation, which supports future growth in productivity; and

- Encouraging the formation of new businesses which expand and strengthen the cluster.

Clusters are said to enhance the productivity, innovative capacity, competitive position, profitability and increase in employment of the businesses, their regions and ultimately the national economy as well. Economic geographers recognize the connection between high-growth industries and geographical concentration, but this does not mean that such concentration causes the growth. Many studies have tried to demonstrate the added value of clusters. The use of different definitions, methods and indicators does not give rise to an unequivocal idea that supports or refutes the effect of clusters on the economy. An example is the report by Weterings et al. (2007: 7) for the former Netherlands Institute for Spatial Research (RPB), which uses the indicators increase in employment and increase in productivity and concludes that clustering does not guarantee above-average economic growth in a region. Another study (EC, 2008), however, measures more prosperity among people who work in a strong cluster. These examples do not demonstrate that clustering is the cause of economic growth.

Innovations are desired results of clusters. They should ultimately result in an improved competitive position of businesses in a region. Intuition and the right circumstances are important for innovation. This makes it hardly possible for a directive policy to give the desired impetus to innovation. Cluster policy only partially explains the increase in innovations and economic activities. Strong leadership is also involved, outside public institutions. This works better than a top-down approach to businesses to induce them to form clusters. Such leadership prevents public authorities from focusing on the clustering process instead of the results (Benneworth and Charles, 2001).

Cooperation in a cluster should lead to more innovation. But businesses will not automatically share their knowledge. Possession of knowledge gives them a competitive advantage and having to share this knowledge eliminates this advantage and with that also their own need to innovate (Enright, 1996). In many industrial sectors, innovation benefits precisely from a diversified urban economy. This is also in line with Jacobs' theory of cities, that the wealth of a city is connected with its diversity (Desrochers and Sautet, 2004: 240). A city is more unstable and susceptible

to economic decline if it is largely dependent on one sector (Perry, 1999; Rosenfeld, 2002). Clusters have a life cycle comparable to that of a product: embryonic; established; mature; and declining. At the end of this cycle, processes or services have become routine, imitators have arrived on the market and costs determine the competitive position. In the event of decline, demand will collapse because products have been replaced by cheaper or more effective products. Industrially specialized areas may once have been flowering and dynamic, but they will subsequently undergo a relative or even absolute contraction (Martin and Sunley, 2003).

An institutional or industrial lock-in can occur in a cluster in which one continues to cling to ways of thinking and doing. Martin and Sunley (2003) also mention technological isomorphism, whereby companies copy one another's technology. Companies in a cluster are more vulnerable if they are not flexible enough to adjust themselves to radical innovations in technologies or products.

The following expectation can be made with respect to the attractiveness of clusters: Public authorities choose cluster policy because of the desired innovations. Another expectation regarding cluster policy is that there are connections in the clusters between businesses and technological institutes. These expectations are tested in the participating European regions.

2.5 Identification of clusters

Identification and analysis of clusters is necessary to gain a good idea of the clusters present in a region, including details on the types of businesses, important leaders and statistics, and to find out where potential growth can take place (IRE, 2005b). The way in which Porter provides an overview of clusters is described, e.g. in the report of Innovative Regions Europe (2005b: 9-11). Porter relies mainly on input and output data from the sectors.

Porter (2000: 17) states that the identification of clusters often requires expertise and that it is a creative process in which the main linkages of industries and institutions of an economic activity must be understood. Bergman and Feser (1999) set out different methods to identify clusters, whereby they list the main advantages and disadvantages (see Figure 2.2). In practice, several methods can be used together or following each other.

Figure 2.2: Methods to identify clusters

Method	Advantages	Disadvantages
Expert opinions	Relatively cost and time-effective; Detailed contextual info	Cannot be generalized; Very difficult to collect data from systems
Sector indicators	Easy, cheap; Support of other methods	Focus is on sectors instead of clusters
Input-output: commerce	Often the only source of interaction; Comprehensive and detailed	Too aggregated
Input-output: innovation	Primary criterion for interaction	Too aggregated
Network analysis	Visualization supports interpretation and analysis	Methods and software are limited
Questionnaires	Flexible collection of the desired data; current data	Expensive; difficult to implement

Source: Bergman and Feser (1999, C3.3)

The lack of a sharply delineated definition results in difficulty in detecting clusters in practice, as ultimately all industries are connected with one another. A cluster exists primarily in the eyes of the policymaker or adviser. The lack of clarity regarding definitions results detection by Porter of 60 clusters in the United States and over 300 clusters by the OECD (Hospers, 2008: 3).

The elusive nature of clusters makes them ideal to use for diverse political purposes. Martin and Sunley (2003) state that a cluster analysis usually does not identify clusters but is rather focused on the largest industrial sectors, as statistics are available on them. Benneworth and Charles (2001) assert that identifying clusters is a politicized process which is heavily influenced by groups who lobby and exert pressure on the government to support certain sectors. In England, for example, some weak sectors receive support under the guise of cluster policy.

This assertion by Benneworth and Charles is tested in the expectation: The selection of clusters is a politicized process. The cluster programmes in the Northern Netherlands are tested against this expectation.

2.6 Choices within cluster policies

Besides identifying clusters, it is also necessary for public authorities to decide which tools are to be used for these clusters. According to Benneworth and Charles (2001), this too depends on political choices. The tools are often chosen because they are in line with the current policy. In this sense, tools come under the overarching term 'cluster policy' while they are traditionally among the elements of e.g. technology, research and economic policy. The Cluster Policies Whitebook (Anderson et al., 2004: 53) describes this as follows:

> "[C]luster policies are pursued by public actors for the purpose of increasing socio-economic benefits through the creation or further development of clusters."

An enumeration of different types of cluster policies can be found in section 2.7.
The tools can be used for all clusters, or the tools are provided separately, whereby a choice is made per cluster. Different circumstances require different tools. This certainly holds if the clusters are in different stages of the life cycle.

Clusters are difficult to define, as is the application of cluster policy: to what businesses and activities does the policy apply? There is tension between public authorities' desire to involve as many businesses as possible and the awareness that policy interventions are more efficient if they are implemented specifically. Hospers et al. (2008: 4-7) state that in pursuing cluster policy, certain economic activities are chosen and that this is often not done on the basis of economic and scientific grounds but on political grounds: to satisfy the following. Cluster analysis often follows the political choice instead of the analysis preceding the choice. This seems like a policy to support successes – picking winners – or troubled sectors – backing losers (Martin and Sunley, 2003:24). Successes are found mainly among the high-tech clusters, even if they provide relatively few employment opportunities. Industries in decline are often low-tech or even no-tech clusters which provide regional employment opportunities. An example is the support of the shipbuilding, coal and steel industries. But such support thwarts the necessary restructuring (Hospers, 2005).

The public choice theory explains that the public authorities are not better able to select clusters than market players (Wolf, 1990). While market failure is the motive for public authority intervention, there is no reason to assume that public authority

failure occurs less often, owing to information asymmetries and strategic behaviour of politicians and bureaucrats. For instance, the public sector is not as well informed of the dynamics of entrepreneurship and the public sector is too far away to recognize real opportunities. Public authorities often view innovation as a result of a process that starts with research, followed by the development of products and then their introduction on the market. That is why public authorities support research and development. This can result in products for which there is no market. Technological innovation is often a process which does not by definition start with research. It often starts precisely with the recognition of a costly and major problem that has to be solved or difficulty in making profits (Desrochers and Sautet, 2004: 238).

Completely correct prediction of the activities that could cluster successfully in the future is impossible. Clustering is the result of strategic choices made by businesses, aimed at making profits. Public authorities cannot take over this task from the market (Sautet, 2002).

2.7 Types of cluster policy

Many policy measures can influence cluster development without this being the aim of the public authority. Strictly speaking, public actors intend cluster policy to increase socio-economic benefits by creating or further developing clusters. Other policy influences clusters indirectly, such as the educational system, competition policy, tendering procedures and public funding of research. Besides the policy for the purpose of increasing benefits, there are also measures that remove the opportunities to develop or reduce the efficiency of current initiatives. Even if they are not covered by the term cluster policy, they are nevertheless of great importance to the clusters and the efficiency of policy focusing on clusters (Anderson et al., 2004).
The Cluster Policies Whitebook (Andersson et al., 2004) gives a subdivision of types of cluster policy:

- broker policies: measures for a framework of consultation and cooperation between businesses, the public sector and NGOs;
- demand side policies: measures by which the public authority encourages new ideas and innovative solutions. The public authority's own expenditure in the region is important, even though the tendering procedures are subject to tougher regulation;

- training policies: improving skills and competences that are essential for effective clustering of SMB;
- measures for special promotion of international linkages: removing trade barriers and strengthening the transport and communication systems, combined with equalization of the rules and regulations;
- framework conditions: the preconditions that influence the success of clusters and innovation, such as macro-economic stability, properly functioning product markets and factor markets, a good educational system and physical institutional and legal infrastructure.

