MEMÒRIA DEL TREBALL DE FI DE GRAU DEL GRAU EN NEGOCIS I MÀRQUETING INTERNACIONALS (ESCI)

TRADE RELATIONS BETWEEN CATALONIA AND THE NORDIC COUNTRIES AND THE INTRODUCTION OF OUR PRODUCTS IN THIS MARKET

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Content

1 Introduction

The world is changing. Powerful economies are needed in order to achieve the difficult challenge of providing the near-future world. The globe needs markets to strive and work together in order to innovate and succeed when facing future changes. This way, we will make us able to create the sustainable growth of our appreciated world.

The Scandinavian Countries - Denmark, Norway and Sweden- and Catalonia are powerful economies that can help each other by trading and sharing knowledge and resources. Under the umbrella of the European Union and the European Economic Area, the cooperation of these markets may be a key success factor for them all.

In this project, we will analyse the facts and opportunities of trade for each of the markets stated above, and we will see how parts of the Catalan economy are structured by clusters. Once this will be seen, we will go deeper in one of the arenas where the Scandinavian Countries and Catalonia can cooperate, trade and follow a single direction looking to the future and innovation. This arena will be the Biotechnology industry, and specifically the Biomedicine, area where Catalonia is pioneer in. Health and innovation being directed to a better and easier life is a matter that affects and concerns every person in the globe. This way, the importance of Biomedicine is huge for both, our present and our future.

Different theories such as the Diamond's Model of Michael Porter and the CAGE model of Pankaj Ghemawart will be used in order to analyse the Biotechnology industry from the perspective and comparison of the studied markets. Following this, we will take a look to organisms that may help the cooperation of the Scandinavian Countries and Catalonia concerning the Biomedicine world, and we will review some legislation regarding the studied subject. Finally, we will comment a set of conclusions that will help us better understand trade relations between the countries studied in a general manner, and their cooperation regarding Biomedicine.

2 Objectives

The underlying hypothesis of the project is:

Whether clusters promote relevant business competitiveness for those organizations belonging to the clusters and, at the same time, whether this competitiveness will boost the development of trade relations in (new) markets.

3 Background

3.1 The Global Economy

Nowadays the world is getting smaller. Globalization makes all markets be one market in the sense that trade among economies is increasing as well as the sharing of resources and knowledge. The revolution of technology, information transfer, transports and logistics have achieved things that we could have never imagined just ten years ago. Nevertheless, in order to achieve a sustainable growing world for our near future, economies must look forward and innovate to provide the world what it needs.

As we will have the chance to see in this project, the European Union is one of these markets that strongly support innovation and that are based on it. Europe tries to update in order to fit with our nowadays changing world.

3.2 The European Union as a Single Market and as a Bioregion

It is important to take into account that both Spain (Catalonia) and the Scandinavian Countries are Member States of the European Union, excluding Norway. However, Norway is a member of the European Economic Area (EEA), and this puts the country in the same conditions as the rest of the Scandinavian Countries when talking about trade among them.

All members of the European Union can take advantage of the free movement of goods in the single market of the EU. The abolition of customs tariffs promotes intra-community trade.

In the case of Norway, it is important to highlight the fact that its trade is dominated by the EU, and that this country is the fourth most important import partner in the EU, basically trading energy supplies.

This way, the single EU market will be an advantage when thinking about possible commercial relations between Catalonia and the Scandinavian Countries.

Europe is currently a strong and fast growing biotechnology industry and research base, and exploiting its fully potential in this sector is one of the objectives for the European Commission for 2020[1]. They want to make sure that Europe remains competitive and a world leader for research and development and, as it is stated in the report *What Europe has to offer biotechnology companies*, the bioeconomy is already one of the most important and beneficial sectors in the EU.

The European Biotechnology Network[2] is a platform that improves cooperation in the fields of biotechnology and other life science, mainly among the 27 Member States of the EU, as well as Switzerland and Norway. The network provides a database covering approximately 500 companies, even though there are more than 4.000 companies involved in the Biotechnology industry in the EU. Moreover,

[1] - Initiative Horizon 2020: proposed research and innovation funding program for 2014-2020
- Biomedicine Strategy: Innovation for Growth; A Bioeconomy for Europe

[2] Network dedicated to facilitating co-operation between professionals in biotechnology in Europe

the network also involves institutions and universities which are completely dedicated to biotechnology or which are somehow active in the biotechnology field. Moreover, 50 biotechnology clusters form part of the Council of European Bioregions (CEBR).

Nathalie Moll, the secretary general of Europabio[3], explains that Biotechnology is an opportunity for Europe in the industry and in the society level, since it gives responses to needs that the society has. She also comments, that Biotechnology will provide industrial growth and job creation, and this way, in the long term, biotechnology will be a good recipe for the European economy (s*ee annex 7 for the interview link*).

3.3 Macroeconomic Environment of the Scandinavian Countries

In order to have a general view of the countries that will be studied in this project, in this section, we briefly review the macroeconomic environment of each of the three countries.

Denmark has a surface of 43.094 km² -excluding Greenland-. Its population is around 5.500.000 inhabitants and this makes a ratio of inhabitants per km² of approximately 128, 64 inhabitants per km². Their currency is the Danish Krone (DKK) and its conversion into Euros is 7,46 DKK/€. Their language is Danish, even though English is widely used for commercial issues. Moreover, they include the Greenlandic and the Faroese as official languages.

Their total GDP was around 155,9 billion Euros by 2011, and their GDP per capita was approximately 125 in PPS[4]. Out of their total GDP, the sector of services form 76,40%, while the industry sector represents 19,10% of the total, and the agriculture sector is only a 4,50% of the total. The Danish unemployment was 8% according to Eurostat 2012. The country's rating by global rating agencies such as Fitch, Moody's and S&P is AAA.

Denmark is a European Union member since 1973, and in terms of politics, this country is a constitutional monarchy with a Parliamentary system of government.

The country's imports were 76,1 billion €, while their exports were 83,2 billion € according to IndexMundi data for 2011. Finally, Denmark hosts around 99 biotechnology companies[5].

Norway has a surface of 385.639 km² and its total population is around 4.973.029 inhabitants. This makes a ratio of inhabitants per km² of only 12,9 inhabitants per km². The currency of the country is the Norwegian Krone (NOK), which has a conversion into Euros of 7,38 NOK/€. Their language is Norwegian, even though English is widely used for commercial issues. Moreover, there are other languages such as Nynorsk, Bokmal and Sami spoken in the country.

3 Europe's largest and most influential biotech industry group
4 Purchasing Power Standard
5 According to the European Biotechnology database

Their total GDP was around 200,7 billion Euros by 2011, and their GDP per capita was approximately 186 in PPS. Out of their total GDP, the sector of services form 57,70%, while the industry sector represents 39,70%, and the agriculture sector is only a 2,60% of the total. The Norwegian unemployment was only 3,50% according to Eurostat 2012.

Norway is not a member of the European Union. However, it is a member of the European Economic Area (EEA), apart from other organizations, and this makes Norway being in similar or even equal commercial conditions compared to countries which are European Union members. In terms of politics, this country is a constitutional monarchy with a Parliamentary system of government. The country's rating by global rating agencies such as Fitch, Moody's and S&P is AAA.

The country's imports were 65,96 billion €, while their exports were 121,08 billion € according to IndexMundi data for 2011. Finally, Norway hosts around 87 biotechnology companies.

Sweden has a surface of 449.964 km² and its total population is around 9.412.851 inhabitants. This makes a ratio of inhabitants per km² of 22,2 inhabitants per km². The currency of the country is the Swedish Krone (SEK), which has a conversion into Euros of 8,53 NOK/€. Their language is Swedish, even though English is widely used for commercial issues. Moreover, there are other languages such as Meänkieli, Sami, Romani and Yidis spoken in the country.

Their total GDP was around 288,07 billion Euros by 2011, and their GDP per capita was approximately 127 in PPS. Out of their total GDP, the sector of services form 70,90%, while the industry sector represents 27,30%, and the agriculture sector is only a 1,80% of the total. The Swedish unemployment was 7,80% according to Eurostat 2012.

Sweden is a European Union member since 1999, and in terms of politics, this country is a constitutional monarchy with a Parliamentary system of government. The country's rating by global rating agencies such as Fitch, Moody's and S&P is AAA.

The country's imports were 133,87 billion €, while their exports were 143,78 billion € according to IndexMundi data for 2011. Finally, Sweden hosts around 509 biotechnology companies.

Conclusions:

- Norway is the only country of the three which is not a member of the EU, but has similar commercial conditions as the European Member States.
- Norway and Sweden have a very low ratio of inhabitants per km² compared to countries in Europe.
- The three countries have their own language, their own currency, and are similar in terms of politics.
- The three countries have an economy based on the service sector, even though Norway also has a strong industry sector.

- The purchasing power is high for the three markets, and the unemployment rates are low, standing out Norway with its 3,50%.
- Biotechnology companies have a big presence in the three markets, but Sweden, as the most commercial market of the three, stands out with 509 companies related to the Biotechnology industry.

3.4 Macroeconomic Environment of Catalonia

Catalonia has a surface of 32.114 km². Its population is around 7.535.251 inhabitants and this makes a ratio of inhabitants per km² of approximately 240 inhabitants per km². The currency of Catalonia is the Euro, and the official languages of the Spanish autonomous community are Catalan and Spanish.

