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# Peripheral Localities and Innovation Policies

## Learning from good practices between the Nordic countries

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**Abstract:**

The focus of the PLIP project has been on local development policy supporting innovation processes in peripheral localities. The core phases of the project were a comparison of Nordic innovation policies from the point of view of small towns and rural areas, an analysis of good practices, a transferability analysis and the transfer of good practices, and the drawing of conclusions.

Good practices were defined as locally anchored, consisting of something extraordinary, an achievement which was expected to have a potential for telling others something, giving them new ideas which they might use in practice. These good practices in innovation policies were looked for, analysed, compared and finally transferred to other regions. They were grouped according to their functions in: competence building, entrepreneurship and product innovation, and networking and co-ordination. The transferability analysis took place through workshops in the case study areas.

The workshops showed that the local and regional actors were willing and able to relate to what was going on in other Nordic countries. We seem to have generated a need to know more, to see good practices in other countries and to make the learning process more efficient. One output from the workshops was a set of specific suggestions for policy initiatives to support the elements of the good practices recognised in the receiving areas.

Our recommendation is to set up good practice networks consisting of receiving partners who aspire to learn to do a given good practice combined with networks of those who are already doing so and researchers capable of codifying the good practice, and organizing its transfer.

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# Executive summary

**Objectives and core phases**

The focus of the PLIP project was on local development policy supporting innovation processes in peripheral localities.

The overall objectives of PLIP were to

- examine differences and similarities in local and national innovation policies between the Nordic countries from the point of view of peripheral areas,
- study good innovation practices in peripheral Nordic areas,
- analyse how to learn from the experiences of good practices in other Nordic localities, and
- test a method of action research for transferring good practices in local innovation policies between the Nordic countries.

The core phases of PLIP were

- a comparison of Nordic innovation policies from the point of view of small towns and rural areas,
- analysis of good practices,
- transferability analysis and
- transfer of good practices.

A point of departure was good practices. The good practices were defined as locally anchored, consisting of something extraordinary, an achievement which was expected to have a potential for telling others something, giving them new ideas which they might use in practice. These good practices in innovation policies were looked for, analysed, compared and finally transferred to other regions.

The processes, success factors, contexts, and impacts of the good practices were analysed, the transferable elements of each good practice evaluated, and the practices grouped according to their functions in: competence building, entrepreneurship and product innovation, and networking and co-ordination. Good practices were selected in the case study areas of all the Nordic countries.

The good practices were:

- Competence building:
    - Innovative co-operation between Centria Ylivieska and the SME's in Oulu South, Finland
    - The STI – Innovation Centre competence-building activities for the furniture industry, Denmark
- Entrepreneurship and product innovation:
    - Emigration Center at Hófsos in Northwest Iceland – innovation in culture-based tourism

    - Glomfjord – successful local-global networking, Norway
- Networking and co-ordination:
    - Collaboration in tourism industry in Lofoten, Norway
    - Small food producers' network and the Knowledge Centre for Food Development (VIFU), Denmark
    - Networking and knowledge transfer between large and small firms – IUC Dalarna, Sweden

We developed the research method of the PLIP project from the learning history approach. The transferability analysis was made through 10 workshops.

**Results and conclusions**

If we look at innovation in the economies of the Nordic countries, the profiles are different. At the same time, there are certain common trends in innovation policies. A general trend in recent years is the shift from narrow science and technology-based policies to a broader innovation policy.

All the Nordic countries are trying to strengthen regional innovation systems. The relations between innovation policy and regional policy are different.

- Regional policy and innovation policy are separate fields in Finland and in Iceland.
- In Norway, regional policy and innovation policy are integrated, hence regional policy considerations are an objective of overall national innovation policy.
- In Sweden, they are partly overlapping through Regional Growth Programmes and in Denmark, there are some initiatives to strengthen the role of regional level in innovation policy.

However, the national context was not so very prominent in the analysed good practices even if the national characteristics can be seen in the cases. Some good practices were uniquely dependent upon local or national systems in certain aspects. All good practices are examples of local or regional bottom-up activities in which the initiatives have came from the regional level.

The focus group analysis worked well.

- In the workshops, local and regional actors easily were willing and able to relate to what was going on in other Nordic countries.
- We seem to have generated the need to know more, to visit the good practices in other countries, and make the learning process more efficient.
- In several workshops a space opened for further discussions and codification of the rationale, modes of operation and achievements of participants.
- One output of the workshops were specific suggestions for policy initiatives to support the elements found in the good practice in receiving areas.

For some participants it was difficult to take a position as an outsider looking upon and evaluating their own institution. What they could learn from others, would have to be improvements in their own specific modes of operation which could best be transmitted from others they could recognize as experts, i.e. professionals like themselves, in other countries.

In some cases, there was a well organized regional partnership, the border to the national level being clearly established and defined. Some of the receiving case areas had institutionalized configurations between the regional and national level which was clearly different from that of the deliverer area of the good practice. A successful transfer seemed to depend on a redefinition of the regional – national divide which is an issue of national actors. In some countries, the regional – national divide obviously is dynamic and under debate, in other countries, this proved to be a cold lead, as the issue seemed to be locked. Similarly, it was hard to translate between local and regional levels.

**Recommendation: Good practice networks**

In order to transfer good practices successfully, the receiving group should be organized in a way which matches the system of actors and institutions *creating* the good practice.

Our recommendation is to set up good practice networks. A good practice network consists of three elements:

- the receiving partnership, aspiring to do the good practice, combined with
- networks which do the good practice already, and
- researchers capable of codifying the good practice, and organizing transfer.

Within the context of such a comprehensive approach to innovation, different methods, such as institutional networks, indicators, professional networks and other approaches should be available as supplementary tools to enhance transfer. Within this context, a bottom up approach to indicator production could be seen as useful, in demonstrating to the actors involved that the good practice is a better practice, thus shaking them out of their routine behavior. Besides this, of course, there are lots of tacit and professional knowledge involved in actually doing the good practice, which are not included in the codified receipt.

Since the *receiving* network should be designed by the object, the good practice, this puts the analytical capability of the researchers in a core position in the early stages of the process**.** Their challenge is to identify and distill the receipts – the codified text describing the basic logic of the good practice - and define suitable groups of institutions and people who might be tempted to apply this receipt in *making* good practice.

Taking into consideration that the process of transfer is likely to transform the good practice into something different, this process of trans-national learning should be regarded as long term and interactive, taking the tacit knowledge of the institutions and actors operating within the object field into due consideration.

The original receipt has to be rewritten, and in applying it in different institutional contexts, the new good practice may end up with different variations. As the object (the good practice) is changing in this process of re-embedding, so is the object network. This approach to innovation requires long-term interactive learning processes, back and forth between researchers and practitioners, tacit and codified knowledge.

In order to create *functioning* good practice networks, we need some kind of institutionalized facilitating mechanism providing the conditions for long term processes of learning within wide-ranging networks. A proper institutional context for taking this approach further could possibly be the EU structural fund programmes. Here, some of the successful good practices identified in PLIP could be used as pilot cases.

# PREFACE

This is the final report of the PLIP project, which focused on innovation policies in the peripheral areas of Nordic countries. This was a follow-up to the Innovation System and the Periphery project, also funded by NICe, and most of the participants were the same. Chydenius Institute - Kokkola University Consortium has been the co-ordinator of the PLIP project.

Good practices in innovation policies were looked for, analysed, compared and introduced into other Nordic regions in the course of the project, and then evaluated by the local actors in the other countries. Numerous meetings were organised for this purpose and many local actors in the selected areas were interviewed and communicated with.

The workshops involving local actors were an important part of the PLIP project, and we are very grateful to the local actors and stakeholders in the Lofoten, Skive, Glomfjord, Ylivieska, Kokkola, Borlänge, Falun and Skagafjorður areas, who gave their valuable time to our experiment. We also wish to thank all the people in the five Nordic countries who gave us valuable information in interviews and in the form of other material.

The PLIP team was very communicative during the research process. We organised five research workshops, two of which were video meetings. The agendas and minutes of these meetings can be found on the PLIP home page at http://www.chydenius.fi/english/plip/index.html. This report is a joint effort of the PLIP team, the members of which have commented on the introduction, comparison and conclusion chapters written by Seija Virkkala, Kristiina Niemi and Åge Mariussen.

Nordregio provided the steering group for the PLIP project. We wish to thank all the participants for an interesting project experiment! Thank you to NICe for making this experiment possible.

We think that there is a need for learning from good practices in local innovation policies between the Nordic countries. Our project revealed that such learning is possible to some degree. We hope to provide an input for further learning between local actors dealing with innovation policies.

September 2006

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# *Contents*

# 1 INTRODUCTION

## *1.1 Background*

Many peripheral areas of the Nordic countries played an important role in the industrialisation process, especially after the Second World War, when economic growth was based on the abundant natural resources, cheap energy and good labour supply. In Finland and in Sweden, for example, this situation gave rise to industrial giants in the pulp and paper industry and the metals industry. Although these industries continue to be important, the sources of economic growth have changed. Significant structural changes have taken place with the transformation of the Nordic economy in a knowledge-based direction. Public policies, especially science, technology and industrial policies, have played a crucial role in this transformation process.

The change to a knowledge economy and the broadly defined innovation policy seems to be regionally and sectorally somewhat biased, i.e. it is based more towards the larger cities and universities than towards rural areas and small towns. A substantial part of the industrial and economic activity is located outside the larger towns, however, and far away from the major cities and the capital regions. The peripheral areas of the Nordic countries could play a more important part in the knowledge-based economy of modern times. Actors in peripheral areas can adapt and adopt innovations developed somewhere else, and they can also create new innovations and alternative innovation systems. The Innovation Systems and the Periphery project[1] (ISP project) point to a number of examples of "good innovation practice" in industries in the peripheral areas of the five Nordic countries.

There is a need for development models targeting the peripheral areas of the Nordic countries from an innovation perspective, and the Peripheral Localities and Innovation Policies Project (PLIP project) responded to this need with an analysis of good practices. The project was built on the premise that there were already some good practices in the innovation policies followed in peripheral areas which could be useful to actors in other regions when formulating and implementing their innovation policies.

Nordic innovation policies are based on a concept of innovation system that seems to need an upgrade due to the advent of globalisation. According to the Finnish Minister of Trade and Industry, Mauri Pekkarinen, *"Due to the creation of the European market and the role played by global firms, innovation policy cannot be based only on national research and knowledge. In particular, European countries must share knowledge and research on innovation policy, and attempt to benefit from collaboration."*[2]

[1] Innovation Systems and the Periphery 2005.
[2] Speech at the ProACT conference in Tampere, March 15-17, 2006.

Parallel to the globalisation processes, innovation policies within the EU have also been transformed in a new way. Hence, regional development policy is moving towards innovation policy.[3] This is important, as it seems to be crucial to introduce more innovation aspects into regional development policies for peripheral areas, as global competition represents an especially great challenge for these areas.

## *1.2 Aims, framework and process of the research project*

The PLIP project is a follow-up to the ISP project, partly building on the ISP data and findings.[4] The ISP project identified a number of examples of "good innovation practice" in selected traditional and mature industries in the peripheral regions of five Nordic countries. Although many of these innovations were small-scale and incremental in nature, the examples demonstrate that in spite of some apparent disadvantages associated with peripheral location, innovation is not merely possible in the Nordic periphery but also important to its development. Good practices and successful policies may come in different forms, depending on local, national and sector-specific preconditions.

The general aim of the PLIP project was to contribute to the innovativeness of the firms and localities in peripheral regions of the Nordic countries. A more immediate goal was to support policymakers and local actors in their efforts to learn from experiences through transferring good practices. The project addressed the problems of increasing the understanding of good practices in local innovation policies, the relationship between policies, entrepreneurship and localities, and inter-regional learning.

The main focus of the PLIP project was on the local development policy supporting innovation processes in peripheral localities, so that good practices in innovation policies were looked for, analysed, compared and finally transferred to other regions. We focused on good practices - not best practices as in many EU projects - since we believe that the practices involved in local innovation policies cannot be put in order of preference so that the best can be chosen in every region. Instead, a practice can simply be good, or have good elements which could be learned by actors in other regions.

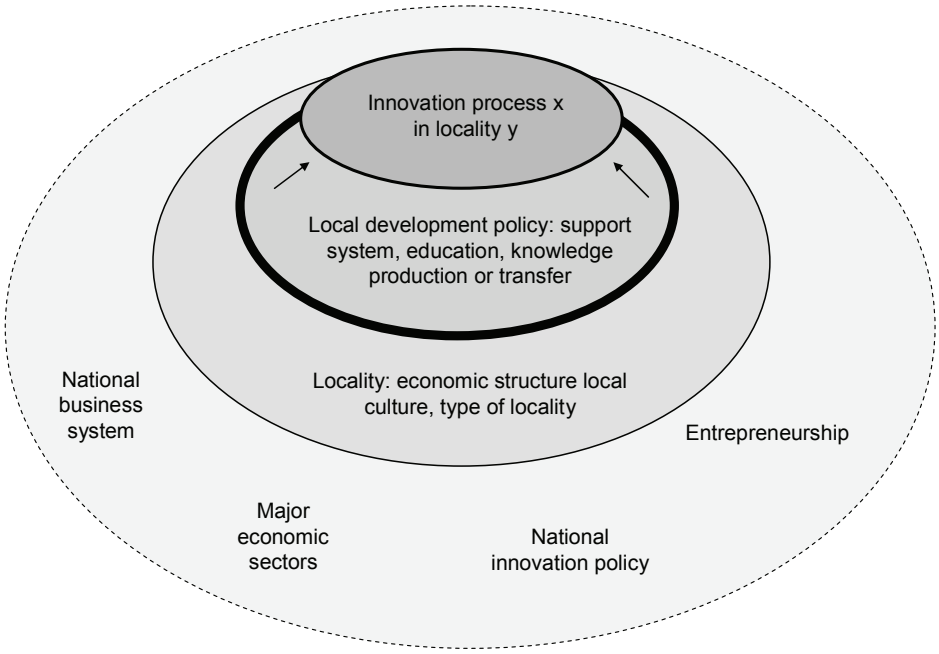
Good practices in innovation policy are to some degree the results of unique historical, local and regional conditions. The relevant properties of localities are local entrepreneurship, locally embedded networks, local culture, local skills relevant to new ways of exploiting local resources, and local and regional policymakers, for example. They can be conditioned by local history and nature, or by a local knowledge base, which may be social, cultural or craft-based. In addition, a firm's interaction with its locality can vary, as innovative firms can be isolated or embedded

[3] Commission of the European Communities 2005.
[4] Innovation Systems and the Periphery 2005.

in a local production system and they can act as driving forces in wider local development processes (Figure 1).

Good practices in local innovation policies can also result from nationally unique conditions and policy systems, such as national innovation systems, national policy instruments, etc., depending on what kinds of national innovation approaches are embedded in these local-level practices. Based on our analyses, we looked for differences and similarities in the Nordic countries with regard to the role of peripheral regions in innovation policy.

**Figure 1.** Research framework of the PLIP project.




The objectives of the PLIP project were firstly to examine differences and similarities in local and national innovation policies between the Nordic countries from the point of view of peripheral areas, secondly to study good innovation practices in peripheral Nordic areas, thirdly to analyse how to learn from the experiences of good practices in other Nordic localities, and finally to test a method of action research for transferring good practices in local innovation policies between the Nordic countries.

The core phases of the project were:

*I Comparison* of Nordic innovation policies from the point of view of small towns and rural areas

*II Analysis of good practices*

*III Transferability analysis and transfer of good practices*

*IV Conclusions*

### *I Comparing innovation policies in the Nordic countries*

Although the innovation policy and regional policy systems in Nordic countries differ, peripheral Nordic areas have certain basic similarities. The cultural, economic and institutional settings in the Nordic countries form the context for the good practices identified, as does the notion of cross-national learning. In order to examine the transferability of good innovation practices, we analysed the national and local embedding of these cases. The relevant policy actors may differ between the countries, as do certain innovation policy preconditions such as production, the business culture and the administrative structure. Many policies such as rural policy, regional development policy and industrial policy aim at contributing to innovation processes and enhancing the innovation capabilities of firms in peripheral regions.

There are variations between the Nordic countries in the ways in which the system concerning innovation processes works at the local level. The national aspects of rural and regional policy and innovations manifest themselves differently at the local level. The PLIP project emphasises a bottom-up perspective – the point of view of firms and local actors in peripheral regions.

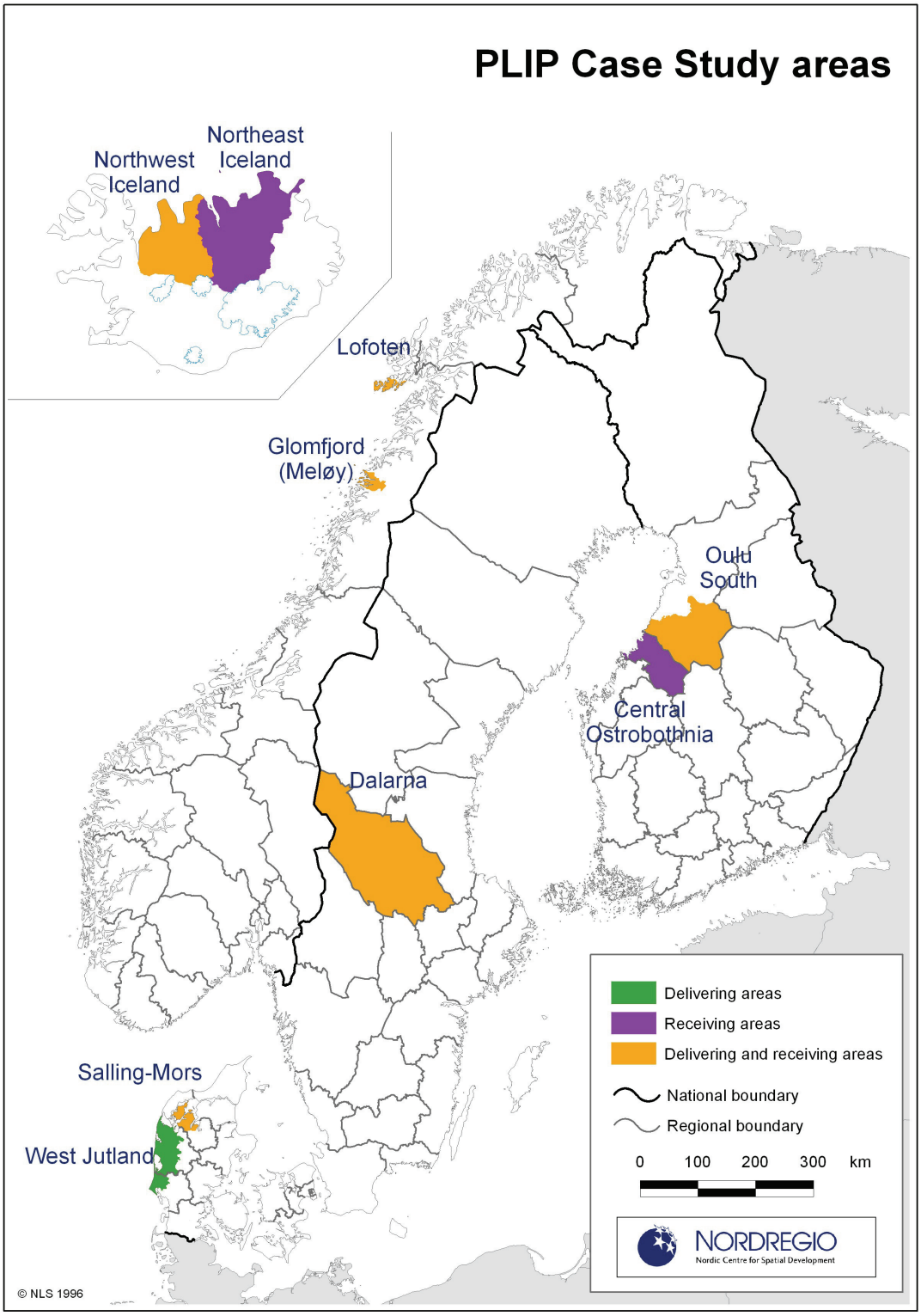
The comparative research was intended to answer the question "What are the differences and similarities between the Nordic countries in the role of peripheral regions in innovation policy?" At the national policy level we set out to examine how localities, small towns and rural areas are taken into account in spatial and sectoral policies, for example. Are there specific systems for this? What are the implicit or explicit definitions of innovation in these policies? What kinds of innovation approaches do we have in rural and regional policies from the point of view of peripheral regions?

### *II Analysis of good practices*

*Selection of case study areas and good practices*

Good practices were selected in the case study areas of all the Nordic countries, constituting parts of the counties of Ringköping, Ribe and Viborg in Denmark, Oulu South and Central Ostrobothnia in Finland, Lofoten and Meløy/Glomfjord in Norway, Dalarna in Sweden and Northwest Iceland. The areas were of three types: areas offering good practices to other regions, areas engaged only in receiving good practices from other areas, and areas which were both offering and receiving good practices (Figure 2).

**Figure 2.** Case study areas of the PLIP project.



The characteristics of the case study areas were described and analysed at the beginning of the research process in order to become familiar with the areas as contexts for good practices or as recipients of such. In the latter case the researchers analysed what was needed in the region.

After preliminary descriptions of the areas, the data on the good practices were constructed according to the criteria defined in the project. Two good practices were selected and described in each country, i.e. 10 altogether. After gathering information on all possible good practices, the national teams made decisions as to which would be their case studies. The result of this matching was that two practices were chosen from Norway and Denmark and one each from Finland, Iceland and Sweden.

*Analysis of selected good practices*

The analysis was based on the learning history method (see chapter 1.4), which meant the construction of a narrative. Parts of the empirical data needed for the analysis were based on data and findings from the ISP project, and additional data were gathered through interviews and from secondary sources. The processes, success factors, contexts etc. of the good practices were analysed and the practices grouped according to their functions in:

1) competence building
2) entrepreneurship and product innovation
3) networking and co-ordination.

The analysis was formulated in a uniformed structure that included:

- the weak hypothesis – why the good practice?
- context
- structure
- process
- impacts
- contextualisation
- transferable elements – what can be learnt from the good practice?

***III Transferability analysis***

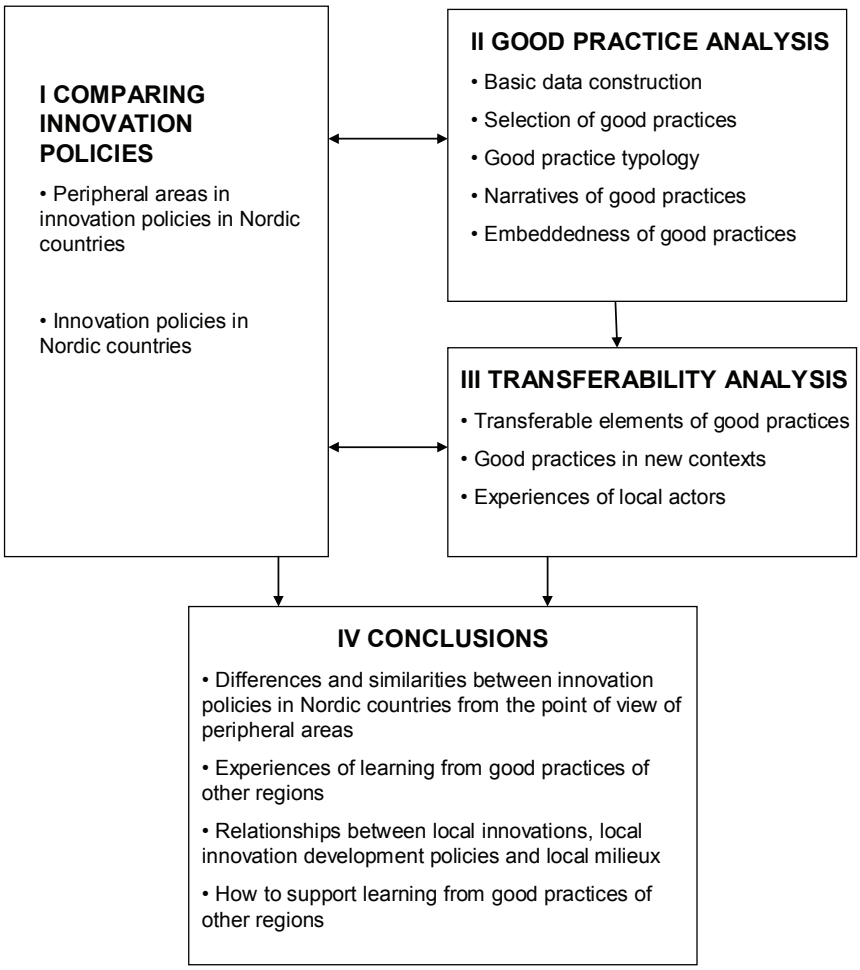
The transferability analysis was based on the outcomes from the previous phases. The aim was to make both the local actors and the researchers familiar with the various good practices and to evaluate their transferability potential. This analysis was carried out in *national-regional workshops*, where good practices from the other countries were presented by the foreign researcher(s), who also participated in the discussion on the transferability potential of the case, while national and regional policymakers, politicians, operators of innovation policy instruments and entrepreneurs were asked to assess the transferability of the good practices. At the national-regional workshops organized in the case study areas of the PLIP project, transferability was analysed

interactively by the research team and the local and national actors in each case study area. The transfer of good practices depended both on their transferable elements and on the characteristics of the new contexts. In some cases they were uniquely dependent upon local or national systems in certain aspects. The question was what could be learnt from the good practices in different regional contexts. The other focus in our analysis was on how the good practices could be supported or sustained by the national innovation systems and policy instruments in the receiving countries?

### *IV Conclusion*

In the conclusion phase we analysed the learning processes connected to the transferability of good practices based on our empirical results. We also inferred policy implications based on the outcomes of the good practice analysis, transferability analysis and comparison of innovation policies. The research process is described in Figure 3.

**Figure 3.** Research process of the PLIP project.




## *1.3 Basic definitions*

*Peripheral regions*

Peripheral regions were defined in the PLIP context as small centres and rural areas outside the major growth centres.[5] These areas could be determined by examining the regional balance, as peripheral areas are often out-migration areas. In the Finnish case the peripheral areas are defined as lying outside the major growth centre areas (Helsinki, Turku, Tampere, Oulu, Jyväskylä), for example.

[5] The definitions are same as in the ISP project.

*Innovation*

A broad understanding of innovation includes not only processes that call for R&D and are based on high-tech principles, but also new products, new means of production, new management and marketing techniques and more effective networking relationships between firms and between the private and public sectors. This broad understanding of the concept also calls for the recognition of different types of knowledge and competence as necessary building blocks for innovation. These include not only the commonly emphasized science-based knowledge but also various forms of practical knowledge, which is the key underpinning for most traditional and mature sectors of industry, for example.[6] The following definition of the concept of innovation was used in the PLIP project:

*"An innovation means implementing/utilizing a novelty for the purpose of strengthening or improving the competitive status of the entity (firm) in question.*

*Innovation is defined from the perspective of the firm, i.e. it has to include something new to the firm but not necessarily new to the market (locally, nationally or in an even wider context). It does not matter, therefore, whether the novelty was developed by the firm or by another entity."* [7]

*Innovation system*

The concept of innovation system has been developed to describe the systemic nature of innovations. It builds on the assumption that innovation is not only a result of interactions and knowledge transitions between economic actors but is also reliant on these. An innovation system has been defined as "*a set of institutional actors and interactions having as their ultimate goal the generation and adoption of innovations at some level of aggregation"*[8] (country, region, industry sector, etc.). The set of players who represent the different elements of the system include firms and various organizations such as educational and research institutes, technology-transfer agencies, consultants and development agencies, public and private funding organizations, interest groups and membership organizations of various sorts. Interactions between these actors can take place in various ways and can be described as flows of knowledge and information, flows of investment, flows of authority or leadership and even as more informal arrangements such as networks, associations and partnerships.[9] Innovation systems are open systems which have some autonomy from their environment with regard to their development, way of functioning and from of specialisation.[10] According to Lundvall[11], the labour market, the education and training system, and the investment capital market all constitute important frameworks for an innovation system.

[6] Innovation Systems and the Periphery 2005, 11.
[7] Innovation Systems and the Periphery 2005, 11-12.
[8] Saviotti 1997, 180.
[9] Innovation Systems and the Periphery 2005, 12.
[10] Lundvall 2002, 44.
[11] Lundvall 2002, 44-45.

*Innovation policy*

Innovation policy includes all public decisions which influence the emergence of innovations and promote or restrict innovation activities. Innovation policy contributes to innovations and the improvement of innovation conditions. It fosters economic growth and the competitiveness of the nation's industry by creating conditions for innovative activities[12]. Co-ordinated innovation policy promotes the generation of innovation in different policy sectors[13], most notably educational and labour market policy. Since competition policy and general economic policy affect the economic climate in which firms operate, these policies should to a certain degree be in harmony with innovation policy. Social policy and the institutions of the welfare state also influence people's attitudes towards often risky technical and organisational changes. Besides, strategies are needed that consider and take into account both the advantages of innovation processes and the costs involved in them. According to Lundvall[14], the way in which a society organizes the distribution of the indirect costs and benefits of the transformation process is crucial.

The broad definition of innovation policy may be problematic, since

- it is so broad that it can include everything and hence might become blurred.
- it could vary between the Nordic countries depending on the characteristics of the national innovation system.
- the relevant policy and sectors may also vary inside the five countries.
- there are differences between political texts and realities. The political text may emphasise broad innovation, but all the measures may be directed toward R&D.

As already mentioned, the starting point of the PLIP project was the broad definition of innovation policy, but the focus was on the definitions and aims of national innovation policies and on linkages between innovation policies and regional policies, i.e. innovation policies from the point of view of peripheral regions.

*Good practices in local innovations and innovation policy*

The basic unit of this study is a good practice. Its definition is likewise problematic, since good practice is not a scientifically discussed concept as is innovation, for example. The concept "good practice" has been loosely used in policy contexts, policy documents and efforts aiming at learning, and it is often used in EU projects without an explicit definition.

The GoodNIP (Good Nordic Innovation Policies) project, dealing with Nordic innovation policies, mostly in the form of policy measures and programmes,[15] seems not to have put forward any explicit definition of good practice. Likewise, the Rural Transfer Network project of the Northern Periphery programme compared rural

[12] Koch & Norgren & Oksanen 2003, 9.
[13] Lemola 2004, 10-11.
[14] Lundvall 2002, 25.
[15] http://www.step.no/goodnip/index.html

policy and models for local rural development in Sweden, Norway, Finland and Scotland,[16] again without any explicit definition of the concept.