The different forms of these types of policy have been studied by way of surveys among policy assistants in the regions. The results can be found in Chapter 5.

C3 Methods

Several methods were used to study the questions and expectations. Scientific literature, policy documents, written surveys and participating observation were used.

The first step was a literature study. It was carried out to see whether any articles and books exist about clustering. Many publications have appeared about clusters, cluster formation and the role of the public authorities in that regard. They form the basis for the theoretical framework and the other chapters. They provide answers to the research questions relating to the categories of business stimulating measures and the role of public authorities in developing clusters. The expectations are formulated in the theoretical framework to test at a later stage whether the role of the public authorities matches the theoretical concept of clusters.

Next, policy reports of the Europe INNOVA Cluster Mapping Project from 2007 were examined to gain an impression of the cluster programmes and the parties involved in the different countries. A report was written for each European country, usually by a national research institute or consultancy firm. A survey was drawn up on the basis of the literature and policy reports. A survey was chosen because the necessary data had to be current and region-specific (Hakvoort, 1995). The survey does not inquire as to the effects of the policy, as it is current policy.

The surveys were sent in English to the national and international partners in the selected regions. These partners answered the questionnaire themselves or together with a policy assistant from the regional public authority. The written surveys were sent in March 2009. The question form can be found in the Annex. The response comprised ten completed surveys. Two or three respondents from the regions were requested, which would add up to twelve to eighteen respondents in total. The present response provided the necessary data for all six regions. The following research themes were studied by using the policy reports and surveys: the structure of public authority policy; the public institutions involved; and the policy applied in the regions.

The last research question includes testing the role of local authorities in the Northern Netherlands. To do so, participating observation and policy documents of the local

authorities were used, as well as analyses of this policy by other organizations. The policy documents and analyses were used to see how the choices were made in the national en regional cluster programmes.

In participating observation, data are collected from a position in the social system which is the subject of study (Segers, 1999). The social system here consists of the consortium of partners from the Northern Netherlands and the foreign partners. The aim of this method is to get to know the group and the situation. In the period from October 2008 to June 2009, meetings were attended with the partners in the Northern Netherlands consortium. In this way, I experienced from nearby how the choices of clusters are made in the IFP project.

C4 De role of the public authorities in the Northern Netherlands

In this chapter, the theoretical framework is applied to the Northern Netherlands and the Innovative Foresight Planning for Business Development project. The expectations drawn up, ensuing from the theory, are tested. In this way the different choices of clusters in the Northern Netherlands are analysed and foresight planning and the use of best practices are studied.

4.1 Geographical economic policy

Since Michael Porter introduced clusters in 1990, his theory has been followed by Dutch policymakers as well. As early as in 1990, the memorandum of the Ministry of Economic Affairs, *Economie met Open Grenzen* (Economy with Open Borders) was published. This constituted a reversal of the policy of generous support of individual companies. Attempts were also phased out to reduce the differences between regions, with the exception, however, of the three provinces in the Northern Netherlands. These regions received support under the IPR scheme and subsequently under the Langman agreement from 1998, in creating employment opportunities (Van Oort and Raspe, 2007).

In the memorandum *Pieken in de Delta* (Peaks in the Delta) from 2004, the idea of regional equality was abandoned and since then the policy has focused on national growth. For this purpose, the comparative advantages of the regions were utilized, the Peaks. A year later, the Key Areas approach was introduced, which focuses on the sectors, networks and technologies where there are many innovative opportunities to strengthen the international competitive position. The Key Areas approach is, as it were, the child of the Innovation Platform, which encourages cooperation between public authorities, businesses, education and research (Van Oort and Raspe, 2007).

In the Northern Netherlands the effect of geographical economic policy can be found in *Koers Noord* from 2007, which was prepared by the cooperating provinces and the Ministry of Economic Affairs.

This approach to geographical economic policy gives shape to European objectives, as formulated in the Lisbon strategy in 2000. In this, the European countries state that they encourage innovations in companies and stimulate entrepreneurship and the growth of the knowledge economy. These objectives can

be found in the de national programmes of the five countries participating in Innovative Foresight Planning, referred to in Chapter 5.

4.2 Market failure and government failure

Van Oort and Raspe (2007) assess the motives of the Dutch policy of placing clusters. A justification of public authority intervention is found in the failure of the market. Without market failure, the sum of present and future prosperity is higher. In relation to knowledge and innovation, the market fails to create and disseminate knowledge. Besides market failure, the researchers also point out the failure of the public authorities. This has to do with the limited information of the public authorities; the information asymmetry between the private and public sectors. Van Oort and Raspe explain this as follows (2007: 3):

> "After all, how do public authorities know what knowledge is needed, who has that need and where that knowledge is available? It is not clear in advance either what knowledge and innovations will actually result in economic growth and where these effects will take place."

These ideas are in line with the public choice theory. Scientists of the Austrian School assert that market failure is no reason for public authority intervention, unless it can be demonstrated that market failure is more serious than public authority failure (Wolf, 1990).

4.3 Selecting clusters for The Northern Netherlands

The Ministry of Economic Affairs chose the Peaks in the Peaks in the Delta memorandum. It defines *peaks* as: "outstanding knowledge institutions, innovative companies, enterprising public authorities, fruitful alliances" (Ministry of Economic Affairs, 2004: 9). This also includes promising clusters. The Ministry states that tough choices have to be made. They are necessary because of the scarcity of funds and for the effectiveness of the policy. Setting priorities should "be based as far as possible on clear criteria" (Ministry of Economic Affairs, 2004: 18).

In the Northern Netherlands, the following comparative advantages are mentioned in *Pieken in de Delta* (Ministry of Economic Affairs, 2004: 46-47):

- Groningen-Assen is a national urban area and a core economic zone;
- the Waddenzee is a valuable nature conservation area;

- agribusiness, the chemical concentrations in Delfzijl and Emmen, the energy-related activities and the metalworking industry are important for the regional economy;
- the development of knowledge is promising in biomedical technology, gene and nanotechnology, water and energy technology;
- promising developments in Energy Valley, Lofar, Eemsdelta and Wetsus (water purification).

The Northern Netherlands Provinces and the Ministry of Economic Affairs choose clusters in sectors from the *Koers Noord*: *op weg naar Pieken* programme (2007). This choice is made on the basis of the strengths and weaknesses of the northern economy. The object is e.g. to expand the three economic peaks of national importance: energy, water and sensor technology. In addition, there is attention for agribusiness, life sciences and tourism.

The Innovation Platform (*Innovatieplatform*) selects clusters in the Key Areas approach. Combinations of knowledge and industry are considered key areas. The Innovation Platform uses several criteria in selecting the key areas. First of all, the combination of knowledge and industry must relate to an appealing and motivating business and social ambition. In addition, the parties concerned must have organizational abilities and commitment. Furthermore, they must be involved in a diversified and globally competitive industry. Another criterion is the application of high-quality knowledge and technology. Moreover, the proposed actions must be effective and efficient for the proposal to be granted (Innovation Platform, 2004).

In Chapter 2, the lack of clarity concerning the definition of clusters is described. That is why the following expectation was studied in the aforementioned programmes: The terms clusters and networks are used incorrectly in the policy.

The programmes *Pieken in de Delta* and *Koers Noord* not only deal with promising clusters, but also individual companies; knowledge institutions or local authorities can be considered peaks. Both programmes use the term cluster, but do not define it. The projects do have to make a contribution to a specific region, which results in a geographical delineation. In this respect, the programmes use the term cluster accurately.

The Key Areas approach focuses on combinations of knowledge and industry. The Innovation Platform (2009) also uses the term cluster. It is remarkable that the Key Areas do not have a geographical specification. The term area implies that the phenomenon could be indicated on a map. This geographical delineation has not been made. That makes it difficult for regions to adjust their policies to the Key Areas, in contrast to Peaks in the Delta (Weterings et al., 2007). For the Key Areas, the combination of knowledge and industry is important. Cooperation takes place in a network, not per se in a cluster. As cooperation is necessary for Key Areas, and geographical proximity is not essential, not a cluster approach but a network approach is appropriate.