The Catalan GDP was around 198.908 million Euros by 2011, and their GDP per capita was approximately 116 in PPS. Out of their total GDP, the sector of services form 60%, while the industry sector represents 37,2% of the total, and the agriculture sector is only 2,80% of the total. The Catalan unemployment rate was around 22% according to INE in 2012.

Catalonia forms part of the European Union since 1986, when Spain entered the union. In terms of politics, Catalonia forms part of the constitutional monarchy of Spain, with a Parliamentary system of government. The country's rating by global rating agencies such as Fitch, Moody's and S&P is BBB.

The Catalan's country's imports were 10.872,20 million €, while their exports were 9.361,91 million € according to ICEX data for 2012. Finally, Catalonia hosts around 520 biotechnology companies.

3.5 Clusters and Competitiveness: The Case of Catalonia (1993-2010)

The history of the cluster organization of the industries, in Catalonia, as well as, as in other international markets is well reflected in this book. It offers the opportunity to see how clusters foster and help competitiveness in different industries and how this industry structure may help companies' development and boost commercial relations with third markets.

In the nineteenth century, Alfred Marshall already used the term "cluster" explaining that enterprises belonging to the same sector tend to group together in the same geographical area in order to optimise their business activities. This idea was later developed by other authors such as Michael Porter in 1990 in his book *The Competitive Advantage of the Nations*. By then, the term cluster was seen as a public policy tool to reinforce competitiveness, and this way, a new understanding of competitiveness. Catalonia was one of the first nations to adopt this methodology. By 1992, there were 8 clusters in the region.

The book explains how the cluster policy in Catalonia was divided into two different stages. The first stage of the cluster policy comprises years 1993 to 2004, and the second stage of the policy includes years 2004 to 2009. After this, the book makes a proposal for a new cluster policy that fosters some changes in it in order to help Catalonia establish international cooperation relations.

In the first stage, by 1993, Catalonia was facing the challenge of the opening of the Single European Market. The aim of Catalonia was to enhance their competitiveness by complementing their traditional industrial policy with mechanisms to identify future strategic changes for companies. This way, Catalan industries experiences a triple shift. For the first one, the structure of the industries went from "sector" to "strategic segment", looking for specific solutions instead of general ones. The second shift was from "clusters" to "micro-clusters", looking for specific recommendations rather than general recommendations. The third shift was from "analysis" to "strategic change", meaning that companies in the clusters had specific responsibilities through their participation in the process. From 1993 to 2004, over 20 specific initiatives were carried out in Catalonia offering support focused in opportunities rather than in problems.

In the second stage, by 2004, the creation of a map of local industrial production system was done. The mapping of clusters was a key element in the definition and execution of the cluster policy. Figures demonstrate the clustered nature of the Catalan economy. There were three changes in this second stage: the creation of specific units dedicated to clusters within the administration, the design of an industrial policy supporting transformation for competitiveness and the gradual process of competitiveness reinforcement initiatives *(see annex 1 for the list of units created by the second stage of the Catalan Cluster Policy and see annex 2 for the map of the local industry system in Catalonia)*.

In 2009, the Catalan government decided to remodel the cluster policy to improve benefits received by the companies. The competitive reinforcement needed to be large enough to establish international competition relations.

The first change they did was going from small to big once again. They decided to go from "micro-clusters" to "clusters". The next change they did was fostering cross-sectorial projects for groups of companies with similar strategies or common target markets. They also started the control of professionals experienced for pushing competitive plans as a third change. ACC1Ó[6] incorporated AVANÇA, a unit that boosts competitiveness with seminar sessions and networking with different companies.

To sum up, we cans see that Catalonia is pioneer in the use of the methodology of the clusters for improving competitive efficiency.

3.6 ACC1Ó

ACC1Ó is the agency for the competitiveness of enterprises from *la Generalitat de Catalunya.* It works for the innovation and the internationalization of the companies and it boasts 34 offices worldwide. This agency is born from the cooperation of COPCA[7] and CIDEM[8] more than 20 years ago and it is attached to the enterprise and occupational department of *la Generalitat de Catalunya.*

[6] Agency for the competitiveness of enterprises. See explanation in section 3.6
[7] *Consorci de Promoció Comercial de Catalunya*
[8] *Centre d'Innovació y desenvolupament empresarial*

ACC1Ó works for companies that are willing to take advantage of changes and want to transform in order to differentiate themselves for the future. The agency works under the idea that this fact is achieved by the innovation and the internationalization.

This way, their new Plan for the Industrial and Business Performance (*Pla d'actuacions Industrials I Empresarials*) for 2012-2014 is the key instrument to foster the reactivation of the country's economy.

One of the structural plans of ACC1Ó is the Internationalization. Currently there are more than 40.000 companies in Catalonia that export, but only 13.500 do it in a regularly. This numbers have been stagnated in the last years. One of the goals for the ACC1Ó new plan is to develop services for the initialization of companies to expand. Their aim is to achieve 1.500 new companies that export by 2014.

4 Analysis

4.1 Analyses of Commercial Opportunities between Catalonia and Scandinavia

After a deep research in ICEX data as well as in the customs database[9], in this section we can see the comparison between the three Scandinavian Countries and their relation with Spain in terms of commercial relations and exact Imports and Exports from Catalonia to the studied countries.

4.1.1 Facts and Opportunities Analyses

The Danish market is a very competitive market. It outstands for its open economy with a high business culture. Danish consumers look for quality products and appropriated prices. They care about the environment and they like eco-friendly products and services. This can be related to the fact that bioenergy and renewable energies have a big importance in the country. Moreover, Denmark has considerable sources of oil and natural gas in the North Sea, and ranks as number 32 in the world among net exporters of crude oil.

Even though the 92% of the Danish companies are SME, we can name some examples of Danish multinationals that have a big importance worldwide. Carlsberg, as a beer producer and Lego as a toy manufacturer are worldwide well-known, as well as the shipping company Maersk is.

As incentives for foreigners to do business in Denmark, we can say that they have an excellent communications system, and that their labour is highly qualified. Moreover, Denmark has a perfect geographical location and this fact gives it big importance as a logistics centre. Denmark offers entrepreneurial incentives, and it is looking forward to internationalization.

Denmark is a member of different international organizations and groups. We can highlight that, apart from being a member of the European Union, it a member of the Nordic Council of Ministers as well as the two

[9] *Red global de exportaciones*

other Scandinavian countries studied. This way, entry barriers for this country are very low, since there is free movement of goods for European Member States.

The opportunities that we have extracted for Denmark are as follows: The areas where Denmark is interested in are biotechnologies, as well as fashion and home design specialisations. It is recommended to acquire existing Danish companies when willing to enter this market, since we are talking about a very developed market and risks are low. Moreover, the Danish government promotes infrastructure investments. In conclusion, Denmark is the right way to start when willing to enter the Nordic markets.

The Norwegian market is considered to be an expensive and monopolized market. There is a lack of labour in this market, and this makes the labour be very expensive. On the other hand, Norwegian consumers spend a lot of money and they like high quality products. Norwegian consumers like specific products coming from Spain, and "made in Spain" labels sound friendly to them.

As said above, the Norwegian market is much monopolized and some important companies that may sound familiar are Telenor as the telecommunications company of the country or *Statkraft*, as a state owned Electricity Company. A fact that is interesting to highlight is that *Banco Santander* did the biggest Spanish investment ever in Norway in 2004 and acquired *Elcon*, a financing Norwegian company.

As incentives for foreigners to do business in Norway, we have to say that it is a market which has high levels of consumption, they have entrepreneurial incentives and they have a friendly feeling for Spain.

Even though Norway is not a member of the European Union, it is a member of numerous International Organizations and groups that make the country be in similar conditions in trade as a member of the EU.

The opportunities that we have extracted for Norway are as follows: Even though it is difficult to find obvious gaps in the Norwegian market and that the establishment of companies in Norway are expensive, the industries of wine, food and vegetables from Spain are liked by the Norwegians. Also, the Norwegian government does international tenders for new infrastructure in the country, since the existing infrastructure does not match the development level of the country.

The Swedish market is a competitive market in terms of commercial relations. Moreover, the country carries out the 10% of the forest products exports worldwide. As Norway, it is also considered a quite monopolized market and we can see this by the fact that, for instance, the food industry is carried out by only three companies which are *Axfood*, *ICA* and *KF*. The country cares about bioenergy and eco-friendly products as its other Scandinavian market partners.

Some big multinational Swedish companies are H&M, in the fashion industry and IKEA, the well-known company for house and furniture products.

As incentives for foreigners to do business in Sweden, we can highlight the country's entrepreneurial incentive, as in the case of the other two Scandinavian Countries studied. Sweden is development oriented and looking for internationalization. Sweden is considered the commercial capital of the Nordic Countries.

Sweden is a member of different international organizations and groups. We can highlight that, apart from being a member of the European Union, it a member of the Nordic Council of Ministers as well as the two other Scandinavian countries studied. This way, entry barriers for this country are very low, since there is free movement of goods for European Member States.