The definition of good practice employed in the PLIP project was arrived at in the context of the aims of analysing such practices. The aims were to find out the variety of ways in which one could operate in peripheral localities, to explicate the tacit knowledge that often lies behind the good practices developed by local actors, to find out what could be learnt from other peripheral areas in Nordic countries and to help local actors to learn from the experiences in other peripheral areas.

A good practice was defined in the PLIP project through the following dimensions:

1. The regional and local context of a good practice is a *peripheral area*, in the way in which we have defined it in the project.
2. A good practice in the context of a local innovation or innovation policy is a separate entity (unit, process, sector, network etc.) which can be *identified* from its context.
3. A good practice has *content*, which is neither too general nor too specific. An entrepreneurial spirit, for example, was regarded as too general for our purposes. On the other hand, the business conducted by an individual firm as such was too specific. Instead, the concept was required to be contextualised and related to the locality and local innovation policy.
4. A good practice is innovative, i.e. it brings *something new* to the locality, especially to local economic development.
5. A good practice is an entity which can be *compared*, at least to some degree, with other good practices.
6. A good practice has something from which actors in other regions can learn. It has some degree of *transferability*.
7. It is possible to *repeat* a good practice, or at least some elements of it.
8. A good practice has some kind of measured or expected *outcome* which increases the innovativeness of firms or the learning capability of the peripheral region. It may often lead to improved "competitiveness" for the locality.
9. A good practice has *some kind of formal structure*. It is organised somehow and certain actors are involved in it.

[16] http://www.kajaaninyliopistokeskus.oulu.fi/proj/alupro/Pmruratr.htm

## *1.4 Research method: learning history in the PLIP context*

We developed the research method of the PLIP project from the learning history approach, which has its background in studies of organizational learning.[17] In organizations, learning through practices resulting in extraordinary achievements often remains at the level of the individual. The individual may repeat the success, but the success may not be replicated or copied by others, simply because they are unaware of it, or, if they recognize it, they are unable to understand how it was achieved. Accordingly, the organization is more often than not unable to diffuse and exploit the new knowledge created by the individual regarding how a "good practice" can be achieved by other individuals. In order to convert new knowledge from individual learning to knowledge which may be utilized by the rest of the organization – or network of organizations – such as regional or innovation policy agencies, or business entrepreneurs, the "good practice experience" must be *codified* in a way which makes it possible for *others* to reconvert this message – *this story* – into new, improved *practices*. This involves three steps:

- From practice to codification, in other words, constructing the codified story out of the successful practice.
- The stories of successes are contextualized, i.e. embedded in contexts which make them unique and useful as inspirations for others. Contextualization raises the need to dis-embed the story, or to abstract the elements which may be transferred.
- From codification to new practices, i.e. using the success story – or some elements of the success story, elsewhere, in other contexts, in order to alter practices.

Telling stories about successes or achievements is something which is going on all the time, when policymakers, business entrepreneurs and people in general, meet and exchange gossip about what they have been doing lately. This *buzz* is often the way entrepreneurs and policymakers monitor their environment and competitors. We believe that this approach of lay people can also bring "*value added*" to the social and regional sciences.

In the PLIP project we applied the learning history method in an experimental fashion in order to study the potentials for learning good practices in different contexts. New knowledge was converted from individual learning through practice to knowledge which could be utilised by others and in other countries but similar contexts. The good practices identified were *codified* in a way which made it possible for others to reconvert them into new and improved practices. The phases of good practice analysis according to the guidelines developed in the project were the following:

[17] See MIT Field Manual for a Learning History at: http://ccs.mit.edu/lh/intro.html

***1. Phase: Definition and description (as a weak hypothesis)***

The good practices were defined as locally anchored, consisting of something extraordinary, an achievement which was expected to have a potential for telling others something, giving them new ideas which they might use in practice. We *inferred* as a weak hypothesis that there may be *something to learn*. We also determined the boundaries of the good practices, i.e. we made a difference between a good practice and its context.

***2. Phase: Identification and substantiation***

The weak hypothesis was substantiated by means of new data obtained through interviews and new documents. The processes generating the good practice were examined from different perspectives. Actors of four types were interviewed: insiders who had initiated the good practice or participated in planning it, actors who had been involved in the projects, actors influenced by the good practice, and outsiders.

In explaining the outcome, we went through the various stories told by different actors and used other available data. This enabled us to identify the relevant actors and to generate a "thick" description that came close to the "empirical realities" of what had been going on and why. This "thicker" case study then substantiated, weakened or modified the initial hypothesis.

When substantiating the story, the key themes and plots were constructed and questions concerning the success factors, the process and structure of the good practice and its inner and outer contexts were answered. The story was validated by asking stakeholders for reflective feedback, and it was also contextualised and the factors and mechanisms which explained the changes at the local and national levels were identified. The output of this phase was a thicker story told by the participants and accompanied by a distillation of the topic.

***3. Phase: Analysis of the story: dis-embedding analysis***

Although the thicker story of good practice was embedded in a unique context which could never be replicated completely anywhere else in the world, the analysis of the story helped us to identify *elements* in the original story which could be more or less abstract. This act of *abstraction* was referred to as dis-embedding. When dis-embedding this "thick" story we tried to extract the "core" of elements which seemed to be relevant to others. This abstract analysis could be seen as a grounded description of an "innovation system", and the output of this phase was a set of abstracted elements from the thicker story of good practice.

***4. Phase: Re-embedding***

The dis-embedded elements were then planned to apply in practice in other contexts. This movement *from the abstract to the concrete* was termed re-embedding. To what extent the abstractions generated through dis-embedding were useful was evaluated by actors embedded in other contexts. The answer to this question depended on the outcome of the confrontation of practitioners with our findings in the workshops.

***5. Phase: Rewriting experiences and testing the initial hypothesis***

The researchers drew insights from these dialogues and rewrote the major findings in their reports, so that the reports were inclusive and multi-voiced. The outcomes were planned to be in the form of policy recommendations.

The methods of good practice analysis were not applied strictly in every case. The number of interviews varied, for example, and the movements from abstract to concrete were applied differently from one case to another. The testing in particular depended on the contexts and outputs of the workshop. The method is evaluated in the conclusions chapter of this report.

## *1.5 Description of good practices – summary*

Chapter 3 of the report deals with the good practice analysis, introducing each of the 7 good practices. As mentioned in section 1.2 above, the good practices were grouped according to their functions in the following way: competence building, entrepreneurship and product innovation, and networking and co-ordination.

Two good practices were studied within the topic of **competence building** for innovation: the Finnish *innovative co-operation between Centria Ylivieska and the SMEs in Oulu South* and the Danish *Skive Technical Institute (STI) together with the Innovation Centre for the Furniture and Woodworking Industry (Innovation Centre) and the educational programmes on innovation and design for furniture industry*. Both cases deal with educational institutions.

The Finnish good practice is mostly based on the activities of Centria Ylivieska, the research and development unit of an educational institution, which has innovative co-operation with the SMEs in its home area and also transfers knowledge and new models between sectors. Centria Ylivieska has been a driving force in a favourable cycle of education, innovation projects and business development in the region.

One central element in the Danish good practice is the integrated teaching in production and design, together with the integration between educational programmes and business development. The Danish case study is embedded in a long craft-based tradition in the furniture sector, which has been reproduced and renewed.

The **entrepreneurship and product innovation** good practices come from Iceland and Norway. The Icelandic good practice case *Innovation in culture-based tourism in Hofsó*s is unique in the way it has made use of the historical and cultural phenomenon of emigration of Icelanders to North America and a good access to genealogical data. A specific brand of cultural tourism has been developed using these historical facts and the old part of a village has been turned into a museum and an area to attract and entertain visitors. This example is a story of interaction between the innovative activities of a single firm and a capacity building development project that was organized by a set of public institutes.

The Norwegian case, *Glomfjord*, involves the restructuring of a locality in Norway through innovation and local-global networking. A local development coalition mobilised the employees of the restructured chemical firm producing fertilizer based on hydro-electric power. New firms were created, one of which - Scan Wafer - based its production on R&D innovation in the field of solar panels.

Three of the good practices were placed within the theme of **networking and co-ordination**. Firstly, the Norwegian good practice of *Lofoten* with a focus on industrial collaboration and innovation policy collaboration in tourism. The combination of these is based on and makes use of the local identity, creating innovative products and extending the knowledge and competence base at the same time.

Secondly, the Danish good practice of *a small food producers' network and their connection to the Knowledge Centre for Food Development (VIFU)* is characterised by learning and networking amongst producers, local embeddedness and regional-level innovation policy. The main points in this good practice are human resources, but there are also themes, projects and activities that catch the interest of the users.

Thirdly, there is the Swedish good practice of *IUC Dalarna*, which deals with networking and knowledge transfer between large and small firms. This practice focuses on regional and industrial networking and development.

# 2 COMPARING INNOVATION POLICIES IN THE NORDIC COUNTRIES

## *2.1 Introduction*

The subject of innovation policy is a very wide one, but also one that has been fairly well covered in recent years, e.g. in the European Trend Chart on Innovation and in many other reports and studies. The comparison to be made within the PLIP project therefore focuses on the definitions and aims of national innovation policies and the linkages between innovation policies and regional policies in the Nordic countries. The aim is to study the similarities and differences between the countries' innovation policies from the point of view of peripheral areas.

The comparison is related to the good practice analysis in that it will assist us in the contextualisation and embedding phases, e.g. in evaluating to what degree a certain good practice is dependent upon country-specific policies, institutions and actors. The information gained from the comparison is also relevant to the new contexts considered in the "re-embedding" phase of the good practice analysis.

The country-specific information on the definitions, scope, objectives, actors and institutions of innovation policies and on their relations to regional development policies is presented in the country reports that make up the appendices. These appendices also include descriptions of the policy initiatives and sectors that are of relevance from the point of view of the good practices considered here.

## *2.2 Innovation profiles of the Nordic countries*

There are some differences in innovation profiles and performance between the Nordic countries which may to some extent reflect the traditional north-south divide, where the northern peripheral areas such as Iceland, Norway, Finland and Northern Sweden have specialised in the extraction and processing of natural resources, whereas market driven innovations may emerge more easily in Denmark and Southern Sweden, which are more centrally located and closer to the central European city belt.[18]

Denmark has an extremely efficient innovation system, with a low input and moderately low investment in R&D, whereas the outputs in terms of the turnover created by new products are extremely high.[19] Their deep cultural knowledge of consumer market tastes enables Danish firms to maintain a high level of consumer

[18] Mariussen 2005.
[19] Mariussen 2005.

product innovations, and proximity to the core European consumer markets, together with excellent channels of access, is a major strength. Other strengths of the Danish innovation system are the high level of skills among process operators in Danish firms and the custom of sharing their experiences in locally embedded networks of craftsmen and industrial operators.[20]

Swedish corporations possess sophisticated and advanced knowledge bases, highly developed industrial organisations, owners with a deep interest in and commitment to technological development, knowledge-driven strategies and a superb capability for solving complex problems of technological development. Sweden created a new development path in the areas of biotechnology and IT during the 1990s, but the heavy investments made in R&D, not least in the public sector, did not yield as much in return as was expected.

Historically, Finland and Norway have had process industries based on raw materials, and like Sweden, Finland has a process industry background with large, sophisticated national clusters in industries such as pulp and paper, metals, energy and supporting branches such as mechanical engineering. Finland created a new path during the 1990s by diversifying its activities in the electronics industry.

The major Norwegian clusters, comprising the marine, maritime and petroleum industries, were injected with a substantial developmental input during the 1980s, through an aggressive R&D policy. The supporting industries, in particular mechanical engineering, are strong. Most Norwegian corporations are process-oriented, focusing on incremental innovations rather than new products. Norwegians know very well how to run processing industries efficiently.

Iceland has a strong maritime-marine cluster, where the basic strengths are in process innovations. This has reached a high degree of sophistication in terms of industrial organisation through the regulation of fisheries, which has opened up the dynamic development of a new Icelandic corporate sector.

## *2.3 How is innovation policy defined and approached in the Nordic countries?*

The roots of innovation policy lie in the technology policy of the 1980s, when the main instruments were R&D programmes in new technologies such as IT, biotechnology and new materials. One common aspect has been that the programmes have aimed at restructuring industry by developing it on a scientific basis. There are national differences in technology policy, however, so that in Finland, for instance, it was continued from 1990 onwards through the development of a national innovation system, while Norway went in the opposite direction, with the emphasis on a broad

[20] Lundvall 2002; Mariussen 2005; appendix E in this volume.

concept of innovation, thus arresting the growth in state support for science and technology.[21]

Innovation policy is generally seen in the Nordic countries as a foundation for future welfare development, and another common element seems to be that it is strongly influenced by a systemic approach to innovation. According to this view, technological advance and competence building is characterised by a constant interplay and mutual learning between different types of knowledge and a range of actors that include firms, institutes, universities, sources of financing, relevant public agencies and a lot more.[22]

Substantial investments have been made in education in all the Nordic countries, especially in higher education, and this has been seen to affect the innovative capabilities of firms, basically because innovation is grounded in learning and companies' abilities to learn depend on the absorptive capacity of their employees.

Even though the innovation profiles are different, there are some common trends in innovation policies in the Nordic countries. Some shifts seem to be taking place from narrow science and technology-based policies to a broader innovation policy. The differences between the two innovation policy definitions are depicted in Table 1.

**Table 1.** Characteristics of narrow and broad definitions of innovation policy.

| **Innovation policy** | **Narrow definition** | **Broad definition** |
|---|---|---|
| *Policy areas* | Science and technology policy | Many policy areas |
| *Orientation* | Technology orientation | Building innovative capacities in different sectors |
| *Perspective* | Macro-perspective | Macro and micro-perspective |
| *Regional aspects* | Centres of expertise, technology centres, science parks etc. | All supporting elements, innovative milieux |

Our hypothesis is that the broad definition

- includes the narrow definition,
- points to more regional aspects of innovations,
- is more of a bottom-up approach,
- emphasises sectoral policies that may be more favourable for building up innovation capabilities in peripheral areas, and
- may strengthen accessibility and democracy.

[21] Mariussen 2006**.**
[22] Koch & Aanstad 2003.

One possible way to analyse the different policy approaches is to examine the rationalities behind innovation policies. These rationalities are often in conflict with each other. The GoodNIP report found the following rationalities behind Nordic innovation policies:

*1. Traditional economic rationality based on neoclassical theory*

This is characterised by a belief in a balanced economy plagued by market failure. Neoclassical theory focuses on the individual company, while innovation theory is more concerned about interaction and learning in groups and environments. Policymakers operating within this rationality have a tendency to focus on financial measures such as interest rates, the balance of trade etc. Innovation policy measures are legitimised with market failure arguments.

*2. Rationality based on a systemic view of innovation*

The main focus is on the networking and learning capabilities of firms. The systemic view, which is quite influential in the Nordic countries, is inspired by modern innovation theory. Vinnova in Sweden and the IMPRA innovation centre in Iceland are governed by this systemic rationale, as also are the Centres of Expertise Programme and the national technology programmes in Finland.

According to the official policy documents, the systematic approach seems to be the formal basis for innovation policies in all the Nordic countries, although the GoodNIP Project emphasises that differences exist between political texts and realities.

*3. Science-based linear model*

The science-based linear model is a rationality based on firm beliefs in the importance of university research and basic science. University scientists are considered to be the true innovators, while industry merely transfers these innovations to the market. Hence innovation policy is reduced to a policy of support for basic research. This belief has been quite strong in Finland and in Sweden.

*4. Entrepreneurship rationality*

The entrepreneurship rationality is not as distinct as the three previous ones, and it often overlaps with both the systemic and the macroeconomic tradition. Policymakers guided by this rationality stress the need for the establishment of new, small enterprises. The focus is on individuals, entrepreneurs, and their ideas.

*5. Planning rationality*

Planning rationality presupposes the possibility of far-reaching public planning.

*6. Holistic rationality*

The above five rationalities mentioned by GoodNIP can be filled out with **a "holistic" rationality** which could be the basis for a broad innovation policy in which policymakers try to involve other policy areas in the innovation policy

process. Innovation policies have traditionally focused on policy areas targeting industrial innovation directly, i.e. industrial policy and R&D policy. The holistic rationality includes policy areas that influence the innovative capabilities of firms indirectly as well, including transport policy, educational policy and social and cultural policies.

An interpretation of the rationalities in innovation policies in the Nordic countries according to the GoodNIP report[23] and the PLIP country reports for comparing innovation policies is provided in Table 2.

**Table 2.** Rationalities in the national innovation policies of the Nordic countries.

| **Country** | **Approach adopted in national innovation policy** |
|---|---|
| Finland | Strong systemic approach |
| Iceland | Systemic approach |
| Denmark | Systemic, holistic and entrepreneurship approach |
| Norway | Systemic and holistic approach |
| Sweden | Systemic, holistic and entrepreneurship approach |

The systemic approach has now become the established one. Its focus is on a wider spectre of innovation activities, including design, marketing, commercialisation, learning and networking. Systemic innovation policy seems to be especially strong in Finland and Iceland.

In the other Nordic countries the systemic approach has been enriched with new perspectives, especially ones taken from the entrepreneurship tradition. The current Danish research and innovation policy, for example, has evidence of both a systemic and an entrepreneurship rationality. The government has focused on the development of a Danish knowledge system consisting of firms, knowledge institutions and framework conditions for entrepreneurs. This new, integrated way of thinking includes the holistic approach that we also find in Norway and Sweden. The goal is to use more parts of society to stimulate innovation and competitiveness. In this perspective the new rationality actually bears some resemblance to the planning rationality, in which a central core functions as a driver for welfare development.[24]

The broad spectrum of innovation is not included in governmental policy framework in Iceland or in Finland. In Finland the term “innovation policy” is often used as a synonym for science, research and technology policy, but is sometimes understood as a wider form of technology policy which takes social aspects into account. Technology policy itself is evolving into a broader innovation policy, which also

[23] Koch & Hauknes & Røste 2003.
[24] Koch & Hauknes & Røste 2003.

means a strengthening of is democracy aspects of the policy. [25] In Iceland the broad innovation definition seems to be implicit in policy statements.

Except in Sweden and Norway, innovation policy is defined quite narrowly in the Nordic countries as R&D policy. Sweden, in a policy initiative adopted in 2004, combined its research policies and industrial policies into a single innovation policy which is driven by national interests and priorities, i.e. the requirement that the regions should contribute to national growth.[26] Norwegian national innovation policy since the beginning of 2004 has had a focus on bottom-up local and regional development and spatial distribution, to the extent that one might speak of the integration of innovation policy into the overall context of regional and industrial policy. This was possible through a radical new definition of innovation policy that implied at the same time a partial dis-embedding from the point of departure, R& D policy.[27]

## *2.4 Innovation policy aims and instruments in the Nordic countries*

The overall aims of the national innovation policies in the Nordic countries are depicted in the following table:

[25] Lemola 2004, 10-11.
[26] Appendix D in this volume.
[27] Innovation Systems and the Periphery 2005, 284.

**Table 3.** Overall aims of national innovation policies in the Nordic countries.[28]

| Country | Overall aims of innovation policy |
|---|---|
| Finland | To ensure balanced development of the innovation system and promote co-operation within it. Collaborative relations with other societal sectors have increased in importance with time. |
| Denmark | To make the country a leading growth, knowledge and entrepreneurial society. |
| Sweden | To achieve growth through renewal: the creation of a knowledge base for innovation, development of innovative trade and industry, use of innovative public investment and promotion of innovative people. |
| Norway | To achieve a leading position internationally in terms of new technology, skills and knowledge with regard to a number of indicators. |
| Iceland | To enhance the cultural and economic strength of Iceland in a competitive international environment, to ensure that Iceland continues to rank at the forefront of nations in terms of its economy and quality of life. |

It seems that the broad concept of innovation has been adopted most clearly in Sweden and in Norway. Swedish innovation policy is formulated in the strategy "Innovative Sweden" and the Norwegian equivalent in the current white paper entitled "Commitment to Research". Denmark also seems to apply a broader concept of innovation alongside its S&T policy, whereas Finland and Iceland seem to lay more stress on S&T policy, even though innovation is a buzzword in regional development. The more precise objectives in Iceland seem to be mostly related to science and research, while in Finland, even today, innovation policy issues are dealt within the established content of science and technology policy rather than on their own.

**Framework policies** for improving innovation conditions are generally aimed at promoting growth over the whole country, which means providing general support for certain specific activities throughout the economy by means of single-instrument policies. Such general policies do not discriminate among firms, industries or technologies, but instead the benefits are generally available to everyone who engages in the activity covered. Support for corporate R&D, as practised in Finland, represents a framework policy approach, in that the subsidies are distributed on the basis of applications received from firms, without reference to the location of the firm or the industrial or technological field represented by its product development project. A large proportion of the subsidies have gone to the electronics industry, but the distribution of public finance has been very similar to the distribution of the corporate sector's R&D input. It is the demand shown by firms rather than anything else that has focused the attention of public financiers on the electronics industry.

[28] Appendixes in this volume; Aanstad & Koch & Kaloudis 2005; Oksanen & Kutinlahti 2005; Sandgren 2005; Siune & Aagaard 2005; Verbeek 2005.

**Focused policies** are ones that are designed to encourage the development of specific technologies, industries or regions. They are typically not generally available, being narrowly focused on particular client groups. VINNVÄXT, introduced into Sweden by VINNOVA in 2002, is a focused programme for regional growth through the development of a dynamic innovation system. The term regional is defined in this context with reference to functional regions rather than administrative regions. VINNVÄXT is built around the concept of a few selected regions receiving financing over ten years and being evaluated regularly in order to ensure progress. The national technology programmes funded by Tekes in Finland are an example of a more focused approach without any explicit regional aspect.

The instruments employed in national innovation policies may be classified in the following way:

**A. Direct subsidies to firms**

- R&D subsidies or tax reductions (e.g. Skattefun in Norway) awarded on the basis of applications received from firms. This mode has no intended regional effects, so that the high tech sectors and the largest urban areas gain as a result.
- Subsiding firms in specific areas, which is an instrument of traditional regional policy, and also applies to the Structural Fund targeted areas.

**B. Developing innovative milieux**

- Human resources
    - General basic and higher education
    - Upgrading skills through adult education (learning and working)
    - Projects in which skills are upgraded
- Infrastructures
    - Developing and maintaining transport channels
    - ICT infrastructure, broad-band etc.
    - Other infrastructure
- Supporting agents
    - Networking
    - Technology transfer
- Educational establishments

## *2.5 Regional development policies in the Nordic countries*

Innovation policy and regional (and rural) development policy are two grand policy arenas.[29] Innovation policies in the Nordic countries have mostly been of a top-down character, with strong national interests and priorities. Regional aspects are often not very prominently included. There seem to be some changes in progress, however, for as mentioned earlier, Norway in particular has integrated innovation policy with regional development policy since 2004.

The regional policies of the Nordic countries have traditionally been a force for reducing regional development inequalities. The main aim has been to preserve settlement, employment and services over the vast, sparsely populated areas and to ensure geographical cohesion. The policy has paid special attention to the periphery in order to bring the remote areas more in line with the rest of the country. Geographical differences are the main reason why Norway, Sweden and Finland implement much more extensive regional policies than Denmark, while Iceland's regional policy target has adopted quite a lot from the Norwegian, Swedish and Finnish statements of policy aims, adding the motivation to achieve balanced settlement in the country: the full exploiting of the natural resources and the strengthening of settlement in remote areas. Since the aim in Denmark is to promote competitiveness in business, the country has abandoned its actual national regional policy and now only focuses on general business policy, which aims to increase business competitiveness by enhancing framework conditions.[30]

Both Sweden and Finland have shifted their regional policy emphasis towards urban policy or "growth policy", which seems to accept a certain amount of migration from peripheries to the centres as a natural development.[31] Norway aims at preserving the existing settlement structure in the whole country and implements the most ambitious and powerful regional policy in the Nordic countries, while the objectives of Icelandic regional policy have never been clearly specified and all of the regions, urban and rural, excluding the capital region, have always been supported.

The traditional mission of a regional policy has been to facilitate national economic integration. Regional policy has been transformed into regional development policy, which is more attuned to creating and/or enhancing economic growth, and it thus includes policies aimed at building economic clusters and innovation systems.[32] There has also been shift in regional development policies from top-down to bottom-up approaches, and partnership formation processes can be found at the regional level in certain Nordic countries.[33]

[29] Howells 2006, 1220-1234.
[30] Lähteenmäki-Smith & Persson 2002; appendixes in this volume.
[31] Perenius 2002; Lähteenmäki-Smith & Persson 2002; appendixes A and D in this volume.
[32] Brockett & Dahlström 2004.
[33] Östhol & Svensson 2002.

According to Lähteenmäki-Smith and Persson,[34] the changes in regional policy or regional development policy in the Nordic countries may be characterised in the following way:

- from support for zones and localities to enabling self-help in functional regions
- from projects to programmes
- from support to firms to the development of networks and business environments (milieux)
- from single to joint responsibility
- from sectoral to cross-sectoral policy
- from centralised rules to regionalisation
- from a national to a European perspective
- from regional policy to a two-fold policy of growth and equity (encouraging economic growth and the better functioning of regions, and other measures tailored to ensure equal conditions for the whole population).

The more prosperous regions in particular are gaining in self-confidence and are thus now better able to establish both cooperation and competitive positions with regard to regions in other countries. At the same time, the less prosperous and more peripheral regions continue to emphasize the need for state intervention and public transfers to ensure that national standards are met in service provision and infrastructure. As for the peripheries, it is not clear what their competitive advantage is, or indeed could ever be. [35]

On the one hand, there is a tendency towards decentralisation which can be detected at several levels. Transfers of authority have taken place from central to regional and local government. On the other hand, the process of rationalisation within both the public and the semi-public privatised sector seems to entail the concentration of services and employment, a process already being accelerated by demographic forces so that it may be regarded as an ongoing geographical concentration of population.

The belief that innovative policies are able to enhance the regional distribution of the new economy is for the time being so strong that it can be said to be the most important factor underlying the transformation from traditional regional policy to a new-regime growth policy in the Nordic countries.

[34] Lähteenmäki-Smith & Persson 2002, 98-109.
[35] Lähteenmäki-Smith & Persson 2002, 104-109.

## *2.6 Innovation policies in the Nordic countries from the point of view of the regions*

The regional level has become increasingly important in the process of developing a knowledge economy. All the Nordic countries seem to have recognised this at some level. There have been efforts to strengthen the regional innovation system or build regional innovation milieux, and although regional development policy and innovation policy are separate fields in Finland and Iceland, they are integrated in Norway, which means that regional policy considerations that imply developing "all parts of the country" are an objective of overall *national* innovation policy.

Although Denmark has had no regionally differentiated measures or priorities directed towards innovation, e.g. with special support for firms situated in peripheral areas the welfare system has been used as a tool for evening out regional discrepancies. The Ministry of STI launched an initiative called "Knowledge moves out" in 2004, with the purpose of strengthening research and innovation in regions with relatively low activities in this field.[36]

Major changes in innovation policy are taking place both at the national level and in regional structures. With the so-called Structural Reform, the number of local authorities will be reduced substantially, and the 14 counties will be replaced by five regions. These changes are expected to affect the regional innovation system as well; in fact the development of regional innovation systems seems already to have gained a much stronger position on the national, regional and local political agendas. The intention is for each of the five regions to be responsible for the development of its own trade and industry. A key objective is to strengthen the development of local and regional growth conditions throughout the country and at the same time create a simpler and more coherent structure to minimise bureaucracy in the private sector.[37]

In Finland, the many policy initiatives for the peripheral areas, like the national rural policy innovation aspects, are not the main dimension. The Ministry of the Interior runs two regional development programmes that are of significance from the point of view of regional innovation. These are aimed at boosting the existing strengths of each region, while other central government actions tend to even out the differences between regions. National innovation policies mainly influence regional innovation systems as a result of actions taken by three ministries: the Ministry of Education, Ministry of Trade and Industry and Ministry of the Interior. Regional development companies, science and technology parks, university centres and polytechnics are seen as fully immersed in regional innovation systems, and the T&E centres provide services in the regions. The government's innovation support measures are increasingly being extended towards small towns and rural areas. University centres have been established in six small towns that previously offered little or no opportunities for university education.[38]

[36] Appendix E in this volume.
[37] Siune & Aagaard 2005.
[38] Appendix A in this volume; Oksanen & Kutinlahti 2005.

In Iceland**,** there is no direct linkage between the policy governance structure for science and technology and regional/rural policy, but innovation receives considerable attention in regional development policy, in the context of both overarching goals and strategic themes as well as in direct proposals for action. The Institute of Regional Development in Iceland is the main body implementing the associated plan and the action proposals and serves as an innovation facilitator in the rural regions of the country. Furthermore, a number of Regional Development Agencies supported by the Institute of Regional Development are active on the local level by helping stimulate entrepreneurship and innovation.[39]

There are two levels of administration in Iceland: central and local government. Local authorities manage their own affairs under their own responsibility and central government has no authority to intervene in local government policy. There is formal co-operation between local authority associations at the local and regional levels.[40]

Much of this policy in Sweden is concentrated around Regional Growth Programmes (RTP), which are strategic action plans designed to work as guides to the solving of problems and to create additional national wealth. The central aim of the RTPs is to create economically, ecologically and socially sustainable growth. The primary effects will take place at the regional level, especially in terms of Gross Regional Product. The ways in which the actors choose to approach the overall goal vary, and a strategic action plan must also be formulated for each area where packages of RTP measures are planned.[41]

In Norway, a convergence of innovation policy, regional policy and industrial policy at the level of policy objectives was possible through a radical new definition of innovation policy. Through a central level policy coordination process that took place between September 2001 and February 2004, Norwegian innovation policy was transformed from a marginalized and fragmented activity for small groups of experts, policymakers and implementers within sectors, such as regional policy, industrial and regional policy, industrial policy and R&D policy, into a mainstream policy context for all sectors, with high-profile central government guidance and attention. The convergence of innovation, regional and industrial policies also means that the conflict of objectives between regional and industrial policy, between growth and spatial distribution and cohesion, has now been imported into the core of innovation policy.

The main actors in Norwegian innovation policy are the counties, the municipalities, the Ministry of Knowledge, the Research Council of Norway, the Ministry of Trade and Industry, Innovation Norway and the Norwegian industrial development corporation. Innovation Norway was established as a new state-owned company for innovation and internationalization in January 2004, replacing four organisations: the Norwegian Tourist Board, the Norwegian Trade Council, the Norwegian Industrial and Regional Development Fund, SND, and the Government Consultative Office for

[39] Appendix B in this volume.
[40] Appendix B in this volume; Verbeek 2005.
[41] Appendix D in this volume; Sandgren 2005.

