

Selection of Competitiveness Initiatives

Cluster identification – **Technical note**

Case: Heyland

In September 2009 the European Commission hosted a conference on clusters in Bruxelles. The focus of the conference was how clusters could contribute to innovation, export and economic growth.

Peter Petersen, the Deputy Director of the Ministry of Business Affairs in Heyland attended the conference. Peter had a special interest in knowing how clusters could contribute to growing the economy in his own country, as Heyland was experiencing low growth rates, a declining export sector and increasing unemployment.

At the conference Peter met Hans Hansen who was a business consultant working with regional development in one of the regions in Heyland. Hans was attending the conference as he was interested in knowing how companies could benefit from entering into a cluster initiative, how he could facilitate cooperation between companies in a cluster and which clusters he should start working with when he returned from the conference.

Peter and Hans were sitting next to each other at the conference dinner and they started talking about Heyland. Inspired by the theme of the conference they both thought clusters could help solve some of the strategic challenges Heyland was facing. However, they were not sure how and where to start working with clusters in the Heyland.

Information about Heyland

Short information about the country

Heyland is a small mountainous country in Europe with a population of 2.5 million people. The country has many islands and most of the land is farmed or forested. There are 7,300 kilometers of coastline and three neighboring countries (see map of Heyland **exhibit 1**).

Heyland is known for its wooden industry, strong food associations, a strong information technology sector, mentioned as the most “wired” and advanced country in Europe, as well as winter tourism.

Heyland is ranked 14th in the world in terms of GDP (PPP) per capita. The country has a labor force of 1.5 million people. The unemployment rate has increased during the last years, and is currently at 8.4% (2009).

Politics in Heyland takes place in a framework of a parliamentary democracy in which the prime minister is the head of government. The political culture is very stable and over the past 8 years, power in government had been held between two to three parties. The current government had pursued sound fiscal policies, resulting in balanced budgets and low public debt.

Heyland is member of the European Union and adopted the euro in 2004.

Despite the high GDP pr. Capita there is a relative big difference in GDP between different regions in Heyland. Currently, over half of Heyland's GDP is created in the capital. Winter tourism and agricultural production in more remote areas ensures relative high employment rate and income in these areas. But the sectors are under pressure due to global warming and increased competition from low-cost countries.

Heyland has a well-educated workforce, a renowned technical university and a business-friendly fiscal climate. All factors which are considered significant to attract foreign direct investment.

Industry

Food, wood and electronic industries were among the most important branches of Heylands industry. In 2007, the food industry employed more than 180.000 people, 12% of the entire country's workforce. Employment in the industry had decreased over the past 5 years down from 210.000 in 2002.

Over the past 10 years new industries were beginning to emerge. As a country dependent upon energy and energy production, many local and foreign companies had been investing in renewable energy sources. The importance of wind power had been increasing steadily and currently the total amount of energy production from wind was nearly 60 MW while at the same time roughly 399 MW worth of projects were currently being developed and more than 2800 MW worth of projects were being proposed in the Lake HeyDay area and the coastal areas of Heysa.

Trade

As a small open economy, Heyland was largely dependent on trade with the outside world and one of the most competitive economies in the world according to World Economic Forum, IMD and The Economist in 2009. Main exports were: machinery and equipment, wood and paper, food products, and it services. Export was based on both labor-intensive and knowledge-intensive production and services.

Proximity to other European Markets and a high-skill labor force had been the major comparative advantages for Heyland over the past 10 years.

Strategic challenges

In 2007 a large current account deficit, rising inflation, falling demand for Heyland's exports and declining employment put pressure on the economy, highlighting the need for generating new growth in export-generating industries and for developing the next generation of industries.

The key challenges for Heyland were to increase innovation, productivity, employment and competitiveness and to transform old traditional industries into new high-value added business opportunities, which can ensure the future prosperity and growth of Heyland.

Information about the two protagonists

Peter Petersen:

Peter is the Deputy Director in the Ministry of Business Affairs in Heyland. Peter studied Michael Porter at university back in the 90s. and understood that clusters could be used as a tool for promoting innovation, exports and growth. But he has no practical experience with clusters. Peter holds a PhD in Economics from a top-notch university in the US and has a strong interest in providing fact-based recommendations to policy makers. Peter is interested in economic development for all of Heyland.

Hans Hansen:

Hans is a business consultant at the regional development office in one of the regions in Heyland. He graduated from business school 15 years ago and has been working in a company as a marketing manager for 10 years. In his current job he works with local companies. Hans visits two companies in his network every week and arranges different networking activities for the local companies. Hans is convinced that the local companies has a strong potential for developing their businesses further, and is eager to help them.