Sweden has strong external relations with Finland, Norway and Denmark, and the number of biotech companies is five times the ones of Norway and Denmark. This way, Sweden would be a good option to enter the Nordic Countries concerning the biotechnology industry, since cooperation with partners will be easier to find and its country relations will enable further Nordic relations for the company entering the Nordic Countries.

The opportunities that we have extracted for Sweden are as follows: The agrifood sector, since Spain is well recognised in Sweden for this kind of products, is a good opportunity for Catalonia. On the other hand, and as in the case of Norway, the Swedish government does international tenders for new infrastructure in the country, since the existing infrastructure does not match the development level of the country. Good quality and eco-friendly products are liked by Swedish consumers, and they have a propensity to spend money for the products they like, even though they are exigent clients. Again, as in the case of Norway, the establishment of a company in Sweden is expensive.

4.1.2 Customs-Chamber

Looking at the tables in annex 3, we can see the exact values in monetary units as well as weights of the industries and products that have been most frequent in the year 2013 talking about commercial external relations between specifically Catalonia and the Scandinavian Countries.

Conclusions:

- The Scandinavian countries are much internationalized and are willing to do it more in the future.
- The three countries are developed and looking for innovation.
- Trade among the Scandinavian Countries has a big importance. They cooperate sharing resources and knowledge through numerous international organizations.
- Denmark would be the best option to start up a commercial relation with the Scandinavian Countries when facing the opportunity of establishing a company there. This is because of the high establishment prices in Norway and Sweden. Additionally, Denmark has a strategic logistic position for a future penetration of the other Scandinavian markets. However, Sweden can be considered a good option for entrance concerning the biotechnology industry.

- Scandinavian consumers look for high quality and eco-friendly products. In the same manner, the three countries are concerned about renewable energies.
- Trade between Scandinavian Countries and Catalonia nowadays is based on industrial machinery, pharmaceutical and chemical products, agrifood products, and some textile products.

4.2 Biotechnology and Biomedicine

Even though there is not an absolute definition for biotechnology, here we can see the definition and explanations of the Organization for Economic Cooperation and Development (OECD) referring to biotechnology and its different types.

This way, *biotechnology is the application of science and technology to living organisms, as well as parts, products and models thereof, to alter living or non-living materials for the production of knowledge, goods and services*.[10]

In conclusion, we can say that biotechnology is behind all aspects of our lives. By this, we mean that it takes care about health issues, but it also takes cares about alimentation aspects in the way that it studies how to feed a growing world population sustainably, as well as issues concerning energy sources.

According to de OECD, USA and Japan are the countries which rank as first and second for the number of biotechnology companies they host, the patents applications and the biomedical approvals. Additionally, the industry picture has looked better in later years for several non-OECD countries, including Singapore, Brazil, China, India and South Africa. However, Scientific American[11] ranked the top five countries in 2010 as follows: USA, Singapore, Canada, Sweden and Denmark. These five countries were defined as those ones who do it well with strong incentives for technology development and a wide range of options for obtaining research funding.

We can highlight two examples of big important companies for the industry: on the one hand, Amgen, an American company with headquarters in Thousand Oaks, which is pioneering in biotechnology since 1980 and practices the development of novel products based on advances in recombinant DNA and molecular biology. On the other hand, Novo Nordisk, with headquarters in Denmark, is a global healthcare company with 90 years of innovation and leadership in diabetes care among other therapies.

4.2.1 The colours of Biotechnology

Biotechnology can be divided into three different categories depending on the biotechnology different application fields. This differentiation is as follows:

Red biotech or healthcare (biotech to heal);Biomedicine: Experts say that, out of all possible applications of biotechnology, red biotechnology is the one that will have a large impact on the way we live. This

[10] Organization for Economic Cooperation and Development (OECD) definition

[11] Popular Science magazine. It is the oldest continuously published monthly magazine in the United States

category takes care of the therapeutic, diagnostic, animal health and biomedical research applications. It may also be applied to developing functional food and nutraceutics[12].

The first apparition of biotech drugs was in 1983, with the recombination insulin. Nowadays, this type of biotech includes more than 100 different molecules to treat over 2.000 different diseases like arthritis, cancer, and cystic fibrosis among others.

Everything from pregnancy tests to HIV tests are biotechnology products, as are the sophisticated DNA chips that allow us to read important genes to find out if a person is at risk for high cholesterol. Moreover, this category is the base of some agents that are essential to image diagnostics.

This type of biotechnology is the one in which Catalonia is pioneering and the one that we will focus on when looking at possible commercial relations with the Scandinavian countries, countries which also have importance in this innovative arena.

Green biotech agrifood (biotech to feed): This category is probably the most well-known one because it takes care of transgenic crops (GMO or genetically modified organisms)[13]. It also includes biotech applied to plague control (biocontrol), to improving soil quality (biofertilization), and even the agrifood industry. It can be considered the society's first biotech industry, as manufacturing bread, wine, yoghurts and beer are strictly biotechnology activities.

Countries like Argentina, Brazil and China among others grow transgenic plants and have integrated them into their economies. Crops with global impact, like soybeans, cotton or corn, are on their way to become predominantly transgenic in these countries, driven by their clearly superior profit margin for local farmers.

White or industrial biotech (biotech to fuel): This category includes all biotech applications linked to the chemical industry, bioremediation to generation fuel (biofuel), to industrial processes for processing raw materials, to generating biological tissues and to bio-detergency. Industrial applications give us biodegradable plastics and biomaterials.

4.3 Biocat

Biocat is the organization that coordinates and promotes the biotechnology, biomedicine and medical technology cluster of companies in Catalonia. This cluster is called the BioRegion of Catalonia. Their mission is to create an environment with a strong research system, active transfer of knowledge and an entrepreneuring business fabric that is able to become a driving force for the country's economy and contribute to the wellbeing of society. The organization brings together all areas of the biomedicine and biotechnology sector including administrations, universities, research centres and companies.

[12] Term used for all that food that is proclaimed as having a benefit effect on the human health
[13] Plants, the DNA of which has been modified using genetic engineering techniques

Biocat was created in 2006 at the behest of the *Generalitat de Catalunya* and the *Ajuntament de Barcelona*. The birth of this organization is linked to the second stage of the Cluster Policy of Catalonia explained above, when the first change of the Cluster Policy was to create specific units dedicated to clusters within the administration. This way, the main objective of Biocat is making the biomedicine Catalan cluster be competitive in an international way.

Biocat has a lot of agreements and collaborations with numerous institutions and organizations locally and internationally. Some examples of these institutions would be European Diagnostic of Cluster Alliance (EDCA) and ACC1Ó.

The BioRegion is the cluster for biotechnology, biomedicine and medical technology in Catalonia. This *biocluster*, which has a very big importance in the European market, has the following features in the case of Catalonia: it includes 520 different companies, 440 research groups and 54 research centres, 10 universities which offer life science studies and 15 hospitals with research activity. It also includes technology-transfer and support structures and networks. Biocat is the organization that dynamizes and promotes the cluster.

One of the objectives for Biocat in the near future is to foster internationalization. Going abroad and making an international network with companies from the same sector will favour the presence and activity of Catalan companies from the biomedical industry into strategic markets. They want to give special attention to emerging economies, which are the ones that are expected to have a higher growth in this area. They also want to promote trans-border collaborations and international projects to improve scientific cooperation as well as technology transfer and market access.

European Countries may see the Spanish (Catalan) market as an open door to get in the Latin American market, a first step to take to enter the growing emergent economies that will be the key for the future.

As Montserrat Vendrell, the general director of Biocat, explains in the interview of the Catalan TV program *Agora*, the organization strives to have presence in international fairs concerning the biomedical industry. As she explains, the Catalan companies which did or are currently doing a research in this field do not normally have all the resources needed to go through the value chain of the products and innovations discovered by them. This way, these companies need bigger companies who have resources and capabilities to help the small Catalan research companies to keep on with the value chain of the innovations in steps like testing and manufacturing. Biocat, therefore, looks for international partners that help Catalan companies assume risks and costs of these researches in the process of taking them into the market. These partners can be corporate, which will help in the business, but they can also be invertors partners, those ones willing to invest on Catalan research and development companies *(see annex 7 for the interview link).*

4.4 Analyses of the Biotechnology Industry

In this section of the project we are going to analyse the biotechnology industry from the perspective of the Scandinavian Countries as a whole, in comparison with the same industry in Catalonia. To do so, two different models are going to be used starting with the Porter's Diamond Model and followed by the CAGE framework of Ghemawat *(see annex 5: World economic forum, Supporting data explaining this analysis).*

The Diamond Model helps understand the competitive position of nations in global competition. It studies clusters among other facts, and it analyses why particular industries become competitive in particular locations. The issues analysed are classified into 6 broad factors which together form the diamond *(see annex 4: Diagram of Diamond Model of Michael Porter).*

Factor Conditions concern human and knowledge resources, which are considered to be highly qualified and educated in both the Scandinavian Countries and Catalonia. Physical resources, including technology and infrastructure, are, as well, proper enough for the biotech industry, even though regular investments in it are necessary to keep commodities updated to new times. R&D is supported in both markets studies and local governments, as well as the EU, give incentives to invest in the studied industry. The natural resources of the Scandinavian Countries give an advantage to them.