In Chapter 2, the expectation was put forth that the selection of clusters is a politicized process. This expectation was also tested against the cluster programmes for the Northern Netherlands.

The Ministry of Economic Affairs uses qualitative criteria and SWOT analyses to find Peaks. But at the same time, the Ministry states that in addition to economic considerations, administrative and social support is important. To study this support, the Ministry talked to 100 national and regional stakeholders. The regional ideas and comparative advantages were derived from these talks. There is room here for stakeholders to have their own regions and sectors chosen and supported (Min EZ, 2004: 22).

Koers Noord adopts the choices made in national policy. In its advice to the SNN, the Northern Netherlands Social and Economic Council (*SER*) regrets that not enough attention is devoted to problem analysis. Moreover, as far as the Council is concerned, the ambitions are unclear and not well reasoned. The policy is not sufficiently based on the regional problems, and focuses rather on pursuing national or European policy (Northern Netherlands *SER*, 2008).

The Innovation Platform selects combinations of knowledge and industry. Those involved have made proposals for such combinations in a bottom-up approach, and indicated what actions they consider necessary. In this way, the Platform wants to hear ideas from the country instead of clusters to be designated from The Hague. The key areas were selected after discussions with those who sent in the ideas and external experts (Innovation Platform, 2004).

The difference between *Pieken in de Delta* and the Key Areas approach is the respective top-down and bottom-up selection process. The same method is then used, in which those involved have room to exert influence to support a sector and an area.

4.4 Innovative Foresight Planning for Business Development

The Northern Netherlands has three clusters participating in the European project Innovative Foresight Planning for Business Development. The whole project has four sectors: Modern Food, Energy, Advanced Technology and Financial Services. The Northern Netherlands chose not to let a cluster from the last-mentioned sector participate (Project Description, 2008).

The choice of the four sectors was made by the partners in the North Sea Area prior to the start of the project. Reasons were not given for the choice, except that the energy sector is important for the Göteborg agenda, which advocates sustainable development (Project Description, 2008).

Project documents refer to Porter's definition of clusters, but do not make clear which definition that is, given that Porter has several of them. This gives the regions room to select 'something' that they consider a cluster.

The selection of clusters in the three sectors in the Northern Netherlands was made by the consortium of the Provinces of Fryslân, Groningen and Drenthe, the NOM and the Northern Netherlands Chamber of Commerce. Observation has shown that the choice of the cluster was made on the basis of interviews with experts from the sectors who know the companies in their networks. Members of the consortium appreciate a division of the clusters across the three provinces. After the clusters are determined, another SWOT analysis follows and the quantitative data on the companies, their investments, alliances and common future are collected.

In the Modern Food sector, a new cluster was chosen in the agribusiness in Fryslân with *Healthy Aging* as its theme. The energy cluster is an existing network of parties involved in photovoltaic cells (solar energy). The network is not geographically clustered, but spread throughout the country. The Advanced Technology sector is represented from Assen by Sensor Universe.

4.5 Foresight Planning

In this European project, foresight planning is intended to enable new competitive businesses and jobs to develop in the regions. It is described as follows (Project Description, 2008: 16):

> "[F]oresight is a systematically initiated process in which an attempt is made to fathom the long-term future of science, technology, the economy and society in order to identify emerging technologies which will presumably bring about the greatest economic and social benefits."

The foresight planning process uses the experiences of stakeholders and knowledge of experts to formulate a strategy for future activities. This is supposed to lead to concrete results, such as action plans and investment plans. This project is intended to use the knowledge and expertise of different companies to create a basis for innovative solutions and products. The selected clusters must use high-level knowledge and technology and focus on innovation.

The identification of emerging Technologies with the greatest economic and social benefits seems like a policy to support successes: picking winners. Sautet (2002) states that public authorities are not able to predict completely correctly which activities can cluster successfully. In the foresight process, besides the government there is room for businesses, educational institutions and knowledge institutions. The decision whether or not to contribute to a cluster should be made by a company itself. This decision is based on recognition of a costly and major problem that has to be solved or a possibility to make profits.

4.6 Adoption of policy

The international partners in the IFP project select best practices of government policy. In this way, they gain insight into one another's policy, which is compiled in a policy toolbox: a structured compilation of documents that systematically facilitate the methodology of IFP for businesses and the government (Project Description, 2008).
Regions themselves have the room to determine what policy they want to adopt or not from other regions. The European Commission encourages regions to take best practices as an example. This policy can result in the spread of *Silicon Somewheres* all across Europe, following the example of Silicon Valley.

The ultimate choice of clusters often turns out to be the same types of clusters. Many public authorities support clusters in information, bio or nanotechnology. Large

amounts are invested in similar technologies. Because they do the same things as their competitors, regions will precisely undermine their own competitive strength. This copycat behaviour can be explained as follows: just like entrepreneurs, politicians tend to imitate a pioneer, hoping to share in the original successes. But as soon as there are more copycat competitors, the profit possibilities will gradually disappear, overcapacity will occur and painful restructuring will follow (Hospers, 2004: 213; Hospers, 2005: 453).

A competitive advantage is achieved precisely by making a difference. Hospers et al. (2008: 14) formulate it thus: “After all, competition is not about copying, but about making a difference”.

If regions have too much trust in and are dependent on best practices from other regions, they undermine their own possible competitive position, which is based on unique, regional characteristics (Hospers, 2004: 174).

Keep and Mayhew (1999: 57-58) also refer to the wish to apply a successful vision of a sector to the entire economy. But they warn policymakers against the idea that a best practice from a specific sector can be generalized for all economic factors.

In his analysis of clusters, Den Hertog (2001) states that they are all different. Factors important for those differences are the history and characteristics of the country, the types of knowledge, the stage of the life cycle and the use of networks. The idea of managing clusters in terms such as ideal types and best practices is doomed to fail, because there is no ideal type and individual clusters differ on many aspects. The specific nature of a cluster requires adjusted policy to help innovation in clusters to progress. Public authority policy is not only instructive as best practices, but certainly as bad practices as well.

There is danger in the approach Den Hertog (2001) describes as *high-tech myopia.* By that, he means that policymakers and researchers do not look beyond high-tech clusters and the available success stories of clusters. The danger in this approach is that one usually forgets that the emergence of such a cluster is the result of a combination of a unique mix of local factors and decades of development processes. This cannot be copied easily and quickly.

The same criticism emerges in the study by the former Netherlands Institute for Spatial Research (*Ruimtelijk Planbureau*) (Weterings et al., 2007: 132), focused on the Dutch key area approach:

> “Policymakers who try to follow on from the stimulation of clustering in certain sectors have no small task in making an estimate of the sectoral and geographical dimensions of the industry in their region in such way that they know which sectors should be stimulated to achieve more economic growth. This is certainly difficult if clusters are assumed to be a policy concept that can be used in any region without taking account of region-specific circumstances. Our study shows that region-specific characteristics are major factors in regional differences in growth. Because of this, examples of success – both national and international – cannot be copied just like that.”

The key areas prove not to be automatically regional drivers of growth, even though many policymakers assume this. Clusters are not manipulable or manageable enough for that.

C5 Structure of public authority policy in the regions

Many European countries have set up policy programmes for the development of clusters. They are usually introduced by the national government, which leaves their implementation to regional public authorities and institutions. In the following sections, it will become clear how this is structured in the countries participating in the project and next which institutions are engaged. This information was collected from the results of surveys and reports on cluster policy.

The cluster programmes were tested against the following expectations:

Public authorities choose clusters because of the desired innovations.

In the clusters there are connections between businesses and technological institutes.

5.1 Norway

The information in this section comes from the Country Report: Norway (2007) of the Europe INNOVA Cluster Mapping Project and the questionnaires answered by E. Lindboe & H. Roth (Rogaland) and J. Stokkan (Vest-Agder County).

Structure:

Public administration in Norway has the following public authorities:

National government, provincial authorities (19 *fylkeskommune*) and municipal authorities (*kommuner*). The national government prepares the cluster programmes and selects the clusters. The *fylkeskommune* is responsible for transport, secondary education, regional development and economic development. Both the national and regional public authorities have a policy programme for clusters.

National:

In Norway, two ministries are most active in supporting clusters. These are the Ministry of Trade and Industry and the Ministry of Local Government and Regional Development. They set up and funded the national programmes *Arena* (start 2002) and Norwegian Centres of Expertise (start 2006). In addition, the Ministry of Education and Research is partially responsible for the *VRI* programme (Programme for Regional R&D and Innovation, start 2007).

The programmes are implemented by national organizations which are funded by these ministries. The three main organizations are: Innovation Norway; Research Council of Norway; and Industrial Development Corporation.