Problem

Both Peter and Hans agreed that clusters were the right way to start solving some of the strategic challenges in the country. However they did not know which clusters they had in Heyland and which were the specific strength positions of their industries. In the airport when going back from the conference they meet an analysis from the Danish Cluster Academy, REG X, who gives them a technical note on cluster identification, where she has selected different methods. Hans and Peter read through the material (appendix 1) and considers how to start working with clusters in Heyland.

How should Peter and Hans start working with clusters? Which method should they use for identifying clusters and strength positions in Heyland?

Appendix 1

Cluster identification

Content:

- Introduction
- Mapping priority industries in Scotland
- Mapping Statistical clusters in Europe: The European Cluster Observatory
- Mapping the environmental technology cluster in Denmark
- Identifying emerging clusters in the region of southern Denmark
- Mapping business areas within the food sector in the Triangle Region

1. Introduction

Mapping of clusters can happen at different levels and through use of different methods. The choice of method depends on the object of analysis for the stakeholder who is interested in knowing where clusters are located. The objective of a policy maker is to get an overview of the strong clusters in the economy to identify which clusters to invest in whereas the objective of a cluster manager is to get a deeper understanding of the companies and the business potential in a given cluster. A key challenge for policy makers, cluster managers and other cluster stakeholders is therefore to identify the right unit of analysis, when working with clusters.

This technical note will present different methodologies that can be used to identify clusters. Each of the examples we present starts by (i) identifying who is the stakeholder (ii) what is the background for the analysis (iii) what is the objective of the analysis (iv) short description of the chosen methodology and finally (v) what did the analysis show. After the different methodologies we introduce a practical exercise that will be used during class.

2. Mapping priority industries in Scotland

Stakeholder

- Scottish Enterprise¹ and Scottish Government

Background

Scotland has a long history of cluster interventions. Scottish Enterprise (SE) was an early adopter of clusters as a policy tool, first undertaking major analysis in this area in the early 1990s, and has adapted and modified this strategy over the intervening years to reflect changing market conditions and industrial strengths both at home and worldwide.

In 2005, SE undertook a review of clusters and industries in Scotland. The aim was to prioritise the key sectors that would be important for the growth of the Scottish economy.

In this it assessed not only the current strengths but also the potential future impact and growth.

Object of analysis

- To identify the Priority Sectors for public sector support and investment within the Scottish economy.

Methodology

The main criteria for prioritization were based on five key questions:

- Current importance – does the industry make a significant contribution to the Scottish Economy?
- Future importance – are there significant opportunities for Scotland?
- Capabilities and industry strength – are there strong industry players, and/or major research capabilities that can be built on within the sector?
- Key assets – are there distinctive competitive assets within Scotland that can be exploited within this sector?
- Added Value – can public sector intervention (SE/Scottish Government) make a difference and are industries willing to engage?

To undertake this study a range of assessments were combined, using historical retrospective data, future projections, qualitative insights and bottom up analysis. These are outlined below:

¹Scottish Enterprise is the largest economic development agency in Scotland

1. Current importance.

This analysis assessed the current contribution of the sector to overall economic performance in Scotland. This was drawn from national statistics on turnover and value added. Where possible the sector was readily defined by Standard Industrial Classification (SIC) codes and these were used to assess the performance of the sector. See **Exhibit 2**.

2. Future importance.

One danger with merely looking at sectors where Scotland was already strong, would be that this may lead to investment in a declining industry, and that opportunities in emerging growth industries would be missed. As such future projected growth across the sectors was also assessed using foresight reports and analysis. The focus was, therefore, drawn to those sectors, which were projected to out-perform the general Scottish economy. See **Exhibit 3**.

3. Capabilities and Industry strength.

Clusters must be built on strength, and so this element identified any key strength within the sector, including large industry players and major research capabilities. This also ensured that the opportunities identified in the question above could be exploited in Scotland.

4. Key assets.

Other strengths and large investments already in place that could be capitalized upon including major assets, physical infrastructure, which could be used to capture and catalyze innovation in the region. Examples could include research and test centers, (for example the European Marine Energy test Centre – EMEC - is located in Scotland) or natural assets.

5. Added Value

Even with a strongly performing sector with growth potential, a further and important question was whether public sector intervention could make a difference, and act as a catalytic lever for improved performance. Included in this assessment (which was largely qualitative and involved engaging with stakeholders and partners) was whether the industry base was receptive to working in partnership with SE on building the cluster.

As part of this assessment SE also reviewed the added value of SE interventions to date.