Demand conditions looks at sophisticated home market buyers. In our case, we can say that buyers in both studied markets are willing to use innovative products which will help them have an easier and which concern for the environment. This type of consumers will make pressure of companies of the sector to innovate faster and create more advanced products. In the case of the Scandinavian consumers, high quality products are welcome, as explained in the Facts and Opportunities analysis.

Related and supporting industries refers to organizations which can produce inputs which are important for innovation and internationalization. As we have seen above, and as we can see on the table of organizations in *annex 6*, there are plenty of institutions supporting innovation and internationalization both in the markets locally, but also internationally (ACC1Ó and Innovation Norway[14] among others). Other organizations partially related with the biotech industry help provide cost-effective inputs and stimulate other companies in the chain to innovate. Hospitals and universities involved in the industry will also have a good influence in the industry development.

Firm strategy, structure and rivalry is about the way in which companies are created, set goals and are managed as a way for success. Also as seen above, clusters and connections between the companies of the industry make them strong and their cooperation is very beneficial. On the other hand, the presence of rivalry between these companies will create pressure to innovate in order to upgrade competitiveness. In

[14] See Annex 8 for an image of the Annual report 2011 of Innovation Norway supporting Innovation, internationalization, clusters and bioenergy

this sense, Norway may have less competitively and rivalry, since this market is more monopolized than the rest, it is more protected and it hosts much less companies than all countries studied.

Government can influence each of the above four determinants of competitiveness. Government interventions can occur at local, regional, national or supranational level, and here we should refer to the impact of the EU positive measures facing the biotech industry, as well as organizations from the administration of the markets such as ACC1Ó and Innovation Norway among others**.**

Chance, as the last factor of the model, is explained by Porter as events and occurrences that are outside of control of a firm. These can create discontinuities in which some markets gain competitive positions while some others may lose.

The CAGE framework takes a look at the differences that arise at borders between countries, thinking of the nowadays as a (semi)globalised one where borders continue to matter. Here we take a look at the differences between the Scandinavian Countries and Catalonia taking a glance from the biotechnological industry level. The aim of this analyses is to see if the Biotechnology industry can be seen as a global one, or if, on opposite, it will fit better as a local industry as in the case of autochthonous food in Catalonia.

Cultural distance: Concerning culture, we can highlight the difference of languages between the Scandinavian Countries and Catalonia (and even the differences of language between the three Scandinavian countries studied). However, this distance reduces when thinking on the English used commercially in both markets studied and thus, used as a common language in the commercial relations. In comparison, Scandinavian countries may be more feminine, meaning that they go for cooperation before competition, and slightly more organized and provisional than Catalonia. Furthermore, the countries studied share the same religion Christian values and democratic systems.

Administrative distance: Concerning the political arena, we could say that the Scandinavian countries give more amenities to biotech companies and investments from administrative institutions in R&D are bigger than the one Catalonia, mainly because their public budget is higher than the Catalan one. On the other hand, both markets studied are linked by the European Union and the EEA and this makes the administrative distance be reduced. However, differences in currencies used could increases this distance. Finally, corruption rates in Spain (Catalonia) are higher than the ones in the Northern market and this makes the Scandinavian Countries be more stable in comparison to Catalonia.

Geographic distance: As Member States of the EU, trading barriers between the markets studied are low. Moreover, the physical distance between the markets are medium-short and the infrastructures that link both markets are good (by sea, by road and by air). Markets are easily accessible in both directions.

Economic distance: Even though infrastructures would be in the same level, development and telecommunications are better in the Scandinavian Countries. We are talking about one of the most

developed markets in the world – the Scandinavian one-, where welfare, as well as GDP per capita and other indicators are very high. Catalonia, thus, would be slightly less developed in this sense. Moreover, all countries studied are opened economies looking for internationalization.

Conclusions:

- The well-educated and qualified workforce of the Scandinavian Countries, as well as the Catalan one, contributes positively to the biotechnology industry.
- Infrastructures and technology in the studied countries as proper for the activities of the industry studied, even though it is very important to keep updating it to be pioneers in the sector.
- Current and potential consumers of the industry products look for high quality products which will make their life easier at the same time that these products do not harm the environment.
- The EU and the local governments support innovation and R&D, which is the key success for the biotechnology industry. The Biotechnology industry is a global industry rather than a local one.
- Distances between countries are not really relevant and the two markets studied are quite similar culturally speaking. Even though there are North VS. South European differences, the countries studied are all open and innovation-driven economies.
- *Coopetition* will be the key success factor for the industry companies and markets in the future. They need to compete against each other and keep on trying to improve, but at the same time, they need to share resources in order to get the best out of their relations.
- The Scandinavian Countries see the Spanish (Catalan) market as an open door to get in the Latin American market, a first step to enter the growing economies that will be the key for the future.

4.5 Other Organisms

In the table of *annex 6*, you can find a collection of organisms that will, directly or indirectly related to biotechnology, support trade between the Scandinavian Countries and Catalonia.

4.6 Bringing the Product to the Market

As explained in the report *What Europe has to offer Biotechnology companies*, a pharmaceutical product can only be placed on the market in the European Union – and in the EEA- when one of these three conditions is met:

- When an authorization has been granted by the European Commission via a Centralised Procedure for all the EU markets.
- When a marketing authorization has been granted by the competent authority of a Member State for its own territory. This procedure would be done through national authorities who can be the subject of mutual recognition between Member States.
- When an authorization has been granted through a decentralized procedure. The marketing authorization holder must be a member of the EU or the EEA.

Since all of the countries studied are in the EU and the EEA, we will focus on the Centralised Procedure to place a product on the market. This procedure is the mandatory regulatory pathway for the marketing authorization of any medical product. In order to simplify it, we have developed a step by step process:

1. Application by the developer of a new pharmaceutical product to the European Medicines Agency (EMA).
2. EMA is responsible for the scientific evaluation of the safety, efficacy and quality of the new product. This evaluation is normally conducted by looking at the product benefit/risk ratio.
3. The assessment is conducted by the EMA's Committee for Medical Products for Human Use (CHMP).
4. Based on the clinical data about the product, the CHMP adopts an opinion which is communicated to the European Commission.
5. Together with the Member States and the European Parliament, the European Commission is responsible for granting the marketing authorization, in case that the CHMP adopted a positive opinion in the previous step.

4.7 Taxation and Regulation

Taxation and regulation for the Biotechnology industry differs from one country to another, making the cooperation, somehow difficult. Every country keeps a lot of regulation issues with a local view, and this is understandable if we consider that the biotechnology industry is currently in its initial process. The industry, thus, lacks a harmonized regulation and taxation system.

However, as Nathalie Moll states in her interview, governments need to have a long term view and Member States in Europe should work together in order to make Biotech a key factor to rebuild Europe.

5 Conclusions

The competitiveness of Clusters: Concentrations of related business increase productivity through specialized inputs, access of information and innovation. This way, these are conclusions regarding the competitiveness that clusters provide:

1. Clusters help and promote connections with other (international) clusters, as we can see from the numerous connections that each of the bioregions studied have with other biotechnology clusters. A good example is Biocat, which has agreements and collaborations with numerous institutions and organizations (clusters) locally and internationally.
2. Based on the fact that cooperative research and competitive striving make companies inside the clusters stronger and prepared to face other markets, there is plenty of evidence to conclude that cooperation of companies within a cluster promotes competitiveness nationally and internationally.
3. Clusters make international trade relations smooth for companies belonging to clusters. Communities understand that the best way to expand their own economies and those of the surrounding region is to support a cluster of firms rather than to try to attract companies one at a time to an area.

The Scandinavian Countries: Even though we have seen that the Scandinavian Countries are quite similar in general terms, we can highlight some aspects that will make them differ and guide ourselves when wanting to trade with them:

1. Scandinavian consumers look for eco-friendly and high quality products.
2. Scandinavian Countries go for innovation and internationalization.
3. Denmark would be the best option to start up a commercial relation with the Scandinavian Countries when facing the opportunity of establishing a company there. Establishment prices in Norway and Sweden are high. Additionally, Denmark has a strategic logistic position for a future penetration of the other Scandinavian markets.
4. Sweden is the most commercial country of the three, and it is considered the commercial Capital of the Nordic Countries.
5. Sweden may be a good option to enter the Nordic Countries in the biotechnology industry, since its relations with other Nordic Countries are strong, it hosts a large number of biotechnology companies, and it can be considered the axis of biotech for the area.
6. Trade between Catalonia and the Scandinavian Countries will benefit parts making them stronger.

The Biotechnology Industry: Biotechnology importance can be interpreted by the fact that its development has been associated with every field benefiting mankind. Thus, this industry is extremely relevant for our present and future. Here we have some conclusions concerning the biotechnology industry relations that the Scandinavian Countries and Catalonia can have:

1. The Biotechnology industry can be a key success factor for Europe to help rebuild the economy.
2. The Biotechnology (biomedicine) is a great opportunity for the Scandinavian Countries and Catalonia to work together, trade and share resources and knowledge.
3. *Coopetition* will be the key success factor for the Biotechnology industry in the markets studied for the future. The countries studied need to compete against each other and keep on trying to improve, but at the same time, they need to share resources in order to get the best out of their relations.
    a. Catalonia can obtain corporate and investor international partners to help Biotech companies.
    b. The Scandinavian Countries can see the Catalan market as an open door for the Latin American as a strong future market.
    c. Catalonia and the Scandinavian Countries working under the EU umbrella can help Europe develop and keep being an important Biotech area in the changing world.
    d. Biotechnology is a global industry (rather than local) which has a big importance in all aspects of our life (energy, health and feeding).
    e. Innovative and future oriented economies willing to change and adapt to upcoming challenges will shine in the future.