Inventors, SVO. Innovation Norway promotes nationwide industrial development that is profitable for both business and the national economy and will help to release the potential of hidden in districts and regions by contributing towards innovation, internationalisation and promotion.[42]

County-level policy initiatives are increasingly becoming engaged in the shaping of regional innovation systems, and are more involved than ever in the management of tertiary education establishments and the outcomes of these, business development and science and industrial parks.

This comparison was based on national-level initiatives, policies and institutions. We will examine in the next chapter how the policies look at the local level, from the point of view of good practices in local innovation policies.

[42] Appendix C in this volume.

# 3 GOOD PRACTICE ANALYSIS AND TRANSFERABILITY ANALYSIS

## *3.1 Good practices in competence building*

### 3.1.1 Innovative co-operation between Centria Ylivieska and the SME's in Oulu South, Finland

#### *Why this is good practice – the weak hypothesis*

The partners in this good practice are Centria Ylivieska and SMEs in Oulu South. Centria Ylivieska is one of the regional units of Centria, a research, development and further education unit of the Central Ostrobothnia University of Applied Sciences (COU). The SMEs are companies operating mostly in electronics, electro-mechanics, woodworking and engineering. The sector of special interest here is woodworking.

According to a case study included in the ISP Project, one of the strengths of the electronics industry in Oulu South lies in knowledge of production automation. This is to a great degree due to the activities and specialisation of the Ylivieska unit of COU.[43]

In short, the impacts of the Ylivieska unit of COU on innovation in firms within the electronics industry became evident in the ISP case study of 2004 in the following way: Firstly, many of the employees, especially in planning, were engineers who had qualified at the local polytechnic[44]. Secondly, many development projects seem to deal with product automation and production methods, and these are often initiated, co-ordinated and owned by Centria. Thirdly, according to the interviews, the main contributors to innovations and innovative behaviour in the electronics industry firms were the clients, i.e. other firms in the industrial network, although Centria was mentioned as a second important contributor. In fact, Centria was the most important public sector partner for the firms interviewed, and almost every one of them had co-operation with it.[45]

We are assuming that Centria also has some effect on other industrial sub-sectors in Oulu South, notably woodworking and engineering. Sections concerning role, operations and resources of Centria Ylivieska as well as initiation, development, forms and impacts of innovative co-operation of this chapter are based on interviews carried out in spring 2006 with 5 persons concerning the process and impacts of innovative co-operation between Centria Ylivieska and SMEs in Oulu South, with special interest in woodworking industry. The material gathered in the ISP project

[43] Niemi & Virkkala 2005, 63-68.
[44] Now called University of Applied Sciences
[45] Niemi & Virkkala 2005, 63-68.

concerning innovation processes in electronics firms and relevant supporting agents in Oulu South, based on 13 interviews that took place in 2004, was also used in the analysis.

## *The regional context*

Oulu South is the southern part of the region of Northern Ostrobothnia. It is located 100-200 kilometres south of Oulu.[46] The area has a population of 87 741 (in 2004) and consists of 17 municipalities, making up the subregions of Ylivieska, Nivala-Haapajärvi and Siikalatva. These three subregions are networked together to form a stronger area which lies somewhere between a subregion and region.

Being a networking unit formed by three equally large subregions, Oulu South lacks a clear regional centre. There are no urban municipalities, but six of the municipalities can be characterised as semi-urban and eleven as rural. The largest municipality, Ylivieska, had 13 343 inhabitants in 2004[47]. The area has been declining in population since 1995, but more slowly than other correspondingly rural areas of Finland, on account of the high birth rate.[48]

Oulu South has a versatile economic structure, with specialisations in agriculture, mining and manufacturing. The region has become more industrialised in the last decade, so that although employment in primary production has declined markedly, employment in industry has increased to an equivalent extent[49]. Of the 33 119 jobs in Oulu South in 2003, 20.1% were in manufacturing, 15.6% in health care and social services, 14.3% in agriculture and forestry, 9.2% in commerce, 8.3% in education and 6.7% in construction[50].

The core branches of manufacturing industry are engineering, woodworking, electronics and electro-mechanics (ICT). The metals and engineering industries employ about 2700 persons in Oulu South at present, the wood industry about 2000 persons and the ICT sector about 1000 persons.[51] Typical of the region are the high number of companies in relation to the population, and a lack of process industries or large-scale industries.

Important actors in the above-mentioned sectors in this area from the innovation point of view are the Central Ostrobothnia University of Applied Sciences with its research and development unit Centria, the Oulu Southern Institute and the local technology and development centres, which among other things provide facilities and business

[46] For a map of the area, see Innovation Systems and the Periphery 2005, 136 or figure 2 in this volume.
[47] Statistics Finland, Kuntafakta 2005.
[48] For more information on the population, employment structure, educational level and unemployment rate, and for other information on Oulu South, see Innovation Systems and the Periphery 2005, 134−143.
[49] Antinoja & Hakuli 2003, 21.
[50] http://www.oulusouth.com/index.asp?language=2
[51] http://www.oulusouth.com/index.asp

services and run projects[52]. The Oulu Southern Institute, founded in the area in 2000 by the University of Oulu, is devoted to organising education and carrying out research and development work, especially in electronics and other regionally relevant sectors.[53]

Oulu South is not a cultural unit with a history of its own, the name having been adopted in 1997, when the subregions and municipalities concerned began to co-operate more intensively, largely in the fields of planning, regional higher education strategy, sustainable development, joint welfare services and a network of priority projects. This networking was further developed in the Oulu South Regional Centre Programme of 2001, in order to respond to new opportunities, improve competitiveness and process new models.[54] The chosen core sectors are food production and the countryside, health, ICT, culture, tourism, the metal industry and the woodworking industry. The particular focuses of attention in these sectors are education, research and development, entrepreneurship and infrastructure.[55] The strategic goal as stated in the application papers for the new Regional Centre Programme period 2007-2010 is to create a common innovation environment based on the existing development environments and to promote cross-sectoral innovations[56].

Other integral programmes for the region in addition to the Regional Centre Programme are the EU programmes, the regional strategic programmes for Northern Ostrobothnia and the national Centres of Expertise Programme. In terms of EU programmes, the Ylivieska subregion belongs to the Western Finland Objective 2 area and the Siikalatva and Nivala-Haapajärvi subregions to the Northern Finland Objective 1 area. One regional strategic programme for Northern Ostrobothnia seeks to emphasise the competence structure of Oulu South by developing Oulu South Higher Education Centre. This means condensing cooperation and utilising the resources of secondary education institutes, universities of applied sciences and academic universities operating in the region. The aim is to be engaged in numerous national sector-wise competence networks in the future, too.[57]

Oulu South has also been active in participating in the national Centres of Expertise Programme. It belongs to two networked centres of expertise: firstly, it is part of Prometal, a centre for the metal industry that include a production studio in Nivala run by Nivala Technology Centre[58], and secondly, it belongs to Multipolis – a network connecting 15 specialised spatial clusters of technology enterprises and expertise in Northern Finland. RFM-Polis is specialised in wireless telecommunication technology

[52] Development and technology centres in the region are Nivala Technology Centre (NITEK), Ylivieskan Teknologiakylä (YTEK), Haapavesi Technology Centre Ltd, Haapajärven Kehityskeskus Oy, Kärsämäen Kehityskeskus Oy and Siikalatvan kehittämiskeskus.
[53] http://www.oulu.fi/oeinst/esittely.html
[54] Oulun Eteläinen Aluekeskusohjelmaehdotus 2001-2006.
[55] Pohjois-Pohjanmaan maakuntaohjelman toteuttamissuunnitelma 2006-2007, 13.
[56] http://www.oulusouth.com/index.asp
[57] Pohjois-Pohjanmaan … , 13.
[58] ProMetal at:
http://www.oske.net/in_english/centres_of_expertise/metal_industry_of_the_bothnian_a/ and ELME studio in Nivala at: http://www.elmestudio.fi/index.html

(RF technology) and digital media, its main field being wireless applications in industry.[59]

## *Centria Ylivieska and the Central Ostrobothnia University of Applied Sciences*

The *Central Ostrobothnia University of Applied Sciences*[60], which operates in Kokkola, Pietarsaari, Ylivieska and Haapajärvi, offers 25 degree programmes. Its mission is to improve the educational level and skills of the region's population and to enhance the abilities of individuals to succeed in a changing environment and their readiness for continued learning. The average number of students enrolled in COU in 2005 was around 2500.[61]

*Centria* is a research, development and further education unit affiliated to COU. The main function of its research and development is to create possibilities for the development of the region's enterprises and communities. Centria Ylivieska in Oulu South is one of Centria's four regional units that operate as a network.[62]

*The Ylivieska Unit of Central Ostrobothnia University of Applied Sciences* offers education in the fields of technology, social services, the humanities, education and tourism. The unit has a staff of 100 people, and had 1150 students in 2005. The number graduating from its degree programmes was 154, of which 65% had a job arranged by their graduation day, mostly in Oulu South.[63]

The dominant fields in the Ylivieska unit of COU are in engineering. Thus 140 out of the 180 student places available in autumn 2005 were in technology fields. The degree programmes in technology take four years to complete, including practical training. The fields covered by the degree programmes in technology are the following (specialisation options in parenthesis):

- mechanical and production technology (robotics and production automation, machine design engineering, production technology in electronics),
- media technology (media programming, media production),
- wood technology (design and product planning, production technology, entrepreneurship),
- electrical engineering (electric power technology, energy technology),
- information technology (data transmission systems, appliance development and testing, programming), and

[59] Multipolis network at: http://www.oulutech.fi/index.php?186 and RFM-Polis at: http://www.rfmpolis.fi/

[60] Kokkola Polytechnic was established in 1991 by merging together five previously independent post-secondary level institutions. The Central Ostrobothnia Polytechnic (COP) became the official name in 1996 and the name Central Ostrobothnia University of Applied Sciences (COU) was adopted in 2006. http://www.cop.fi/eng/tiedostot/ECTS_YKAT.pdf

[61] http://www.cop.fi/eng/ ; Keski-Pohjanmaan ammattikorkeakoulu, Vuosikertomus 2005.

[62] http://www.centria.fi/eng/index.html

[63] Keski-Pohjanmaan ammattikorkeakoulu, Vuosikertomus 2005.

- industrial management (industrial manufacturing, global marketing and management).[64]

*Centria Ylivieska*, which is part of the Ylivieska unit of COU, carries out research and development work, provides services (testing services, laboratory services etc.) and arranges follow-up education, its main customers being manufacturing firms in Oulu South. Research and development activities in the Ylivieska campus area are closely linked to the engineering fields. Centria Ylivieska has a mission to create conditions for the development of firms and communities in the region. It utilises the knowledge of its staff and teachers, the facilities of its modern laboratories and the ingenuity of its students to complement the input from the experts. This innovative co-operation improves both teachers' and students' local knowledge and also local labour relations.[65]

Centria Ylivieska has a staff of about 50 persons, and its total returns in 2005 were 2.3 million euros, with investments in testing technology, information systems and energy technology, for example, amounting to a total of 344 000 euros. In the same year research projects were carried out in testing technology, communications and media technology, robotics, tool making and wood surface treatment technology. Three applied research projects were started, and the unit was also a partner in an Interreg project with the aim of enhancing research activities among firms in peripheral areas.[66]

## *The initiation and development of innovative co-operation*

The innovative co-operation taking place between the local University of Applied Sciences and SMEs in Oulu South has represented a decisive long-term effort.

The roots of Centria Ylivieska lie in Ylivieska Technical College, founded in 1979. A unit called Kalajokilaakson tietotekniikkakeskus[67] was founded in 1986 as a department of this technical college, to train local authority and other public administration personnel in the field of information technology. The name of the department was changed to the YTOL Institute in 1993, and its mission was widened to more general development services for SMEs in the region. The special focus of its activities was on production and production automation, which enhanced the knowledge of local SMEs in these fields. A further aim was to incorporate the idea of innovative co-operation into the working community of the technical college. Ylivieska Technical College has been a part of COU since 1996, and the YTOL Institute became a service unit of COU at that time. Its name was changed to Centria in 2001. At first, the focus in COU was on the organisation of education activities and not so much on research and development activities. A dozen or so years ago, the activities of the YTOL Institute, later Centria, involved mostly education.

[64] http://ylivieska.cop.fi
[65] http://ylivieska.cop.fi/
[66] Keski-Pohjanmaan ammattikorkeakoulu, Vuosikertomus 2005.
[67] In English, the *Kalajoki River Valley Information Technology Centre*

The present innovative co-operation was set up at the Technical College in the 1980's. One example of it was the benchmarking activities carried out at that time, some of the firms involved in which turned out to be success stories later. One important, confidence-building case was the co-operation with the firm Sievin Jalkine, which led to a very successful technology transfer resulting in a spin-off firm Sievi Tools, for example.

The Technical College and the YTOL Institute had the capabilities for recognizing the needs of businesses in the surrounding area and for responding to those needs. A group of young people among the management of the institute understood that the better relationships the institute had with businesses in the region, the easier it was for the institute to operate. Great store was set by educating young people to the specific needs of enterprises in the region. There was also a demand for the unit, as no strong actor existed in education to work actively for the success of firms, regional employment and the welfare of the people.

A primus motor in this development was Keijo Nivala, currently director of the Ylivieska (Technology) Unit of COU, whose dissertation in 1994 dealt with innovation processes in SMEs and technical services provided by technological institutes and included a comparative study in Germany, FH Aachen.[68]

The unit has been quick-moving, and the needs of the regional economy have been documented by making surveys of educational needs, for example. A case in point is the programme in woodworking, which started in 1996, in a situation where there were more than a hundred woodworking companies but no higher education in the region. At the moment 70% of those with a qualification in woodworking get a job in Oulu South. Another concrete effort implemented at the same time was the establishment of a woodworking laboratory to provide companies with the relevant technical information.

New legislation that provided that the polytechnics engage in applied research in support of regional development was of significance to Centria Ylivieska, as it opened up more opportunities for applying for funding to enable competence development, projects in applied research and development work that was of importance to local enterprises in general. Finland's membership of the European Union from 1995 onwards has also meant funding possibilities, especially through the ERDF and ESR, and hence an increase in project activities involving innovative co-operation.

Customers and revenue have increased gradually. At the early stage, recruiting focused on experts that were able to carry out development projects for firms, but nowadays the focus in Centria is on educating the students to be experts. Also, the focus has moved from education to research and development projects and the provision of standard services. In general terms, Centria offers firms competence generated in the course of research and development projects. Confidential relationships with firms have constantly been a major factor in the development of innovative co-operation.

[68] Nivala 1994.

## *The role, operations and resources of Centria Ylivieska*

Centria Ylivieska plays a very essential role in regional development, especially concerning the industrial sectors corresponding to the fields of technology taught at the Ylivieska Unit of COU. There is no other actor of comparable size with regard to personnel or the versatility of the equipment available. The work done in Centria can in practice be seen in the activities of very many local firms, but it also has a central role in the innovation system of Oulu South as a whole. Creating development environments and developing SMEs is part of the Oulu South Regional Centre Programme. As far as woodworking technology is concerned, Centria Ylivieska is definitely the most important actor in the region, as it is the only intermediary agent for higher education and development in Oulu South with a knowledge of the substance of this field.

Centria Ylivieska has adopted a proactive way of acting. The Ylivieska Unit of COU is actively trying to create jobs for the students who qualify from it by means of innovative co-operation, and most students do find a job in the region. Centria and the Ylivieska Unit of COU develop technological knowledge and equipment for the needs of local enterprises, which is of benefit to the manufacturing sector in the region. Centria's research and development activities are also linked to the education unit, through the involvement of teachers and students in many projects. The volume and scope of the unit's service activities relative to the volume of education and the number of students are among the highest in the country.

The personnel of Centria Ylivieska work in teams, which are made up of staff of both the education programmes and Centria and are mostly based on substance. The wood team, for example, consists of an engineer responsible for the laboratory, the development manager of the woodworking field in Centria Ylivieska, experts from the laboratory and teaching staff. There also exists a team for international services, undertaking internationalisation of the education unit, assignments from different sectors and various projects such as an Interreg project called EKIE, in which Centria is responsible for research and development activities. International fairs are an important part of the work of the team for international services. The team gathers firms in the region together, arranges a joint stand for them at a fair and takes care of everything concerned with their representation at the fair. This activity related to international fairs has been part of Centria's services since 1993, and about 300 firms have taken part in fairs in this way.

The aim is to involve students in projects as much as possible, according to the principle of learning by doing, although specific development and research projects for firms are always carried out professionally and often without student participation. Confidentiality is ensured, and students are not involved in testing services, for example. On the other hand, student involvement in international fairs is of great significance. Sometimes students have a chance to produce their final dissertation as part of a large project, and they may continue to do project work for Centria or a local enterprise after graduation. Those who obtain jobs in local companies are naturally oriented towards Centria's activities, which is of importance from the viewpoint of continuity and the development of innovative co-operation. The proportion of students

involved in Centria's activities is not high, however, and hence efforts should be made to increase it.

Centria Ylivieska's partners in innovative co-operation are mainly expanding firms which base their development on inter-firm starting points and want to develop their knowledge. They get to know about development possibilities through the Centria staff, and personal trust is of great importance in the resulting co-operation.

Centria Ylivieska is operating with the other local developers in a network aimed at improving knowledge and competence in the area. Within the Oulu South Regional Centre Programme, it is co-operating with other organisations for development such as Kärsämäki Development Centre (Kärsämäen Kehityskeskus Oy) and Haapavesi Technology Centre (Haapaveden Teknologiakylä). Other important partners are the Technical Research Centre of Finland (VTT), Oulu Southern Institute, Ylivieska Technology Centre (YTEK), Nivala Technology Centre (NITEK) and the ELME Studio. If Centria doesn't possess the necessary special knowledge in a particular case, the knowledge is transferred from elsewhere, perhaps from somewhere in Centria's European or even world-wide network.

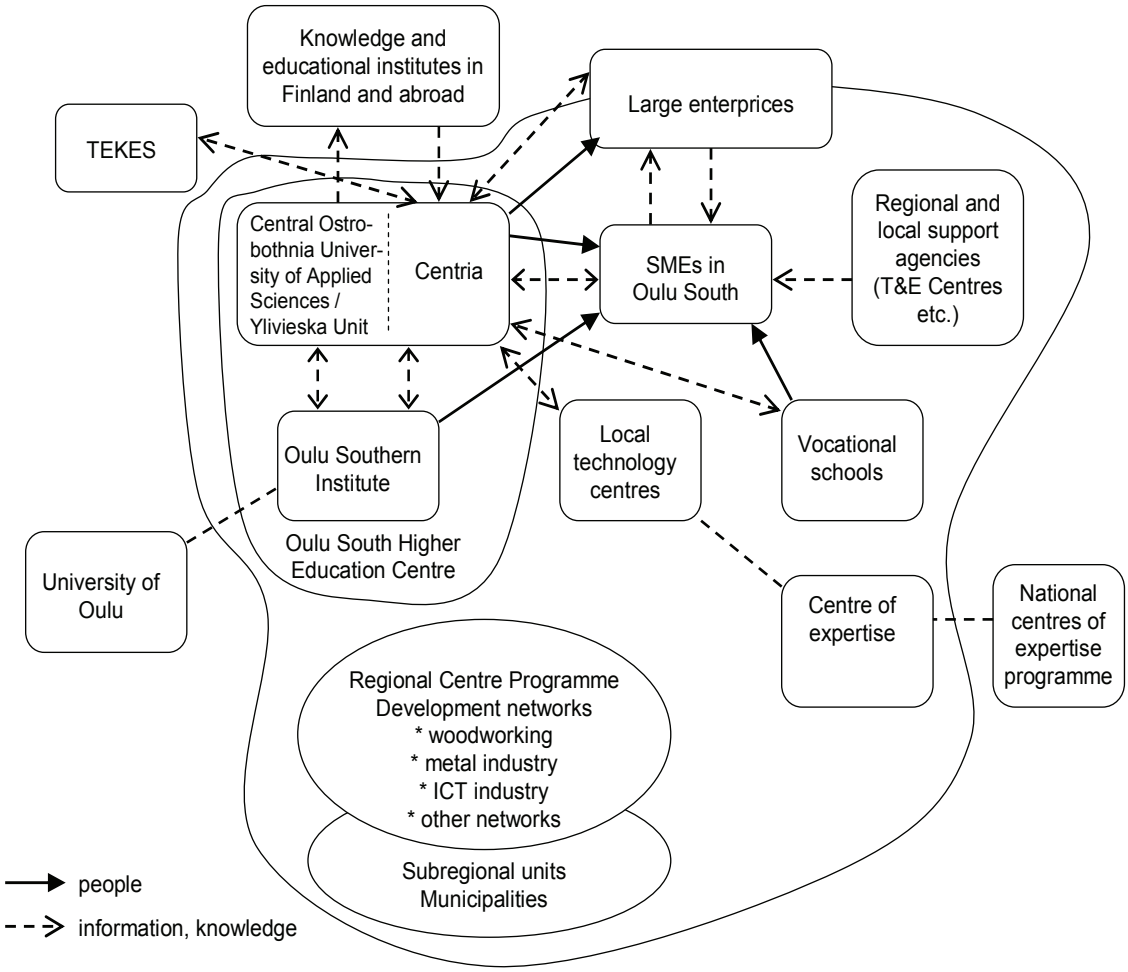
Knowledge generated in one sector is utilised in developing another, and technologies are transferred from one sector to another. Things developed for the electronics and electro-mechanics industries can be exploited in woodworking and engineering, for example. Quality systems, production processes, machine vision systems etc. developed rapidly in the electronics industry about ten years ago, and now Centria is transferring these systems to woodworking firms, for example.

The funding for Centria Ylivieska consists of COU's own resources and the income from services, which are a major source. Project funding consists of EU funding, national funding, funding from municipalities and subregions, COU funding and industrial funding. Development projects are usually common efforts on the part of a number of funding partners. The National Technology Agency Tekes is an important source of funding, and also the provincial administration finances projects to some extent.

COU is a limited company and Centria Ylivieska operates as a business, hence it has problems in financing investments. No direct financial support exists, but instead investments must be financed out of income. Applying for funds means a lot of work, and although research and development activities are statutory, they are not subsidized but are dependent on project funding.

Centria Ylivieska's role in the regional innovation system as far as manufacturing in Oulu South is concerned is depicted in Figure 4.

**Figure 4.** Centria Ylivieska in the regional innovation system for manufacturing in Oulu South.




## *Forms of innovative cooperation*

The innovative co-operation practised by Centria Ylivieska consists of development, research and education. An impulse for co-operation can be initiated either by Centria or by a firm: Centria can offer a certain project to a firm, or else a firm can seek a solution to a certain problem in a form of a project, for example. There are different ways of taking the matter further, funding being one of the determinants of how this is done. Firstly, co-operation can be purely bilateral, between Centria and the firm, e.g. when developing a product or a production method. In this kind of co-operation professional secrecy etc. is of special importance. Secondly, pilot projects are often implemented jointly by Centria and one firm, the funding being partly public, and the knowledge generated in the project can be offered to other firms in the region, too.

Thirdly, there are publicly funded projects, the results of which are available to everyone.

Centria Ylivieska's innovative co-operation can be classified into four categories: education, standard services, development projects and applied research.

*Education*

Centria offers training in fields of special know-how for the employees and management of firms. Training is an essential part of most innovation processes, as a means of introducing new things into firms. A 3 D system can turn the daily routines of employees in a firm inside out, for example. In the early stage of the introduction of a new system there is a lot of extra work to be done in order to make the process operate smoothly. Training is a means of lowering thresholds, of facilitating innovation processes and making them more effective, and not an end in itself. Most of the training takes place in the firms' working environment, on their terms and from their starting points.

*Standard services*

The standard services offered by Centria Ylivieska include measuring services, testing services, surface treatment services and machining services. These are often supporting services for firms' product development projects and can be used for concretising ideas generated in the firms. The making of prototype series is also one form of standard service. The woodworking laboratory has a line for surface treatment, for example, which is used for the testing and surface treatment of prototype series.

One of the testing laboratories is used almost exclusively for standard services, the main customers being electronics firms in need of testing services during the process of product development. The largest firms have their own laboratories for testing, of course, but for smaller firms these services are important.

*Development projects*

Development projects arise almost without exception from the needs of one firm, which then becomes a partner in co-operation. These projects, in which Centria implements a certain product, production method or form of production automation, e.g. in connection with information systems, are carried out totally on the firm's terms. The firm finances the project itself, or finds some additional supporting funding.

*Projects in applied research*

Projects in the field of applied research are aimed at generating new knowledge in the region, and there are usually several firms participating. It is usually a teacher who leads the team, and when the project ends, the teacher goes back to teaching, hence research and development projects underpin the teaching.

Applied research projects in the fields of production automation and robotics have been carried out at Centria for a long time. The developing of user-friendly automation and robotics so that it serves the needs of small series is challenging work. Centria is working with firms in the electronics industry on projects for developing

methods and practices for the design and testing of products, aiming at improved competitiveness in production development processes. Testing has become a more and more significant part of the product development process, and it is already necessary at an early stage to plan how a product will be tested during product development, production and use. Centria Ylivieska has carried out two large research projects concerning wood surface treatment for the woodworking industry that have resulted in a deeper knowledge of surface treatment processes and a new service for measuring the quality of a process. There have also been some notable research and development projects in media technology, currently in the field of mobile media and mobile location services.

The results of publicly funded projects in applied research are public, but their application calls for a great deal of work, and Centria offers various application projects for firms. At present they can apply for Tekes funding for this.

## *The viewpoint of the woodworking industry*

The woodworking industry in Oulu South is very strong, with about 150-160 firms. Centria aims for its part to contribute to the processing of more wood in the region. The Ylivieska unit of COU is a powerful actor from the viewpoint of firms in the woodworking industry, and it is the northernmost place in Finland with higher education in wood technology. Modern equipment and facilities are essential requirements for both education and innovative co-operation. The woodworking laboratory and the equipment for surface treatment have played a central role in two Tekes-funded research projects focused mainly on firms in Oulu South, for example. The development environment will be further improved by a new woodworking laboratory, which is now at the planning stage. From the viewpoint of firms, the proximity of testing equipment is important. They outline what is needed in business terms, but Centria has a central role in the success of implementing the necessary changes. Besides proximity, the fact that the people know each other well is important for firms.

Centria Ylivieska has especially supported the region's wood construction industry, which includes some of the country's top companies. The firms had a need for equipment for testing the quality of different materials and structural solutions to support their product development, in order to improve their products, and hence their competitiveness. Centria responded to this need by investing in testing equipment for doors and windows and obtaining public and industrial funding for this. The testing equipment is used both by firms and by the educational programmes of the Ylivieska unit. Similar equipment can be found in Finland only at VTT, which is the only formal tester in the country.

## *Impacts*

The educational programmes in the Ylivieska unit of COU can be seen as an engine for the activities of Centria Ylivieska, which distributes the knowledge generated by the unit to firms in the region in many ways, thus contributing to the regional

effectiveness of COU. On the other hand, Centria also improves knowledge within COU. Centria Ylivieska employs 50 people, which is a significant number of experts for Oulu South.

The possibilities for education and development offered by Centria promote the development of firms and their operational processes, and hence regional development. The impacts of its activities may be seen in the availability of skilled employees, numerous innovative co-operation projects with firms and the development of the region's innovation environment.

Centria places great store on developing the knowledge of its staff, which is acquired largely in the form of research and development projects and can be transferred to firms. Also, students have received training through various applied research projects. Centria is engaged in promoting the employment of its students in local firms, and a high proportion of the students who qualify at the Ylivieska unit of COU get a job in the region. In last year, for example, 50 engineers were employed by local firms, implying a significant contribution to regional development.

More than a hundred projects involving Centria and firms in Oulu South take place each year, often including collaboration in a number of fields. The high number of projects indicates that firms have adopted Centria as a partner. For many firms the proximity of testing and other services is also important, so that the environment for testing doors and windows, for example, clearly supports the operations of firms in that field, and lowers their threshold for development.

The interviewees were of the opinion that Centria Ylivieska has a central role in the innovative environment of Oulu South and in the success of the region's manufacturing industries. It participates in regional programmes to a notable extent both by implementing programmes and EU projects and by acting as a regional developer. In particular, it has been responsible along with other actors for developing the woodworking and ICT industries in Oulu South.

Centria's impacts have been especially visible in the success of the electronics and electro-mechanics industry in the region. It has expertise in production automation, which is essential for manufacturing industries to exist in this country in the future. Centria has developed certain narrow fields of expertise and also a systematic approach to raise the critical mass in special fields. Co-operation with Oulu Southern Institute and other partners has been of benefit in this. The future challenge will be to succeed in networking outside the region as well, as Finland has a general lack of resources outside its growth centres.

Concerning the woodworking industry in the region, one indicator of the impacts of Centria Ylivieska is the continuity of co-operation with firms and financiers, which proves that its activities have been effective and steered in the right direction, and that they are worth continuing. Firms have been able to improve their competitiveness by rationalising production, by acquiring further training, by implementing innovations and by possessing skilful employees. They have increased their revenues, jobs have been maintained and new jobs have been generated. Centria has developed together with economy of the region. The woodworking sector has grown substantially in Oulu South, and Centria has certainly contributed to this, but it is difficult to estimate

exactly what the impact of Centria is. Value added in the woodworking industry in the Northern Ostrobothnia region as a whole has grown 24-fold within the last 15 years, and close to 60% of this woodworking is located in Oulu South.

## *Contextualisation*

Centria Ylivieska has grown during the last decades, the skills of its staff have enhanced and it has developed its own ways in which to support SMEs.

The preconditions for its growth have been

- a high commitment to business development in Oulu South,
- long-term planning and purposeful development of the selected sectors and fields of expertise,
- continuing foresight regarding the needs of local firms,
- networking and partnership with other actors in Oulu South,
- its social proximity and mutual dependence with respect to SMEs in Oulu South, and
- specialisation in branches, sectors and technologies relevant to the SMEs of Oulu South.

Many elements of the innovative co-operation between Centria and the SMEs in Oulu South are embedded in the local environment. For example, no other higher education units in technology have existed there, and there have been very few engineering consultants, either. In the absence of these, Centria has grown into a competent unit and developer. Nowadays, however, there is both a higher education unit, Oulu Southern Institute, and various engineering consultants operating in the region.

It may also be said that the characteristics of the regional economy, such as the high number of enterprises in relation to the population and the lack of process industries or large-scale industries, have contributed to the emergence of Centria as a knowledge creator and developer in the region. It has also developed as a translator of the relevant technological knowledge for the SMEs.