Findings from the Mapping

The review prioritized six areas, which were categorized as Priority Industries. Although SE continued to work with companies across a whole range of sectors, these were the focus for resources (people and money), and had dedicated teams working with industry and other stakeholders to build and deliver strategies for growth.

Despite a change of government at the Scottish level and the development of a new Government Economic Strategy for Scotland, these six areas of priority (with some marginal changes in name) continue to be the Key Industries identified as those with high growth capacity and the capacity to boost productivity. These are:

- Creative Industries (initially Digital Media)
- Energy (including renewable)
- Financial and Business Services
- Food and Drink
- Life Sciences
- Tourism

3. Mapping statistical clusters in Europe: The European Cluster Observatory

Stakeholder

- EU Commission

Background:

In 2006 the EU Commission established the European Cluster Observatory aimed at providing a mapping of clusters in Europe and to provide European policy makers with a tool for benchmarking clusters across Europe. Since 2006 the European Cluster Observatory has developed further currently provides free access to mainly employment data through the European Cluster Mapping Database as well as information about cluster organizations. The European Cluster Observatory will enter a third phase in 2011, where among others mapping of emerging cluster industries will be included in the database.

Objective of analysis:

- Provide regional and national governments, international organisations and cluster organisations with information about the location and specialization of European Clusters.

Methodology²:

The Cluster Mapping database is a diagnostic tool used to map and benchmark statistical industry clusters across 404 regions predominantly 250 NUTS-2 regions (EU statistically defined regions) in Europe. The mapping of clusters is based on regional agglomeration of employment in co-located industries across Europe

The database builds on Michael. E. Porters definition of cluster categories, which are clusters defined by the agglomeration of employment in co-located industries. Cluster categories are based on the US SIC industrial classification system that has been translated into the European NACE 2.0 industrial classification system. This definition gives rise to a total of 41 European sector based cluster categories ranging from Agricultural Products to Textiles.

Data is collected, analyzed and categorized by the research institution, Centre for Strategy and Competitiveness, at Stockholm School of Economics in Sweden.

The European Cluster Mapping Observatory allows for a mapping of the top-100 strongest clusters based on a 3-star-methodology. The star-methodology is based on three different measures for employment – cluster size, cluster specialization, compared to other regions, and cluster employment as a share of a regions' overall employment. Each regional cluster is assigned 0,1,2 or 3 stars depending on how many of the employment criteria are met³. Clusters with more than three stars are among the top-100 clusters in Europe.

Findings: (How the European Cluster Observatory can be used)

- Applying the star-methodology in the European Cluster Observatory to a **country like Austria** will show the following results:
 - 87 clusters in Austria have received at least one star
 - Clusters in Upper Austria – which is one of the eight regions in Austria – are i.e.
 - 2-star clusters
 - (1) Automotive, (2) Building fixtures, equipment and services, (3) Heavy machinery, (4) Metal Manufacturing, (5) Production technology, (6) Sporting, recreational and children goods
 - 1-star clusters:
 - (1) Business services, (2) Construction, (3) Furniture, (4) Lighting and electrical equipment, (5) Paper products, (6) Plastics and (7) Processed food
 - Austria have four clusters among the top-100 strong clusters in Europe:
 - Tourism and hospitality (Region of Tirol)

² The description of the methodology is based on www.clusterobservatory.eu and the "The Use of Data and Analysis as a tool for Cluster Policy" – Green Paper on International best practices and perspectives prepared for the European Commission, November 2008, E. Wise, L. Langkilde and M. D. Bertelsen, FORA

³ Strong clusters in Innovative Regions, Center for Strategy and Competitiveness, Stockholm School of Economics, May 2011

- Financial Services, Telecom and Transportation and Logistics (all in the Vienna region)
- Upper Austria does not have any clusters among the top-100 clusters

4. Mapping the environmental technology cluster in Denmark

Stakeholder

- Danish Ministry of the Environment

Background

In 2006 the Danish government launched an action plan for environmentally efficient technologies and solutions. The aim of the action plan was to contribute to solving a series of important environmental problems – nationally as well as globally - through technological development and innovation while at the same time creating growth in Danish companies.

The Environmental Protection Agency under the Danish Ministry of the Environment was asked to provide input to the action plan. The agency initiated an analysis aimed at mapping the Danish environmental technology cluster and at identifying Danish strongholds in environmental-efficient technologies. FORA carried out the analysis – a research unit under the Danish Ministry of Economics and Business Affairs.