6 Bibliography

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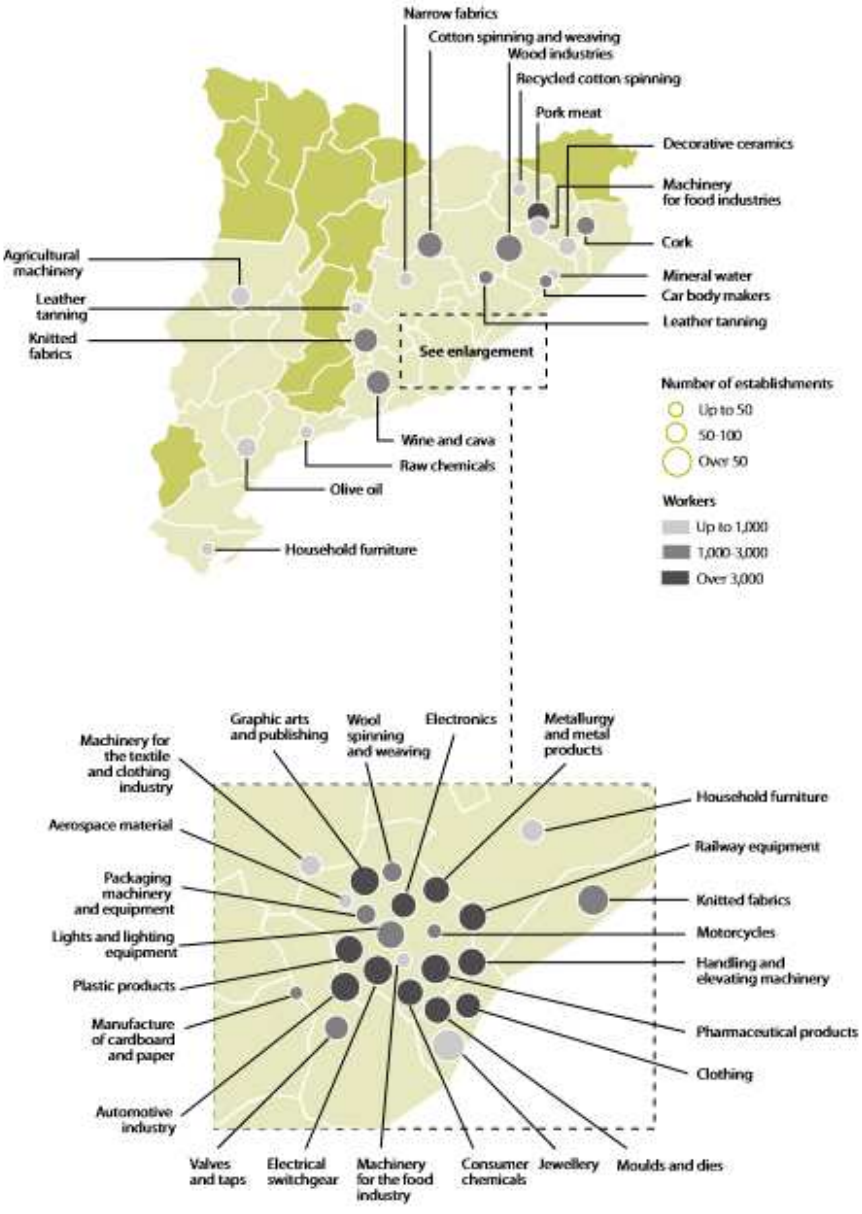
7 Annex 1: Units created by the second stage of the Catalan Cluster Policy

In this table we have some of the units created by the second stage of the Catalan cluster policy:

OPI: Observatory for Industry Foresight	Analyses difficulties of each sector and carries out an international benchmarking.
CIDEM: Centre for Business Innovation and Development	Supports innovation and works after OPI guidelines.
ACC1Ó	Analyses and executes competitiveness reinforcement initiatives.
NON: New Business Opportunities	Facilitates change to SME.

8 Annex 2: Map of the local industry system in Catalonia

Figure 11. Map of the local industrial systems in Catalonia



Source: Hernández, J. M. et al. (2005): Map of Local Industrial Production Systems in Catalonia.

9 Annex 3: Database Import / Export

Exports in 2013 destined to Denmark performed by Catalonia:

Chapter	WEIGHT (thousands of Kgs.)	VALUE (thousands of euros)	NUM. OF OPERATIONS
[62] APPAREL AND CLOTHING ACCESSORIES, EXCEPT KNITTED.	71,4	9.103,0	145
[02] MEAT AND EDIBLE OFFAL	2.629,5	5.701,5	134
[87] MOTOR VEHICLES, TRACTORS, CYCLES AND OTHER LAND VEHICLES, AND PARTS AND ACCESSORIES	640,6	5.445,3	90
[84]NUCLEAR REACTORS, BOILERS, MACHINERY AND MECHANICAL APPLIANCES, AND PARTS	250,1	2.946,0	473
[38] MISCELLANEOUS CHEMICAL.	517,0	2.827,4	81

Exports in 2013 destined to Norway performed by Catalonia:

Chapter	WEIGHT (thousands of Kgs.)	VALUE (thousands of euros)	NUM. OF OPERATIONS
[85] MACHINERY. EQUIPMENT AND ELECTRICAL EQUIPMENT AND PARTS; RECORDING DEVICES OR REPRODUCTION OF SOUND IMAGES AND SOUND OF TELEVISION AND PARTS	546,3	4.355,0	296
[84] NUCLEAR REACTORS, BOILERS, MACHINERY AND MECHANICAL APPLIANCES, AND PARTS	201,2	1.553,9	260
[22] BEVERAGES, SPIRITS AND VINEGAR.	455,3	1.299,4	164
[61] CLOTHING AND CLOTHING ACCESSORIES, KNITTED.	13,6	1.017,9	1.853
[02] MEAT AND EDIBLE OFFAL	128,5	862,8	29

Exports in 2013 destined to Sweden performed by Catalonia:

Chapter	WEIGHT (thousands of Kgs.)	VALUE (thousands of euros)	NUM. OF OPERATIONS
[87] MOTOR VEHICLES, TRACTORS, CYCLES AND OTHER LAND VEHICLES, AND PARTS AND ACCESSORIES	2.670,5	11.269,7	255
[39] PLASTICS AND ARTICLES	2.413,6	5.363,6	519
[84] NUCLEAR REACTORS, BOILERS, MACHINERY AND MECHANICAL APPLIANCES, AND PARTS	407,7	4.285,6	494
[85] MACHINERY. EQUIPMENT AND ELECTRICAL EQUIPMENT AND PARTS; RECORDING DEVICES OR REPRODUCTION OF SOUND IMAGES AND SOUND OF TELEVISION AND PARTS	255,2	3.981,1	627
[30] PHARMACEUTICAL PRODUCTS	135,7	2.692,8	81

Imports in 2013 coming from Denmark performed by Catalonia:

Chapter	WEIGHT (thousands of Kgs.)	VALUE (thousands of euros)	NUM. OF OPERATIONS
[30] PHARMACEUTICAL PRODUCTS	11,3	8.297,4	126
[04] DAIRY PRODUCE, EGGS, NATURAL HONEY; EDIBLE PRODUCTS OF ANIMAL ORIGIN, NOT ELSEWHERE IN OTHER CHAPTERS	2.246,6	8.296,8	74
[38] MISCELLANEOUS CHEMICAL.	280,2	7.866,0	53
[84] NUCLEAR REACTORS, BOILERS, MACHINERY AND MECHANICAL APPLIANCES, AND PARTS	409,7	7.011,5	759
[35] ALBUMINOIDAL SUBSTANCES; PRODUCTS BASED ON STARCH MODIFIED STARCH; TAILS; ENZYMES	662,2	3.505,0	103

Imports in 2013 coming from Norway performed by Catalonia:

Chapter	WEIGHT (thousands of Kgs.)	VALUE (thousands of euros)	NUM. OF OPERATIONS
[27] MINERAL FUELS, MINERAL OIL AND ITS PRODUCT DISTILLATION	122.384,8	41.722,5	2
[03] FISH AND CRUSTACEANS, MOLLUSCS AND OTHER AQUATIC INVERTEBRATES	465,1	2.312,5	32
[31] FERTILIZERS	6.409,0	1.763,5	5
[76] ALUMINIUM AND ARTICLES OF ALUMINUM	543,8	1.208,2	8
[84] NUCLEAR REACTORS, BOILERS, MACHINERY AND MECHANICAL APPLIANCES, AND PARTS	99,2	826,3	99

Imports in 2013 coming from Sweden performed by Catalonia:

Chapter	WEIGHT (thousands of Kgs.)	VALUE (thousands of euros)	NUM. OF OPERATIONS
[84] NUCLEAR REACTORS, BOILERS, MACHINERY AND MECHANICAL APPLIANCES, AND PARTS	773,9	10.356,0	1.782
[85] MACHINERY. EQUIPMENT AND ELECTRICAL EQUIPMENT AND PARTS; RECORDING DEVICES OR REPRODUCTION OF SOUND IMAGES AND SOUND OF TELEVISION AND PARTS	377,4	9.299,7	626
[48] PAPER AND CARDBOARD, ARTICLES OF PAPER PULP, PAPER OR CARDBOARD	9.073,3	7.491,2	279
[90] INSTRUMENTOS Y APARATOS DE OPTICA,FOTOGRAFIA,CINEMATOGRAFIA	27,5	5.219,7	511
[96] MISCELLANEOUS ARTICLES	1.598,1	5.162,6	17

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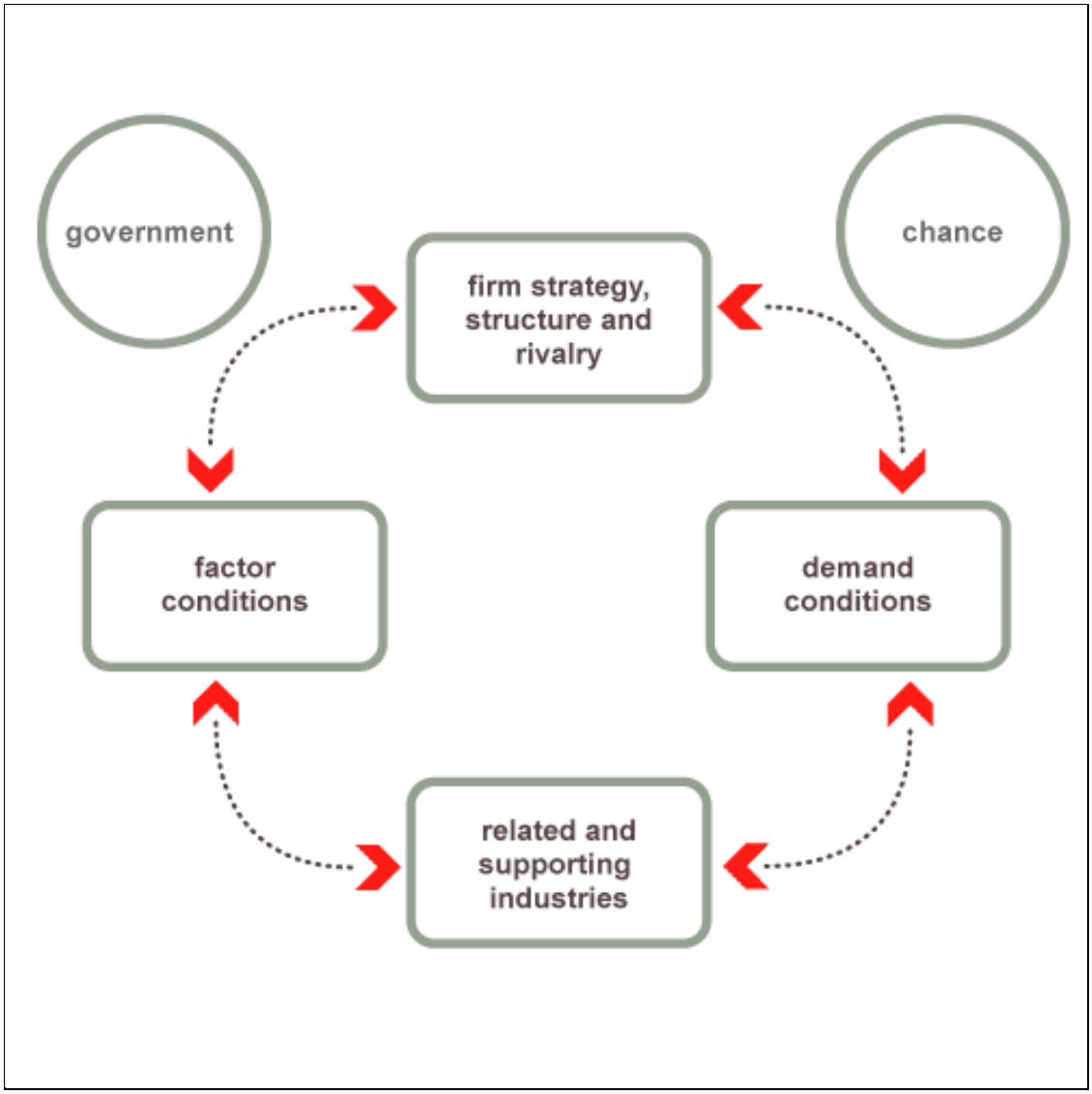
10 Annex 4: Diamond model

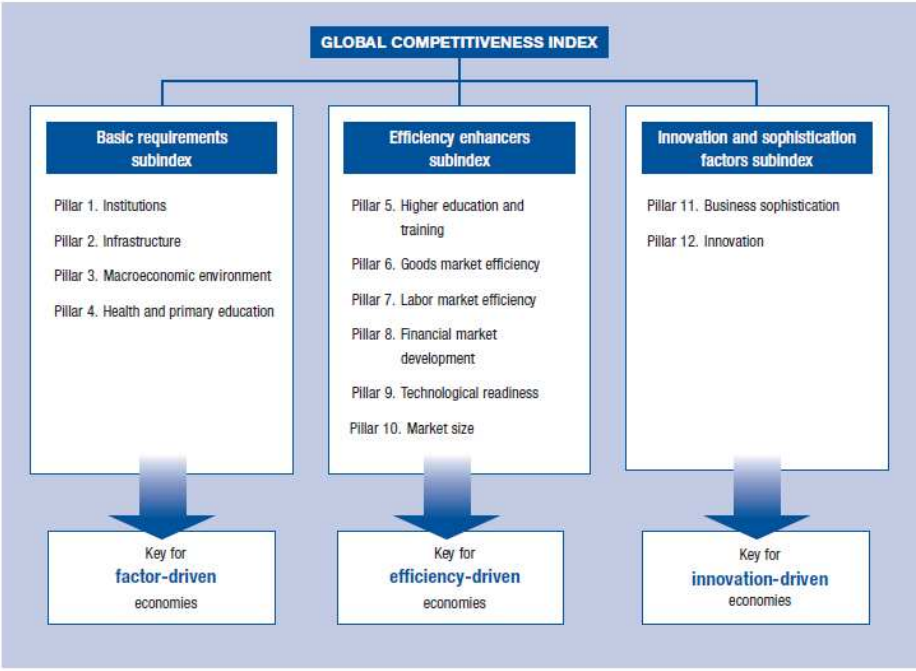


11 Annex 5: World forum, supporting data

World Economic Forum 2012-2013.

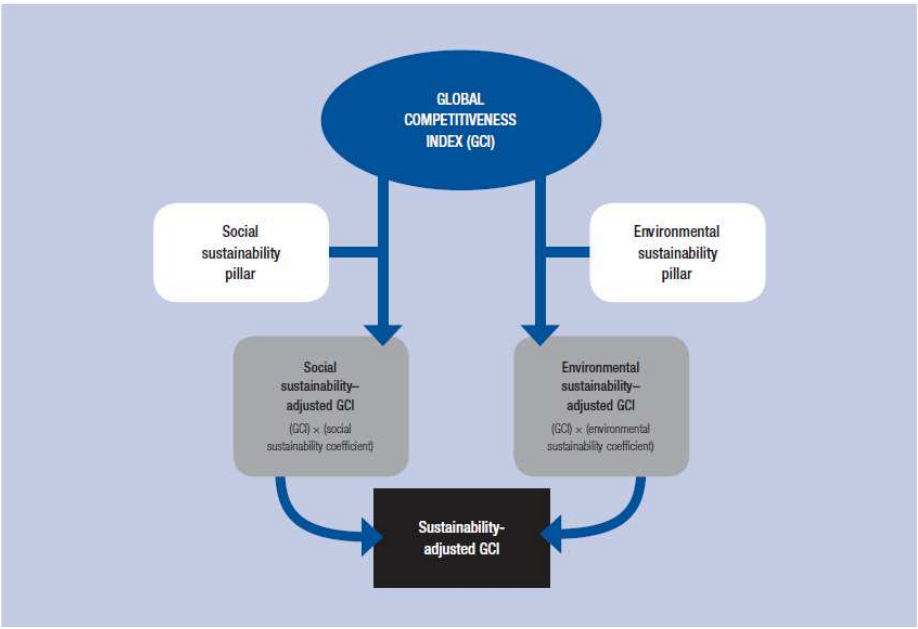
The Global Competitiveness Index Framework

Figure 1: The Global Competitiveness Index framework



Assessing the Sustainable Competitiveness of the Nations

Figure 1: The structure of the sustainability-adjusted GCI



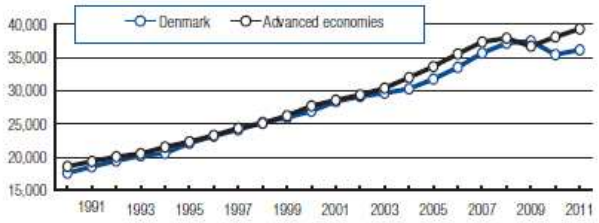
Denmark

Denmark

Key indicators, 2011

Population (millions)	5.8
GDP (US$ billions)	333.2
GDP per capita (US$)	59,928
GDP (PPP) as share (%) of world total	0.26