Centria's own proactive way of acting can be seen as a part of the powerful culture of entrepreneurship in the region, and of the attitude described by the interviewees as "not giving in". This regional characteristic forms the basis for its eager approach to acting together with the firms, which in turn have learned to ask for its services. Centria's greatest asset is its flexibility and quickness of response, together with its readiness to invest wherever it sees possibilities for long-term industrial development in Oulu South.

## *What is there to learn elsewhere?*

What could be learned from this good practice is the general *proactive attitude and behaviour necessary for a regional development agency like Centria Ylivieska to achieve economic development* in its region.

Proactivity can mean support for the emergence of a new sector in the region, as was the case with the electronics industry, which was related to the national ICT and telecommunications cluster. Proactivity also means that Centria Ylivieska is taking initiatives in innovative co-operation. It is activating the SMEs and their desires for innovation by supplying them with development issues, technologies, facilities, new ways of acting, etc. The smaller efforts such as innovative co-operation projects are linked to the constructing of innovation milieux. This means education, support and knowledge production and transfers for the relevant sectors.

In Centria's experience there is a need for universities of applied sciences and development organisations to employ more experts who really know the business sector. It is important to understand the needs of firms, to do the right things and to offer firms services and projects which are of interest to them. Relations must be sustained and must operate on terms laid down by the firms.

Centria Ylivieska's relations with the local SMEs are close and it seems to be easy for the SMEs to contact the organisation. The high level of trust stems from common aims and a common history. Confidential relationships with firms at every level are indeed one prerequisite for success, and the gaining of such relationships is a process which is up to individuals. There must be some way to earn this trust, however, for without it there will never be any good results.

In the case of Centria Ylivieska, there has been a certain starting point, a successful transfer of technology, which has encouraged everyone to continue the work. There has been development, and people have been looking forward all the time. There has been the skill of choosing the right fields of knowledge and developing these, both in education and in innovative co-operation with firms. The starting point has been the entity, not merely the needs of individual firms. There has been a co-evolution of Centria Ylivieska and the SMEs in Oulu South, in which Centria has promoted the emergence and growth of the SMEs and has responded to their demands for services, while the SMEs have learnt when to contact Centria, and on which questions it is able to enhance their knowledge base and support their innovation processes.

But if there is no history or common aims, what can a development agency do, and how should it begin? One possibility is to make the initiative oneself, invite the SMEs to visit, and visit them in turn. The second phase could then be the preparation of a development project. The necessary closeness will be generated when the needs and problems of the SMEs are familiar. All of this requires the development agency to have something to give or transfer to the SMEs.

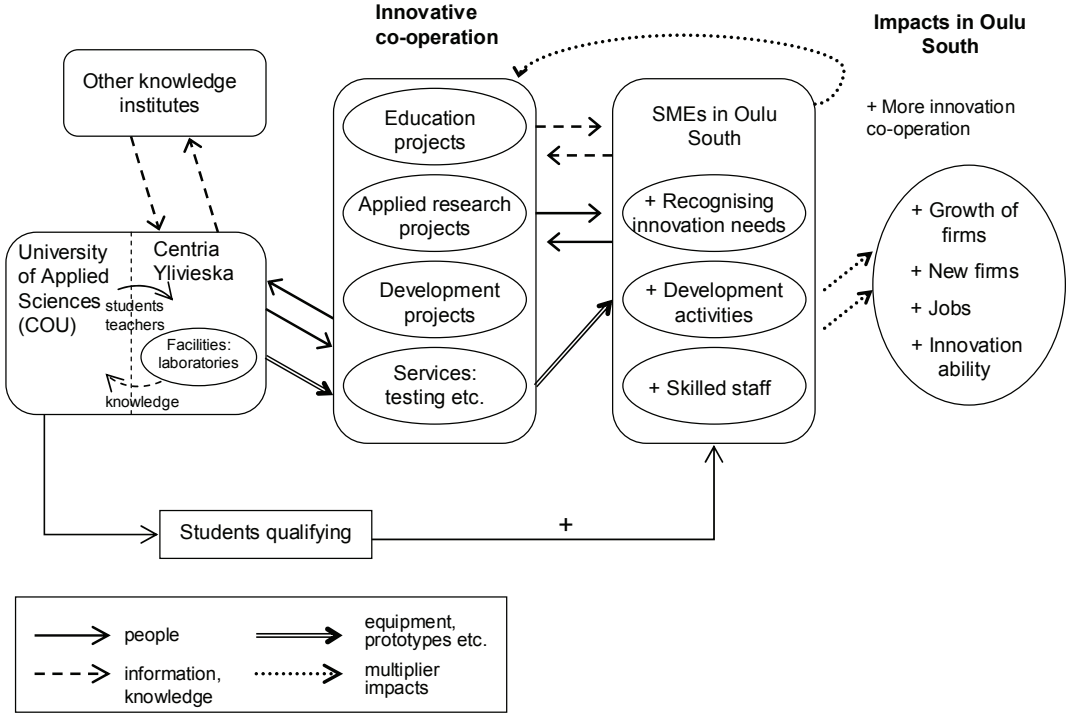
The development of manufacturing in Oulu South has been based on endogenous potential, even though the growth impulse in some sectors has stemmed from outsourcing processes in large national or international firms. The important factors in the development process have been both active entrepreneurs and active development agencies like Centria Ylivieska. Most of the development agencies in Oulu South are owned by municipalities or groups of municipalities, but the development activities are run by the local agencies.

The forms of innovative co-operation or bridging functions implemented by Centria Ylivieska could be abstracted as elements of good practice. The *forms of innovative*

*co-operation* are education, standard services, development projects and applied research, and the *bridging function*s are embedded in these forms of co-operation. Firstly, Centria modifies the explicit knowledge which is already available but in a complex and theoretical form so that it is possible for the SMEs to apply it. Secondly, Centria acts as a transfer unit between educational institutes, R&D units etc. outside the region and the SMEs. Thirdly, Centria *transfers knowledge between sectors* in Oulu South, and fourthly, it ensures that the development and implementation of a *pilot projec*t in one firm will enhance the competence of both the Centria project staff and the respective firm. In this way the skills and knowledge gained can be used elsewhere and in other projects.

The applied research and development unit seems to be effective when its activities are linked to the *education task.* Location in an education unit enables the creation of a centre of expertise and allows sufficiently wide utilisation of the resulting knowledge. The whole unit must understand that it is possible for the staff to undergo renewal by doing research and development work that serves the region. The innovative co-operation that takes place between Centria Ylivieska and the SMEs promotes a favourable cycle of *education, R&D and business development* in which the innovation capability of the SMEs is developed and promoted through this innovative co-operation, leading to business development and growth. The SMEs will recruit more staff, especially from among the students whom they already know from the co-operation projects and who already have experience of their work. The former students working in the SMEs will then be ready to ask Centria for more services and will be favourably disposed towards working in co-operation with it. The more skilled staff the firms have and the more contacts they have with Centria, the more services they will ask for (Figure 5). This cycle of good practice is supporting the innovation capabilities of the SMEs, which in turn constitute a precondition for the success of the northern periphery under conditions of global competition.

**Figure 5**. The cycle of innovative co-operation between Centria Ylivieska and SMEs in Oulu South.




### 3.1.2 Learning from the Finnish Centria Ylivieska case in Borlänge, Sweden

## *Context*

The Finnish good practice, "Innovative co-operation between Centria Ylivieska and the SMEs in Oulu South", was chosen to present their case in Dalarna. One reason was that the industrial structures of the regions as well as the Swedish and Finnish good practice cases had some similarities. Common for the regions is that both have many enterprises in woodworking industry as well as engineering industry. Both Finnish and Swedish good practice cases are focused to support SMEs, knowledge transfer and innovations.

The wood industry in Dalarna means mostly construction industry. In this sector generation shift is ongoing and new ideas would be needed. The sector could be much bigger when it comes to furniture. There is a potential in the furniture industry - there are good designers, the material and smart people but the companies are not interested in growing. At the same time new ideas and workforce are needed also in the metal

industry sector. In the case of Oulu South the relation between the SMEs and the educational institutions seemed to be tighter which was expected to be of interest for the development in Dalarna.

## *Workshop*

The workshop was held at IUC Dalarna in "Teknikdalen" in Borlänge between 9 and 12 on 12th May. Before the workshop the participants had received a short review of the PLIP-project, a workshop programme and a description of the Finnish good practice.

The researchers started the workshop by welcoming the participants and the participants introduced themselves shortly. Thereafter, a short introduction to the PLIP-project was given. The Finnish team presented the case of the Innovative co-operation between Centria Ylivieska and the SMEs in Oulu South. This was followed by a discussion of the development needs in Dalarna. At the end of the workshop an assessment was made of the project. The meeting was recorded so that any information during the workshop was not missed.

The Swedish team had invited relevant industrial actors in Dalarna. This included both public actors and enterprises. Some of these persons had been interviewed before for the Swedish part of the project and thus had some knowledge about it.

In addition to two Finnish and Swedish researchers one person from the IUC Dalarna, one from the County Administrative Board and one from ALMI participated in the workshop. The participants were the most important actors regarding organisations supporting industry and SMEs in Dalarna. They have regular meetings and a tight cooperation and are used to discuss issues concerning SMEs in the region. However some key persons were lacking - especially enterprises and the University College's presence could have brought a valuable additional view to the discussion. These actors were invited to the workshop but they did not participate due to lack of time.

The case was interesting and important in the view of the workshop participants and some elements could be of relevance to Dalarna. The cooperation between Centria Ylivieska and enterprises in the case was of specific interest to the workshop participants. According to them, the problem in general in Sweden is that the universities talk a lot about cooperation with industry but in fact they do not cooperate that much.

The educational system in Finland was also of great interest to the participants. The educational systems in Finland and Sweden are different: in Sweden there are no 'vocational high schools' – instead all higher educational institutes are universities or university colleges. They are not the same kind of higher level educational institutes from which people are continued afterwards to certain occupations as in Finland. The higher educational institutes/universities in Sweden provide similar education but all do not have research capacities. The university colleges have not any regular research funds from the state – instead they are dependent on external funds from different sources if they are going to do some research.

According to one participant, the Centria's work focusing to different sectors corresponding to the educational field of technology in the Ylivieska Unit of COU was very interesting. According to her many small businesses do not see the point in innovations. If the support had been more specialised it would have been easier to pick up new ideas and develop the companies.

In general the participants seemed to think that the two regions have similar problems and opportunities. The similarities in the contexts (e.g. both countries been under the EU umbrella) made it easier to compare the regions and find elements of interest to Dalarna.

As mentioned before, the relation between educational institutions and enterprises was of specific interest to the participants concerning learning and transferability. The cooperation between the industry and the university in Dalarna could be much better. According to the workshop participants, there is a lot of knowledge in different laboratories that could be used more efficiently. In general most of the laboratories are in large companies but there are not many institute laboratories. Sometimes the enterprises also use research units outside Dalarna, for example the laboratories of the Royal Institute of Technology (KTH) in Stockholm. This was said to concern testing in general and not any specific sector. Especially there is a lack of laboratories regarding the small woodworking sector.

The problem is also that the universities in Sweden are not able to answer to the SMEs' needs rapidly enough. The participants underlined this by saying that if the universities cannot promise to help the enterprises immediately they are of no interest for the companies. That was considered as a big problem – more flexibility is needed. The educational system in general in Sweden is neither well fitting to the needs of the industry.

During the workshop there was also a discussion on the generation shift that is going on in many companies. The companies in the wood sector would like to change leaderships. More discussion is needed on how to get new leaders in these companies and how to develop the industry and products. The same kind of model as Centria would be interesting concerning the new owners in the wood industry sector that need new ideas.

The same is true also for the metal industries and the SMEs. The leaders of the companies have not been willing to let the companies grow bigger during the last ten years. When they now have to change leadership in the companies, they need to show some very good results but they cannot.

It is hard for companies to recruit people. The students leaving the universities often have higher demands for salaries than they can be offered and this is a reason why most of them start working in bigger companies. When students start working in big companies and then go to small companies they come directly to high position in the small firms. The small enterprises need qualified persons immediately and they cannot afford long training periods.

The participants said that companies are supported with grants when they change the generation of leadership. During the last year a lot of work was done with design and

the companies tried to hire designers to develop their products. This work with design and shifting generations with grants is going on.

The opinions of the participants were coherent and the participants found consensus on the issues. The workshop participants considered the case very interesting for Dalarna. The participants discussed how to support the good practice elements in Dalarna. However the general opinion seemed to be that it would not be easy to change the attitudes and the old ways of working.

All the participants evaluated the idea of the PLIP-project as valuable. There was seen a need for finding models that are more stable than the EU projects - more institutionalised solutions that stay for many years. The participants considered the opportunities and problems the same in the countries even though the cultures and markets are different.

One of the participants thought that in general more should be learnt from each other but the actors from the Centria and Dalarna should also visit each other. There was an interest in hearing more about the case and also to step further by getting in touch with Centria in Oulu South. The participants thought that it would be interesting to look at how other regions do the same things even though Dalarna needs to find ways on its own to do it. The contact information of Centria Ylivieska was decided to be supplied to the workshop participants.

### *Evaluation*

Some elements of the good practice could be used in Dalarna. Especially how Centria connects the SMEs and the educational institutions in the region. In Dalarna, there seems to be lack of traditions of cooperation but also mismatch between the needs of the industry and the education given at the University College. This would need support at regional but also at national level. In general the existing support systems could be used to support the elements to be transferred.

In general the outcome of the workshop was positive. The participants seemed to be very interested and took actively part in the discussion. The national and regional differences made it, however, difficult to really transfer any elements of the good practice to Dalarna, but in order to go further, there should be contacts established between the actors in Oulu South and Dalarna.

## 3.1.3 Learning from the Finnish Centria Ylivieska case in Skive, Denmark

### *Context*

The main idea why to “transfer” the good practice of Centria Ylivieska and the innovative co-operation with the SMEs in Oulu South, Finland to the Salling-Mors area of Viborg County in Denmark, was the possibility of benchmarking and learning

from the innovation services of competence-building and knowledge dissemination in the Danish innovation services of this kind related to manufacturing activities in the periphery. From the viewpoint of the receiver area, it is hypothesised that the Centria Ylivieska case can provide a good practice in developing and linking applied research and business development to vocational training activities.

The Oulu South area is characterised by SMEs, while the Salling-Mors area is characterised by a mixed business structure of small and large firms across the manufacturing sector. Wood-based and furniture industry has an important role in the Oulu South region and in the Salling-Mors area. In Oulu South the industry is dominated with wood products for the construction sector, while the Salling-Mors area hosts a genuine business cluster of (pine wood) furniture production.

The good practice of Centria Ylivieska is suitable for benchmarking of innovation support and competence building practices as compared with the Danish case. The comparison of different practices of relative similar organisations within the educational sector gives room for learning across the areas with regard to innovation support activities and experiences for the manufacturing sector in the peripheral Nordic areas.

## *Workshop*

The workshop was held at the Skive Technical Institute at the department for the new educational programmes for the production technologist students between 12 noon and 4.30 p.m. on May 18, 2006. The visiting researchers had a guided tour to around the STI and the cabinet maker workshops. The PLIP good practice transfer workshop started after lunch time with a presentation of participants, a presentation of the STI and of the general aims and objectives of the PLIP project. Following this, the Finnish good practice case of Centria Ylivieska was presented by the researchers present. The workshop was combined with transfer of the Swedish good practice case, so the Swedish case of good practice of IUC Dalarna was presented by the researchers. Then followed a around of comments and a group discussion of the transferability of the cases to the Danish context of innovation services for the furniture industry around Skive in the Salling-Mors area. The discussion was managed by the Danish coordinator. The working language was English with a few comments in Danish as the discussion evolved. Written description of the good practices presented was distributed by email to the local participants together with the programme and an introduction to the PLIP project. The workshop was jointly organised by the Head of the STI International Department and the Danish research coordinator.

The workshop had 11 participants of which 5 represented the local educational actor together with business services in the Salling-Mors area, while 2 researchers where represented from Finland, Sweden and Denmark respectively. The 5 local participants where the head of the Skive Technical Institute International Department and Director of the Development Centre for Furniture and Wood Working Industry, a senior teacher at the cabinet makers programme at STI, a private consultant to the furniture industry, the director of the Skive Business Centre and the Director of the Morsø Trading House services. The local participants were all key persons in business

development with emphasis on the furniture industry, education, training and innovation as well as entrepreneurship and international marketing in the area. Representatives from the industry organisation, labour organisations as well as municipal and regional policy makers where missing. They were not able to participate at the workshop. The participants present at the workshop gave emphasis to the roles and practices of especially education and R&D services to the furniture industry.

The case was generally interesting and important in the view of participants. The local participants took special interest in the activities and working of the research and development unit as an intermediary organisation between businesses and education. The case presented was detailed enough to enable the local participants to compare and learn. The case was context depended in the sense, that the key local participants where representing a similar organisational context of educational institutions, which gave relevance and opened for learning on a very concrete level.

The local workshop participants saw the situation/status of the development of the furniture sector in the Salling-Mors area as hard. The firms are under tough competitive pressure on the national and international market especially for pine wood furniture. For development, the businesses are in need of enhanced capabilities for design and innovation. The pressure for outsourcing of production to low-income countries is counterbalanced with initiatives for export promotion to new markets, e.g. China. Bottlenecks are found in the area of knowledge and competencies as well as future supply of skilled labour, especially how to attract young people into the crafts.

The workshop discussion was focussed on the interesting elements of the good practice presented from Finland, where there where a good match to the specific development needs of the furniture sector. There was expressed a clear interest in a closer examination of the possibilities to use the elements of the good practice. The participants had little time discuss how to support the implementation of the good practice elements in the region, though the question of designing and attracting funding was emphasised.

The local workshop participants considered the idea of the PLIP project as very positive and relevant. They found the idea of learning across the Nordic periphery as important for their own activities both in general and with regard to innovation support to the businesses. In a similar way, the workshop was considered as a good way to actually have the dialogue and communication of good practices. More could be done in the way of involving the participants in the discussion and evaluation of the cases presented, though this would require more time from all parties and time is a constraint for all. A way forward could be to include a larger group of local actors in the project in order to have a more continuing communication and interaction, though this would require project funding of another magnitude.

The workshop led to suggestions from the STI participants to move on with contacts and meetings with Centria Ylivieska and other educational institutions with programmes and training within the wood and furniture sector in the Oulu South area in order to move forward on exchange and learning from each other (confer the

workshop presentation of the STI good practice at the Centria Ylivieska). Research should be adjoined to such follow-up activities.

The local workshop participants found consensus on the following points:

1. Common strategies and visions on the role of technical education and training for regional business development, active role of technical schools, vocational and polytechnics institutions and applied science university, collaboration with business firms and a bridging role of educational institutions between business and research.
2. The co-evolution of an applied science research centre with development projects together with local businesses (SMEs) and the growth of the manufacturing sector in the region.
3. The application of knowledge and process technology across industrial sectors (process automation and control in wood and electronics).
4. Research projects with teachers involved (1-2 years on a half time basis) as a way to disseminate new knowledge into education and training.

There was a discussion of the relevance of providing laboratory facilities for the businesses for test and control and development activities. There where no clear signal from the workshop, that this kind of local service is lacking or could be relevant for the Salling-Mors furniture industry. The importance given to problems of geographical distance was mixed. On the one hand, no problems of distance to laboratories and technological service was stated, on the other hand, the future change of location of the Development Centre for Furniture and Wood Making (from Skive to Herning) was considered as problem for the local industry. As part of the change in location, the Centre will build up some workshop facilities for development activities.

## *Evaluation*

As a general conclusion, it seems possible to use the Centria Ylivieska good practices on research and development services for SMEs in the development of the STI and its innovation services in competence building and knowledge dissemination for the furniture industry in the Salling-Mors area.

Support is needed to build a research organisation like Centria Ylivieska and the Danish Development Centre for Furniture and Wood making has received funds from the county and the state in order to establish itself first as a "Regional Growth Environment" and now in order to develop into a "Regional Technology Centre". In order to carry out specific innovation projects together with individual businesses in the good practice way, funds are needed to support this. Some kind of national, regional or sector based "applied research and innovation fund" could be a way forward. The participation of teachers as part of research activities also needs both financial support and possible changes in the organisation of the staff at the STI.

The participants present at the workshop gave emphasis to the roles and practices of especially education and R&D services to the furniture industry and where directly or indirectly linked to the Danish good practice case of competence building for

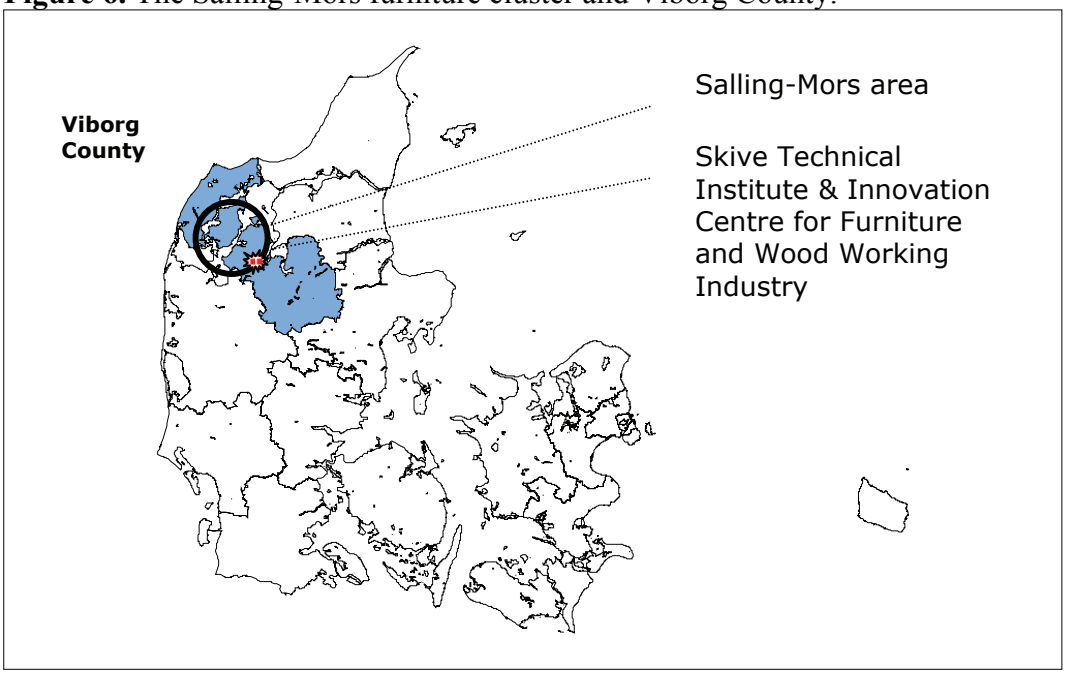
innovation in the furniture industry. This representation narrowed down the workshop discussions to lessons directly relevant to the Danish case. This gave a more practical focus to the workshop, while on the other hand, left little room for more general evaluations and discussions of policy issues, which representatives from industry organisation, labour organisations and municipal and regional policy makers could have provided. It seems, that learning and transfer of good practices are most likely to succeed, when there are essential overlaps between both the organisations actually conducting the good practice in question (vocational and applied science education and training) and the industrial sectors in focus for innovation services (wood and furniture industry).

### 3.1.4 The STI – Innovation Centre competence-building activities for the furniture industry, Denmark

#### *Context*

The case study area in Denmark consists of the 5 municipalities: Skive, Spøttrup, Sallingsund, Sundsøre and Morsø in Mid-West Jutland, Viborg County. Together they cover the peninsular of Salling and the island of Mors. Within this area, the good practice is found at the Skive Technical Institute (STI) together with the Innovation Centre for Furniture and Wood Working Industry (Innovation Centre) both located in the city of Skive, who are key actors of the Danish good practice case of competence building for innovation in furniture production and wood working industry in the periphery.

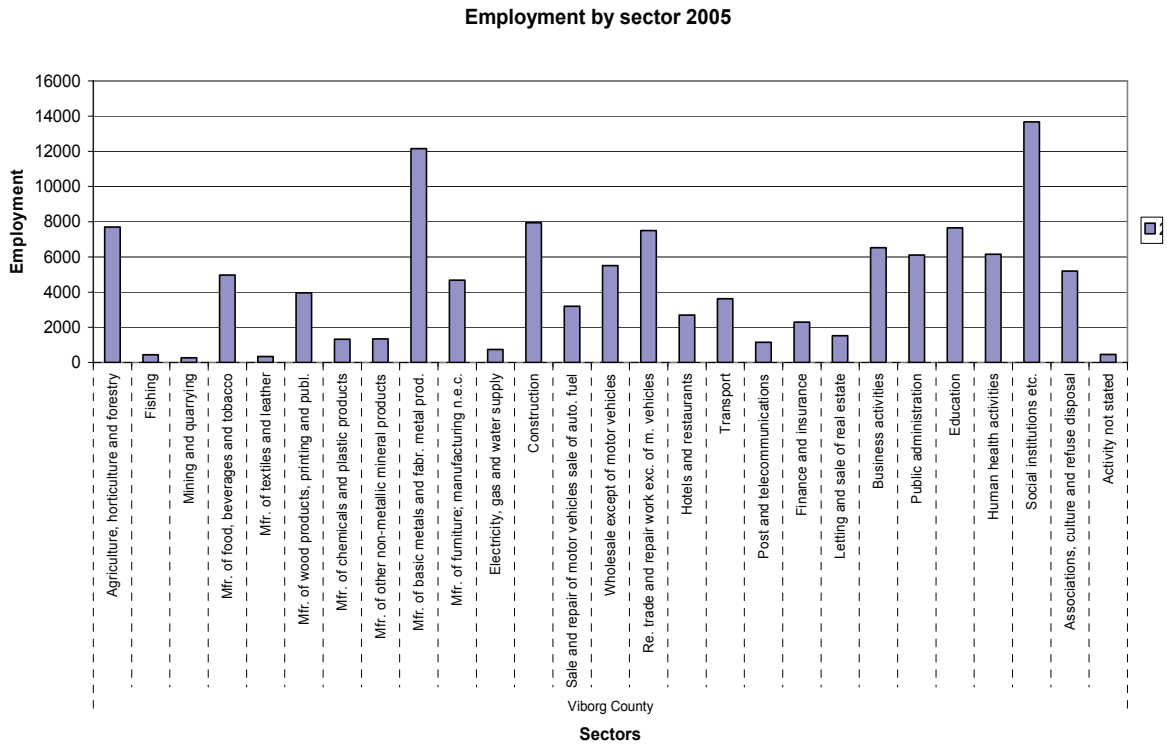
**Figure 6.** The Salling-Mors furniture cluster and Viborg County.



The study focus (in accordance with the ISP project on innovation in the periphery[69]) on the predominantly pine wood furniture cluster of businesses in Skive, Morsø, Sallingsund, Spøttrup and Sundsøre municipalities of Viborg County. There are important – small and larger furniture and wood working industries all over Denmark, off course. An important part of the furniture industry (kitchen furniture) and wood working industry (windows, doors, construction materials) is located in the neighbouring Ringkøbing County area and around the city of Herning. More than 50% of all Danish wood and furniture industry is located within 100 km from Skive[70].

In 2005, Viborg County had about 1/3 of the employment in manufacturing with furniture and wood working (construction materials) as the major sector besides iron and metal industry, construction and food industry. The share of employment in the primary and secondary sectors are generally higher than the national average and the level of formal education is lower than the national average[71].

**Figure 7.** Employment by sector in Viborg County 2005 (Source: Danmarks Statistik 2006, www.statistikbanken.dk).




Employment in furniture manufacturing was 4674, in manufacturing of wood products, printing and publishing 3963, employment in manufacturing total 37432 employed.

[69] Innovation Systems and the Periphery 2005.
[70] Svend Erik Nissen. Head of Department, Skive Technical Institute & Innovation Centre for Furniture and Wood Working Industry.
[71] See Innovation Systems and the Periphery 2005 and appendix E in this volume.

Employment in the 5 Salling-Mors area municipalities are distributed in a similar way with furniture and wood working industry counting for more than 1/3 of manufacturing. The Salling-Mors area furniture cluster of manufacturing firms employed in 2005 more than 2000 people and has an annual turnover of approximately 4 billion DKK, mostly for exports to the European market. Employment in the furniture and woodworking industry counts for between 15 and 25% of total employment in the manufacturing sector in the area[72].

The Salling-Mors area of the furniture cluster consists of a geographically relatively small labour market with Skive and Spøttrup being part of a larger labour market proximate to the eastern and larger part of the Viborg County. While the Danish regional labour markets have been dramatically reduced in numbers, thus enlarged in geographical coverage, the Salling-Mors commuting region has been stable in the period[73]. The island and peninsular geography (and culture) may explain this characteristic, which underline the localised nature of the workforce of the furniture and wood working cluster.

For the furniture and woodworking industry in the Salling-Mors area, a few actors are important for business development and innovation at the local and regional level[74].

Skive Technical Institute, STI, (technical school) has a long record in educating cabinet-makers (among others) in Denmark in close interaction with the private sector and the industrial and labour organizations. STI is moving forward as a polytechnic school with middle-long education. STI is now part of the Business Academy Mid-West together with the former business school for shorter education in Holstebro and other schools in the region.

Danish Innovation Centre for Furniture and Woodworking Industry, the Innovation Centre, is a new and important support actor targeted to the furniture industry in its activities for competence-building and knowledge dissemination. Skive Municipality is actively engaged in the Innovation Centre and local business services (Salling Udviklingsråd – now part of Skive Erhvervscenter) also plays a supportive role for the business sector and the furniture industry. The Skive Cabinet Makers Guild has a century old role to play for the managers of the furniture industry in the area.

The Technological Information Centre (TIC) in Viborg County receives basic funding from Viborg County and the Government (TIC Denmark) and is partly self-financed in their consultancy services for the business sector. Their activities are focused within the areas of entrepreneurship and implementation of national business development initiatives at the regional level.

There are 2 national programs with a direct impact on the good practice of competence-building for innovation[75].

[72] The figures and shares are depending on how you interpret the broad sector categories in the available statistics at the municipal level.
[73] Miljøministeriet 2003 & 2006.
[74] Appendix E in this volume.
[75] Appendix E in this volume.

*"Regional Growth Environments 2001-2006"*

The support framework "Regional growth environments" was initiated by the Ministry of Science, Technology and Innovation to stimulate bridge-building between companies and knowledge institutions while building on existing competences and specialisations in regions. Government support was granted to research and educational institutions working with knowledge and technology dissemination. The funding cannot exceed 60% of the total budget. Support is granted for a 3 years period with possibility for 2 years extension. A "growth environment" was expected to develop into a self-financed institution[76].