Object of Analysis

- To identify environmental-efficient technology areas where Denmark has a potential for developing business strongholds

Methodology

In 2006 environmental technology was a relatively new business area in Denmark. Thus there was no official definition of environmental technology companies, no cluster definition nor any statistical definition or records of Danish environmental companies.

To identify the companies within the Danish environmental cluster FORA chose a step-wise bottom up-approach to obtain a fact-based foundation for studying the Danish environmental technology cluster.

The bottom-up approach for mapping the cluster consisted of three steps:

Step 1: How do you define an environmental technology company?

To define an environmental technology company and the characteristics and specialization of the environmental technology cluster, FORA initiated a discussion with a group of Danish companies who were known to have an environmental technology profile. Together with these companies a common definition of environmental technology companies was defined. See **Exhibit 4**.

Step 2: Mapping the Danish Environmental technology cluster

To get an understanding of the size of the cluster and the companies in the cluster the team from FORA applied an electronic snowball method, which is a method that can be used to identify hidden populations. The snowball contained two questions:

- Is your company an environmental technology company (Yes/No)?
- Can you identify other environmental technology companies in Denmark? If so, please list these companies.

To set the snowball rolling, the questionnaire was sent to 10 known environmental technology companies. Over a period of 4-6 weeks the snowball kept rolling. By the end of the period 420 companies had defined themselves as environmental technology companies.

Step 3: Identifying the specialization of the companies in the cluster and important framework conditions for the cluster companies.

Having obtained the population of the environmental technology companies in the cluster the next step in the analysis focused on getting an understanding of (1) the specialization of the cluster and (2) the most important business framework conditions for the companies in the cluster.

To obtain this information an electronic questionnaire was developed and forwarded to the 420 companies. In the questionnaire the companies were asked to (a) identify their specialization among a list of 8 business areas (b) to select the most important business framework conditions for the companies to grow their business out of a list of six pre-defined cluster specific framework conditions.

Findings from the mapping

The mapping of the environmental technology cluster identified 420 companies with a total of 60.000 employees along with 46 knowledge institutions focusing on environmental efficient technologies. In addition the mapping documented that the environmental technology cluster is one of Denmark's largest clusters.

Five areas of specialization within the cluster were identified as potential strongholds in the analysis. From these 3 were selected by the agency for further analysis (in bold):

1. Wind energy from mega turbines
2. Water purification

3. Industrial biotechnology
4. Bio fuels
5. Fuel cells

The companies in the analysis of the two most important framework conditions for the cluster companies identified government regulation and the possibilities of testing new technologies.

In 2009 the Ministry for the Environment decided to publish regularly statistics on Danish environmental technology companies' production, export and employment. To carry out this work, the Ministry asked FORA to apply the bottom-up methodology and work together with the statistical office in Denmark to develop the framework for the first statistical report as well as provide recommendations on how to develop future statistical reports on environmental technology companies.

5. Identifying emerging clusters in the Region of Southern Denmark

Stakeholder

- The Region of Southern Denmark

Background

The Region of Southern Denmark has since its establishment in 2007 taken a strong interest in using clusters as a tool for growing the regional economy. In terms of employment the region has a strong position within the transport and logistics cluster. This fact is also given in the European Cluster Observatory database, when examining strong clusters in Denmark.

However, the Region of Southern Denmark was interested in knowing what the next generation of clusters would be. The so-called emerging clusters. To identify regional emerging clusters in the Region of Southern Denmark a tender was made. A consortium consisting of the University of Southern Denmark, Oxford Research, Business Link Southern Denmark and *Innovations fabrikken* were given the assignment.

Object of analysis

- To identify emerging clusters in the Region of Southern Denmark.

Methodology

Emerging clusters are entities that are seldom formalized and do not figure in traditional cluster- or industry statistics. As a consequence a bottom-up mapping technique for identifying emerging clusters in the region was applied.

The methodology consisted of three steps; (1) mapping of all cluster- and network initiatives in the region, (2) scanning the initiatives for identifying emerging clusters, and (3) a screening procedure for identifying the business potential of the emerging clusters (**Exhibit 5**).

Step 1: Mapping stage

As a first step, the researchers listed all cluster- and network initiatives in the region. The list of initiatives was drawn from different sources, including local and regional business service centers, local industry associations and network organizations. 87 cluster- and network initiatives were identified.

The second step focused on sorting the 87 initiatives according to their development stage. To make this sorting, a set of assessment criteria was applied (**Exhibit 6**).