GDP (PPP) per capita (int'l $), 1990–2011



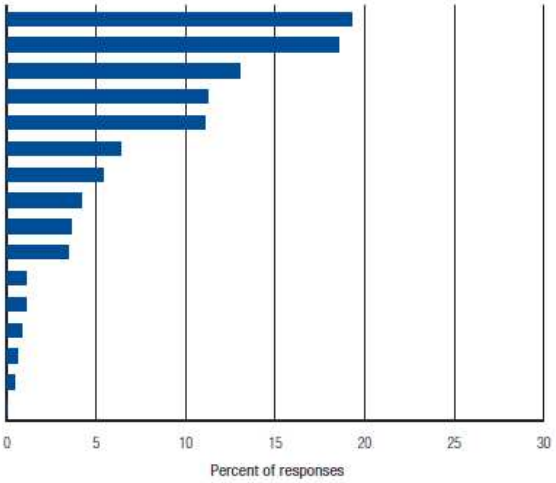
The Global Competitiveness Index

	Rank (out of 144)	Score (1–7)
GCI 2012–2013	**12**	**5.3**
GCI 2011–2012 (out of 142)	8	5.4
GCI 2010–2011 (out of 139)	9	5.3
Basic requirements (20.0%)	**16**	**5.7**
Institutions	14	5.4
Infrastructure	16	5.7
Macroeconomic environment	32	5.4
Health and primary education	29	6.2
Efficiency enhancers (50.0%)	**15**	**5.2**
Higher education and training	14	5.6
Goods market efficiency	19	5.0
Labor market efficiency	8	5.2
Financial market development	30	4.7
Technological readiness	3	6.2
Market size	53	4.2
Innovation and sophistication factors (30.0%)	**12**	**5.2**
Business sophistication	9	5.4
Innovation	12	5.1

Stage of development

The most problematic factors for doing business

Access to financing	19.2
Tax rates	18.6
Inefficient government bureaucracy	13.0
Restrictive labor regulations	11.3
Tax regulations	11.1
Insufficient capacity to innovate	6.3
Poor work ethic in national labor force	5.4
Policy instability	4.2
Inadequate supply of infrastructure	3.6
Inadequately educated workforce	3.4
Crime and theft	1.1
Inflation	1.1
Foreign currency regulations	0.8
Poor public health	0.6
Corruption	0.4
Government instability/coups	0.0



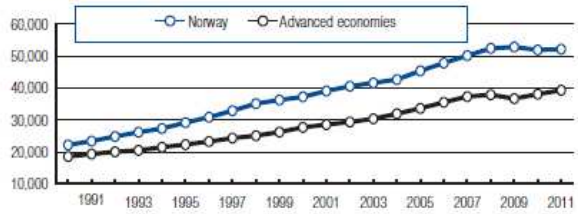
Norway

Norway

Key indicators, 2011

Population (millions)	5.1
GDP (US$ billions)	483.7
GDP per capita (US$)	97,255
GDP (PPP) as share (%) of world total	0.34

GDP (PPP) per capita (int'l $), 1990–2011



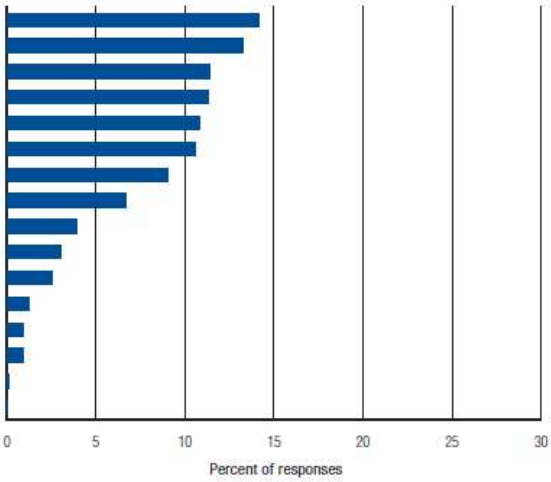
The Global Competitiveness Index

	Rank (out of 144)	Score (1–7)
GCI 2012–2013	**15**	**5.3**
GCI 2011–2012 (out of 142)	16	5.2
GCI 2010–2011 (out of 139)	14	5.1
Basic requirements (20.0%)	**9**	**5.9**
Institutions	8	5.7
Infrastructure	27	5.2
Macroeconomic environment	3	6.6
Health and primary education	18	6.3
Efficiency enhancers (50.0%)	**16**	**5.1**
Higher education and training	12	5.6
Goods market efficiency	28	4.8
Labor market efficiency	18	5.0
Financial market development	7	5.4
Technological readiness	13	5.8
Market size	50	4.3
Innovation and sophistication factors (30.0%)	**16**	**5.0**
Business sophistication	19	5.1
Innovation	15	5.0

Stage of development

The most problematic factors for doing business

Restrictive labor regulations	14.2
Inadequate supply of infrastructure	13.3
Access to financing	11.4
Insufficient capacity to innovate	11.3
Inefficient government bureaucracy	10.8
Tax rates	10.6
Tax regulations	9.1
Inadequately educated workforce	6.7
Foreign currency regulations	3.9
Poor work ethic in national labor force	3.0
Policy instability	2.6
Inflation	1.2
Crime and theft	0.9
Poor public health	0.9
Corruption	0.1
Government instability/coups	0.0



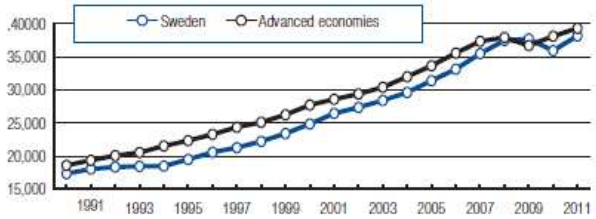
Sweden

Sweden

Key indicators, 2011

Population (millions)	9.9
GDP (US$ billions)	538.2
GDP per capita (US$)	56,956
GDP (PPP) as share (%) of world total	0.48

GDP (PPP) per capita (int'l $), 1990–2011



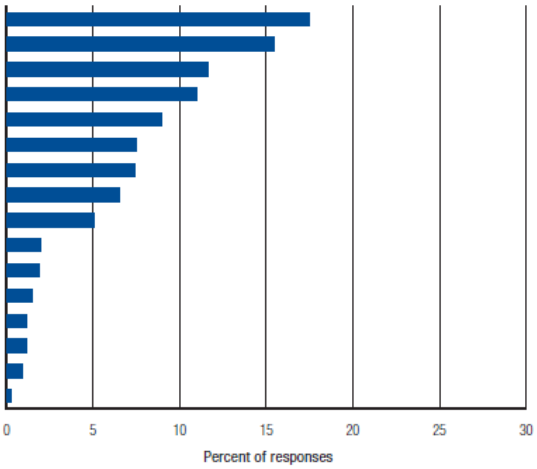
The Global Competitiveness Index

	Rank (out of 144)	Score (1–7)
GCI 2012–2013	**4**	**5.5**
GCI 2011–2012 (out of 142)	3	5.6
GCI 2010–2011 (out of 139)	2	5.6
Basic requirements (20.0%)	**6**	**6.0**
Institutions	6	5.7
Infrastructure	19	5.7
Macroeconomic environment	13	6.2
Health and primary education	14	6.5
Efficiency enhancers (50.0%)	**8**	**5.3**
Higher education and training	7	5.7
Goods market efficiency	12	5.1
Labor market efficiency	25	4.8
Financial market development	10	5.3
Technological readiness	1	6.3
Market size	34	4.6
Innovation and sophistication factors (30.0%)	**5**	**5.6**
Business sophistication	5	5.6
Innovation	4	5.6

Stage of development

The most problematic factors for doing business

Tax rates	17.5
Restrictive labor regulations	15.4
Access to financing	11.7
Tax regulations	11.0
Insufficient capacity to innovate	8.9
Inefficient government bureaucracy	7.5
Inadequately educated workforce	7.4
Inadequate supply of infrastructure	6.5
Foreign currency regulations	5.1
Policy instability	2.0
Poor work ethic in national labor force	1.9
Inflation	1.5
Crime and theft	1.1
Government instability/coups	1.1
Poor public health	0.9
Corruption	0.3



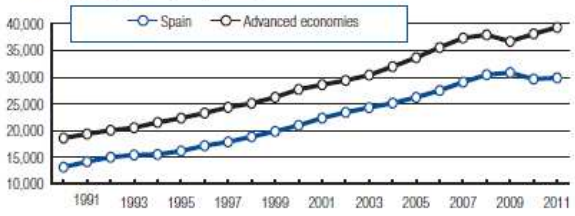
Spain

Spain

Key indicators, 2011

Population (millions)	48.8
GDP (US$ billions)	1,493.5
GDP per capita (US$)	32,360
GDP (PPP) as share (%) of world total	1.79