One of the specific initiatives in operation in Viborg County is the Innovation Centre for Furniture and Woodworking Industry, Skive, aimed at raising the competences and level of education of the companies in the sector through improved education, courses etc. The "growth environment" has after 3 years operation been evaluated and here found to have a positive impact on innovation and business development of the furniture industry with the new educational initiatives and practices.

*"Knowledge Moves Out"*

The Ministry of Science, Technology and Innovation supports regional companies and knowledge institutions with the aim of securing a knowledge and high technology based development of the Danish regions. The government action plan wants to add research, technology and innovation to the regional agenda, to promote a strong regional interplay on research and innovation, to raise regional competences and to have more knowledge based entrepreneurs in the country. One of the initiatives in the "Knowledge Moves Out" action plan is to co- fund a number of "Regional Technology Centres" with specific sector focus from 2006 and 3 years ahead[77]. The Innovation Centre for Furniture and Wood Working Industry has been approved to this initiative.

## *Skive Technical Institute (STI) & Innovation Centre educational programs in innovation and design for the furniture industry.*

At the STI, educational projects are carried out in a co-operation between local furniture manufacturers and a number of local and national education and governmental institutions, including Business Academy Mid-West partners, Wood and Construction Labours Union (TIB) and Wood Manufacturers Employers Union (TA). Project resources and external support has been received from Viborg County, Ministry of Business and Housing, Ministry of Science, Technology and Innovation, Technological Institute, Aarhus School of Architecture and Design, Private technical and business consultants and EU funded programs.

Skive Technical Institute is forming part of the Danish Innovation Centre for the Furniture and Woodworking Industry and hosts development activities in education and vocational training developed together with the Innovation Centre. Closely

[76] Danish Ministry of Science, Technology and Innovation: Regional Growth Environments.
[77] Danish Ministry of Science, Technology and Innovation: Regional Technology Centres.

connected with the furniture industry in the surrounding area, the program for production technologists is relevant and has a long tradition of delivering skilled technologists to the furniture industry in the region. At the STI there is at present equipment for 3D measurements and Italian and German moulding and wood cutting machines suitable for transforming 3D-CAD drawings into prototypes (Essetra, Marka and Rechenbacher)[78].

### *Process of good practice*

The Danish wood and furniture industry faces strong competitive pressure especially from East European and Asian countries. Unskilled and low skilled employment has been steadily falling the last decade. The industry has an important economic role in the Middle and Western parts of Jutland. The wood and furniture sector is at the same time characterised by a low levels of education and formal skills and a relative low level of research and development activities. There has developed consensus on the need to focus on change and innovation in the industry by means of knowledge transfer, development of workforce competences and education of new types of employers. The idea of an innovation centre for the wood and furniture industry is to build a creative and visionary learning environment for the industry and promote cooperation between companies and educational, knowledge and research institutions[79].

By initiative of the Viborg County business development section, Skiveegnens Vækstråd (Skive area growth council with participation of the Skive Municipality) and a group of private furniture companies a consortia was established with Skive Technical Institute, Danish Technological Institute and Technological Information Centre (Viborg County) to form The Danish Innovation Centre for Furniture and Woodworking Industry in Skive. The Innovation Centre achieved government support as a regional growth environment by the end of 2001.

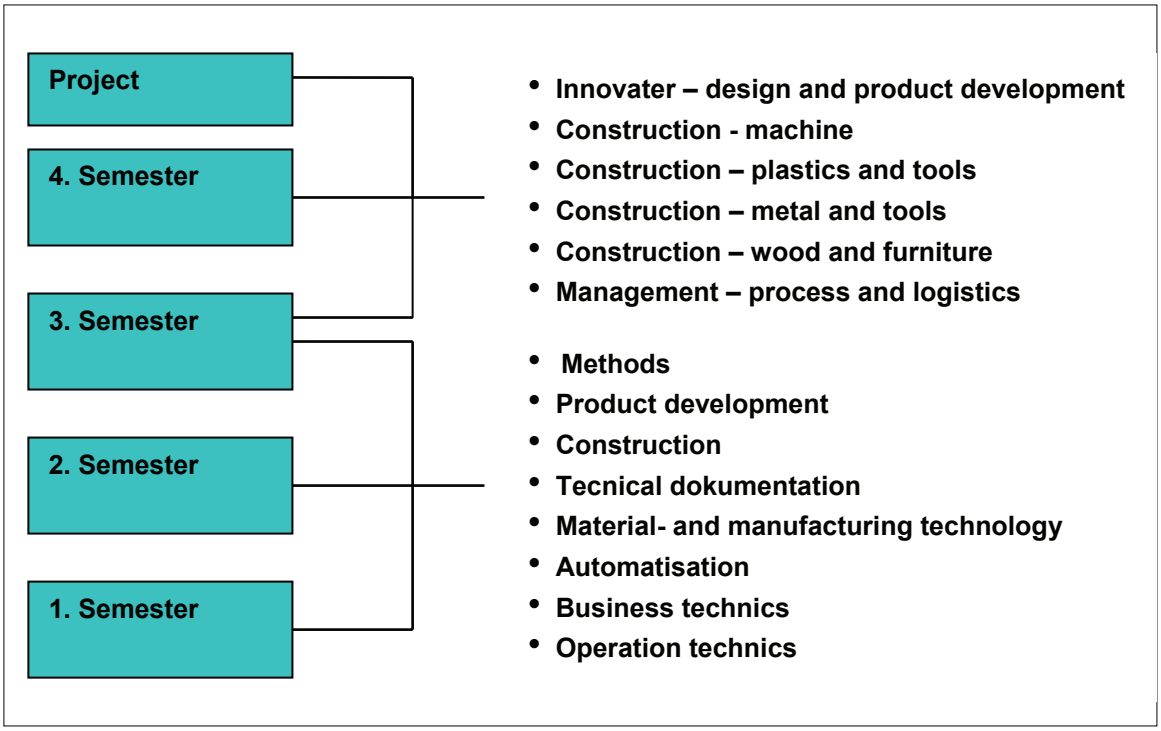
The Innovation Centre has carried out activities for almost 30 million DKK from 2002 – 2005, where of the contribution from the Government has been 50%. The rest has been financed by private companies and public authorities and institutions (5 million DKK). Private companies have co-funded activities with their own work time for approximately 10 million DKK[80]. The Innovation Centre is organised as an independent fund with a board with representatives from the consortia group, Skive Municipality and local furniture firms. Other actors included in the activities have been universities, business schools, architecture and design schools, business academies, other technical institutes and researchers.

STI has a long tradition of running the "Production technologist" program – a 2 year study with a specialisation in plastics, metal and wood and furniture. Emphasis is on practical knowledge on materials, process management and logistics with company contacts, a mentor arrangement between each student and a company has been initiated and students are engaged in project work at companies. It is at present

[78] Svend Erik Nissen.
[79] Viborg Amt, Erhvervsudvalget 2005.
[80] Viborg Amt, Erhvervsudvalget 2005.

voluntary for the Danish technical institutes to engage with mentor arrangements for their students, though it is promoted by the Ministry of Education. The STI production Technologist program has implemented this arrangement and offers new students without apprenticeship background to engage with a mentor company from the beginning of the study. Companies are not compensated financially for their engagement as mentors, but see a clear interest in identifying possible new key employees. At the same time, the companies get a chance to get specific problems solved and tasks carried out. At present, the STI works with making formal agreements (contracts) between the Institute, the student and the company on the specific mentorship arrangement in question in order to harmonize expectations[81].

**Figure 8.** Structure of Production Technologist program at STI. (Source: Skive Technical Institute.)




Around 25 students start annually and with this program, the STI and the Innovation Centre has build:

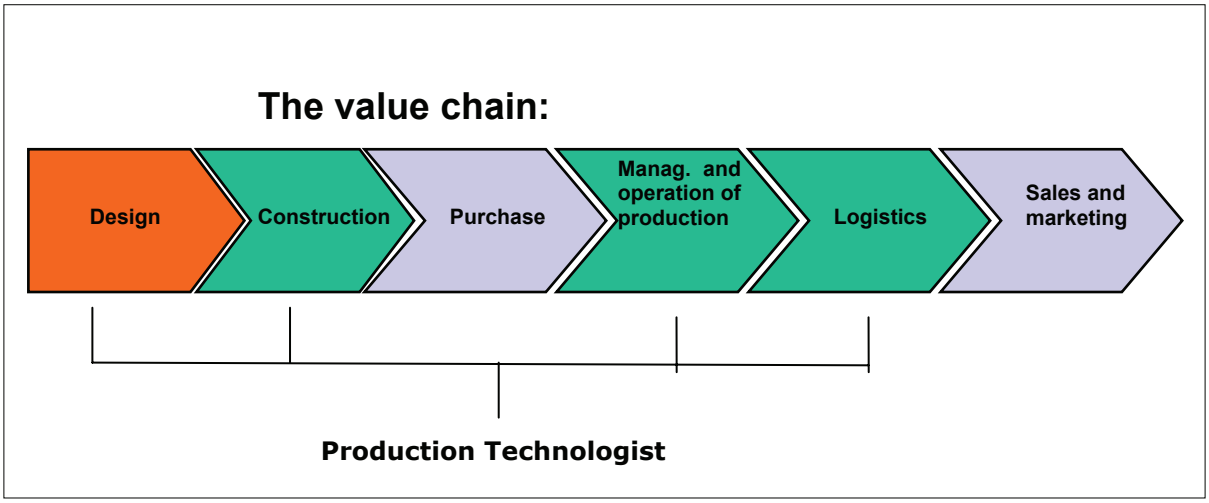
- "*Innovator*" – a 2-year study with specialisations in design/product development, trend/marketing, process/logistics, offered to students at high-school level of education. 8 students graduated 2005.
- "*Innovation-designer*" – a 1-year course with modules on the idea phase, the constructions phase and the pre-production phase of innovation, offered to employees in the furniture industry with some years of experience.
- "*Mini-Furniture Cup*" – a learning concept on product and design development with production technologist students at STI, students of

[81] Svend Erik Nissen.

architecture and design at Aarhus School of Architecture and a local furniture manufacturing company on furniture innovation with integrated innovation education and entrepreneurship promoting program for participants. Manufacturing firms sponsors the project.

These new educational initiatives build on a "value chain" conception of the phases and elements of manufacturing. The new initiatives add and integrate in a practical way the design and innovation component to the traditional elements of competence for production technologists.

**Figure 9.** The educational Value Chain of the STI Production Technologist program. (Source: Skive Technical Institute.)

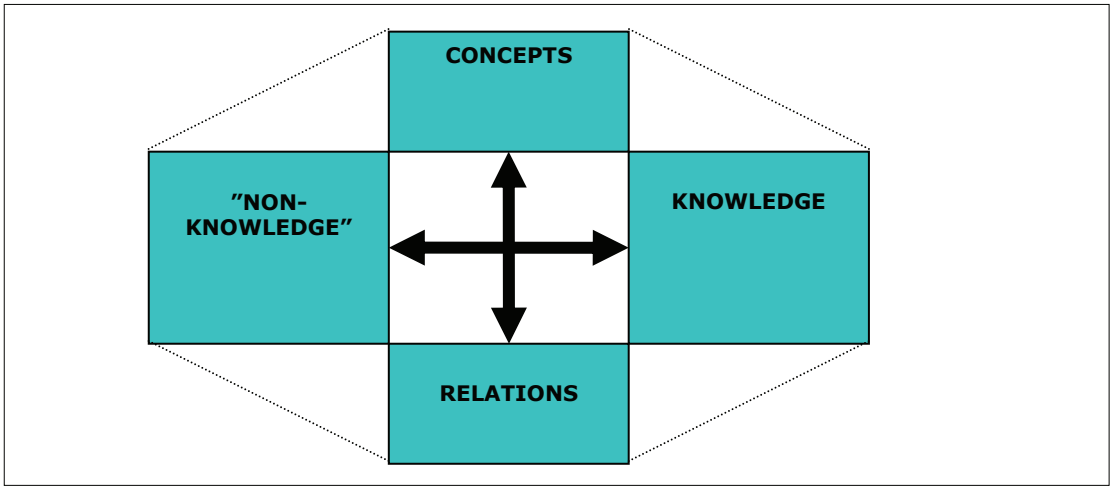



Besides the specialisations of the production technologists within innovation and design, the STI and the Innovation Centre have developed a "HTX Design College" at the high school level, a 5 week innovation project for design students at the universities/architectural schools, developed projects with design schools in other Nordic countries and together with the regional growth environment for the aluminium industry, "AluVækst" developed a concept on the use of aluminium in the furniture industry. This project has involved professional designers and aluminium and furniture producers.

### Development of innovation tools and methods ("Furniture Cup")

The Innovation Centre has worked with smaller projects and workshops/continued education of employed at the companies and teachers. Here an "Innovation Diamond" model developed by Danish Technological Institute (L. Darsø, 2001) has found wide application in team work on idea generation and development, where knowledge meets "non-knowledge", concepts meet relations management in the design of new products. "Non-Knowledge" is synonymous with ignorance – often in the sense of unscholarly, from the knowledgeable point of view and helps in raising untraditional questions in the process.

**Figure 10.** Innovation Diamond (Darsø, 2001).




The Innovation Centre has, further more, developed a web-based education system with modules on construction, surface treatment and mass production. A training program for teachers and for Dansk Byggeri (Danish construction sector organisation) has been implemented and there has been developed a homepage database service with information on wood materials.

### Transfer of research based knowledge and project development

Together with CAMS (Centre for Applied Management Research) in Herning, part of Copenhagen Business School, the Innovation Centre has developed 2 PhD projects, by January 2005 with focus on sale and purchase in the pine wood furniture sector with 8 companies as co-funders. Other transfer activities include courses in logistics and sourcing, workshops and conferences for furniture and wood working companies, establishment of "experience groups", collaboration on export promotion among others. The Innovation Centre has also developed and tested a "make/buy-model" an IT tool for evaluation of whether to produce in-house or purchase from suppliers[82].

STI and the Innovation Centre have carried out several project activities with additional funds provided by external participants besides the direct funding to the Innovation Centre activities provided by the Ministry of Science, Technology and Innovation (Regional Growth Environment) and from Viborg County and Skive Municipality. STI receives funds on application from Træfonden (Fund of the Danish wood industry) to support student travels etc. and it receives funds from the involved private local furniture companies engaged in the "Mini Furniture Cup". The Innovation Centre has been involved in a Leader+ project with technical schools in Småland, Sweden to exchange experiences, the have received Nordic Council funds for a project on cooperation in education with technical schools in Finland. They are

[82] Viborg Amt, Erhvervsudvalget 2005.

also engaged in European Union Social Fund, Goal 3 projects on labour market and competence-building for the less-favoured.

### STI international network

Skive Technical Institute has together with the Innovation Centre build international cooperative relations with a number of educational institutions: SOU nabytkarske a technicke, Praha, Chek Republic; Gewerbliche Berufliche Schulen der Stadt Flensburg, Germany; Berufskolleg Beckum des Kreises Warendorf, Germany; IPSIA Meroni, Milano, Italy; IPSIA San Giovanni Al Natisone, Udine, Italy; Salpaus Further Education, Lahti, Finland and Savonlinna Vocational Institute, Finland.

The primary relations with the foreign partners concern projects, where new forms of learning is developed in collaboration with firms, organisations and ministries in the respective countries. From this follows interchange of knowledge learning across the educational institutions and generation of new ideas for projects, which can raise the quality of education, strengthen network relations or the competitiveness of firms. Inclusion of the growth and knowledge centres associated with the different educational institutions is a way to promote problem solving and increase business competitiveness[83].

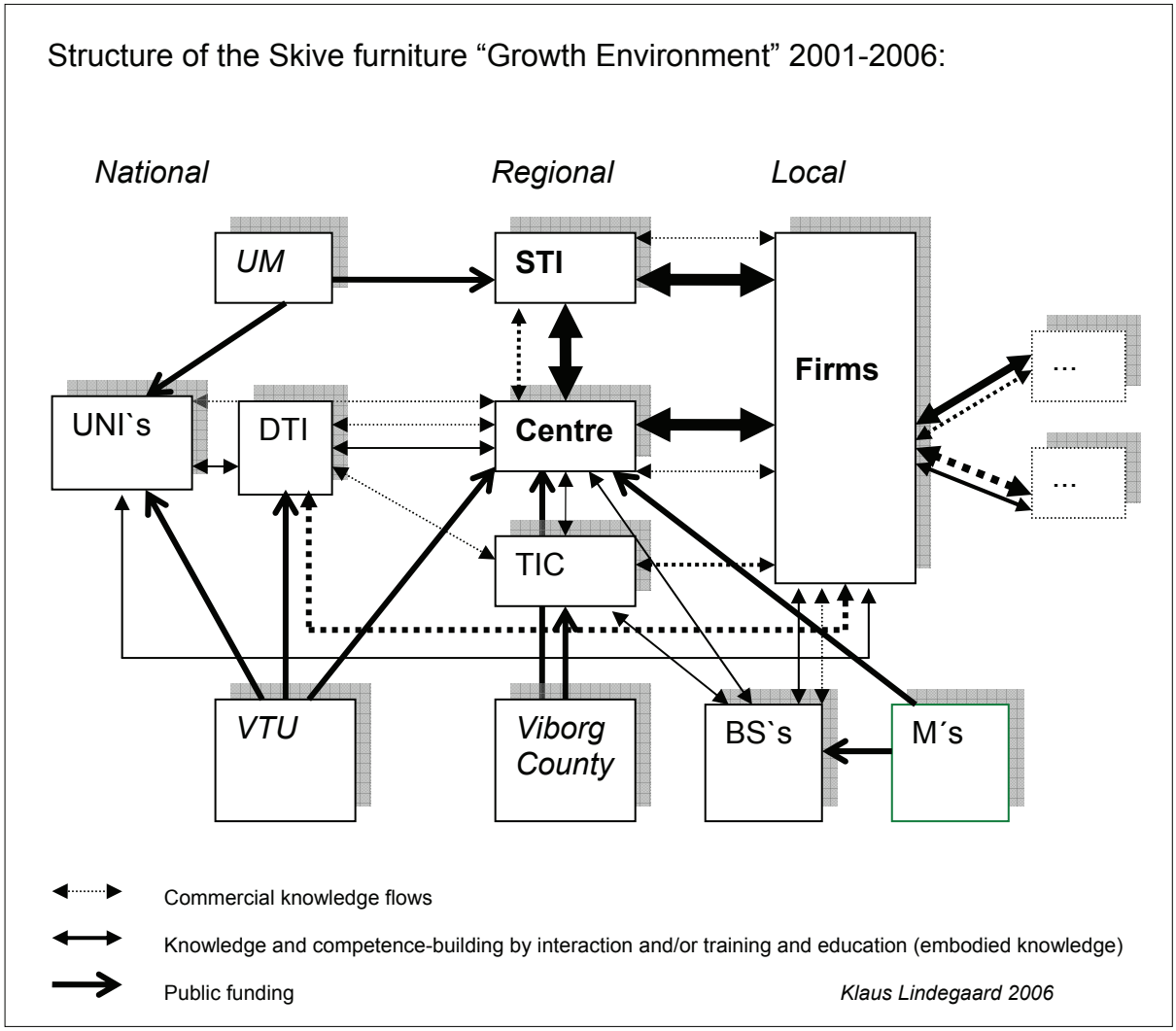
## *Structure of the good practice*

The central actors involved in establishing of the good practice "triangle" between STI, the Innovation Centre and the firms are (see figure):

- STI: Implementation of educational activities
- Centre: Coordination and knowledge dissemination function
- DTI: National laboratory service for the industry and "innovation model"
- TIC: Regional technology and business information service for Viborg County

[83] Svend Erik Nissen.

**Figure 11.** Structure of the Skive furniture "Growth Environment" 2001-2006.




**STI**: Skive Technical Institute; **Centre**: Danish Innovation Centre for Furniture and Woodworking Industry; **Firms**: Furniture and woodworking industry in Salling-Mors area; **BS´s**: Business Service Centers; **M´s:** Municipalities; **TIC:** Technological Information Centre Viborg County; **DTI**: Danish Technological Institute; **UNI´s**: Business Schools and Universities; **UM**: Ministry of Education; **VTU**: Ministry of Science, Technology and Development.

The relationships between the actors, especially the local and regional actors are both formal and informal due to various proximities. The business service center activities (thematic meetings for managers in the region, study tours and export promotion initiatives across industrial sectors) are important examples of a way to enable the businesses to interact on a formal-informal basis.

The "triangle" of interaction between the firms, the STI and the Innovation Centre is the core of the good practice of competence-building for innovation in the furniture industry in Salling-Mors. The knowledge flows in the "triangle" consists both of codified knowledge and more tacit and skill-based knowledge embodied in the people, who moves from the school to the firms. The working of this "triangle" of cooperation is partly based on the overlap of staff between the STI and the Innovation Centre, which enhances knowledge sharing and synergy in activities. The up-scaling of the flows are due to the funding provided by local, regional and national authorities

to the Innovation Centre and from here to the STI activities. There are also commercial knowledge flows between the firms and the STI and the Innovation Centre, as the firms provide private funding to some activities. The firms self-financing of their involvement in cooperative activities should not be disregarded as the interaction of the firms – both formal and informal – with the other actors of the innovation system (suppliers, customers, etc.) must not be disregarded.

The role of local business service centres (Salling Udviklingsråd, Skive Erhvervsservice), the Skive municipality and the Viborg County co-funded TIC have all been important for the establishment of the Innovation Centre. These local actors also provide knowledge on a continued commercial and semi-commercial basis.

The national Danish Technological Institute is important for knowledge provision for the firms on a commercial basis as well as a consortia member of the Innovation Centre providing knowledge on innovation and business management etc. both by interaction and training and on a contractual basis by mean of the Innovation Centre funding from the Ministry of Science, Technology and Innovation. There is cooperation with the Herning Business School on business economic issues and the PhD projects are based here with funding from the firms. Other institutions of higher education are involved, i.e. the architecture and design school in Århus and Danish Design Centre in Copenhagen, while the direct university interaction is very weak – not to say non-existing.

## *Impact of good practice*

The STI-Innovation Centre initiatives have build practical skills and training in innovation work for the production technologist students entering the wood and furniture industry. It has also created a broader awareness of the importance of design and innovation for competitiveness in the industry. It has created a stronger knowledge base and networks for knowledge dissemination. It has stimulated product development on the spot and embodied knowledge transfer in vocational training. 30-40 companies are involved on a regular basis as part of the education program. The STI-Innovation Centre activities have influenced the development of new educational programs and forms of learning in Denmark in collaboration with the Ministry of Education and the Ministry of Science, Technology and Innovation[84].

By means of the student project work and the "Furniture Cup", it has impact on development of new product concepts as well as product and process optimisation in private companies and has participated in the development of new products and production processes in local firms[85]. The activities are adding to the SMEs opportunities to make fast, cheap and "fun" product development and at the same time experience the value of higher educated key employees inside the company. Further more, the activities create new forms of learning among educational institutions and with private companies.

[84] Svend Erik Nissen.
[85] Svend Erik Nissen & Interviews with firms; Innovation Systems and the Periphery 2005.

The activities are based on close relations with local companies which provide mentorship and host the students in apprenticeship. Companies are defining the concepts and sponsoring project work. Practical knowledge is important because the user-driven character of the innovation system, where firms are studying the major markets shaped by fashions, styles and short product lives. Practical knowledge is also important because the skills and embodied knowledge in the people of firms and educational institutions play an important role for the firms[86].

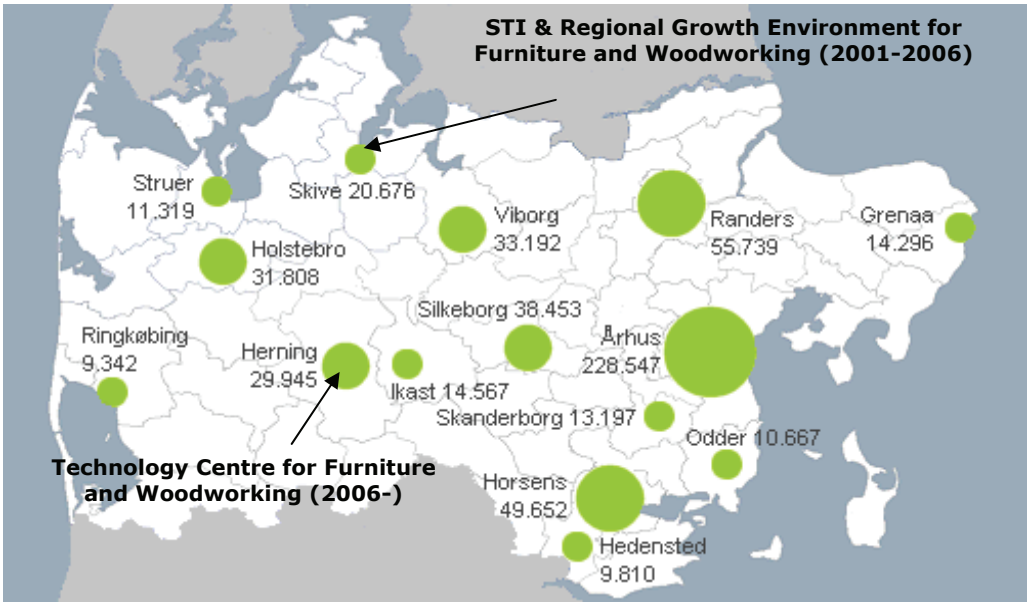
Overall, the good practice has contributed to economic growth, competitiveness, employment creation and population growth in the region. Effects on regional economics and development are difficult to measure and quantify due to the relative short period of operation of the Innovation Centre and due to the difficulty in isolating any one factor in the analysis of development processes. It is a common view among all stakeholders in the industry and the region, that the Innovation Centre and the STI-Innovation Centre activities on competence building are very positive for the industry and the region[87].

### *The future*

The Skive Technical Institute, located in Skive, hosts the good practice case developed together with the Danish Innovation Centre for Furniture and Wood Working Industry – a Regional Growth Environment. By mid-2006, the Innovation Centre moved to the city of Herning, placed 60 km south of Skive and turned into a Regional Technology Centre with funding from the national program "Knowledge Moves Out". The new regional administrative structure with Region Mid-Jutland is coming into force 1. January 2007 and covers only the Salling area part of the Salling-Mors furniture cluster. The Morsø part will be under the administration and regional development strategy of Region North Jutland.

[86] Interviews with firms; Innovation Systems and the Periphery 2005.
[87] Interviews with firms; Innovation Systems and the Periphery 2005; Oxford Research 2005.

**Figure 12.** The future location of the Innovation Centre. The Region Mid-Jutland by 2007 (inhabitants in major cities 2005).




While the Innovation Centre has had success with establishing new independent educational programs in design and innovation, the focus has also been on developing new forms of learning, which have resulted in collaboration with businesses and educational institutions all over Denmark. The aim is to provide the employed in the companies with new competences to strengthen the competitiveness of the furniture sector as well as enhance the job possibilities for the students. By creating a forum for business firms with similar market challenges, it has been possible to create research projects with PhD students.

As a "Regional Technology Centre" supported by the Ministry of Science, Technology and Innovation, the Innovation Centre will have 2 main objectives: To create new PhD and applied research projects and to work with innovation processes. These objectives are aimed to strengthen firm competitiveness and innovation capabilities at the educational institutions and companies. The "new" Innovation Centre will establish physical workshop facilities to take apply new methods for prototype development (Rapid Prototyping, 3D modelling). The industrial and labour organisations (TA-Træets Arbejdsgiverforening and TIB-Træ-Industri-Byg) have taken interest in collecting all relevant knowledge on wood and furniture at one location in Denmark, why the Innovation Centre moves to the city of Herning together with the 2 organisations, Træets Kompetenceformidling (Wood Industry Competence Dissemination) and Sekretariatet for Træets Uddannelser (Secretariat for Wood Industry Educations). It may in the future turn into a formal cooperation between STI and Business Academy Mid-West together with Danish Technological Institute and CAMS at Herning Business School.

## *Transferable elements of the good practice*

There are possible lessons to learn concerning 4 aspects of the good practice: Actors, activities, processes and support schemes. The good practice can be summarised as follows:

- Actors: Educational institutions are important actors in promoting innovations. The good practice provides ways and means of knowledge creation and dissemination for medium-sized manufacturers via education enhancing innovation and competitiveness.
- Activities: On the job training and project work are integrated in teaching programs with state-of the-art skills in technology and development. The program brings together students of handicraft and technology with students of design (educational value-chain approach) for developing new furniture prototypes and mutual understanding of design processes as well as processing of wood in manufacturing.
- Processes: By participation in product development on the spot and embodied knowledge transfer in vocational training, the STI and Innovation Centre have impact on development of new product concepts as well as product and process optimisation in private companies. The locally anchored educational institutions act as a bridge between national technology institutes and local firms. With the education of the new generation of skilled workers, the knowledge moves *in* to the companies with the young generation. The STI-Innovation Centre activities have influenced the development of new educational programs and forms of learning in Denmark in collaboration with the Ministry of Education and the Ministry of Science, Technology and Innovation.
- Support: The STI and Innovation Centre are based on local/regional tradition and regional business cluster relations together with impetus from national regulation of technical schools and participation in local/regional innovation centre initiative supported by national funding of the specific innovation activities of the educational and knowledge institutions involved. National funding scheme is based on a bottom-up local organisation of relevant private and public actors for the Innovation Centre (Growth Environment support scheme).

## *Summing up and contextualisation*

The case of the STI and the Innovation Centre for Furniture and Wood Working Industry in Skive, Denmark is assumed to be context-independent in the sense, that the main actor of the good practice, the STI school of vocational education and training, who implement the activities, is an actor present for all sectors of manufacturing, which as "mature" industries dominate the peripheral areas in the Nordic countries. The Danish innovation system is often characterized as "user-driven" in opposition to science and research-based innovation systems. The weak presence and role of research activities and research institutions in the development

activities of the manufacturing sector is well captured in this description. The STI-Innovation Centre good practice offers a way forward for regional development in that sense, that it is a case of how to mobilize other (and locally present) actors for knowledge dissemination and innovation in the absence of research institutions and traditions in the peripheral area and traditional manufacturing sector.

There has been an evolution in a Danish context from the local/regional specificity of the STI-Innovation Centre good practice to a broad and national applicability in vocational education and training system for the traditional skill-based trades and manufacturing industry. While the good practice grew out of the specific needs of the furniture industry in the Salling-Mors area, now the ideas of integrating innovation and design is getting widespread in the development of vocational training and education in Denmark. This process reflects off course a general need for innovation in all sectors, but also – and more – a need of the educational institutions to be attractive for students in the future. The Ministry of Education is playing an active role in this transformation of the schools for vocational training.