Data for the assessment criteria were gathered first through desk-research and second by use of direct e-mails and telephone calls to persons involved in the initiatives. This enabled the researchers to group the cluster initiatives under four broad cluster categories:

- *Mature clusters*: Clusters that have documented a growth potential and contributed to significant development in the region in terms of jobs and turnover
- *Emerging clusters*: Clusters with a critical mass and strong coherence among actors in the cluster
- *Potential clusters*: Clusters with a local base and an economic potential
- *Others*: Cluster initiatives not falling under any of the above groupings⁴

The sorting of the 87 initiatives resulted in a list of 6 initiatives in the mature clusters category, 28 initiatives in the emerging clusters category, 27 initiatives in the potential cluster category and 26 cluster initiatives categorized as others.

The 28 initiatives categorized in the emerging clusters category were carried on to the scanning phase for deeper scrutiny.

Step 2: Scanning stage

The aim of the scanning phase was to obtain a deeper understanding of the emerging cluster initiatives and to select emerging clusters for the screening stage (step 3).

A set of nine new assessment criteria was set up to evaluate the most promising emerging cluster initiatives (**Exhibit 7**). Based on these assessment criteria, the researchers made a standardized aggregate index that allowed for a ranking of the 28 emerging cluster initiatives. Data was collected through telephone interviews.

During this process, 8 of the 28 emerging cluster initiatives were excluded from the list. The remaining 20 emerging cluster categories were grouped into 10 different cluster categories according to the sector they belong to (food, energy etc). For instance 3 of the 20 emerging cluster initiatives were working with the exploitation of biomass. These initiatives were grouped into the cluster category "Energy". And five initiatives related to food were grouped into the cluster category "Food".

To identify the emerging cluster in the Region of Southern Denmark with the highest business potential the 10 emerging clusters were taken onwards to the screening stage (step 3).

⁴This also include initiatives that are indirectly connected to one or more of the other clusters and/or which have a geographic hub outside of the region or a broader perspective such as "entrepreneurship in general"

Step 3: Screening stage

In the final step of the analysis, the 10 emerging clusters underwent an in-depth analysis to identify the business potential of the clusters. The analysis was carried out through desk-research and qualitative interviews with stakeholders in each of the clusters⁵. The collected information was then used to list the 10 clusters into three groups according to the qualitative evaluation of their business potential: High potential, moderate potential and low potential.

Findings from the analysis

The objective of the analysis was to identify emerging cluster initiatives in the Region of Southern Denmark. The mapping resulted in a grouping of the 28 emerging cluster initiatives under 10 generic cluster categories: Energy, Food, Steel, Plastic, Tourism, Environment, Health care, Transportation and Logistics, Safety and Security, and Experience and Adventure. These were then listed according to their business potential. The region of Southern Denmark was presented with a thorough report of the methodology behind the analysis, as well as documentation of the qualitative methods and results used throughout the analysis. It was left to the Region of Southern Denmark to decide if – and how - they wanted to support the further development of the regions next generation of clusters.

In 2009, Health care and Energy were selected as priority areas in the Regions development strategy and considerable financial support have been given to develop these two areas. Energy and Health Care continues to be in focus in the Region of Southern Denmark's 2020 Development Strategy.

6. Mapping business areas within the food sector in the Triangle Region

Stakeholder:

- Triangle Region Denmark⁶

Background

In 2006 the Triangle Region Denmark initiated a project aimed at strengthening the competitiveness of the companies in the regions' food cluster.

Traditionally the regions food cluster had been in a strong and growing position, but continued growth of the cluster was threatened by low level of innovation in the companies and jobs moving abroad.

⁵Different qualitative methods were applied in the screening process, including a snow-ball method, semi structured interviews and focus group interviews.

⁶The Triangle Region Denmark is a sub-regional authority in the Region of Southern Denmark. It is an association consisting of 6 municipalities (Billund, Fredericia, Kolding, Middelfart, Vejle and Vejen). Main tasks include promoting collaboration among the municipalities, improving framework conditions and initiating new projects in fields like business development, education, transportation, planning and culture.

An analysis by the Triangle Region in 2005 had documented that a key challenge for the companies in the food cluster was their ability to innovate.

As a consequence the Triangle Region Denmark initiated a cluster initiative aimed at promoting the level of innovation among the companies in the cluster by focusing on developing a new business area for the companies in the cluster. Competitiveness, a Spanish consultancy company, was hired as consultants to work alongside the staff from the Triangle Region on the cluster initiative. The duration of the project was 18 months.

Object of Analysis

- To identify new business opportunities for companies in the regions food cluster

Methodology

Traditional cluster statistics had documented that there was a strong concentration of employment within the food industry in the Triangle Region. But the cluster statistics did not offer the possibility to map the specific value chain for companies in the food cluster in the region⁷. Nor did the statistics reveal information about the companies (specialization, turnover, employees etc.), or which companies to work with for developing new business opportunities for the companies in the cluster.