GDP (PPP) per capita (int'l $), 1990–2011



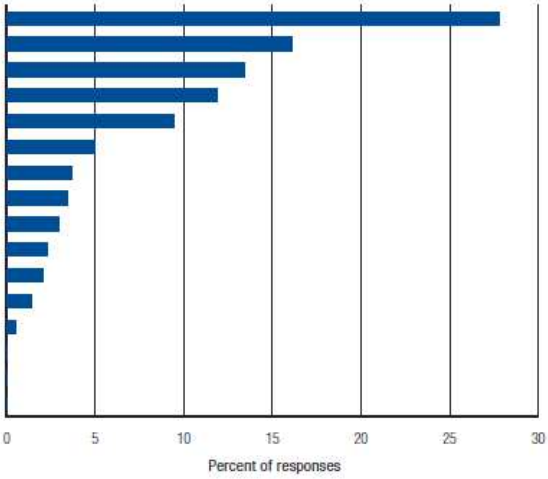
The Global Competitiveness Index

	Rank (out of 144)	Score (1–7)
GCI 2012–2013	**36**	**4.6**
GCI 2011–2012 (out of 142)	36	4.5
GCI 2010–2011 (out of 139)	42	4.5
Basic requirements (20.0%)	**36**	**5.1**
Institutions	48	4.2
Infrastructure	10	5.9
Macroeconomic environment	104	4.2
Health and primary education	36	6.1
Efficiency enhancers (50.0%)	**29**	**4.7**
Higher education and training	29	5.0
Goods market efficiency	55	4.4
Labor market efficiency	108	4.0
Financial market development	82	3.9
Technological readiness	26	5.3
Market size	14	5.5
Innovation and sophistication factors (30.0%)	**31**	**4.1**
Business sophistication	32	4.5
Innovation	35	3.8

Stage of development

The most problematic factors for doing business

Access to financing	27.8
Restrictive labor regulations	16.1
Inefficient government bureaucracy	13.5
Insufficient capacity to innovate	11.9
Tax rates	9.4
Tax regulations	5.0
Corruption	3.7
Inadequately educated workforce	3.4
Poor work ethic in national labor force	3.0
Policy instability	2.3
Inflation	2.0
Inadequate supply of infrastructure	1.4
Poor public health	0.5
Crime and theft	0.0
Foreign currency regulations	0.0
Government instability/coups	0.0



12 Annex 6: Organisms supporting trade between the Scandinavia and Catalonia

ORGANISMS	COUNTRY	AIM	LINK
ACC1Ó	Catalonia	Internationalization of Catalan businesses. They provide a network of 34 offices operating in more than 80 countries.	http://www.catalonia.com/en/
Biocat	Catalonia	Coordinating and promoting the biotechnology, biomedicine and medical technology sector in Catalonia, the BioRegion of Catalonia.	http://www.biocat.cat/en
Medcom	Denmark	Facilitating the cooperation between authorities, organisations and private firms linked to the Danish healthcare sector.	http://www.medcom.dk/
fivu	Denmark	Danish Ministry of Science, Innovation and Higher Education. It supports technology, innovation, high education and internationalization.	http://fivu.dk/en/
DanskBiotech	Denmark	Active organisation which is in a continuous dialogue with the Danish authorities and who is recognised as an authority regarding biotechnology in the public debate.	http://www.danskbiotek.dk/uk
Innovation Norway	Norway	Norwegian Government's most important instrument for innovation and development of Norwegian enterprises and industry.	http://www.innovasjonnorge.no/
Biotech North	Norway	Emerging biotechnology cluster of enterprises and R&D organizations, which cooperate closely with regional funding and development actors	http://biotechnorth.no/
Vinnova	Sweden	Developing Sweden's innovation capacity for sustainable growth and benefiting society	http://www.vinnova.se/en/

Medicon Valley	Denmark / Sweden	Axis of life science activities, which spans the eastern part of Denmark and the south-western part of Sweden. Danish-Swedish network organisation representing human life sciencesin the area.	http://www.mva.org/
Medcoast	Norway / Sweden	Network organization with the aim to strengthen and develop the biomedical sector in the Göteborg-Oslo region.	http://www.medcoast.org
CEBR	Europe	Network of biotechnology that support local biocommunity through direct services including networking, incubation, partnering and cluster promotion.	http://www.cebr.net/
European Biotechnology Network	Europe	Facilitating co-operation between professionals in biotechnology and the life sciences all over Europe.	http://www.european-biotechnology.net/

13 Annex 7: Interview videos

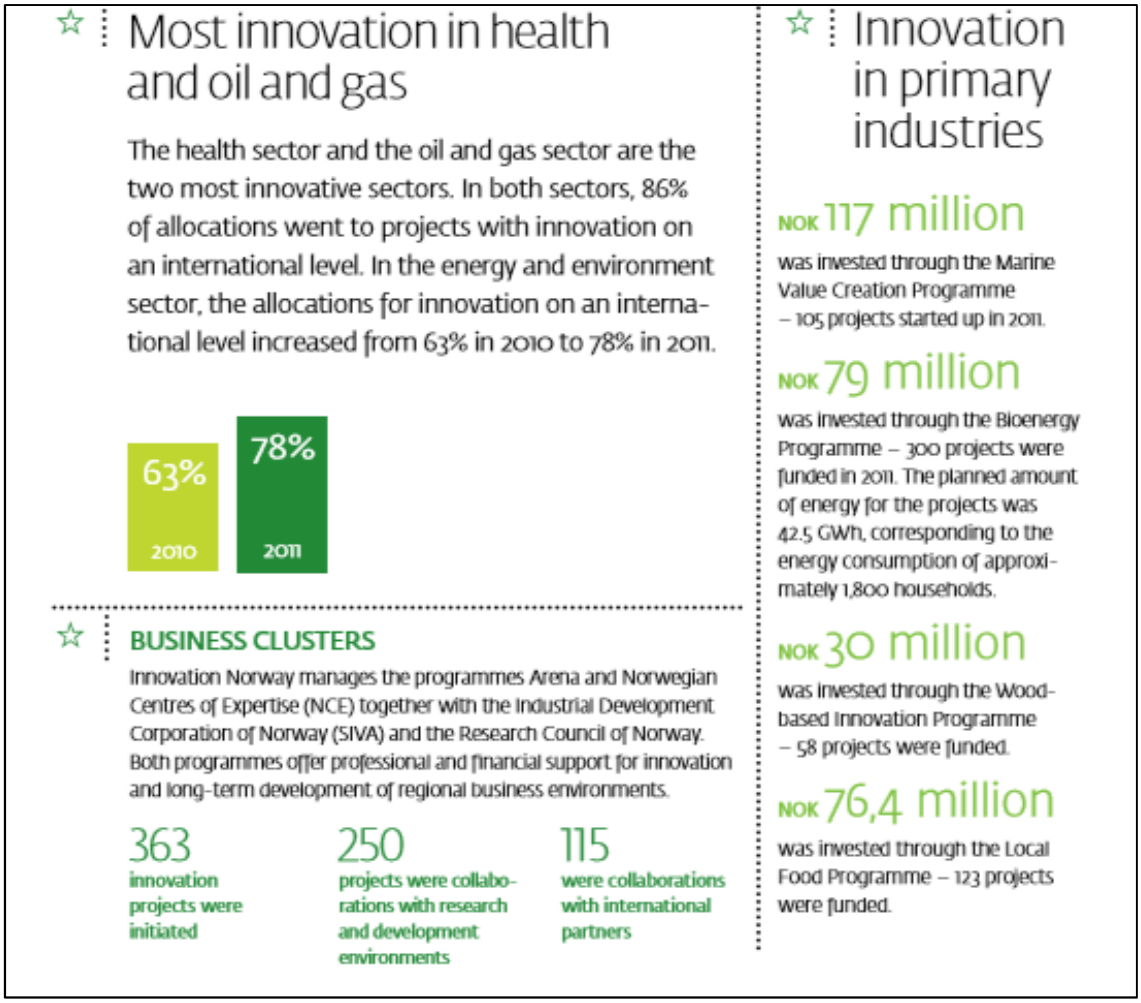
Interview Montserrat Vendrell in the Catalan TV program *Agora:*

http://vimeo.com/44733170

Interview Nathalie Moll, EuropaBio:

http://www.euractiv.com/video/nathalie-moll-ebs-2013-519832

14 Annex 8: Image of the Annual Report 2011 of Innovation Norway



Most innovation in health and oil and gas

The health sector and the oil and gas sector are the two most innovative sectors. In both sectors, 86% of allocations went to projects with innovation on an international level. In the energy and environment sector, the allocations for innovation on an international level increased from 63% in 2010 to 78% in 2011.

BUSINESS CLUSTERS

Innovation Norway manages the programmes Arena and Norwegian Centres of Expertise (NCE) together with the Industrial Development Corporation of Norway (SIVA) and the Research Council of Norway. Both programmes offer professional and financial support for innovation and long-term development of regional business environments.

363 innovation projects were initiated

250 projects were collaborations with research and development environments

115 were collaborations with international partners

Innovation in primary industries

NOK 117 million was invested through the Marine Value Creation Programme – 105 projects started up in 2011.

NOK 79 million was invested through the Bioenergy Programme – 300 projects were funded in 2011. The planned amount of energy for the projects was 42.5 GWh, corresponding to the energy consumption of approximately 1,800 households.

NOK 30 million was invested through the Wood-based Innovation Programme – 58 projects were funded.

NOK 76,4 million was invested through the Local Food Programme – 123 projects were funded.