### 3.1.5 Learning from the Danish STI – Innovation Centre case in Ylivieska, Finland

#### *Context*

The assumption was that learning could take place in a benchmarking fashion between the Danish good practice and the Centria Ylivieska good practice and the respective actors. Both cases deal with knowledge and competence building among firms in the regions concerned – the interest here being especially in the woodworking sector – but in different ways. The Danish case focuses on furniture manufacturing, while that of Oulu South focuses on woodworking. Centria Ylivieska is a research and development unit of an educational institute, while the STI has no research and development activities. There are differences between the regional and national contexts and between the activities and focuses, but the aims are basically parallel. Both institutes aim to enhance the innovation ability of SMEs in their areas. The idea was that comparing and learning between the two cases might be valuable.

#### *Workshop*

The local actors invited to the workshop were contacted from mid-March onwards. Information on the PLIP project and on the purpose and content of the workshop were sent to participants at the time of invitation. The workshop programme and some preliminary information on Skive Technical Institute were sent to participants a couple of days before the workshop.

The workshop was held at the Centria facilities in Ylivieska between 12 noon and 4 p.m. on April 27, 2006. The meeting started with welcoming and presentation of the participants followed by an introduction to the activities of Centria Ylivieska and the

economic life of Oulu South by the manager of Centria Ylivieska. There was also a short introduction to the project and the workshop and to the general findings and conclusions of the ISP project case study of electronics in Oulu South.

A Danish researcher presented the Skive Technical Institute case. This was followed by a discussion in which the main themes were the regional and national contexts and learning from some of the elements of the Danish case. The conclusion of the workshop included a final round in which participants evaluated the workshop. The discussion took place in English.

The aim of the Finnish research team was that all the key actors in the developing woodworking industry, especially in terms of innovation co-operation and education in the region, would be represented in the workshop. This goal was fairly well achieved, the main deficiency probably being the non-attendance of vocational education institutes in the region.

A total of ten participants were present in the workshop, including two Finnish researchers and one Danish researcher. Four of the participants represented the Ylivieska unit of the Central Ostrobothnia University of Applied Sciences and Centria, one of them being the research and development manager, the second being the development manager dealing with the wood sector in the region, the third a senior researcher and the fourth a lecturer. The fifth participant was the manager of the Ylivieska subregion, the sixth an employee of the Ylivieska subregion who was representing the Technology Education Centre and is also partly working for Centria Ylivieska, and the seventh was representing a regional development agency, Kärsämäki Development Centre, which also deals with the woodworking sector. The presentation on Danish good practice seemed to be of great interest to the participants. The case wasn't too abstract nor too concrete, but seemed to be useful.

The participants reflected on the STI case and its context and the operations of Centria Ylivieska and its regional and national context and made comparisons between them. Concerning the Danish context, they asked about such matters as the funding of education, the developing of raw material procurement, sales and marketing in firms, and the existence of machinery manufacturers in the region, the sufficiency of employees and market areas for woodworking companies in the Skive region. They also asked for more details of the STI and its activities, e.g. motivation of firms in the mentorship system, the existence of new approaches and solutions and the use of 3D modelling programmes. Elements of the story which were of specific interest to the participants were the curriculum of the STI and its practical approach to innovation.

The Skive good practice has some common elements with Centria Ylivieska and the context of its activities, the main thing they have in common being orientation towards enterprises. The Skive case also has similar elements to the Teknokas Technology Education Centre for young people. Both emphasise learning and innovation through practical issues. The discussion dealt with the education system, which should be stable but flexible, and the gap between universities and firms, both issues being the same in both contexts. The approaches adopted to the use of technology and new methods are different in the two cases, however, as there is automation and robotics from design to service in Oulu South whereas production in

the Skive area is more craft-based. There are also differences regarding the value chain and its management. Raw materials for the woodworking industry are imported into Denmark, and according to one of the participants, the Danes are good at combining design and products, and there is something to learn from that, but in Oulu South you have to be competitive over the whole value chain, starting from raw material procurement. Many small family enterprises in the region need more competence in marketing, exports and business thinking. Also, practical studies and design should be combined more, and students should be encouraged towards innovation more during their studies.

There was a lively discussion that included many topics such as logistics, labour costs, mass production moving elsewhere, mass products contra special products, the value chain, co-operation between sectors etc.

In general, the participants seemed to think that there are things in the Danish good practice to learn from in Oulu South. The practical approach to innovation in STI was particularly interesting and could be used more in vocational training in Oulu South, too. The educational institutes in Oulu South could develop similar courses to supplement the existing vocational education. Practical knowledge could be more closely combined with technological and theoretical knowledge both in industry and in education schemes.

Another thing that was of interest for application in the region was the mentorship system. There have been attempts to implement this in Oulu South, but the problem has been the limited time resources of the companies. The participants were interested in obtaining information about the incentives for firms in the mentorship system in Skive.

The question of how innovation is promoted today was given some thought, one conclusion being that the local authorities, for example, do not play an active role in enhancing innovation, and that more should be done in this respect.

The participants seemed to consider the workshop interesting and productive and were very positive about it. Some of the things presented on Skive were not new to them, but acquired more information to back up their existing ideas. More information on the Skive area and on some details on the STI are still needed, however. It was promised that the participants would be informed about these things later on.

The comparison between the cases was seen to be useful in helping participants to recognise their own strengths and possibilities. There are some things in the STI good practice that can be utilised in Oulu South. Some things can be done differently, and some things depend on the national way of operating, such as the national framework for educational institutes.

## *Evaluation*

Many elements of the STI case are applicable in Oulu South and some of them seemed to be of real interest for the participants to develop in their own region. A couple of things stood out as possible points for future development. A practical

approach to innovation in vocational training could be developed in Oulu South. Related to this, an excursion to Skive could be made with representatives of the vocational education sector. The mentorship system was also very interesting, and a support scheme for this should be developed.

After the workshops the Finnish researchers supplied the Centria people with information on the contact person at the STI and vice versa. Otherwise there does not appear to have been any concrete action so far.

The workshop was a success in the opinion of the researchers. The discussion was active and productive and led to a positive outcome. This was evidently much due to the participants' ability to compare the practices and contexts and to assess the reasons behind the differences and to their will to improve their own practices.

### 3.1.6 Conclusions on the competence-building good practices

Although both competence-building good practices – Centria Ylivieska and its innovative co-operation with SME's in Oulu South and the STI Innovation Centre for the Furniture and Woodworking Industry in Denmark - deal with educational institutions, the cases have quite a different context with regard to their specialisation and the areas' industrial history, for example. The Danish case study is embedded in a long craft-based tradition in the furniture sector which is being reproduced and renewed by good practice, whereas the Finnish case study area used to be a region of primary production but has industrialised rapidly and shifted into the knowledge-based economy, with the R&D unit and its related educational institution being the force behind this process. Both regions can be characterised as SME-dominated with specialised cluster formation and dynamics, but while the Finnish area lacks any large firms or process industries, the Danish area has some large firms within that sector.

The elements of the Danish good practice are integrated teaching in production and design and integration between the educational programmes and business development, together with new knowledge and crafts embodied in the people and the function of bridging and networking between actors in the furniture sector. The good practice in competence building in the Finnish case is mostly based on the activities of the research and development unit (Centria Ylivieska) of an educational institution (Central Ostrobothnia University of Applied Sciences) which is pursuing innovative co-operation with SMEs in its home area, Oulu South. The forms of this co-operation are applied research, development projects, continuing education and the supply of services. Centria is also engaged in transferring knowledge and new models between sectors. There is a favourable cycle of education, innovation projects and business development through innovation activities in the region.

In the Danish case the research and development organisation, the Innovation Centre, is in the making, first as a "Regional Growth Environment" and now as a "Regional Technology Centre" (with a build-up of laboratory/workshop facilities), whereas the Finnish Centria Ylivieska has co-evolved with local/regional manufacturing SMEs

and built laboratory facilities in order to respond to the needs of these firms. In both cases there are strong interaction and knowledge flows between the research and development and innovation services and their educational base.

The two competence-building good practices have some elements in common, such as

- working in social and geographical proximity to the local firms,
- developing sectors/clusters of the case study areas proactively,
- networking and bridging functions between SMEs and other knowledge institutions, and
- having a cross-sectoral character to some extent, but in different aspects.

The difference is that in the Finnish case the educational institution has a separate and relatively large unit for R&D activities and innovative co-operation, whereas in the case of the STI the innovation co-operation is embodied in former students and involved in the educational programmes. The other difference is that while Centria has a strong technological dimension, the STI Innovation Centre is more craft-based and the R&D activities have not been developed in house to the same extent.

The national context was not very prominent in either of the two good practices, although some national characteristics can be seen in these cases. The Danish business system of entrepreneurship and the user-driven innovation system are reflected in the operation of the STI Innovation Centre, while the Finnish science and technology-driven innovation system and the national policy of cluster development form a context for the innovative co-operation between Centria Ylivieska and the SMEs.

These good practices are examples of local or regional bottom-up activities in which the initiatives have came from the regional level. In the Oulu South case the national level policies are not determinants, though the activities have received both national-level and EU resources for projects. The Danish practice grew up out of a local effort to move the industry forward, together with being part of the national-level Regional Growth Environment programme.

There seemed to be a good match between the two in terms of competence building. The reasons behind this were probably the similarities in the aims of the two educational institutes involved and the fact that the woodworking sector was of interest for both parties. Also, the local actors participating in the workshops in Ylivieska and Skive had an obvious ability to abstract and learn new information.

There were some elements of the good practices that were obviously both interesting and at least partly transferable, e.g. the mentorship system of linking students with businesses at STI and the participation of teachers in research projects at Centria.[88]

What is needed in order to promote inter-organisational learning and the transfer of good practices? In the Finnish case, policy initiatives are needed to stimulate the development of a practical approach in vocational education, while in the Danish case, policy initiatives are needed to stimulate research and development activities, e.g. funds to address applications for applied research and innovation projects and

[88] More on this in chapters 3.1.3 and 3.1.5

development activities involving the Innovation Centre and businesses. While support and funds from different levels are important, an engaged local/regional network of firms, public authorities and knowledge institutions is a precondition for new practices to evolve and take off.

## *3.2 Good practices in entrepreneurship and product innovation*

### 3.2.1 The Emigration Center at Hofsós in Northwest Iceland – innovation in culture-based tourism

#### *Why this good practice – the weak hypothesis*

The Icelandic Emigration Center was selected as our good practice first and foremost because it appears to be the single biggest innovation success in the tourism industry in Northwest Iceland.

The business concept in question ("the emigration business") is a novelty not only in Northwest Iceland but in Iceland as a whole. Furthermore, the Icelandic Emigration Center has a different approach (tourism based) than most other emigration centers in Europe. It has also proven to be a big success and has received considerable national as well as international attention.

A true entrepreneur (Valgeir Þorvaldsson) implemented the business concept and laid everything on the line in the process. He came out on top not the least because of unusual perseverance but also because he succeeded in involving important national actors, e.g. the Icelandic government, corporate CEOs and other people of influence. In other words, he used the support system to his advantage but also went outside of it, mainly to actors in the private sector, for support.

The operation of the Icelandic Emigration Center has grown considerably in the last couple of years and its operation has great potential for further expansion. Valgeir is for example already in full-swing transferring the emigration tourism business concept to Norway, Stryn to be exact.

A big reason why this case was chosen is the role educational institutions have played in the development of the operation of the Icelandic Emigration Center. The LearnCom project is a good example of such an involvement, where the aim was to strengthen the general capacity of a community and in that way to reinforce the innovation potential of individuals and firms within that community.

Last but not least, this good practice is very attractive despite its uniqueness because its lessons can be transferred to a fairly broad context.

## *Context of the good practice*

This example is a story of the interaction between innovation activities of a single firm and a capacity building development project that was organized by a set of public institutes. The story has, therefore, two basic components that are affected by each other.

**Hofsós in Northwest Iceland**

The story takes place in the small community of Hofsós in Skagafjörður District, Northwest Iceland. The total area of the Northwest Iceland is around 12.000 square kilometers[89]. There are two main districts in Northwest Iceland: 1) East and West Húnavatnssýsla district, which is located further to the west and 2) Skagafjörður district, which constitutes the east part of the region.


**Figure 13.** Northwest Iceland.

Highway one passes through the Northwest region, the distance from the west boarder of the region to the east boarder along the highway is 181 km. The driving distance from Iceland's capital city Reykjavík to the west boarder of the region is 159 km.

The Northwest region includes five communities that are classified as urban. These five urban communities account for approximately 6.100 people or roughly 67% of the population of the region. The rest of the population, or roughly 33%, lives in either small centers (of 80 to 190 people) or in sparsely populated areas. In fact the Northwest region is the region in Iceland that has the highest proportion of the population living in rural settings. The rural areas and the urban center are interlinked in many ways through the interchange of goods, services, and people. Agricultural products (raw materials) are transported from the rural areas for processing in the urban centers. Rural residents also utilize various services in the centers and in some cases commute to the nearest center for employment. The course of development of the rural and urban communities is therefore strongly connected.

The population of the Northwest region has been slowly declining in the last couple of decades. In 1980 the population of the region was 10.631 but in 2003 it had gone down to 9.151 (close to 14% decrease). The communities that have experienced the most decrease in recent years (1997-2002) are Siglufjörður (2,3% decrease), Blönduós 2,1% decrease) and Húnaþing vestra (1,7% decrease).

The Northwest region is in a traditional sense a food production region. The area is well suited for agriculture and also has strong tradition in the fisheries. Currently

[89] Arnalds et.al. 1997.

around 25% of the employed persons in the region work in agriculture, the fisheries or fish processing. This is a considerably higher proportion than the national average. As in other regions of Iceland, various services nevertheless account for the largest proportion of the labor force.

Tourism is becoming an increasingly important industry in the Northwest region, especially various action-based, culture-based and other recreational services. The tourism industry in the region relies on organized activities and events as an attraction for tourists to a greater extent than many other regions of the country, although the region's nature and landscape also is a resource in this regard[90]. The Western part of the region (East and West Húnavatnssýsla district) is renowned for salmon and trout fishing. The region as a whole, especially the Eastern part (Skagafjörður district) has strong tradition for tourism activities associated with horseback riding and the Icelandic horse. Cultural tourism is also an important part of the tourism landscape of the Northwest region. The area has rich history, which has contributed to the development of various development projects through out the region. Several museums and cultural centers operate in the region focusing on different aspects and time periods of the region's history and traditions.

As with the situation at the national level, the lack of statistics makes it hard to estimate the exact number of operators within the tourism industry in the region. The Icelandic Tourist Board registry[91], however, included around 115 tourism firms that are located in the Northwest region[92]. Most of these firms are very small and many only operate during the summer months. It seems reasonable to say that the region possesses a fairly large group of firms offering unusually broad range of recreational services, in comparison to other areas outside the capital region. These include for instance firms offering various forms of salmon and trout fishing, guided walking tours, river rafting, jeep tours, boat tours, riding tours, etc.

In 2003 the total overnight stays sold by accommodation establishments in the Northwest region were 69.053, which is 3.5% of the total number of overnight stays sold in Iceland that year. This equals 5.1% increase from the previous year. Around half of the overnight stays was bought by Icelanders (34.717, or 50.3%), but the other half was bought by foreign visitors (34.336, or 49.7%).[93] According to a recent study the seasonal difference within the annual tourist flow is more drastic in the Northwest region than in any other region of the country.[94] The number of overnights stays, which were sold by accommodation establishments in the region, in the high season period, is around 34 times higher than the corresponding number for the low season period. Considering these figures it is not surprising that the average annual occupancy rate for the year 2003 was only 28% in the Northwest region, reaching the lowest in January (5%) and the highest in July (62%). As also seen by these figures

[90] Ferðamálaráð Íslands 2002.
[91] Ferðamálaráð Íslands 2004.
[92] Since registering with the Tourist Board is not mandatory, the Board's register is not fully exhaustive. In addition to accommodation and recreational service firms the register includes swimming pools, various museums and highland cabins.
[93] Hagstofa Íslands 2004.
[94] Hagfræðistofnun 2004.

there seem to be sufficient, if not excess supply of accommodation services in the region.

## *The Icelandic Emigration Center and LearnCom*

Hofsós is, as mentioned before, a part of the municipality of Skagafjörður. The community has a population of 172[95], but has experienced a considerable population decrease in recent years (16% since 1997). In the last 15-20 years the economy of the town has experienced quite turbulent times. The fishing industry, which through the years has been a very important part of the economy, has experienced great changes, characterized by the loss of fishing quotas from the community, but attempts to maintain some fish processing onshore. Currently only around 10 people work in fish processing in Hofsós. Majority of the labor force works in different types of service industries.

### The two key components of the example:

### A) The role of the individual firm

Mr. Valgeir Þorvaldsson, a local entrepreneur, started working on tourism development in Hofsós in 1990, together with his family. Before that time tourism had a very insignificant role in the community. His efforts resulted in the establishment of the Icelandic Emigration Center in Hofsós in 1995. In the last 10 years the operation of the Center has gone through several development phases but is currently run as a non-profit organization which is operated in cooperation with the company Snorri Þorfinnsson Ltd. and the company Samstarf Ltd. Both companies are owned by Valgeir and/or his family members. The focus of this threefold operation is on culture-based tourism, where the Center itself creates a tourist attraction but the two companies provide the necessary services needed to make use of the attraction. The focus of the three components of the operation can be described in the following way:

1. The Center: Offers exhibits, genealogy and information services, seminars and workshops, all of which build on the history of emigration of Icelanders to the New World.
2. Snorri Þorfinnsson Ltd.: Is responsible for the operation of the Center as well as for providing general information and tourist information services.
3. Samstarf Ltd: Operates restaurant services at the Center, is partly owned by Snorri Þorfinnsson Ltd.

The client group of the operation consists of tourists interested in the history of emigration of Icelanders to North America. Majority of visitors are Icelanders. However, the main target group consists of descendants of Icelandic immigrants in Canada and the USA, i.e. foreign tourists.

[95] *Statistics Iceland*. Population counts. Dec. 31 2004.

The Icelandic Emigration Center (and accompanied companies) can be regarded as a very innovative operation. The innovativeness appears through the development of the products offered at the center, i.e. a specific kind of culture–based tourism products. These products are new, not only to the regional market, but also to the Icelandic tourism market. The success of the Center is also based on a well defined marketing strategy building on lobbying key interest groups in North America, i.e. associations of Icelanders and Icelandic descendants. These strategies have resulted in further product development in the form of exhibits targeting customer groups from particular geographic areas within the continent.

The development of the Icelandic Emigration Center is very much a result of a strong individual effort of Valgeir Þorvaldsson and his family. Through the different development phases of the Center, a variety of support measures has been utilized. Different agencies, most working on the national level, have provided guidance as well as funding for the project. However, these measures have been picked and chosen by Valgeir and utilized according to his specific needs. The support agents have generally had a fairly reactive role. Valgeir has been very successful in lobbying both private and public agents for the purpose of ensuring support for his ideas and the development of the operation. Since 1999 the Center receives core funding from the State, but other parts of the operation (the two companies) are run as private operations. Annual turnover of Snorri Ltd. and Samstarf Ltd. is 50-60 million ISK, and account for approximately 5 man-years of employment. In addition the Center accounts for two expert positions. The entrepreneurial spirit, determination and hard work of Valgeir, together with his expertise in "massaging the system" (as he himself puts it) have, therefore, paid off and resulted in innovative practices within the tourism sector in Hofsós, the Northwest region, and the country as a whole.

The Icelandic Emigration Center has obviously proven to be a success and its operation on has great possibilities for expansion. It's for example estimated that around 200 and 300 thousand people of Icelandic descent live in North America. What's more there are around 40 associations of Icelanders in North America, located all over the US and Canada. Obviously, this is a big and scattered target group and one that is a challenge to reach.

Valgeir´s usual marketing strategy is to contact the associations and set up exhibitions, focusing on one state at a time and involving one or two associations of Icelanders. Already a couple of exhibitions have been set up, focusing on Manitoba, Gimli, Utah, North Dakota, and Columbia etc. A lot of groundwork has to be done in order to set up exhibitions like the ones in question and Valgeir has to spend a lot of time traveling. Still, this is something that has to be done.

Around 20 European countries are in the "emigration business". Iceland, i.e. the Icelandic Emigration Center, is one of the best, according to Valgeir. The Icelandic approach is based on tourist concept while other European countries have more of a research based concept. In that sense Iceland is an excellent paradigm for those who want to use the emigration concept to facilitate more tourism activity.

Valgeir is already in full-swing transferring the emigration tourism business concept to Norway, Stryn to be exact. There an emigration center like the one in Hofsós will

be set up if everything goes according to plan. Last summer a 50 person legation came to Hofsós to familiarize themselves with the operation of the Icelandic Emigration Center. It is interesting to note that the representatives of Stryne heard of the concept from Valgeir´s brother, Sigurður, who incidentally lives in Stryn and operates a retail outlet in the town.

The same concept will be used in Stryn as in Hofsós. Valgeir sees great possibilities in Stryne, especially since 800 thousand tourists visit the town every year on average. Then, of course, there was mass migration from Norway to North America back in the day and it's estimated that about 1.000.000 Norwegians migrated there between 1852 and 1962. What's more, Icelanders and Norwegians more or less migrated to the same areas in North America and in many instances we are talking about descendants of the same people that formed families out west. Last but not least, there are between six and eight million people of Norwegian descent in North America so this has possibilities of becoming quite a profitable business venture.

Of other advances it should first be noted that Valgeir is just about to make an agreement with the University of Iceland. The agreement involves four departments at the University, history, medicine, humanities and one interdisciplinary department, and will only strengthen the theoretical and research foundation of the Center.

Plans for building a hotel on the hill above the Emigration Center have been put on hold for a while. The hotel will eventually consist of four antique style houses. The idea is that after more exhibitions have been put up people will want to stay in Hofsós for a few days, see the exhibitions, tassel through the genealogy and use the local recreational activities.

Lastly, Valgeir is in the process of building up a culture and nature based tourism venture in Kolkuós in Skagafjörður municipality. This venture will center on the Icelandic horse and Kolkuós as an old village of commerce and this will only strengthen the Icelandic Emigration Center and will also prove very important for Hólar University College and Skagafjörður as a whole.

### The two key components of the example:

### B) The role of a community-based development project focusing on capacity building

The operation of the Icelandic Emigration Center attracts around 10.000 tourists every year. Before the establishment of the Center, tourism did hardly exist in Hofsós. The operation of the Center, therefore, evidently changed the atmosphere in the community, particularly during the summer months. The interaction between the Center and the surrounding community is, however, not a one-way stream. The operation is also affected by its surroundings and the morale of the community it exists in. According to Valgeir Þorvaldsson[96], in the beginning the community had somewhat mixed responses to the operation of the Center and the accompanying

[96] Valgeir Þorvaldsson, managing director of the Icelandic Emigration Center. Personal Interview (June 08, 2004).

tourist visits to the community. Although many community members were supportive, some were quite negative towards the Center, demonstrating fairly high degree of pessimism and discouragement, as well as a general frustration towards the growing number of visitors. According to Valgeir, he and his family tried not to get too distracted by these attitudes although they surely affected their work indirectly.

It is important to note that in the early nineties, or at the time when the Icelandic Emigration Center was being developed, the community of Hofsós, which for decades had been characterized by long-standing social and economic traditions, was facing some changes. These changes appeared as quite drastic cut-downs within one of the community's major industries, i.e. the fisheries. This resulted in increasing unemployment and out-migration from the community. Hofsós was, therefore, at that time, experiencing a period of depression.

In the late nineties some regional actors in the field of education and life-long learning were offered to participate in a trans-national development project called Leonardo Da Vinci Learning Community Project, or LearnCom. As the name indicates, this project received its core funding from the Leonardo Da Vinci vocational training program of the European Commission. The Leonardo program "*promotes trans-national projects based on co-operation between the various players in vocational training - training bodies, vocational schools, universities, businesses, chambers of commerce, etc. - in an effort to increase mobility, to foster innovation and to improve the quality of training*"[97].

According to the Final Evaluation Report of the LearnCom project the aim and key activities of the project were the following[98]:

*"The aim of the project was to provide populations, living in disadvantaged communities, with learning skills necessary to take control of their own situations and re-enter the working life. The general objectives of the LearnCom-project were three-fold. The first aim was to improve the skills and competencies of the inhabitants by creating positive attitudes in the community towards changes and acquisition of new skills. The second aim was to create a learning community atmosphere within the community, by attempting to extend the program to a cross-section of the community and the third aim was to improve the quality and access to continuing vocational training and life-long acquisition of these skills. ... New skills such as language skills, computer skills and other skills required in today's labor market, were presumed to facilitate mobility and restore self-esteem. This might also be achieved by introducing new skills such as those related to tourism into the communities and to open up the possibilities of that industry. ...*

*To full-fill the aims of LearnCom project, the partners were expected to set up four different types of courses. These modular courses were English, self-esteem, computer skills and rural tourism. Participants would be trained in the use of computers that would enable them to make use of the latest communication technologies. Participants were also expected to enhance their linguistic skills which might open up the potential*

[97] See the programme's web site at http://europa.eu.int/comm/education/programmes/leonardo/leonardo_en.html.
[98] Jónasson & Harðardóttir 2004, 3-4.

*arena of rural tourism, were both language skills and the information technology would play an important role. So in each context the participants were expected to take the four sets of courses which would be inter-related."*

The Icelandic partners in the LearnCom project came from the following three institutes:

1. *The Regional Institution of Lifelong Learning (FSNV)*, which was the promoter and administrator of the Icelandic part of the project, was at that time owned by the 12 municipalities in the Northwest region, the local labor unions, the Economic Development Corporation of the Northwest region (ANVEST), the local junior-college, and the National Workers Educational Association. The main objective of FSNV is to promote or organize adult education within the area, with special emphasis on continuing education. It offers hobby courses, courses for unemployed people, courses for unskilled employees and continuing education for skilled personnel.
2. *Hólar University College*, which is a research-, development and educational institute run by the Ministry of Agriculture and is one of two schools of agriculture and land-based industries in Iceland. The College aims to enhance the economic and social development of rural areas by vocational education in land-based industries such as aquaculture, horse breeding and rural tourism. Hólar is located in Skagafjörður district and, although servicing the country as a whole, the institute frequently works on research and development projects in its home region.
3. *The Social Science Research Institute of the University of Iceland* in Reykjavík was responsible for the evaluation of the project.

The Icelandic partners in the LearnCom project defined their target group of the Icelandic part of the project geographically, centering in the Hofsós area. According to Guðrún Helgadóttir[99], who represented Hólar College in the project, this choice was made partly because the economic and social situation of the Hofsós community at that time, but also because of the fact that the Icelandic Emigration Center was already in place and had started a promising tourism development. According to the Final Evaluation Report of the LearnCom project[100], "*everybody could take part, irrespective of his or her employment status. In the beginning there were 65 individuals that began the modules and came from Hofsós and the surrounding area, but around 45 individuals finished all the* [learning] *modules ... The principal reason for the decline in number of participant in the project was due to facts that some of them had moved a way from the area during the project.*" The learning modules were carried out in a three years period (2001-2003).

[99] Helgadóttir, Guðrún, Lecturer, Hólar University College. Personal communication through phone. Oct. 27, 2005.
[100] Jónasson & Harðardóttir 2004.

### *The impact of the chosen good practice example: The relationship between the two key components of the story*

The interaction between the operation of the Icelandic Emigration Center and the LearnCom project can be described from a threefold perspective:

1. As noted earlier the choice of target group (geographical focus) for the LearnCom project was partly influenced by the fact that some community members in Hofsós had already taken the initiative to start some innovative practices within tourism. The demonstrated individual family firm effort, therefore, caught the attention of the development agencies and, hence, influenced the action of the development agents who organized the project.
2. The operation of the Icelandic Emigration Center was also directly affected by the LearnCom project, since some of the participants in the project's learning modules were directly involved in the operation of the Center. Both Valgeir's wife and Valgeir's sister were participating in the LearnCom project. Both are highly involved in the operation of the Center and/or the associated companies. Their participation in the learning modules can be regarded as likely to have strengthened their competence to further develop the tourism operation.
3. Finally, Valgeir Þorvaldsson[101] and the coordinators of the LearnCom project[102] agree on that the project did result in a more positive community moral towards tourism development in Hofsós, a better acceptance of innovation and change in the community, and increased openness to participate in other development projects. The following quote from the Final Evaluation Report for the project[103] further confirms this conclusion:

   *"The majority of the* [project] *participants are satisfied with the tourism course, most of them had learned something in general about tourism in the course. 88% of the LearnCom participants rated that they had learned much about the possibilities of the area as a tourist destination .... Participants were also positive about the possibilities of the area for tourism, emphasizing nature, culture and cultural heritage. ... Overall, the tourism model apparently had a positive effect on self-esteem of the participants. They became more confident, and they had more initiative to talk within the group, they got more positive about that one can learn at any age and they felt that their environment could be looked upon as an opportunity. ...*

   *The coordinators were asked if they felt the project had affected the local community and they responded that they felt that effect had been substantial. The teachers also all agreed that the project had affected the local community substantially. By increasing self-esteem, community awareness as a whole increases. ...*

[101] Valgeir Þorvaldsson, managing director of the Icelandic Emigration Center. Personal Interview (June 08, 2004).
[102] Helgadóttir, Guðrún, Lecturer, Hólar University College. Personal communication through phone. Oct. 27, 2005.
[103] Jónassoni & Harðardóttir 2004, 21-22.

*"It seems that we succeeded in opening mental doors, so to speak, for the participants. They seemed to be more aware of their community, of their role in the community and how they could possibly be responsible for changing their community in a way they want themselves"."*

As should be evident from the paragraphs above the LearnCom project aimed at and did affect the Hofsós community in general, i.e. not only the operation of the Icelandic Emigration Center. According to Guðrún Helgadóttir[104], the establishment of a local handicraft group in Hofsós can be directly pointed out as a result from the LearnCom project. The group was established in 2003 and focuses on the production of handicrafts that are routed in the traditions of the area, as well as establishing a joint arena for sales and marketing of the products. Another direct result of the project was the renewal of an annual summer festival in Hofsós. Both these activities are fairly small in scale, although they have a certain innovation aspect to them from the local perspective.

## *Contextualization*

The Icelandic Emigration Center and its operation have grown in the last couple of years and will most likely continue to grow into the unforeseeable future.

The premises of the success and growth of the Icelandic Emigration Center are:

- A driven entrepreneur.
- A novel business concept.
- Considerable growth possibilities.
- Commitment from the local community.
- Financial and promotional backing from the Icelandic government.
- Support from important actors in the private sector and other influential people.
- Proximity to and cooperation with educational institutes, especially Hólar University College.