To identify the specific strongholds in the regions' food cluster and consequently facilitate the development of a new business concept, Competitiveness applied a 3-step procedure:

Step 1: Cluster screening: Getting to know the companies in the cluster, their specialization, challenges and opportunities

1. Identify actors (companies, knowledge institutions, suppliers, buyers and supporting institutions) in the regions food cluster through existing networks, desk-research, yellow pages, regional and municipal authorities, business councils etc.
2. One-to-one meetings with key companies and cluster stakeholders to obtain information about the companies in the cluster, the industry, challenges and opportunities, and the specialization of the cluster as well as related clusters
3. Map the value chain of the cluster based on the information collected in 1 + 2. See **Exhibit 8**.

⁷In Denmark there is a number of food clusters with different specializations. The Food cluster in Central Denmark region is characterized by big production companies, specialized knowledge about agro-production processes, waste-handling and biomass. The food cluster in the capital region specializes in ingredients. Finally the food clusters in more remote areas like in the Northern part of Jutland and Bornholm specializes in local specialities/produce from smaller farms and growers.

Based on the collected information, cluster actors were invited to a first meeting aimed at recruiting participants to join the cluster initiative. At the meeting participants were informed about the cluster initiative, given facts and trends about the industry, and were discussing the key challenges for the industry.

Step 2: Working with global trends and new business opportunities for the cluster companies

Having identified the specialization of the cluster, the second step of the methodology focused on studying the global trends and identifying new business opportunities for the companies in the cluster.

In this phase the consultants focused on providing business intelligence about the current and future prospect of the food industry – specifically looking at

- Global trends within the food industry
- High-value added products within the food industry
- Exploring opportunities for moving the regional companies into a new business area
- The terms of competition within the industry

Based on the information gathered in step 1 and the business opportunities identified in step 2 Fresh Convenience Food was identified as a new business area for the region's food cluster.

Subsequently two working groups were established that were given the responsibility for developing a 12-month action plan for how to develop a Fresh Convenience Food concept focusing on the strategic opportunities for the companies in the cluster. One working group focused on "Logistics", the other working group on "Product development and sales channels".

Step 3: Conceptualizing "Fresh Convenience Food" as a new business idea

To develop a Fresh Convenience Food concept, 6 working groups were established. Over a period of 12 months the 6 working groups were individually responsible for conceptualizing their part of the business idea.

The 6 working groups were working under the headings below:

1. Market analysis
2. Logistic audit
3. Economic simulation of transportation system
4. Analysis of sales channels
5. Development and test of new sales channels
6. Development of a new logistical system

Findings

By the end of the project, a group of 6 companies from the food-, logistics-, cooling- and IT- sector had developed a fresh convenience concept aimed at delivering healthy meals directly to consumers. To qualify the concept further the Triangle Region applied for funding at the national and the regional level. But the application was rejected.