Innovation Norway provides funding, expertise and a network for innovative activities of businesses. The main financier is the Ministry of Trade and Industry. Innovation Norway promotes industrial development, which is profitable for both the industry and the national economy. In addition, it contributes towards innovation, internationalization and the promotion of Norway among tourists. There is a focus on industries in which Norway has a lot of knowledge and/or a competitive advantage.

Research Council of Norway is the institution for the development and implementation of the national research strategy. The financiers are the Ministry of Education and Research and the Ministry of Trade and Industry. The Council gives advice on research policy, explores research wishes and sets priorities. It funds the necessary activities and works on them together with research institutes and the private and public sectors.

The purpose of the Industrial Development Corporation of Norway (Norwegian: SIVA) is to improve the national infrastructure for innovation. This is done by developing strong regional and local industrial clusters. It helps by way of ownership of infrastructure, investment funds, knowledge networks and innovation centres. The main financier is the Ministry of Trade and Industry.

Arena is a national programme for the development of regional clusters. It provides advice and support. The programme is implemented by Innovation Norway, Research Council of Norway and Industrial Development Corporation of Norway. The aim of the programme is to increase the innovative capacity of clusters through a stronger and more dynamic interaction between industry, research institutes, universities and the public sector. This entails long-term, purposive interaction. The focus is on innovative cooperation, international orientation, access to knowledge and new industry. The programme had 22 regional cluster initiatives in October 2008.

Norwegian Centres of Expertise are run by the same organizations. The programme strengthens internationally oriented clusters with the potential for growth directed by innovation. A smaller number of clusters were selected for this programme, nine NCEs since 2007.

VRI is a programme of the Research Council of Norway. It focuses on research and innovation through regional cooperation and more efforts in R&D. Fifteen initiatives have now been started.

Regional:

Rogaland and Vest-Agder County Councils are public administrations of a province, directly elected by the residents. The *fylkeskommune* is responsible for transport, secondary education, regional development and economic development.

Greater Stavanger Economic Development supports economic development in the Stavanger region. Together with the academic community and public and private sectors, a plan was made to give the region a better competitive position and stimulate innovation. The region concentrates mainly on energy and food production. Innovasjonspark Stavanger is an organization that supports starting businesses, innovations, research and development.

The Norwegian government sees clusters as a means of increasing innovative capacity. This holds for the Arena, Norwegian Centres of Expertise and VRI programmes. These programmes are aimed at promoting cooperation between businesses and technological institutes. This is not the most important criterion for the NCE, as it requires an international competitive position.

5.2 Denmark

The information in this section comes from the Country Report: Denmark (2007) of the Europe INNOVA Cluster Mapping Project and the questionnaire answered by S. Nielsen (Regionmidtjylland), L.H. Jensen (Regionmidtjylland) and K.H. Jensen (CENSEC).

Structure:

Denmark is divided into five administrative regions. These include 98 municipalities. The regions are responsible for health care, public transport, economic development and regional development. Both the national and regional public authorities have a policy focusing on clusters.

National:

There is no national cluster programme In Denmark, but various ministries support clusters in their field of policy. The main ones are the Ministry of Economy and Business Affairs, responsible for the National Agency for Enterprise and Construction, and the Ministry of Science, Technology and Innovation, charged with the Danish Agency for Science, Technology and Innovation. In addition, a role is set aside for the Ministry of Environment, which is responsible for the Spatial Planning Department.

The Spatial Planning Department writes a *National Planning Report* every three years, containing the spatial vision of the national government. The report from 2000 and 2003 stimulated the facilitation of clusters. In 2006, however, some reservations were added by stating that not all clusters will have a positive effect in the future.

The Agency for Science, Technology and Innovation published an action plan in 2007 to promote more innovation and exchange of knowledge: *InnovationDenmark 2007-2010*. This plan supports the development of innovation centres to enhance R&D and facilitate the exchange of knowledge between businesses and institutions. This programme has 11 high-tech networks, 13 regional technology centres and 4 regional ICT knowledge centres.

Regional:

Unlike Denmark as a whole, the regions do have cluster programmes, as in Central Denmark Region (Danish: *Regionmidtjylland*). After its administrative reorganization in 2007, the region acquired a Regional Growth Forum (Danish: *Vækstforum*), in which cluster development is an important part of the regional development strategy. The Forum's tasks include: drafting a regional development strategy for businesses based on strengths and weaknesses; monitoring the growth of regional development in order to make possible changes to the development strategy; and developing initiatives to improve local growth, while making recommendations for use of the available funds, including EU funds.

The cluster programme of the Regional Growth Forum is called the Central Jutland Cluster Programme (Danish: *Midtjyske Klyngeprogram*). The programme focuses on large as well as small businesses, but mainly on creating networks between businesses and knowledge institutions. It focuses on the support of new clusters as well.

Another regional organization is Business Link Central Denmark (*Vaeksthus Midtjylland*), which is partly funded by the regional and national public authorities. It supports the growth of businesses by way of 30 business consultants.

Denmark has no national cluster programme, but the InnovationDenmark programme uses clusters to promote innovations in Denmark. The regional cluster programme of the Central Denmark Region is intended to achieve regional economic growth. Innovations are not required for this.

In both InnovationDenmark and the regional cluster programme, there must be cooperation between businesses and technological institutions.

5.3 The Netherlands

The information in this section comes from the Country Report: Netherlands (2007) of the Europe INNOVA Cluster Mapping Project and the questionnaires answered by E. Meijerink (Drenthe), H. Ter Welle and H. Beerink (Groningen), and E. Zijlstra (Fryslân).

Structure:

The Netherlands has 12 provinces. The provinces Fryslân, Groningen and Drenthe together form the Northern Netherlands. Both the national and regional public authorities have a cluster policy programme.

National:

In the Netherlands, the Ministry of Economic Affairs is the most important ministry for cluster policy. The Ministry of Education, Culture and Science also plays a part, particularly in relation to the exchange of knowledge.

The Senternovem agency is one of the main implementers of the policies of the Ministry of Economic Affairs. The purpose of Senternovem is to convert government environmental, innovation, energy and sustainable development policies into results that have a positive effect on the economy and the whole of society. It grants access to knowledge institutions, research centres, trading partners, businesses and government organizations.

Syntens is an innovation network for entrepreneurs, established by the Ministry of Economic Affairs. The purpose of Syntens is to enhance the innovation capacity of SMEs, give them an impetus to innovate successfully and thereby make a visible contribution to sustainable growth. Besides giving advice and information to businesses, it also facilitates the development of regional clusters.

The Ministry of Economic Affairs set up a national economic programme in 2004: *Pieken in de Delta* (Peaks in the Delta). The cluster approach is used in this programme. The programme is aimed at promoting innovation and strengthening promising clusters. In addition to a national programme, it can be used at the same time as a regional programme. It determines the vision for the six designated regions, and the sectors and places where their opportunities lie. The Northern Netherlands is

one the six regions and, after the end of the previous *Kompas* programme for the North, it adapted the regional programme to *Pieken in de Delta* in 2007.

The Innovation Platform is a platform of key players in the knowledge economy. Its members, chaired by Prime Minister Balkenende, come from the business world, politics, research and education. Its purpose is to analyse and improve the Dutch knowledge and innovation system in order to give innovation and entrepreneurship an impetus.

Regional:

On a regional scale, the three provinces cooperate in various organizations. But there is no strong regional administration.

In the Northern Netherlands Provinces (*SNN*), the provinces strengthen the economic position of the Northern Netherlands. The SNN, together with the Ministry of Economic Affairs, set up the *Koers Noord: op weg naar Pieken* programme for the North. This is a regional elaboration of *Pieken in de Delta*. According to *Koers Noord*, the Northern Netherlands has the promising sectors energy, water, sensor technology, agribusiness, life sciences and tourism.

Besides *Koers Noord*, the SNN also implements the Operational Programme North of the European Regional Development Fund. In this programme, besides the aforementioned sectors, the metalworking and shipbuilding industry and the chemical industry are also considered growth sectors.

The public limited company N.V. NOM is the investment and development company for the Northern Netherlands. It is a company for the purpose of developing employment in the Northern Netherlands by stimulating sustainable, profitable economic activities. The shareholders are the Ministry of Economic Affairs and the three Northern provinces. The NOM also makes additional efforts for the aforementioned sectors from *Koers Noord* that put the Northern Netherlands on the international map.