There are some benefits for the Icelandic Emigration Center being located in the small rural community of Hofsós. In this context the Center enjoys the status of a big fish in a small pond and this gives Valgeir and his people a lot of leverage. Also, especially because of its importance for the Hofsós community, the Center has considerable support among the local people. As stated before, the LearnCom project improved the attitude of the locals towards the Center and it's unlikely that the project would have been as big of a success in this regard in a bigger community.

It's also important to reiterate that the community of Hofsós has been undergoing structural changes in the last couple of years, mostly because the fishing industry has experienced great changes, characterized by the loss of fishing quotas from the

[104] Helgadóttir, Guðrún, Lecturer, Hólar University College. Personal communication through phone. Oct. 27, 2005.

community. Because of this effort has been put into diversifying the economy in Hofsós and the Icelandic Emigration Center has benefited from this.

Still, the biggest benefit of the Icelandic Emigration Center's in being located in Hofsós is its proximity with Hólar University College (located 25 km. from Hofsós). This has enabled the Center to cooperate quite a lot with Hólar especially the Department of Rural Tourism and this cooperation will almost surely increase in the future. Then it's unlikely that Hofsós would have been the geographical focus of the LearnCom project if it wasn't for its proximity with Hólar.

On a national basis it's important to keep in mind that the Icelandic Emigration Center is the only operation of its kind in Iceland. This fact gives the Center a unique position it would most surely not enjoy if there were more companies in the fold. The most important implication of this is that the Icelandic government backs part of the operation of the Center financially.

The last important benefit lies in the fact that Iceland is only a land of 300.000 people. Because of this fact we have short communications channels and therefore it's easier for people to gain access to regional as well as national actors.

There are drawbacks to the Icelandic Emigration Center being located in Hofsós. These drawbacks are of similar character as rural operations all over the world have to deal with, most of which center on remoteness. The biggest drawback in this case is that Hofsós is located 326 kilometers from Reykjavík where the vast majority of the tourists travel. Furthermore Hofsós is 370 kilometers from the main international airport. Then, of course, it doesn't help that most of the support system is located in the capital area along with the majority of the influential actors.

## *Lessons that can be drawn from this example for other study areas*

Although the overall impacts of the LearnCom project on innovation activities of local firms seem to be fairly weak, it is important to remember that innovation does take place and is at least indirectly effected by the environment that the innovator exists in. One of the key findings and associated policy recommendation of the ISP project was that although various valuable types of knowledge and competences were found across the ISP cases, the improvement of the basic knowledge and competence base, of the firms studied, would contribute the innovation potentials of these firms and the regions they operate in. One of the recommendations of the ISP project was, therefore, that the role of educational institutes within peripheral regions, should be strengthened, especially their input and involvement in various general capacity building efforts. The LearnCom project is a good example of such an involvement, where the aim was to strengthen the general capacity of a community and in that way to reinforce the innovation potential of individuals and firms within that community. In this case the effort took the form of a locally-anchored cooperative project, which included international, national, regional and local players, that targeted specific local group of people and focused on knowledge and competence fields that were relevant for strengthening the innovation potential of the community in question.

The key lesson from this example is the demonstration of the need to look at innovation facilitation as multifaceted phenomenon that does not take place in isolation from its environment and, hence, should not be separated from the overall discussion of community development. What this example also demonstrates is the importance of an individual driving force, i.e. the importance of individual firms or entrepreneurs that can be regarded as innovation champions. The actions of such firms/individuals can greatly influence the atmosphere within and the status of small rural communities. The actions of these firms/individuals can also awake the attention of support agents and, therefore, influence the likelihood of these agents taking on a proactive role.

A final lesson from this example is that, in the case of the Icelandic Emigration Center, the operation seems to have been able to gain support from quite a few support agencies. However, most of the measures utilized where offered on a national level and organized by national agencies, rather than by local or regional players. Valgeir Þorvaldsson and his family have shown unusual determination in reaching and making use of these different measures (experts in *"massaging the system"*). Not all rural innovators possess such determination. It is, therefore, of crucial importance that local support agents, which in the Icelandic case seem to possess fairly weak human and financial resources, are capable and proactive in their effort to link firms to overarching support system.

The lessons of this good practice example could be transferred to a fairly broad context. The smallness and, hence, the closeness of the Hofsós community, however, probably is an important factor. This being said, small, somewhat depressed communities that are in a need for general capacity building and/or revitalization, and that possess weak local support systems, can without doubt be found in all of the study regions of the PLIP exercise.

### 3.2.2 Learning from the Icelandic Hofsós case in Falun, Sweden

#### *Context*

The Icelandic researchers had chosen, "Innovation in culture-based tourism in Hofsós", as their good practice case. One of them visited Falun in Dalarna in order to present it and discuss its relevance for Dalarna. The research team was, however, aware that the two regions are different in many ways, not at least concerning the size of the regions. Dalarna's population is of the same size as the whole of Iceland's and differences can also be found in entrepreneurial cultures and industrial and administrative structures. However, both in Iceland and in Dalarna tourism is an important sector and therefore it could be expected that these two regions could learn from each other.

## *Workshop*

The workshop was held in a conference room at Region Dalarna in Falun between 14:30-17:00 on 11th of May. Before the workshop the participants had received background material concerning the Icelandic case, sent by e-mail. The idea of the PLIP-project and the workshop was also described and the participants were informed about the agenda of the workshop.

The researchers started the workshop by welcoming the participants and who also introduced themselves. Thereafter, a short introduction of the PLIP-project was given. After that the Icelandic researcher made a power point presentation of the Icelandic case. The appearance was followed by a discussion of the development needs concerning the tourism sector in Dalarna. In the end of the workshop the need of transferring good practices between the Nordic countries was discussed. The meeting was recorded so that no information during the workshop was missed.

The Swedish researchers invited to the workshop relevant actors working within tourism industry and regional development in Dalarna. Among these persons there were actors that were interviewed earlier and had therefore already some knowledge on the project but also additional actors were participating. The time of the workshop was also decided so that it was organised at Region Dalarna directly after the meeting of the Dalarna's tourist board. The regional tourist manager had invited all the participants at the same time to the board meeting and the good practice workshop. Even though around 20 persons were invited, the number of participants stayed at five. One reason was that many of the invited persons had to travel a long way in order to participate in the workshop.

However, the most central actors were present at the workshop. In addition to the two Swedish researchers and the one Icelandic researcher there were three representatives from Region Dalarna. Two of them work with regional planning and one with tourism. One participant, mainly working with rural development and small-scale tourism, represented the County Administrative Board and the fifth participant - a human geographer focused on research in tourism - was from the University College in Dalarna.

Region Dalarna is responsible for the development of the tourism industry in the region and is therefore a central actor. In addition, the County Administrative Board has a general view on the tourism sector and regional development in Dalarna. The biggest shortcoming considering the participants in the workshop was that the small tourism entrepreneurs, being important in the context of the tourism economy in the region, were not participating. These actors could have brought valuable perspective to the workshop that could have differed from the perspectives presented by the public actors.

The Icelandic case in general seemed to be of interest to the participants as a consequence of – among other things – some similarities between the tourism activities in the areas. The participants from Dalarna were familiar with and informed that Leksand – a municipality in Dalarna – also has an emigration centre similar to the centre in Hofsós.

The great interest in tourism in Iceland at national level that was underlined in the Hofsós case caused much discussion during the workshop. This kind of interest at a higher level is – according to the Swedish participants – lacking in Sweden. The kind of activities that were established around the emigration centre in Hofsós were of special interest to the participants and could be something to develop around the centre in Leksand. The educational activities in the Hofsós case were also of some interest. The way that the "Association of Icelanders" markets the Icelandic case in the US was also discussed since the actors in Dalarna considered the large costs to reach that market as a hampering factor. An interesting detail for Dalarna was also that the services in the emigration centre in Hofsós are free of charge. There was also some discussion on differences between the entrepreneurial cultures and attitudes in different Nordic countries.

Even though some parts of the Icelandic case seemed to be of relevance to Dalarna, differences between the contexts of the regions seemed to be so wide that it was difficult to compare the two regions.

During the workshop many different issues and development needs concerning the tourism sector in Dalarna were discussed. In addition to the cultures and sizes of the regions, character of the tourism industry is different in Dalarna compared to the North West Iceland. Dalarna is an important and well-known tourism area in Sweden, both during the winter and summer seasons and tourism in Dalarna has long traditions. Many people come regularly to different tourist destinations. Both summer and winter activities and attractions are found in the region and the diversity is much wider than in the Hofsós case. The turnover within the tourism sector in Dalarna is, by the way, largest during the winter season.

The real development needs in the region are related to attitudes among the entrepreneurs. It was said that finding financial resources in the tourism sector is very hard if the company is not a very big one. This was a hindrance concerning the development of the sector. The participants stated also that there is lack of interest at the national level. The sector is not seen as attractive as some other industries, such as high-tech, biotechnology etc. Even though the tourism industry is an important sector in Dalarna, many politicians have not realised that according to the participants in the workshop. Tourism was also considered as a sector where the employment will take place in the future. Even though some politicians have already noticed that, they are not many enough to gather more funds and money for new enterprises. Politicians and other involved persons should consider the tourism industry as a "real" industry at national, regional and local levels. This is a precondition for a good and continuous development of the tourism sector. Seed financing and other means are needed in order to get more funds and money that are of utmost importance to the development of the sector. In the Icelandic case, the national interest was very important in order to make the emigration centre successful.

However the discussion was fragmented and there was not any in-depth analysis. There was no discussion of how to concretely support the elements of the good practice in the region. The development needs appeared, however, to be related more to the wider political and cultural framework in the country than at local and regional

levels. There were not any disagreement among the participants in the workshop about the development of the tourism sector in Dalarna – instead they were of similar opinions.

The participants considered the idea of the PLIP project useful and thought that it would be valuable to hear more about how people in other countries work within tourism. However the participants also considered it necessary to bring the emigration centres in the countries together and only by following this way it could be possible to really see what could be transferred or learned. In the end of the workshop, it was decided that contacts between the actors and information about the Swedish centre would be forwarded to the Icelandic emigration centre.

### *Evaluation*

Even though the Icelandic case will not be "transferred" to Dalarna, some of the elements of it could be used there. During the workshop some important development needs came up concerning administrative structures. Actually, one point that seemed to receive a lot attention from the Swedish participants was the national support in the Icelandic case. In Sweden more support from the national level is needed. Better financing possibilities would be necessary in the region if more similar single initiatives and small-scale tourism would appear in Dalarna.

In general the workshop worked well. However, the duration of the workshop seemed to be short. The discussion also circled around diverse issues and there was no time to get very deep into the up-coming topics. It seemed that there would be a need to take a next step and build a contact link between the actors in Iceland and Dalarna in order to go further in finding out the elements that could be useful to learn from this particular case.

## 3.2.3 Glomfjord – successful local-global networking, Norway

The case illustrates a successful combination of

- Productivity-enhancing capabilities of peripheral industrial locations
- R&D-based knowledge, developed in national and global networks.

The institutional framework which made this combination possible was the Norwegian mix of regional and innovation policy systems. This mixture was empowering local development actors in peripheral locations, and broadening the scope of their networks into national and global innovation systems.

In this way, peripheral areas may provide the national innovation systems with exactly what they need in times of increased competition from China: firms able to exploit R&D based knowledge with a globally competitive level of productivity.

## *Why this good practice – the weak hypothesis*

The point of departure was the success of the local development coalition in establishing new, profitable innovative processing industries, manufacturing silisium wafers for solar cell panels. This was seen as a good example of local actors playing in global games, through national and global connections:

- National and regional conditions were enabling local actors (the development coalition) in linking up with
- Entrepreneurial researchers, operating at the national and global level.

The case also illustrates some of the *barriers* to be overcome in order to make this synergy work, both in terms of

- Creating a global innovation network from scratch
- Improving processing technology
- Productivity enhancing problem solving and learning in the local plant
- Policy institutions and networks

## *The regional context*

Glomfjord is a small and remotely located industrial village close to the Arctic Circle, below the Svartisen glacier in Nordland County in Norway. Industrialization was based on hydroelectric power, generated from waterfalls from the glacier. For a long time, the village was based on a single chemical firm, producing fertilizer based on hydro-electric power. This firm was owned by Hydro. Profitability failed in the 1980s. Hydro started downscaling and laying off from the mid 1980s. The restructuring effort continued from 1989 to1999.

## *The story*

Two major initiatives were taken, in order to achieve two objectives

- Maintain the corporation. Mobilization of all employees in the corporation, with the objective of meeting the benchmarks from the corporate owners.
- New job creation. Establishment of a local development coalition to generate new jobs, through cooperation between the municipality, Hydro, and local actors.

The outcome was a success. 7 new firms were created. The *local development coalition* consisted of three partners,

- Meløy Næringsutvikling (MNU) responsible for innovation.
- Meløy Bedriftsservice was established to provide industrial services within the industrial park.

- Meløy Eiendom was established to take care of the industrial estate no longer needed by Hydro, and convert housing and areas into attractive locations for locally expanding firms as well as external investors.

**Figure 14.** The local development coalition.


Meløy Næringsutvikling is owned by Hydro and the municipality. Generous funding was provided through transfer of money generated by hydroelectric power.

### Saving the old factory

As a part of an attempt to enhance efficiency, the fertilizer division within Hydro was outsourced, and it became "Yara" May 2004. Because Glomfjord had such an early start in restructuring, the plant successfully managed to adapt to the corporate benchmarking system designed within Yara, and maintain a position as an equal partner.

*Local mobilization*

This success was achieved through a process initiated by the local managers and the unions. The point of departure was a conference with all employees, where the situation was presented, and the indicators telling about the shortcomings were confronted. Through this mobilization, it became clear for all that the firm could not possibly continue. The consensus belief in the existing system of production was destabilized, to an extent where a pragmatic discussion of new solutions was possible. The competition within Yara follows three dimensions. First, there is a certain co-specialization between the plants. Second, plants compete on a short term basis on new orders of production. In this competition, the main indicator is costs of production. Second, the plants compete on investments. Here, the indicator is expected future profits.

*Social policy considerations enabling economic adaptation*

Another core element in the agreement which was reached to speed up efficiency was a policy for preventing long-term illness. An element in this policy was awareness for the group where this problem is arising: senior operators who have to change their positions and accept new and more challenging working routines and positions. In addition to this, the local firm is supported from the corporation in training programs and competence-enhancing measures needed to support reorganization and transformation into a more lean unit.

*Outsourcing*

Another element was outsourcing of support elements and maintenance into new firms, which are also serving the other firms in the industrial park. This proved to be quite complicated, because it involved transforming maintenance routines into market relations, which had to be formalized in projects described through contracts. The challenge for Yara was to become "professional customers" for these outsourced units. This problems was deepened because the *new* local customers of the outsourced units feared that the hours they paid for was spent by at the old place, in Yara, and not on their premises.

### R&D-based innovation: Scan-Wafer-REC

The idea which later became the Scan-Wafer success story was initiated by a "mineral project" organized by a regional development program funded by the regional authorities (fylke) in 1993. Here, they were trying to find out how to exploit available natural resources, among them silicium, for industrial purposes. For experimental purposes, Meløy Næringsutvikling bought raw material worth 200 000 NOK. In this early, critical phase funding was provided by a *regionalized* part of the Norwegian Research Council, the NT program.

Early in 1994, a scientist and entrepreneur, Alf Bjorseth, was contacted. Bjorseth had background from the University of Oslo. He had been leader of research in two major Norwegian corporations, Elcem and Hydro. The firm was established in 1994, with an initial capital of NOK 100 000, provided by Meløy Næringsutvikling. Bjorseth had 2/3 of the stocks. The main office was put up by Bjorseth in Oslo. At the point of departure, it was a shared recognition that the road to *profitability* would be long. The sources of funding were:

- Meløy Næringsutvikling was able to access resources through its owners, Hydro and the municipality.
- Regional and innovation policy institutions, such as Innovation Norway, the Norwegian Research Council, the county (fylke) and other regional development institutions.
- Several small scale private national, regional and local level investors, including a local bank were investing *as owners*.
- Some resources also was accessed as *bank credit*.

The *synergy* of this joint effort of public and private investors should not be underestimated. Public support was critical in encouraging private investors to believe in the success of the company. The other way around, as private interest proved to the

public investors that this was a good idea with a future prospect. The company was founded in 1994. Production started in 1996, with 40 employees. Production capacity was expanded in 1998. However, in 1999, there were problems and layoffs. In 2000, however, new major contracts with Mitsubishi and Shell were secured, and the decision to build the second factory in Glomfjord was taken. In 2002, the second factory was set up in another industrial location in Norway, Herøya. This factory was started in 2003.

With the rising oil prices at the end of the 1990s, the global market for solar cell panels started to grow exponentially, dwarfing all forecasts. The demand continues to be much larger than supply, and prices are growing. This growth process made it possible, and necessary, to develop the small factory into a corporation.

At the Scan-Wafer head office in Oslo, the strategy was to

- *Expand production*, through setting up other factories in other geographic locations, as the capacity of the small local labor market in Glomfjord soon was exhausted.
- *To integrate the value chain,* from access to raw materials, production of consumer-ready panels, and developing of local production facilities (in Africa).

Parallel to these efforts to build a corporation in Oslo, at the local level in Glomfjord, the crucial issue was to find out how to do the manufacturing sufficiently efficient.

### Local learning: enhancing efficiency

The local learning process in Glomfjord was crucial to the commercialization of the R&D going into product development. The challenges in terms of the work process were multiple. It involved transformations in work culture, routines, cleanliness, and in general in the work organization.

In addition, there were technical difficulties, which could only be handled by learning at the shop floor. Silisium is melted, through adding heat, and then cooled down into a block called the "Ignot". This *cooling down* process is crucial, because it determines the structure of the crystals within the wafer. This structure is crucial for the efficiency in the process where the wafer is converting solar energy into electricity.

In Glomfjord, the company has access to qualified shift-workers, in addition to reasonable energy and stable supply of cooling water from Meløy municipality. In production, the major challenge is to secure both a proper process of cooling down, as well as to avoid wasting of raw material through destruction of the wafers in cutting up the metal bars. A learning organization, applying the Toyota Production System with indicators, does this on a shift basis. Every Friday, the shift goes through the weekly output, as described by the indicators, and discusses what went wrong, and what may be done to correct it. To enhance efficiency, Scan Wafer developed a new type of melting - crystallization furnace. This went together with increased automation in other steps in the production process. Scan-Wafer has introduced recycling of production consumables, which is significant both for its environmental relevance and to decrease costs. Scan-Wafer's goal is to pursue technology

development and to contribute to a lower cost per watt for the end–customer, meaning a price reduction for the finished solar energy products. More cost-effective cells are achieved through higher cell efficiency and lower prices. For Scan-Wafer, this means improved wafer quality as well as more efficient production methods. In these efforts we are co-operating with universities and research institutes in Norway, such as NTNU, Sintef, IFE (Institute for Energy Technology). Substantial knowledge about the interaction between wafer quality and the quality of the finished product is established through long-term co-operation with customers. This knowledge is critical for becoming a competitive supplier in the market. In order to increase process efficiency and reduce cost per produced unit in the value chain, we have focused on

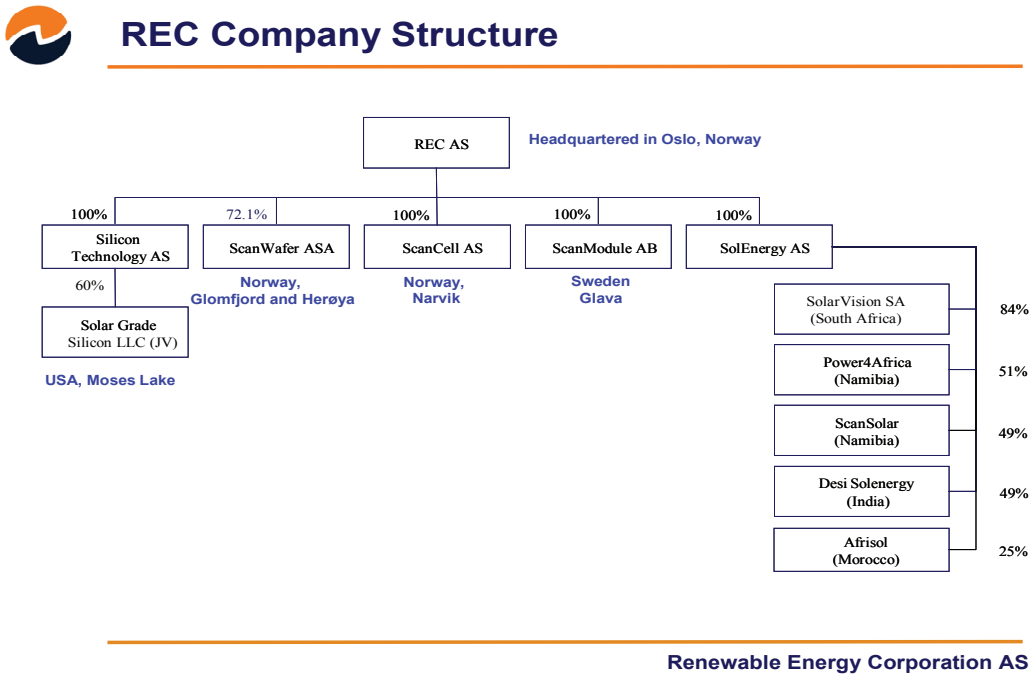
- the development of production processes,
- plant concepts, as well as
- quality improvements of the silicon material that is produced.

The latter is important both for the efficiency of the solar cell at the benefit of customers and for profit in wafer production. Through joint technology development with suppliers, ScanWafer secured exclusive rights to some of the production equipment used in wafer manufacturing.

### Creating a new corporation which integrates the value chain

First, their customers were global producers of panels. Through taking one step up – and constructing the REC corporation, the Scan-Wafer founders have successfully integrated the value chain from silicon to solar panels. The REC company rapidly integrated the entire value chain, by purchases in US, electronic cell production facilities in Narvik, and a module factory, producing the electronic modules, in Glava in Sweden. SolEnergy AS is providing the market in South Africa, Namibia, India and Morocco.

**Figure 15.** REC Company Structure. (Source: www.scanwafer.com)




The quality of a solar cell, and therefore also of a wafer, is measured by its efficiency. Only a small share (15-16%) of the sunlight that hits the solar cell may be converted into electricity. The bigger part that is converted the more effective is the cell.

The technological success was the result of developing a global network. A substantial amount of information is exchanged with customers in order to utilize the experiences from cell production to improve wafer quality.

## Future prospects

The global solar energy industry is relatively new, but it is growing fast. Germany and the USA are considered the largest markets for solar energy. Japan has the largest share of installed solar systems per capita, followed by Switzerland, Austria, Germany, Netherlands and Norway. In Norway, the solar systems are primarily found in recreation cottages. Solar cells can be made of different materials using different technologies. The technologies based on multi-crystalline and mono-crystalline wafers are the most common. Scan-Wafer only produces multi-crystalline wafers and the company believes that this is and will be the most cost effective material because of

- more reasonable raw materials and a
- cost-efficient production process.

The company also considers this material to have the greatest potential for further cost reductions in the manufacturing process, at the same time as the efficiency of the cells can be increased above the 15,5 percent that today is achieved at good cell producers. Under normal conditions, electricity from solar cells will have a considerably higher

price than electricity from other energy sources. The solar cell industry is therefore dedicated to cost reductions. Three facts affect the price of solar energy systems:

- Technology development
- Cost reductions including large-scale production
- Subsidies

The solar energy industry is characterized by considerable technology development. When Scan-Wafer started its production in 1997, the average efficiency of multi crystalline wafers was 12.5 -13 percent. Today, this percentage is close to 16 percent. This is an efficiency increase of more than 25 percent.

## *What is there to learn elsewhere?*

There are many unique factors which prevents learning from this good practice. First, the business idea of developing solar cell panels was not just a good idea - it was a good idea at exactly the right time. In short, it was a unique stroke of luck. The product proved to be extremely profitable, in particular because of the sharp rise in the global price of oil, which sent the world out on a search for alternative sources of energy. This rise came after the project was initiated, in 1994, due to factors no human could realistically foresee. Second, this idea crucially depended upon the skill, ingenuity and creativity of a single researcher and entrepreneur, Alf Børseth. So, generally speaking, you need to be extremely clever and lucky to succeed. These things do not come easy, and they may hardly be generated through policy instruments of institutions. Even when we look at the institutional factors, some of them are uniquely Norwegian, and depend upon certain Norwegian peculiarities. The embeddedness of this case in the Norwegian society became clear to us only when we tried to transfer the case to Iceland. The last 100 years of Norwegian industrial history, and the peculiarities of the Norwegian political geography which follows from this history, puts local development coalitions in geographically isolated one-company towns into a very formidable position indeed. The local actors in Glomfjord commanded huge resources, both in terms of policy instruments with wide spanning networks into the National support institutions – and hydroelectric power. They were a promising and attractive match to the innovator/entrepreneur, and his network.

*This created a wide spanning multi-level network, integrating local, regional, national and global actors. This network did the job – and delivered success.*

What became obvious when we discussed the story in Iceland was that these deeper layers of the national system in Norway could not possibly be replicated in a country where peripheral municipalities have a much weaker political and institutional position. It simply would take a deep transformation of the *central* political system of Iceland to *empower the local actors* which could make them deliver something like Glomfjord in, say, Northern or Eastern Iceland. At the same time, it should be noted that *if* national or regional conditions empower local development coalitions, and *if* these local coalitions manage to lock their resources and skills into the schemes of the right kind of entrepreneurial researchers, working on the national and global level, something very wonderful *might* happen now and then. This synergy, it is worth adding, do not solely rely on state subsidies to remotely located municipalities,

legitimized by a strange political system. There is more to it than that. First, it should be noted, the role of Glomfjord is building on the strength of the local skills, which are the ability to learn how to organize industrial manufacturing processes efficiently. In this respect, the character of the local labor market, including its remote location, is excellent, in terms of providing frameworks ensuring a stable and highly motivated working force, able and willing to solve problems and deliver what it takes.

In this way, Glomfjord provided the national level entrepreneur with the capacity to develop an efficient machine turning his knowledge into money. Now, given the characteristics of contemporary urban labor markets, it is likely that a more central geographic location would have seriously undermined the efficiency. What the peripheral partner provided was what in the end decides whether a good plan can reach its goal, a high level of *productivity*.

### 3.2.4 Learning from the Norwegian Glomfjord case in Northwest Iceland

#### *Context*

When the Icelandic PLIP-project team was faced with choosing one or two foreign cases to visit Iceland, it was their first option to get a visit from the Norwegian team. The reasons were primarily that the geographical setting of both countries is in many ways similar and its industries have many similarities.

The Glomfjord case was considered to be important to study in the Icelandic context since much restructuring of manufacturing has been taking place in North Iceland. It has however often proved difficult to re-establish a different and successful industry on the basis of former industries. A success story could shed a light on what have been the major shortcomings of such attempts.

#### *Workshop*

The workshop was held at Hólar University College in Skagafjorður, North Iceland on April 27 2006 between 10.00 and 16.00. Before the meeting the participants were sent via email written material on the case and a presentation with the title “The Glomfjord Industry”.

The meeting was designed so that two cases could be discussed during the same day, the Glomfjord case and a case on tourism in Lofoten. The meeting began with a short introduction and welcome by the Icelandic team and an introduction by the Norwegian team on the Norwegian innovation system and innovation policy. The Lofoten tourism case was introduced and discussed before lunch (10.20-12.30) and the Glomfjord industry development after lunch (13.30-16.00). One participant, a specialist in rural tourism only took part in the first part of the discussion. During the latter part of the meeting the rector of Hólar University College took part while the

Glomfjord case was being introduced. The discussion at the meeting was recorded digitally and it took place entirely in English.

The Icelandic team made a great effort to get good attendance to the meeting and there were some changes made to the list of participants until the last minute. The first letter to invite participants was sent in Icelandic via e-mail on March 16 and then on April 4, due to some changes in participants some following-up was necessary. A week before the meeting a final agenda in English was sent to the participants via e-mail.

The Icelandic team decided to invite participants from the whole of North Iceland to the meeting even if the case study area is the Northwest region. This was both because some of the tourism initiatives are planned for North Iceland as a whole and secondly because structural changes of the economy like those presented in the Glomfjord case have to a larger degree taken place in the Northeast region.

A total of 11 participants were present at the meeting, seven originated from various institutions in North Iceland and the four researchers from Iceland and Norway. These were as follows: A project manager from the Technological Institute of Iceland, two researchers from the University of Akureyri Research Institute, three consultants from the Association of Municipalities in Northwest Iceland, a lector from the Rural tourism department at Hólar University College (during the first part of the meeting), a consultant from the Þingeyjarsýsla Region Business Agency, a project manager from the Akureyri Region Business Agency, the rector of Hólar University College (during the second part of the meeting) and lastly two researchers from NIFU/STEP, Oslo.

As the list above indicates, these were representatives from both institutes dealing with economic development in general in the respective regions as well as those more specialized in tourism. Three of the practitioners were from the eastern part of North Iceland and four from the western part, i.e. the study area.

A staff member from the development department of The Institute for Regional Development in Iceland (Byggðastofnun) was missing from the meeting. It would have been very valuable for the project to have that representative present due to her extensive knowledge on the policy framework and economic development in the Iceland in general.

The Glomfjord case is a real success story and appeared very interesting to the participants. However, they found the case rather unique in the way that everything seemed to have worked out perfectly. For this reason they had doubts that this could be replicated in the Icelandic context since not all ingredients for the "recipe" were at hand:

1. All the necessary elements were present in this case, creating an ideal environment for the innovation to succeed. This is e.g. "patient capital", available energy at the disposal of the respective company, transfer of knowledge, cooperation of companies and municipalities and personal ties of key persons to the respective area.

2. Some participants expressed the opinion that the success of this project was almost one of a kind where everything has worked out well and where everything fell into place.

3. The formation of a special company running industrial services (Meløy Bedriftsservice) was very interesting to the participants.

4. The special provisions for older workers and the rehabilitation of the workforce in relation to the restructuring of the industry received some interest.

It appeared as if the participants could not see how this project could fit into the Icelandic setting, at least in the case of peripheral areas, even if the same problems exist in both countries. Structural changes are taking place; i.e. companies in certain manufacturing industries are closing, there are options available to use e.g. the workforce to a certain degree and there is generous supply of energy. It appears that there were too many differences between Glomfjord and Northwest Iceland, e.g. the availability of capital and the determination of both companies and the local government to make things work out well.

In the opinion of the Icelandic team, much of the actual abstraction of the case in fact took place during the meeting, not in the papers sent out before the meeting. In fact this took place primarily in the interaction between the Norwegian team presenting the case and in discussion with them afterwards where the most relevant/interesting aspects of the case were clarified and summed up.