Exhibits

Exhibit 1: Map of Heyland



Exhibit 2: Priority industries

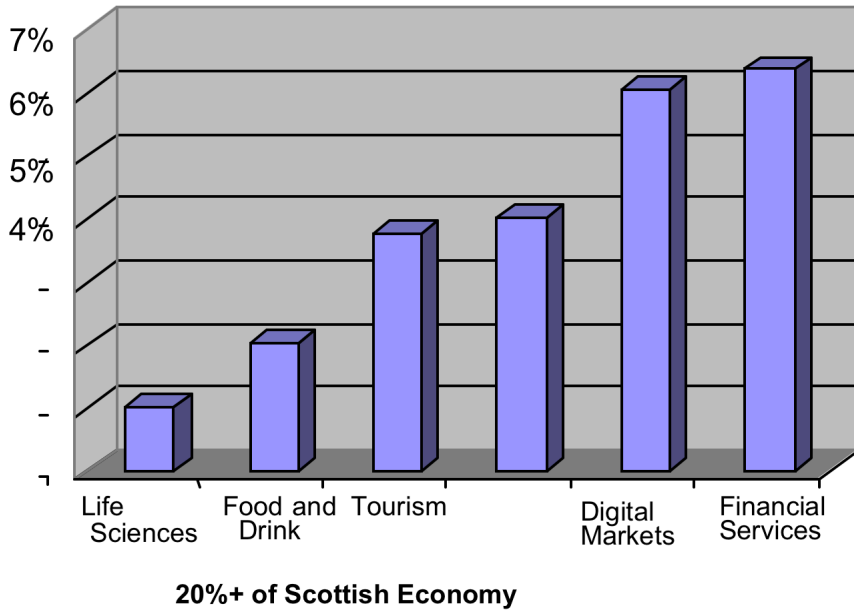


Exhibit 3: Index of Projected Sales Growth

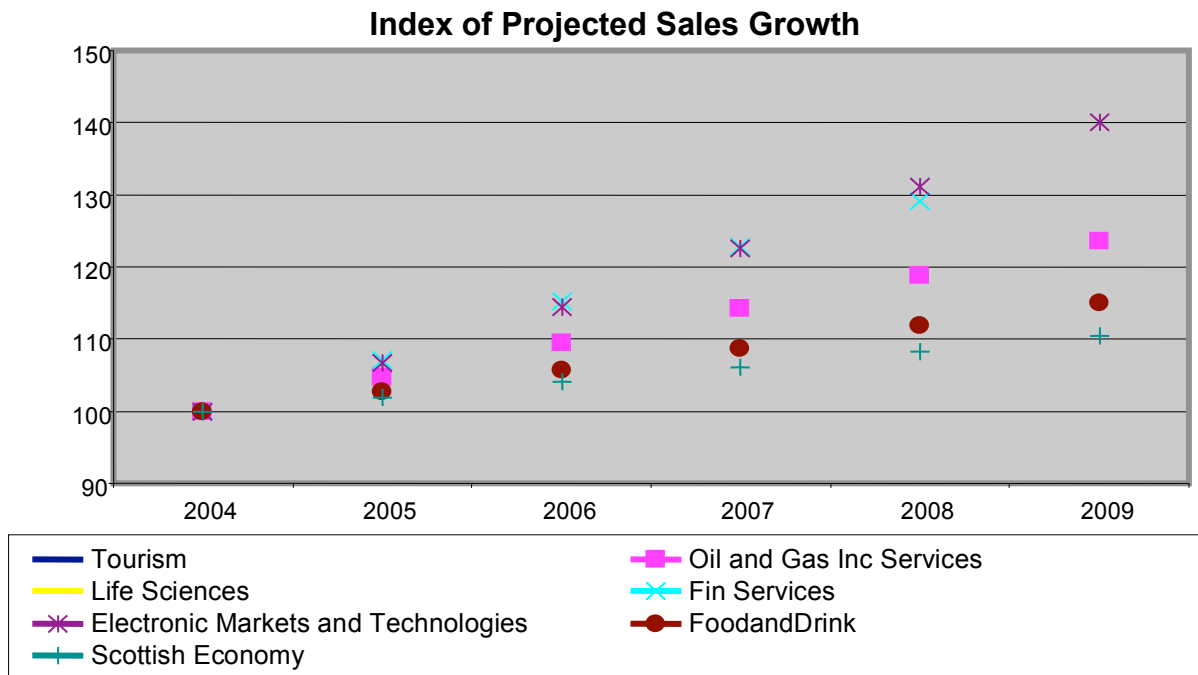


Exhibit 4: Defining an Environmental Technology Company

In order to qualify for an environmental company, the company have to fulfil three criteria:

1. Develop and sell solutions, products or technologies which directly improve the environment (ie. companies working with purification of water and wind)
2. Develop and sell solutions, products or technologies which through a better use of resources improve the environment (i.e. companies driven by the ambition of developing new and more environmentally friendly solutions, products or technologies than those that currently exist)
3. Develop and sell solutions or consultancy advice aimed at optimizing and making more efficient use of processes to improve the environment (i.e companies who see themselves as a company that market environmental solutions and provide advice about how to improve the environment)

Exhibit 5: A 3-step methodology for identifying emerging clusters in region of Southern Denmark