The Northern Netherlands Technology Centre (TCNN) was established in 1998 to help and advise SMEs by way of cooperative projects with knowledge institutions. The purpose is to strengthen the economy of the Northern Netherlands through innovation and cooperation. TCNN can help the projects through economic, business administration and technological feasibility studies, technology projects and specific workshops. TCNN is funded by the SNN and the European Regional Development Fund, and also receives contributions from regional research institutes.

Each of the provinces has a separate programme to promote innovation: Innovative Action Programme Drenthe, Innovative Action Programme Groningen, and Regional Innovation Programme Fryslân. These programmes are partly funded by the European Regional Development Fund. They stimulate entrepreneurs to develop innovative projects. Groningen and Fryslân indicate a preference in the programmes for some sectors or themes which are also mentioned in *Koers Noord*. Drenthe does not express a preference.

The *Pieken in de Delta* and *Koers Noord* programmes as well as the Key Areas Approach focus on the promotion of innovation. In *Pieken in de Delta* and *Koers Noord*, this is not only done by means of clusters. In the Key Areas, a connection between businesses and technological institutes is a requirement. In *Pieken in de Delta* and *Koers Noord*, such cooperation is not required but is indeed possible.

5.4 Germany

The information in this section comes from the Country Report: Germany (2007) of the Europe INNOVA Cluster Mapping Project and the questionnaires answered by Dr. M. Hirschfeld (Ministry of Science, Economic Affairs and Transport of Schleswig-Holstein).

Structure:

Germany is a federal republic with 16 federal states (*Bundesländer*). Besides the federal government and ministries, the federal states have their own ministries and responsibilities. The partner IZET, the innovation centre in Itzehoe, is active in two federal states: Schleswig-Holstein and Hamburg.

National:

In Germany, the Ministry of Economic Affairs and Science and the Ministry of Education and Research are responsible for cluster policy. Other important actors are the Competence Networks Department, the Council for Innovation and Growth and the Industry, Science and Research Alliance. National cluster programmes are the Competence Networks, and following on from this: Innovation Clusters, Excellence Clusters and Focus Clusters.

The Competence Networks (*Kompetenznetze Deutschland*) are an initiative of the federal Ministry of Education and Research (*Bundesministerium für Bildung und Forschung*) from 1999. The Ministry for Industry and Technology (*Bundesministerium*

für Wirtschaft und Technologie) is now responsible for the organization. The networks originally focused on nanotechnology. Research institutes, universities and businesses were united in a network. The purpose of their cooperation was to enable top-level research to be brought into production more quickly.

An Excellence Cluster (*Exzellenzcluster*) is an initiative from 2005 to financially support excellent university research and education. These science clusters should have the potential to compete globally at the top. An Innovation Cluster (*Innovationcluster*) is a tool from 2006 that enhances cooperation and exchange of knowledge among researchers, developers and traders from universities, research institutes and businesses in a specific technological area. A Focus Cluster (*Spitzencluster*) is an initiative from 2007 in which knowledge institutions and businesses form a cluster that will ultimately result in an actual product. Fifteen Focus Clusters in total have been designated.

In 2006, the Ministry for Industry and Technology and the Ministry of Education and Research developed an interdepartmental High-Tech Strategy, in which clusters play a part in stimulating innovations and technology. The Alliance of Industry and Science (*Forschungsunion Wirtschaft – Wissenschaft*) was established to monitor this interdepartmental programme.

Regional:

Two federal states are actively important in this project. The State of Schleswig-Holstein and the State of Hamburg.

In Schleswig-Holstein, the Ministry for Science, Economic Affairs and Transport is responsible for cluster policy. The comparable ministry in Hamburg is the Ministry of Economic Affairs and Employment.

The Corporation for Industrial Development and Technology Transfer (*Wirtschaftsförderung und Technologietransfer*) is a collaborative venture of the regional government, universities and Chamber of Commerce in Schleswig-Holstein. It provides services to companies that want to locate or expand their operations in the State.

IZET is the Innovation Centre in Itzehoe in which the economic and technological development of the region is stimulated, particularly a microtechnology cluster in Itzehoe. New jobs need to be created in the region by promoting entrepreneurship, technology transfers and product innovations.

Germany has national and regional cluster programmes. Innovations are usually pursued in the form of new products. An Excellence Cluster, however, concerns academic level, which should become one of the top levels in the world. Cooperation between knowledge institutions and businesses is required in the cluster programmes.

5.5 Scotland

The information in this section comes from the Country Report: United Kingdom (2007) van het Europe INNOVA Cluster Mapping Project and the questionnaires answered by J. Davis (Scottish Enterprise).

Structure:

Scotland, England, Wales and Northern Ireland form the United Kingdom. Since the 1990s, increasingly more powers of the central government in London have been derogated to the government in Scotland. Scotland now bears responsibility for health care, education, housing, spatial planning, tourism and economic development.

National:

Scotland does not have ministries as many other countries have. Until 2007 there were departments, but the government replaced them by directorates. The Enterprise, Energy and Tourism Directorate supports the Minister of Enterprise, Energy and Tourism in establishing policy. This minister comes under the responsibility of the Cabinet Secretary for Finance and Sustainable Growth. They determine the policy objectives.

Regional:

Scottish Enterprise is an innovation and investment company of the Scottish government. The company's task is to provide for economic growth by supporting businesses and developing their surroundings. Scottish Enterprise covers central, south and east Scotland. The comparable company Highlands and Islands Enterprise is active in the north and west. They grant licences and provide funds to companies to introduce new products and technologies. The business environment is improved together with partners from the public and private sectors. Clusters are not part of national policy programmes, but they are indeed part of regional policy programmes.

The aim of Scottish Enterprise is to enable economic growth. It does not focus directly on innovations, but facilitates the introduction of new products. It has not emerged from this study that connections do or do not have to exist between businesses and technological institutes.

5.6 Survey of actors

Table 5.1 on the next page contains these actors per region. The actors are divided into the national and regional scale.

5.7 Conclusion

In most cases, public authorities use clusters to enhance innovation capacity. The programmes *Pieken in de Delta, Koers Noord* and InnovationDenmark do not use only clusters to promote innovation.

In Denmark and Scotland there are no national cluster programmes. In the other countries the cluster policy is usually determined by the national government.

It is remarkable that the main actor in a country cannot simply be designated. There are several actors on the regional scale as well as on the national scale which implement cluster policy and share responsibilities. Scottish Enterprise in Scotland is an exception to this. It is also noticeable that several similar programmes are implemented at the same time. Examples of these are the *Excellenzcluster, Innovationcluster* and *Spitzencluster* in Germany and Arena, Norwegian Centres of Expertise and VRI in Norway.

There does not have to be a connection between businesses and technological institutes in all clusters of cluster policies. It is a requirement in many programmes and an option in a few programmes.

Table 5.1 Structure of the relevant public authorities and institutions

	Rogaland, Norway	Agder Region, Norway	Region Central Denmark	IZET, Germany	Northern Netherlands	Scottish Enterprise
National actors	Min. Local Government and Regional Development: Regional Development Department; Min. Trade and Industry: Department for Research and Innovation Policy; Innovation Norway; Research Council; Industrial Development Corporation;	Min. Local Government and Regional Development: Regional Development Department; Min. Trade and Industry: Department for Research and Innovation Policy; Innovation Norway; Research Council; Industrial Development Corporation;	Min. Economy and Business Affairs: National Agency for Enterprise and Construction; Min. Science, Technology and Innovation: National Agency of Science, Technology and Innovation: Council for Technology and Innovation; Min. Environment: Spatial Planning Department National Growth Council REG LAB	Min. Industry and Technology: Geschäftsstelle Kompetenznetze Deutschland; Min. Education and Research; Industry Science Research Alliance	Min. Economic Affairs Min. Education, Culture and Science Senternovem Syntens Innovatieplatform	Cabinet Secretary for Finance and Sustainable Growth; Enterprise, Energy and Tourism Directorate
Regional actors	Rogaland County Council; Greater Stavanger Economic Development; Innovasjonspark Stavanger	Vest-Agder County Council; Aust-Agder County Council	Central Denmark Region: Central Denmark Growth Forum. Business Link Central Denmark	Min. Science, Economic Affairs and Transport of the State of Schleswig-Holstein; Ministry of Economic Affairs and Employment Hamburg; Business Development and Technology Transfer Corporation; IZET	SNN; NOM; TCNN; Provinces Fryslan, Groningen, Drenthe	Scottish Enterprise

C6 Types of cluster policy in the regions

This chapter describes the results of the surveys from the regions. No results have been received from two regions in North Germany and Scotland. That is why they have not been taken into consideration here. The Rogaland and Agder regions in Norway are described together, with a specification of the region where necessary.
The policy is described on the basis of the types of cluster policy, as referred to in section 2.7. The five types are: Broker Policies; Demand Side Policies; Training Policies; Measures for special promotion of international linkages; and Framework Conditions. The striking differences and similarities are mentioned in section 6.4.

6.1 Rogaland and Agder regions

The information in this section comes from the questionnaires answered by E. Lindboe & H. Roth (Rogaland) and J. Stokkan (Vest-Agder County).
Broker policies:

The VRI programme promotes cooperation between businesses and research institutes. This is also done in the Arena programme, the *Norwegian Centres of Expertise* (NCE) and the *Centres for Research-Based Innovation Scheme*. The regional development programmes also make efforts for cooperation between businesses and research institutes.

The government provides clusters and the organizations with property and provides room for meetings, conferences and seminars. The development of clusters is measured by collecting relevant statistics.
Demand Side Policies:
Norway does not use subsidies or public procurement for clusters. The VRI programme participates financially in projects by way of research and development. High-level international research is supported in the Centres of Excellence Scheme.
Norway does not give tax credits to businesses or clusters. The tax rates are the following (in 2009):
The value added tax rate is 8%, 14% or 25%, depending on the type of product. The corporation tax rate is 28%.
Training Policies:
With the VRI programme, Norway attempts to improve the knowledge and expertise of researchers, so that researchers can cooperate better with businesses. In this

way, researchers gain better insight into the wishes and needs of businesses. The Arena and NCE programmes also provide possibilities to do so. Rogaland has a good supply of educational institutions, which have adjusted their study programmes to the needs of SMEs. This supply of study programmes is not sufficiently available in Agder.

Measures for special promotion of international linkages:

The Arena and NCE programmes provide for the communication and branding of clusters, also internationally. Stavanger (Rogaland) simplifies the establishment of new businesses and employees by offering them a manual. Although Norway is not a member of the European Union, it nevertheless takes part in European programmes such as Interreg, ERRIN and Framework Programme 7.

Framework Conditions:

The quality of the conditions, which influences the success of clusters and innovation, was assessed by the respondents from Norway. Figure 6.1 gives this assessment.

Figure 6.1 Framework Conditions:	low		neutral		high
Macroeconomic stability	O	O	O	●	O
Product markets (goods and services)	O	O	O	●	O
Factor markets (labour and financial markets)	O	O	O	●	O
Education systems	O	O	O	●	O
Physical infrastructure	O	O	O	●	O
Institutional infrastructure	O	O	●	O	O
Judicial infrastructure	O	O	O	●	O
Communications infrastructure	O	O	O	●	O
Transport infrastructure	O	O	●	O	O
Corporate governance	O	O	●	O	O

6.2 Region Central Denmark

The information in this section comes from the questionnaires answered by S. Nielsen (Regionmidtjylland), L.H. Jensen (Regionmidtjylland) and K.H. Jensen (CENSEC).

Broker Policies:

The Central Denmark region has a new network programme. In this programme, 25 regional intermediaries work with businesses to motivate and encourage them to set up business networks. The linkages between businesses and universities are enhanced by institutes that bring them together and organize meetings.

The national programme Innovation Denmark supports national innovation networks. The aim of these networks is to stimulate research and development and the sharing of technologies in sectors.

Forms of support such as public-private collaboration are used. The development of clusters is measured by collecting relevant statistics. The government does not provide property for clusters.

Demand side policies:

The region does not use its own procurement to promote clusters. Only the regional transport institutions, for which the region bears responsibility, have chosen biodiesel as their main fuel in order to increase the demand for such fuel.

Research and development are supported by national programmes such as Innovation Denmark. But the regional government also contributes funds for this purpose. No tax credits or subsidies are given to businesses or clusters. The tax rates are the following (in 2009):

The value added tax rate is 25%, and the corporation tax rate is also 25%.

Training policies:

There is a training programme for intermediaries to allow businesses to cluster. This programme is based on the methodology of the Australian expert Rodin Genoff. In addition, the University of Southern Denmark has a training programme for regional development that focuses on clustering.

The Competence Platform was set up to serve as a link between educational institutions and businesses to inquire about available training programmes. But in general it is up to the institutions or cluster organizations themselves to communicate this information. There is a sufficient supply of providers of training programmes which are well in line with the wishes of SMEs.

Measures for special promotion of international linkages:

The *Invest in Denmark* policy is aimed at attracting foreign investments. In this policy, the Danish Trade Council cooperates with cluster organizations, large municipalities, the regions and trade organizations. Another section of the Danish Trade Council facilitates businesses that want to invest in other countries.

The public authorities leave the promotion of clusters to the cluster organizations themselves. They have to communicate the advantages of their cluster.

Framework Conditions:

The quality of the conditions that influence the success of clusters and innovation was assessed by the respondents from Central Denmark. Figure 6.2 gives this assessment.

Figure 6.2 Framework Conditions	low		neutral		high
Macroeconomic stability	O	O	O	●	O
Product markets (goods and services)	O	O	O	●	O
Factor markets (labour and financial markets)	O	O	O	●	O
Education systems	O	O	O	●	O
Physical infrastructure	O	O	O	●	O
Institutional infrastructure	O	O	O	●	O
Judicial infrastructure	O	O	O	O	●
Communications infrastructure	O	O	O	O	●
Transport infrastructure	O	O	O	●	O
Corporate governance	O	O	●	O	O

6.3 The Northern Netherlands

The information in this section comes from the questionnaires answered by E. Meijerink (Drenthe), H. Ter Welle and H. Beerink (Groningen), and E. Zijlstra (Fryslân).

Broker Policies:

In the Northern Netherlands, broker policies are pursued by supporting the relationships among businesses. Subsidies are possible for projects in which SMEs

cooperate. Cluster and network organizations are subsidized and facilitated in this way.

There are also subsidies to facilitate cooperation between businesses and educational and research institutions, for example the provincial innovation action programmes (IAD, IAG, Fryslân Fernijt), Northern Innovation Support Facility (NIOF) of the SNN and the collaboration projects of TCNN with SMEs and knowledge institutions. *Pieken in de Delta* supports innovation clusters with their investments and operations.

Forms of support such as public-private cooperation are used. The development of clusters is not measured by collecting relevant statistics.

The Northern Netherlands does not provide accommodations for clusters, although the Province of Drenthe co-finances the Knowledge Campus in Emmen and Assen, in which accommodation is also provided for SMEs, next to a senior secondary education institution.

Demand Side Policies:

The Ministry of Economic Affairs introduced the *Launching customer* approach in 2007, in which the government acts as the first major customer. This is sometimes used in the Northern Netherlands to support clusters, but especially to facilitate innovations and sustainability. The government purchases an innovative product, process or service. This increases the market opportunities for the innovation. Particularly businesses in the Peak sectors can count on additional attention, as was given to Energy Valley.

The Northern Netherlands does not give tax credits to businesses or clusters. The tax rates are the following (in 2009):

The value added tax rate is 6% or 19%, depending on the type of product. The corporation tax rate is 25.5%.

Research and development (R&D) is financially supported by the NIOF schemes, the provincial innovation action programmes, the Promotion of Research and Development Act (*Wet Bevordering Speur- en Ontwikkelingswerk (WBSO*)), *Pieken in de Delta* and Loans for Innovation (*Innovatiekrediet*).

Training Policies:

In The Northern Netherlands there is a sufficient supply of education and training. The government stimulates this by informing SMEs about available training

programmes and checking the extent to which the programmes are well in line with the needs of SMEs.

Measures for special promotion of international linkages:

The Regional Investment Aid Scheme (*InvesteringsPremieRegeling (IPR)*) stimulates investments by companies in support areas of which 50% or more of the turnover comes from outside the Northern Netherlands. For example the Regional Investment Projects (Subsidies) Decree (*Besluit subsidies regionale investeringsprojecten (BSRI)*), by which the economic structure in weak regions is improved by promoting the establishment or expansion of businesses.

The protection of intellectual property is supported by *Pieken in de Delta*. SMEs can receive support for the costs involved in acquiring and validating patents and other intellectual property rights. The rights have to be recorded for each cluster. Where possible, there is also deregulation in relation to licences. Clusters and local advantages are communicated (internationally). This is done by way of websites, branding, publications and promotion.

Framework Conditions:

The quality of the conditions that influence the success of clusters and innovation was assessed by the respondents from the Northern Netherlands. Figure 6.3 gives this assessment.