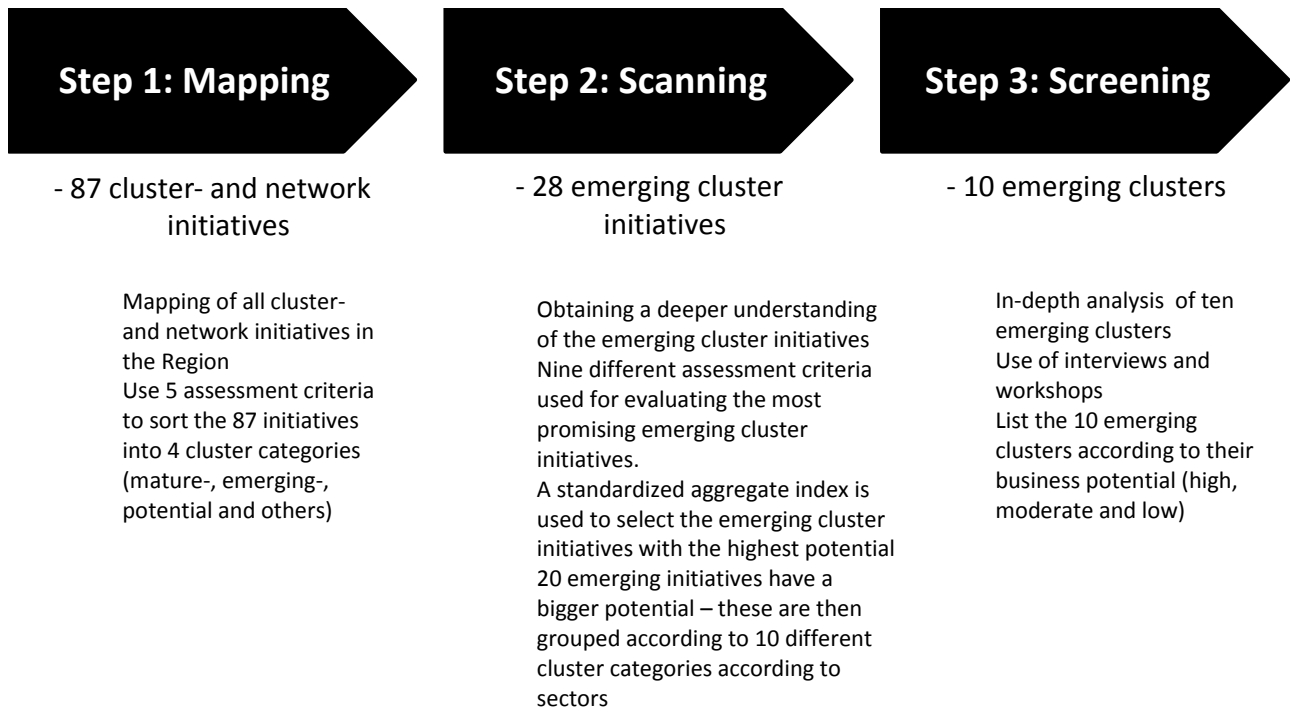


Exhibit 6: Assessment criteria for determining the cluster initiatives development stage

Assessment criterion	Indicators
Formalisation of networks	Is there a formalised cluster?
Management	Is there management in the cluster?
Access to resources	Is the cluster financed today or is there an application in the works?
Local engagement	How many active members are there in the cluster?
Cluster or not	Do you consider yourselves to be a cluster?

Source: Cluster development Southern Denmark 2009

Exhibit 7: Assessment criteria for identifying emerging clusters

Assessment criterion	Indicators	Weight (%)
Coherence	<ul style="list-style-type: none"> - What are the primary activities in the cluster? - What is the uniqueness of the cluster? - What are the three most important areas of co-operation in the cluster? 	No score applied
Participation	<ul style="list-style-type: none"> - Who participate in the cluster initiatives? (companies, public authorities, R&D institutions, others) 	20 %
Local involvement	<ul style="list-style-type: none"> - How many different participants in the region are involved in the cluster activities? - Are the participants in the region – companies, public authorities, R&D institutions or other? 	25 %
Leadership	<ul style="list-style-type: none"> - Who drives the development of the cluster initiatives (companies, public authorities, R&D institutions or other stakeholders)? - What is the formal organisation of the cluster initiatives (Board, advisory group, cluster facilitator, secretariat)? - Who constitutes the core actors of the cluster initiative? 	10 %
Institutionalisation	<ul style="list-style-type: none"> - How many staff members are on the pay-roll of the cluster initiative itself? - Is there a specific budget for the cluster initiative? 	10 %
Access to resources	<ul style="list-style-type: none"> - What is the primary source of finance (companies, public authorities, R&D institutions, other)? - What is the structure of finance (donations, grants, subscriptions)? 	10 %
Synergy	<ul style="list-style-type: none"> - Does the cluster initiative co-operate with institutions or initiatives beyond the region? If yes, who? National or international relations? 	5 %
Performance	<ul style="list-style-type: none"> - How many specific projects have been initiated with more than two participants? - How many projects are ongoing at the moment? 	20 %
Potential	<ul style="list-style-type: none"> - How do you estimate the economic potential of the cluster 5 – 10 years from now in terms of profits, employment and number of participants? 	No score applied

Source: Cluster development Southern Denmark 2009

Exhibit 8: Map of the value chain for the food cluster in the Triangle Region

The food cluster (eksempler på virksomheder)