Figure 6.3 Framework Conditions	low		neutral		high
Macroeconomic stability	O	O	●	O	O
Product markets (goods and services)	O	O	O	●	O
Factor markets (labour and financial markets)	O	O	●	O	O
Education systems	O	O	●	O	O
Physical infrastructure	O	O	●	O	O
Institutional infrastructure	O	O	●	O	O
Judicial infrastructure	O	O	●	O	O
Communications infrastructure	O	O	●	O	O
Transport infrastructure	O	O	O	●	O
Corporate governance	O	O	O	●	O

6.4 Germany

The information in this section comes from the Country Report: Germany (2007) of the Europe INNOVA Cluster Mapping Project and the questionnaire answered by Dr. M. Hirschfeld (Ministry for Science, Economic Affairs and Transport of Schleswig-Holstein).

Broker policies:

The government funds network organizations for cooperation among businesses by way of subsidies. Public-private cooperation is used for the support. The government does not provide property for clusters.

Demand Side Policies:

No demand side policies are used in cluster policy. The tools are, however, used in regional and technology policy. Germany does not use subsidies or public procurement for clusters.

The value added tax rate is 7% or 19%, depending on the type of product. The combined corporation tax rate (central and sub-central government) is 30.18%.

Training policies:

No training policies are used in cluster policy.

Measures for special promotion of international linkages:

According to the respondent, these tools are not part of the cluster policy. The *Kompetenznetze*, however, provide marketing support for the networks and their results.

Framework Conditions:

The quality of the conditions that influence the success of clusters and innovation was assessed by the respondent from Schleswig-Holstein. Figure 6.4 gives this assessment.

Figure 6.4 Framework conditions	low		neutral		high
Macroeconomic stability	O	●	O	O	O
Product markets (goods and services)	O	●	O	O	O
Factor markets (labour and financial markets)	O	●	O	O	O
Education systems	O	●	O	O	O
Physical infrastructure	O	●	O	O	O
Institutional infrastructure	O	O	●	O	O
Judicial infrastructure	O	O	O	O	●
Communications infrastructure	O	O	O	●	O
Transport infrastructure	O	●	O	O	O
Corporate governance	O	O	O	●	O

6.5 Scotland

The information in this section comes from the Country Report: United Kingdom (2007) of the Europe INNOVA Cluster Mapping Project and the questionnaire answered by J. Davis (Scottish Enterprise).

Broker Policies:

Scottish Enterprise organizes network events for businesses and universities. Public-private cooperation is used for cooperation in research and development. Scottish Enterprise facilitates clusters by providing property and facilitating science parks.

Demand Side Policies:

No public procurement is used in Scotland to promote clusters. Direct subsidies are, however, given to SMEs for innovations and market development. There are tax credits for businesses that make expenditures on research and development. These expenditures are partially tax deductible for such businesses.

The value added tax rate is 5% or 17.5%, depending on the type of product. The VAT was reduced temporarily to 15% from the end of 2009 to the end of 2010. The corporation tax rate is 28%.

Training Policies:

There is a sufficient supply of education and training in Scotland. The government

stimulates this by informing SMEs about available training programmes through the skills councils of the industrial sectors.

Measures for special promotion of international linkages:

Scottish Enterprise has a specialized team to strengthen international connections. It also arranges representatives in trade missions and conferences.

Framework Conditions:

The quality of the conditions that influence the success of clusters and innovation was assessed by the respondent from Scottish Enterprise. Figure 6.5 gives this assessment.

Figure 6.5 Framework conditions	low		neutral		high
Macroeconomic stability	O	O	O	●	O
Product markets (goods and services)	O	O	O	●	O
Factor markets (labour and financial markets)	O	O	O	●	O
Education systems	O	O	O	O	●
Physical infrastructure	O	O	O	●	O
Institutional infrastructure	O	O	O	O	●
Judicial infrastructure	O	O	O	O	●
Communications infrastructure	O	O	O	●	O
Transport infrastructure	O	O	O	●	O
Corporate governance	O	O	O	O	●

6.6 Conclusion

All regions use broker policies to support cooperation in clusters. There are different forms of cooperation: between businesses with one another; between businesses and research institutes; and public-private cooperation. In Scotland, clusters are facilitated by providing them with property. This is not done in other regions.

Research and development are financially supported by all. Several programmes run simultaneously in the regions in order to fund the different types of research and development.

Public procurement is hardly used to support clusters. The Central Denmark region does mention an example. In most cases, public procurement is unknown as cluster policy and is also made difficult by European tendering rules.

In Norway, researchers are trained to adjust themselves to the wishes and needs of businesses. In Denmark there is a training programme for intermediaries to allow businesses to cooperate. The Competence Platform in Central Denmark Region informs educational institutions and businesses of the available training programmes.

In Norway, the Netherlands and Scotland, the government also promotes clusters. In Denmark and Germany, this is left to the cluster organizations themselves. In Stavanger (Rogaland), new businesses and employees receive a manual on establishment and settling in the region.

If one compares the framework conditions in the different regions, it is striking that only Schleswig-Holstein ascribes itself a poor quality of some conditions. The other respondents do not see any adverse conditions in their regions that would prevent a cluster from developing. Scotland ascribes itself the highest quality, followed by Central Denmark and the Norwegian regions. The Northern Netherlands is the most neutral about itself.

C7 Conclusions

The object of this study was to map out government policy relating to the stimulation of industry and clustering. For this purpose, a survey was made of the structure of the public authorities and other institutions concerned, and I examined the types of policy pursued in the regions.

The approach to clusters and why public authorities take this approach was described in a theoretical framework. The definition of clusters, as given by Michael Porter, is vague and is interpreted differently by researchers because it lacks a geographical and economic delineation.

The programmes *Pieken in de Delta* and *Koers Noord* use the term cluster but do not define it. The projects are nevertheless supposed to make a contribution to a specific region, which results in a geographical delineation. The programmes therefore use the term cluster correctly. The Innovation Platform also uses the term cluster. There is no geographical delineation in the Key Areas, even though the term *area* implies that the phenomenon can be indicated on a map. A combination of knowledge and industry is required for the Key Areas. Cooperation takes place in a network, and not per se in a cluster. As cooperation is required for Key Areas, and geographical proximity is not, a network approach rather than a cluster approach is appropriate.

Clusters are attractive for public authorities because they enhance the productivity, innovative capacity, competitive position, profitability and growth of employment of the businesses, of their regions and ultimately of the national economy. This idea can be found in the regions. Almost all public authorities studied set the goal for themselves to increase innovative capacity by means of cluster policy.

There does not have to be a connection between businesses and technological institutes in all clusters of the cluster programmes. It is a requirement in many programmes, in some programmes it is an option.

It is striking that the main actor in a country cannot simply be indicated. There are several actors on a regional as well as national scale that implement cluster policy and share responsibilities. It is also striking that several similar programmes are implemented at the same time.

Most clusters form without help from the public authorities, and sometimes even in spite of help from the public authorities. Porter and many other researchers state that public authorities should refrain from creating clusters themselves. Porter does, however, see a role for public authorities in strengthening and supporting developing clusters. This can be done by recognizing a cluster and then removing obstacles and inefficiencies and improving labour, infrastructure and rules.

These proposals are attractive to implement, but there is no good reason to link them exclusively to the cluster concept. Businesses outside a cluster would also like to see barriers, rules and poor facilities tackled. If the policy is aimed only at a limited number of clusters, one might presume that the public authorities are able to describe clusters and their potential accurately.

That is why the researchers Desrochers and Sautet (2004: 241) reject any help for clusters from the public authorities: “There is no role for public authorities in cluster development”. With that, they follow the ideas of Joseph Schumpeter and Israel Kirzer, two exponents of the Austrian School, who state that regulation stifles entrepreneurship (Wolf, 1990). It intervenes in the selection process of the free market: good companies do not need stimulation. While the motive for public authority intervention lies in market failure, there is no reason to assume that public authority failure occurs less frequently.

The selection of the clusters in the Northern Netherlands is done mainly by the national government. The Ministry of Economic Affairs and the Innovation Platform choose the Peaks and Key Areas, respectively, for example on the basis of interviews with experts and stakeholders. There is room here for stakeholders to have their own regions and sectors selected and supported, or to satisfy their political following.

A difference between the two programmes is the top-down selection process of *Pieken in de Delta* and the bottom-up selection process of the Key Areas.

Koers Noord mainly follows national policy instead of being guided by its own problem analysis and ambitions.

In the Innovative Foresight Planning for Business Development project, clusters were also chosen on the basis of interviews with experts. Another analysis of the clusters will follow, for the purpose of learning what kind of cluster is concerned.

Foresight Planning is a systematically initiated process, in which an attempt is made to fathom the future of science, technology, the economy and the community for the purpose of indentifying emerging technologies which will presumably provide the greatest economic and social benefits. The sectors with comparative advantages are identified. This seems like a policy to support successes: picking winners. The clusters selected must apply high-level knowledge and technology and be focused on innovation. Sautet (2002) states that it is impossible to predict absolutely correctly which activities could cluster successfully. Businesses make the strategic choice whether or not to contribute to a cluster, aimed at making profits. Clustering should be a bottom-up process, driven by strong leaders from the private sector. The government can make this possible, but not by focusing on a few sectors, businesses or entrepreneurs. This should be left to the market. Things are made possible by creating the right conditions for all.

The international partners in the IFP project select best practices of public authority policy. In doing so, the partners can set examples for and learn from one another. They can adopt best practices (partly) from one another from a policy toolbox: a structured compilation of documents that systematically facilitate the methodology of IFP for businesses and public authorities. The regions themselves have room to decide what policy they do and do not want to adopt from other regions. The European Commission encourages the use of best practices. There is, however, too little attention for leaning *bad* practices. Because if regions have too much trust in best practices from other regions, they undermine their own possible competitive position, which is based on unique, regional characteristics. Examples of success cannot be copied just like that. Clusters are not manipulable and manageable enough for this. A competitive advantage is achieved precisely by making a difference. Hospers et al. (2008: 14) formulate it thus: “After all, competition is not about copying, but about making a difference”.

At the end of the report, the quality of the research and the possibility to generalize it should be described. Too few regions were studied in the project to be able to say that the study is representative of all similar regions.

The quality and quantity of the response to the surveys were not constant. There were enough responses from some regions, and only one respondent in other

regions. It was noted that not all forms had been filled in completely. The questions may have been too difficult to answer, and some terms may not have been known. It is also possible that the partners did not really appreciate sharing their own policy.

A possible distortion in participating observation is the biased viewpoint effect (Segers, 1999). This means that the observer perceives the research situation from the position he or she has taken. The information will not be perceived if it is not accessible to that position. In principle, the observations are not repeatable, and one can sometimes doubt whether the observation by another researcher will produce the same results.

In subsequent research for this project, I can recommend studying the specific policy used in the selected clusters/sectors. This specific policy may deviate from the general policy in the region.

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Appendix: Survey of public authorities

Survey of public policy tools in the clusters

* = more than one answer possible

Region:

Rogaland	O
Agder Region	O
IZET, Germany	O
Northern Netherlands	O
Region Central Denmark	O
Scottish Enterprise	O

Ministry/ministries primarily responsible for setting the cluster policies*:

O Finance / Economy	O Science / Research	O Trade / Industry	O Interior	O Other: _____

Key agency/agencies responsible for implementing the cluster policies (e.g. development agencies, councils, offices)*:

_____

Are the clusters part of a **national** policy programme? O Yes O No

Are the clusters part of a **regional** policy programme? O Yes O No

Are the clusters in a certain **stage of the lifecycle** targeted*? See the appendix on page 6 for a brief description of the stages.

O Embryonic	O Established	O Mature	O Declining

What is/are the **target group**(**s**) of the cluster policies (e.g. research institutions, SMEs, multinationals)*?

_____

_____

Broker policies

1) How does the public authority support the establishment of linkages between firms? _____

_____

_____

_____

2) What instruments are used to strengthen the science-industry interaction, to promote the linkages between universities and local firms? _____

_____

_____

3) Are public-private partnerships being used to support knowledge-enhancing organizational linkages? O Yes O No

4) Are there public efforts to collect and organize relevant statistics, which are necessary for measuring and understanding cluster developments? O Yes O No

5) Does the public authority facilitate clustering through …

-the provision of real estate? O Yes O No

-through the expansion of attractive housing? O Yes O No

-or through other local facilities, such as _____

_____

6) Are there other broker policy measures concerned with the framework for dialogue and cooperation between firms, public sector and NGOs?

_____

_____

_____

Training policies

7) Are there policies aimed at upgrading the skills and competencies, which are essential for effective clustering of SMEs? _____

_____

_____

8) Does the public authority provide information to SMEs about existing vocational training programmes, and through which channels? _____

_____

_____

9) Do the educational institutes provide programmes that are adapted to the SMEs?

_____

_____

10) Is there competition and pluralism in terms of training providers? O Yes O No

11) Are there other training policies?_____

_____

_____

Market policies

12) How is public procurement being used for developing and strengthening the cluster? _____

_____

13) If the public authority gives direct subsidies, to whom and why do they give it?

_____

_____

14) What tax incentives does the public authority give, to strengthen clusters?

_____

_____

15) How does the public authority financially contribute to R&D?

_____

_____

16) Are the clusters relatively open or relatively closed considering competition and renewal? _____

_____

17) Are there consistent rules to protect IPR (intellectual property rights)?

_____

_____

18) How are (inward) foreign direct investments attracted?

_____

_____

19) How are (outward) foreign direct investments encouraged, or other measures to develop an international network? _____

_____

_____

20) Is there diffusion of information about the locational advantages and partnerships that can be offered by the existing clusters, and through which channels?

_____

_____

21) Are there other policies, aimed at stimulating the market?

_____

_____

22) Are there other policies, aimed at (international) promotion of the cluster?

_____

_____

Broader framework conditions

25) Would you scale the quality of the following conditions in the region?

	low		neutral		high
- Macroeconomic stability	O	O	O	O	O
- Product markets (goods and services)	O	O	O	O	O
- Factor markets (labour and financial markets)	O	O	O	O	O
- Education systems	O	O	O	O	O
- Physical infrastructure	O	O	O	O	O
- Institutional infrastructure	O	O	O	O	O
- Judicial infrastructure	O	O	O	O	O
- Communications infrastructure	O	O	O	O	O
- Transport infrastructure	O	O	O	O	O
- Corporate governance	O	O	O	O	O

What is the **importance** of the types of policy for clusters?

	unimportant			very important
- broker policies	O	O	O	O
- training policies	O	O	O	O
- policies stimulating the market	O	O	O	O
- promotion of international linkages	O	O	O	O
- broader framework conditions	O	O	O	O

Could you name some **examples** of the policies that you think are most important?

_____

_____

Cultural dimensions of the organization

In order to select and copy 'best practices' from one region/organization to another, it is helpful to draw up possible differences in the culture of the organization.

Could you please scale the culture of the organization (e.g. the ministry or key agency), responsible for implementing cluster programmes/policies? See the appendix on page 6 for an explanation of the dimensions. Could you fill in the name of the organization you are describing:

_____

1	Process-oriented	O	O	O	O	Result-oriented
2	Employee-oriented	O	O	O	O	Job-oriented
3	Parochial	O	O	O	O	Professional
4	Open system	O	O	O	O	Closed system
5	Loose control	O	O	O	O	Tight control
6	Normative	O	O	O	O	Pragmatic

Thank you for answering the questions.

Form filled in by: _____

Organization: _____

Date: _____ 2009

Appendix

Stages of the lifecycle:

Embryonic: those at the early stages of growth
Established: those perceived as having room for further growth
Mature: those that are stable or will find further growth difficult
Declining: those that have reached their peak and are falling or declining

Cultural dimensions:

1. A Process-Oriented organization is one where each day is just as the one before, risks are avoided and not much effort is put into the job. Result- Oriented on the other hand is where each day is new with great challenges, maximum effort is put in and people are comfortable with working in a challenging, changing environment.
2. An Employee-Oriented organization is one which cares for its employees and is concerned about their work-life balance and personal life whereas the Job-Oriented organization is one which cares only for getting the job done and not about the happiness of its employees.
3. The Parochial dimension is where employees possess a personal culture matching that of the organization. This culture is predominant in organizations which retain employees for long terms as opposed to short term contractor types. The Professional dimension is usually held by contractors whose personal cultures do not match any organization's culture.
4. The Open and Closed System dimensions relates to the ease with which new members fit in, the availability of information and the ease of its accessibility. Open systems, to an extent, have freedom of information, have open employees and new members can fit in painlessly, while Closed Systems usually have secretive management, information is hard to obtain and new members are slowly inducted.
5. A Loosely Controlled organization is seen as a relaxed environment where meeting times and budgets are loosely kept and management is easy-going. A Tightly Controlled organization is seen to be a strict environment with stringent rules, tight meeting times and budgets and harsh, inflexible rules.
6. A Normative environment views following procedures as more important than producing results, whereas in a Pragmatic environment producing results is more important than following processes and procedures.