Generally it seemed that the participants had difficulties seeing ways how to transfer the Glomfjord case into the Icelandic context. There were too many differences between the regions. This came as a certain surprise to the Icelandic team, as prior to the meeting they believed that Icelanders could learn much from this case. Much restructuring of manufacturing has in fact taken place in Iceland but there are still many components present in the Glomfjord case that are not present in the Icelandic context.

- Apparently, the amount of patient capital had been very much in the Glomfjord case and the participants have not seen similar willingness to invest in projects in their respective regions/industrial sectors.
- The fact that the municipalities have control over the hydro power electricity seems to be one of the key factors contributing to the success of this project in Glomfjord. In Iceland, municipalities do not have this control as it is in the hands of state energy companies. This is a disadvantage for peripheral locations in Iceland and stimulates exploitation of energy in more central settings.

There did not seem to be very mixed opinions between the participants on the transferability of the Glomfjord case into Icelandic context. The transferability was generally considered limited due to the fact that it is very much based on the unique situation in Glomfjord which is quite different to the situation in North Iceland.

### *Evaluation*

At the meeting participants did neither specifically evaluate the PLIP project nor the workshop per se. However it appeared that the participants were generally pleased, indicated e.g. by the very active participation in discussion during the meeting. Furthermore, the intentions of a few of them to make use of ideas mentioned at the meeting in their own fields indicates that the project is looked upon favourably and seen as a practical one.

It seemed relatively hard to use the elements of the Glomfjord case in the context of rural Iceland. The fact that the municipalities have control over the electricity seems to be one of the main factors contributing to the success of this project in but in Iceland it is in the hands of state energy companies. The availability of capital that appeared to be available in this case was more than the participants in the workshop considered realistic in Icelandic rural context. The transferability was generally considered limited due to the fact that it appears to be very much based on the unique situation in Glomfjord which is quite different from the situation in North Iceland or rural Iceland in general.

The workshop in general worked out very well in the opinion of the Icelandic team. The discussion was fruitful and most participants took active part in it. Using the focus group approach to this work appeared to lead to a positive outcome, e.g. the fact that the number of participants has to be limited. However, it initially proved difficult to get attendance from some of the relevant participants but eventually the Icelandic team managed to get the most important actors to attend the meeting.

## 3.2.5 Conclusions on the entrepreneurship and product innovation good practices

The **entrepreneurship and product innovation good practices** represented different sectors: tourism (Iceland) and manufacturing (Norway).

The Icelandic good practice case “Innovation in culture-based tourism in Hofsós” is unique in the way it has made use of the historical and cultural phenomenon of emigration of Icelanders to North America. A specific brand of cultural tourism has been developed using these historical facts and an old part of a village has been turned into a museum and an area to attract and entertain visitors. The business concept of the Icelandic Emigration Centre is a novelty not only in Northwest Iceland but in Iceland as a whole. Furthermore, a different approach (tourism based) is applied there than in most other emigration centres in Europe. This was e.g. evident from responses at the meeting in Dalarna where this good practice was presented. These links to tourism thus appear to be unusually important in this case. However centres and exhibits set up around this phenomenon are fairly common in Europe. A specific element in this case is also the fact that the Icelandic Emigration Centre makes use of a computer database containing the genealogy of all Icelanders, making it easy to trace ones roots and find relatives. Use of this database is free of charge and the

Icelandic government has furthermore supported the centre by locating specialized staff there to assist in this kind of research while also giving it various financial and promotional backing. This database has been developed partly as a part of a large project in genetics technology and therefore information technology and genetics play a considerable role in this case. An important element of this case is how the entrepreneur and owner of the centre has sourced support for his business. Due to its perceived weakness he has refrained from using the formal support system both locally and nationally, instead he has, to a larger degree, addressed large national companies and the Icelandic government for support. The success of the centre is also based on a well defined marketing strategy building on lobbying key interest groups in North America, i.e. associations of Icelanders and Icelandic descendants. These strategies have resulted in further product development in the form of exhibits targeting customer groups from particular geographic areas within the continent. Last but not least the centre has benefited from its proximity to and cooperation with nearby educational institutes, especially Hólar University College. The biggest advantage of this came a few years back when almost the whole of Hofsós' inhabitants participated in a trans-national development project called Leonardo Da Vinci Learning Community Project, or LearnCom. The geographical focus of the project was partly influenced by the fact that some community members in Hofsós had already taken the initiative to start some innovative practices within tourism, e.g. the Icelandic Emigration Centre. The centre was also directly affected by the LearnCom project, since some of the participants in the project's learning modules were directly involved in the operation of the Center. Most importantly the project did result in a more positive community moral towards tourism development in Hofsós, a better acceptance of innovation and change in the community, and increased openness to participate in other development projects.

Both good practices are based on the product innovation and they rely on the national level resources beside the local level. The Hofsós case makes use of historical and cultural facts, old and suitable environment for its operation and the existence of a national database on the genealogy of the Icelandic nation. In both cases the entrepreneur had roots in the area where the innovation took place.

The point of departure for the Norwegian good practice was a small industrial village, Glomfjord, located in a remote area at the Polar Circle. In Norway, the right to exploit hydroelectric power is a part of a long debate between the state, large corporations exploiting the power locally for industrial purposes, and local municipalities. In the 1990s the corporation, Hydro, realized it had to restructure its activities and close one of its production lines.

This put the municipality in a strong bargaining position v.a.v. the corporation. Hydro responded by becoming an important partner in the work to generate new jobs. A part of Norwegian regional policy since the beginning of the 1980s has been to use regional and industrial policy resources to create new jobs in one-company towns where the core firm was scaling down or disappearing. Some of the power was going to be used for other local industries. This combination of institutional factors gave the local development agency, established by the municipality, a strong position, with

open access to several regional and national level institutions, providing potential for long-term funding.

This potential made the local development agency an interesting partner for entrepreneurial researchers with good ideas, waiting to be commercialized. The crucial link was a telephone call from the local agency to Alf Bjorseth. Bjorseth had a doctoral degree in physics from the University in Oslo. He started his career at the University of Oslo, moved to positions in SINTEF, the core technological research centre in Norway, and went into industrial research and served as Corporate Director of Research for Hydro, as well as Director of Technology for Elcem. Bjorseth teamed up together with the local network. He provided the strategy, to produce multi crystalline silicon wafers, and he provided a network into core Norwegian corporate actors – as well as global contacts.

This alliance between the local developers and Bjorseth, who was a national and global player, proved to be successful. By using the combined networks of the locals and the national actor, it was possible to get funding for an extended period of trial and error in making production work in an efficient way.

It became clear at the national workshop that there are considerable differences in the Icelandic and Norwegian setting e.g. concerning the ownership of energy. In Norway this is in the hands of the municipalities but in Iceland this is generally in the hands of a national power company. This increases obviously the chances of electrical power to be used locally in Norway. Another specific element in the Glomfjord case appeared the availability of "patient capital".

The availability of knowledge on genealogy in Iceland and its connection to information technology and genetics appears to be rather specific for the setting in Iceland. Also, the substantial financial and promotional backing the Icelandic Emigration Centre receives from the Icelandic government is rather unique. How well the entrepreneur in this case has managed to lobby the Icelandic government can be explained by his great perseverance and the smallness of the Icelandic society. This smallness makes the Icelandic setting unique as the channels of communication within society are much shorter and therefore easier to thread than in the other countries.

It seemed relatively hard to use the elements of the Glomfjord case in the context of rural Iceland. The fact that the municipalities have control over the electricity seems to be one of the main factors contributing to the success of this project but in Iceland this has usually been in the hands of state energy companies. The availability of "patient capital" that appeared to be available in the Glomfjord case was more than the participants in the national workshop in Iceland considered realistic in Icelandic rural context. The transferability was generally considered limited due to the fact that the success of the Glomfjord case appears to be very much based on the unique situation in Glomfjord which is quite different from the situation in North Iceland or rural Iceland in general.

These institutional factors gave the local development agency in Glomfjord a strong position and a wide ranging network into several sources of funding. This turned them into the partners the scientific entrepreneur, Bjorseth, needed to develop his project, the production of silicone wafers.

## *3.3 Good practices in networking and co-ordination*

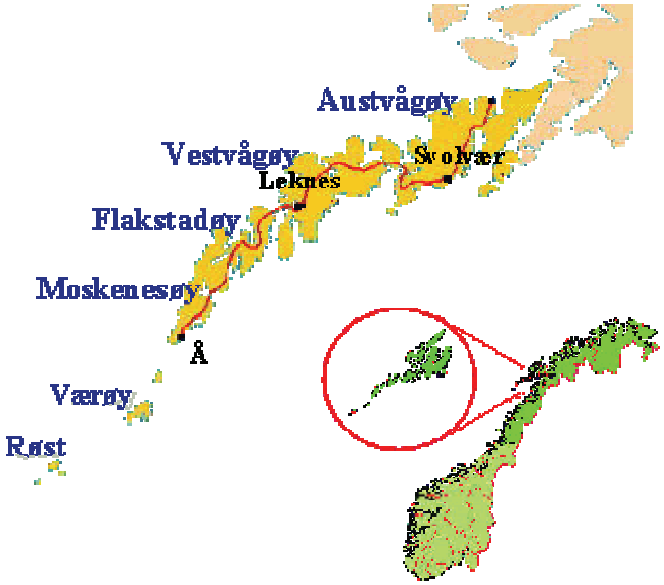
### 3.3.1 Collaboration in the tourism industry of the Lofotens, Norway

This chapter outlines some of the main reasons why Lofoten is a success story in tourism. Some reasons for success cannot be copied, such as the mountains and the sea, but some elements may perhaps be studied by outsiders with a more practical objective. One of these elements is the innovative approach to tourism development in Lofoten.

#### *Introduction*

Lofoten is a group of islands outside the coast of Northern Norway. It is part of Nordland County, which has 237 000 inhabitants. Lofoten is well known as a tourist destination, and it has an expanding tourist industry. This is due partly to the natural conditions, but also to a long-term cooperative effort involving private actors, municipalities, and development agencies, to develop and promote the destination.

**Figure 16.** Lofoten.




Because of its geographical location Lofoten has what may be called an ideal structure for tourists. Attractions, activity based adventures, different types of places for food and drinks, different types of accommodation – and everything wrapped into a proper, local, picturesque context where the scenery of the nature has a constant impressive character. The structure of the attractions is often very convenient – clusters of several attractions within walking distance, in the compact original sceneries of old, small, exotic fishing villages. The scenery is natural attractive wherever you turn your head. The more attractive places are located in convenient distance from each other – never

more than a one hour drive. And as mentioned, nature surpasses your expectations. Therefore, Lofoten is among the destinations that people have set as targets for their holidays. It is what we may call a primary destination in the tourist market. The region has more visitors than most other rural destinations have in Norway.

There is a wide range of accommodation possibilities in Lofoten, from camping sites, to typical rental accommodation such as cabins and Fishermen's cabins, and different types of hostels and hotels. A large share of the supplier firms are small family owned and family driven firms, but during the last couple of years larger national hotel chains have showed interest in Fishermen's cabins, and there are now some examples of more commercial (than family owned) ownership and control over this type of accommodation in Lofoten.

Destination Lofoten is a commercially driven and co-operatively based company that works within operation of and development of tourism in Lofoten. Destination Lofoten receives support from both regional and local authorities and from private local firms. Destination Lofoten is a special actor that despite its commercial obligation may be seen as a mediator between local/regional authorities and firms.

Innovation is important, both at the firm level and in particular the industry and the policy level. In a historical perspective of 20 years back or so, development is the result of entrepreneurship by actors with local ownership and control as well as by actors with no particular roots in the region, entrepreneurship by investors from outside the region.

Work to plan further development of tourism in Lofoten involves the 6 municipalities in Lofoten, and a coordinating public body, the Regional Council of Lofoten.

Core elements are

1. The establishment of Destination Lofoten
2. On-going work on initiating a national Centre of Expertise in tourism in Lofoten.

## *Lofoten tourist industry - core actors and institutions*

### Destination Lofoten

Destination Lofoten is both a destination company, a tourist industry actor as a commercial unit selling gadgetry, promotional products and information products, and a supporting agent as Lofoten´s joint promotional body. However, this latter function is also partly on a commercial basis.

Destination Lofoten has a number of tasks and is responsible for the following:

- International and national marketing, promotion and sales.
- Co-ordinating existing travel trade products in the area, and product development.

- Co-operation with international tour operators.
- The production of promotional material.
- Representing Lofoten at trade fairs and shows.
- Developing a joint profile and Lofoten as a destination.
- Co-ordinated product information.
- Official tourist information.
- Taking care of the hospitality- and information -duties on behalf of the municipalities of the Lofoten islands.

All these tasks imply a range of working task and areas of involvement for this firm. Destination Lofoten takes care of marketing and promotion, on the Internet, and through other channels of communication. Destination Lofoten produces and publishes a number of booklets and brochures about Lofoten, which is distributed from its main shop and office in Svolvær.

Destination Lofoten plays a central role as driver and co-ordinator of the ongoing joint public effort to make a marketing master plan for how to go about with Lofoten in terms of tourism. The most challenging task is to fill the plan with contents, measures and actions that are supported on a joint basis in Lofoten, i.e. with the necessary consensus between the six municipalities in Lofoten, the regional and national actor for regional policy and innovation policy, and representatives for the tourist industry.

## The establishment of Destination Lofoten: actors and institutions

*The Regional Council (Lofotrådet)*

The region Lofoten comprises of six self-governing municipalities. Lofoten is part of Nordland County, which altogether have 45 municipalities and 237 000 inhabitants. The four municipalities southwest in Lofoten are small. Røst, Værøy, Flakstad and Moskenes have only between 650 and 1500 inhabitants each. East in Lofoten Vestvågøy and Vågan are larger with around 10 000 inhabitants each. The four small municipalities are all among the communities in Norway that are most dependent on fisheries. Additionally the tourist industry is important. Although fisheries are certainly important for the two larger municipalities as well, they depend relatively more on agriculture and public and private service industries. Based on their differences in terms of industrial structure, the authorities in the municipalities have their own industry specific challenges, concerns and agenda in terms of development. While Vestvågøy has a strong concern for its agriculture industry, Vågan has a stronger focus on service industries and education. However, all six municipalities have a strong focus on innovation in the public sector, and this focus and engagement is reflected in what is going on in Lofotrådet.

The Regional Council of Lofoten (Lofotrådet) is a co-operative body for the six municipalities in Lofoten; Røst, Værøy, Moskenes, Flakstad, Vestvågøy and Vågan. On behalf of the whole region the council works with common development challenges. The purpose is to prepare and arrange for development processes that

indirectly and directly may contribute to innovation in trade and industry and in public service in the region. Lofotrådet is strictly aimed at coordination and consideration of common affairs that may promote Lofoten as region. According to the rules, the financial part of cases on the agenda shall be clarified before joint action is taken. Cases that may have a negative outcome or cases in which one or more of the member municipalities are competitors are not considered. The decisions that are made shall have consensus as objective. Political affairs that do not have approval from all the member municipalities, shall be kept outside this regional political co-operation, and shall be brought to solution in the relevant municipality.

The Lofoten Council (Lofotrådet) represents the most important overall official framework for general innovation facilitation in the Lofoten region. This strongly consensus-oriented actor deals with sectoral as well as cross-sectoral development issues. Municipality level policy processes complement the collaborative processes in Lofoten. Although the Lofoten Council is present and active, the municipality level is strong and sovereign. Although the degree of inter-municipal collaboration is high and the vision of this collaboration is to contribute directly and indirectly to industrial development, the assessment of the impact that the collaboration has on real and concrete innovation in firms is difficult. There exist a number of policy documents on the regional and/or municipal level which touch on economic development, entrepreneurship, and/or innovation.

### The national and regional/local innovation policy operator "Innovation Norway"

As of 1 January 2004 the new state owned company Innovation Norway has replaced the following four organisations: The Norwegian Tourist Board, the Norwegian Trade Council, the Norwegian Industrial and Regional Development Fund (SND) and the Government Consultative Office for Inventors (SVO).

Innovation Norway is the most important innovation policy actor in Norway, nationally and regionally.

In the county of Nordland, to which Lofoten belongs, Innovation Norway has offices in the town of Bodø. The former SND has a long historical record of supporting industrial life in Lofoten. The most dominant support activity historically is loans and subsidies to industrial infrastructure such as buildings and machinery. The inclusion of the Norwegian tourist board and the Norwegian trade Council with the main economic and innovation policy agent (SND) has brought the heavy national marketing effort of Norway and Lofoten as tourist products within the domain of Innovation Norway. The new Innovation Norway as from January 2004 is thereby also engaged in targeted innovation measures such as product development support and other types of innovation activity support. Based on the overall objective of promoting profitable industrial development, Innovation Norway seeks to trigger development opportunities and possibilities in regions such as Lofoten. Innovation Norway is aiming at contributing to regional development through the support of innovation, internationalisation and profiling/branding. Within the new vision– "We give local ideas global possibilities" - Innovation Norway proclaims that the tourism

industry, entrepreneurship and small and medium sized firms with international ambitions will be the main areas of effort.

### The Master Plan process in Lofoten

The work with the Master Plan is the current main effort of the local and regional policy level aimed at constructing a knowledge base that can feed into development of tourism in Lofoten. It is a collaboration project between the regional council (Lofotrådet), the destination company "Destination Lofoten" and the national and regional innovation policy actor "Innovation Norway". The overall objective is to come up with a new regional plan for development of tourism in Lofoten. It includes a preliminary phase in which a SWOT-analysis (Strength, Weaknesses, Opportunities, Threats) is done. As part of this effort three scenarios for tourism in Lofoten have been elaborated. Moreover the project includes further work which is focused on focusing at challenges and tasks. In practice the current phase, which is the phase of the main project, is supposed to come up with tasks, measures and concrete projects that shall support development of tourism in the right direction.

The work with the Master plan represents an important and significant production of knowledge about tourism development that can feed into innovative processes in policy making and firms. The processes that are established have its regional political anchor in the municipalities and the Lofoten Council, it has its coordinator and industrially relevant anchor in the destination company and it has its professional management in a national consultant group with specialised competence within tourism development.

*The White book on tourism development*

It is this last mentioned national consultant specialised on tourism development that represents the main carrier of the systematic knowledge base in the case of Lofoten. This actor has had the project leadership in the making of the Norwegian White book on tourism development, which was finalised in 2003. The framework in the White book is utilised in the Master plan process. The White book is meant to be a guide and a toolbox in the customisation of development projects for different destinations. The objective of the White book is to improve processes and results in tourism and destination development. It shall be a work of reference describing processes, tools and experiences. The White book's target group is the regional offices of the national innovation policy maker "Innovation Norway", destination companies, actors involved in industrial and commercial development, tourism actors, municipalities, investors and others.

The point of departure or the basic rationale of the White book is that the attractiveness of the tourist product (the location, place, and region) is shaped by the physical and product related properties/qualities of the place, the expressed demand or wish from the market and the experiences of the guests/tourists. In sum the Master plan process gathers policy, industry and innovation expertise in a framework that is comprehensive in the sense that it theoretically includes any potentially relevant aspect or stakeholder. In theoretical terms the White book considers tourism development as a "muddling through" process. In the theory of muddling through the

planners place themselves "in the real life" and discuss, negotiate, consult and propose different alternative courses of action and solutions in the context of different actors and stakeholders who are expected to defend their own interests. The course of action or the result is thereby partly unforeseen as the result is based on balance of power between stakeholders. The immediate reaction is that this seems to be a vague and risky planning method. And, as the White book argues, experiences from real cases also confirm that vague objectives foster implementation processes with no obligation. The White book therefore takes this into account and emphasises that it is crucial that the result of the discussion and dialogue out there is owned by the stakeholders. The processes have to be adjusted to the need and will of the stakeholders to take action in each case. Moreover, the case is certainly not an anarchist process. It is emphasised that the course of action will be under strong influence by a set of stable variables such as nature, climate, culture and infrastructure, and a set of relatively less stable variables that is subject to political decisions, such as regulations, land utilization and so on.

Utilising the framework of the White paper Lofoten's Master plan project has developed three scenarios of Lofoten in the year 2015. Scenario building is a method of visualising implications of different development paths. It is a method that concretely engages stakeholders' opinions about where they want to go in the future. It contributes to the making of a common platform and consensus about the central challenges that Lofoten faces as a region. The three scenarios are all pushed to the extremes in one way or another. They include one very happy picture, one definitely not so happy picture and one picture that is somewhere in between. All three pictures include stylised development paths of policy perspective and policy efforts, infrastructure development, industrial development, demographics and the interaction between market demand and dynamics and market strategies.

## Environmentally based development of tourism and local communities: LTE

The second perspective to development of tourism in Lofoten that we emphasise here has strong roots in the combined tourist supplier and education institution called LTE, Lofoten Tourist Enterprises AS. LTE is driven by a local entrepreneur localised in the far west of Lofoten. The entrepreneur has wide experience from tourism education and together with local engagement in an environmental perspective he has established a systematic knowledge based perspective to tourism development. The perspective sees the preserved nature and vital local communities as a prerequisite to the establishment and maintenance of a good tourist product. The perspective implies strong guiding principles concerning many aspects that are related to tourist development.

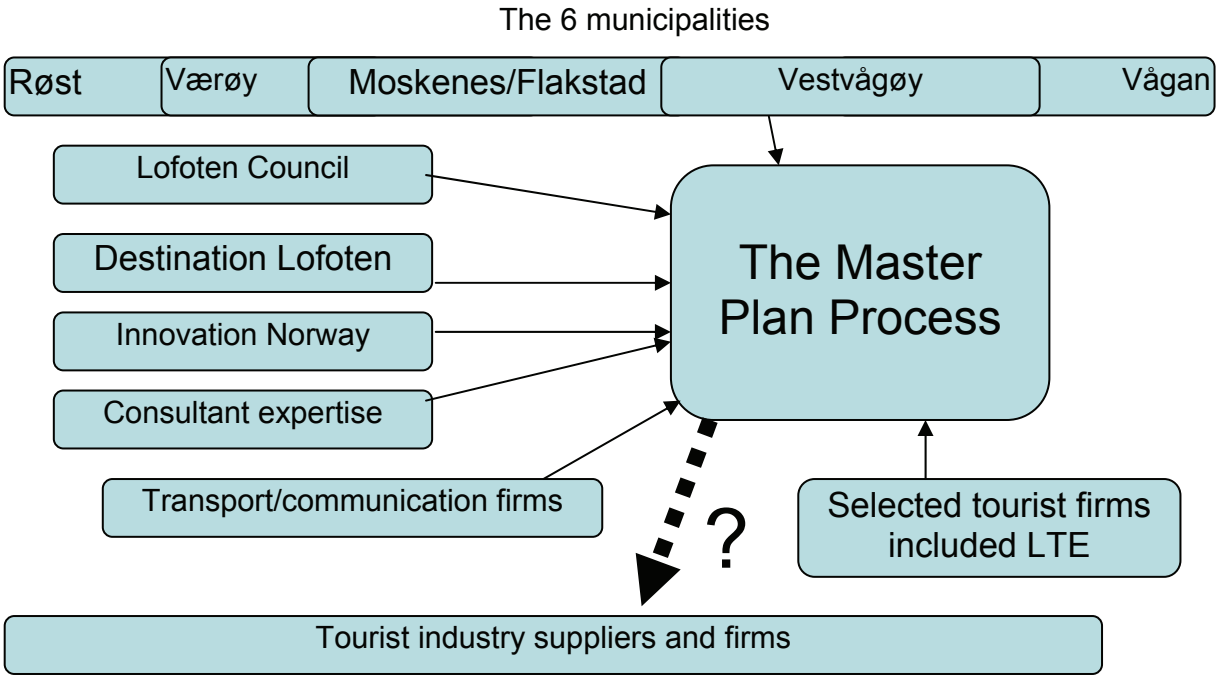
The perspective emphasises the importance of developing a tourism product that is in balance with the local community and its capacity. It is the notion that the local community's specific character is at the core of the tourism product. The perspective is comprehensive in the sense that it considers most aspects that are relevant to a tourist's impression of the place. It includes the natural landscape, the cultural landscape, cultural monuments, architectural style and building tradition, fisheries and

other business activities, social and cultural life and traditions, traffic management, transport, accommodation, food and drink service, activity portfolio, attractions, tourist information and other services.

The LTE-perspective is conservative in the sense that it is distinctly profiled within the values of preserving local communities. As part of this and at the same time, LTE communicates the vision and ambition of developing the tourist product of Lofoten into a knowledge intensive product. It implies establishing processes that consciously build up the knowledge base on which local communities are based. Given the profile taken this implies production, exploitation and diffusion of the knowledge and competence relevant for the local community, including the aspects mentioned above. In concrete terms, LTE organises on the one hand education and training within this perspective, on the other hand LTE is a tour operator and is engaged in other tourist products such as a museum. Moreover LTE has taken on the function of providing tourist information within the western part of Lofoten. In line with the specific perspective taken, a brochure has been printed that reflects the notion of environmentally sustainable tourism development by paying special attention to local knowledge, local culture and local specificities in terms of sustainability.

### Summing up: tourism development in Lofoten

**Figure 17.** The Master plan and its main stakeholders.




The Master plan process represents a positive framework that may facilitate innovation in tourism in Lofoten. It is however a good question whether the measures that are being established in the Master plan's main project are able to influence on concrete innovation in the firms. The indications from our respondents are that the

expectations are relatively low. Firms do not expect to be able to innovate concretely, but then the main project of the Master plan has not started yet. Some of our respondents indicate that they know little about the process. The ones that know something have the impression that this is a branding process, aiming at improving the visibility and uniformity of Lofoten as tourist product, toward national and international customers. Certain selected large tourist suppliers, such as transport firms and the largest actors, are members of the steering group and they have therefore greater expectations, it seems.

The Master plan project with the project leader Destination Lofoten and the expert consultant seem to have plans for concrete facilitating measures for Lofoten's tourist firms, but it remains to be seen what the construction of these measures signifies for the tourism firms in terms of input to concrete innovation.

## *The next step: a National Center of Expertise for Tourism in Lofoten?*

In the text above we stated that it remains to be seen how the Master plan will influence industrial activities at the firm level. The initiative to establish a National Center of Expertise represents a milestone in this regard because it is an attempt to organize industrial innovation in the whole industry cluster in Lofoten. The industry cluster with tourism, food and adventure firms have been working actively in the Master plan process.

The most important outcome of the Master plan is the construction of a common regional understanding of what the real situation in Lofoten is, what the most wanted development of this reality is, and what possibilities this gives and the challenges are faced. The action part of such a plan shall trigger activity within wanted possibilities in Lofoten. The National Center of Expertise model focuses on the core activities of food, tourism and adventure. A number of actors have been selected as engines of innovation in the work. They will be initiators and driving forces that may boost innovation in other firms. They include the following actors:

- Lofotr The Viking museum, Borg, Vestågøy (cultural adventure)
- Svinøya Rorbuer, Vågan (accommodation, fish, arts, food)
- Rica Hotel, Vågan (external/national hotel chain with different engagements)
- Lofoten Guideservice, Vestvågøy (cruise)
- Statle Rorbuer, Vestvågøy (accommodation, fish)
- Ramberg Gjestegård, Flakstad (Arctisk menu)
- Fishing village museum/stockfish museum, Å, Moskenes (cod-liver oil/fish oil/stockfish/fishery history, vivid traditional fishing village)
- Lofotaquarium, Vågan (nature based adventure actor related to aquaculture)

The objectives of these actors can be summed up:

- They want far more visitors and preferably in the shoulder-/winter season

- Increased competence and quality in all chains of the value chain regionally
- Take care of and develop the image of Lofoten
- Bridging local food, local culture based/nature based adventures, other local industries, with a overall national and international orientation

Additionally, bridges to external actors have been established, to enterprises and activities with great potential in development, in particular logistics. They include:

- The coastal ship (Hurtigruten)
- Cruise operators
- Destination Bodø (the largest town nearby)
- Evenes, Narvik (other centers and towns in the region)

### Content of the National Center of Expertise

The project description of the National Center of Expertise project sketches four project areas:

1. Industrial and commercial development

A main issue in the development of tourism in Lofoten is the dependence on the short summer season. Developing products that make Lofoten to an interesting destination during the whole year.

a) Products, industrial innovation
b) Co-operation measures, maritime industries – tourism
c) Co-operation measures, tourism actors outside the region
d) Develop the value chain in the cluster

2. Competence development

Competence development is an important strategy to strengthen and refresh important groups of employees. Moreover it is important to develop a common understanding of tourism in Lofoten, which can contribute to regional development and product development. Competence represents an infrastructure that can be developed by learning from other regions and development partners. This is a reasoning that we find in the concept "knowledge regions", which was the theme of a seminar in Lofoten (reference needed). Regional Bachelor degrees represent important competence development and a competence foundation that feeds into an experience oriented Master degree with emphasis on tourism and regional development. Thus, regional competence is developed and reinforced by:

a) Bachelor degree, adventure, tourism
b) Bachelor degree, maritime industries
c) Experience based Master degree in tourism and regional development

3. Learning arenas. Regional competence

Lofoten as a region with peculiar natural and cultural landscapes may produce strategies, products and co-operation relations that can be transferred to other destinations. This may be the case nationally and on international arenas.

4. Relation to R&D

The project has established relations the research and college/university community, which may contribute to the strength of relevant knowledge and competence.

*Preliminary setback?*

The proposal of Lofoten as a National Center of Expertise did not succeed in this round of tender. Local coordination may have been the most important problem. It seems that the group of stakeholders involved in the proposal, and probably above all the proposal writers, did not have intimate enough knowledge and awareness about the existing structure of tourism development, which above all includes Destination Lofoten.

## *Product development in the Lofoten tourist industry*

Innovation conditions refer to the possibilities for firms to innovate shaped by the external environment. It includes factors that represent barriers to innovation and it includes what we call facilitating factors for innovation; factors that influence positively on firm innovation. Our respondents in the tourism industry in Lofoten live in different realities when it comes to how they experience their innovation conditions. There is generally a moderate degree of awareness of and view towards the current public policy situation. Firms in Lofoten are generally more aware of the local and regional policy situation that the national policy situation. There is a significant difference in firms' awareness and view to the existing public support services, at all levels of geography.

The smallest firms, which are mainly family driven firms offering accommodation, have often low consciousness about the possibilities of innovating by means of public policy support. This may vary depending on individuals' personal network and capacity, but the small firm has often no particular resources that can be directed outwards. The internal operation takes their time. Low awareness and lack of information about existing public policy support programmes may represent a barrier to innovation for these firms.

Still, many of the small firms are driven by engaged entrepreneurs that have a strong perception of the importance of entrepreneurship as innovation. The existence of local entrepreneurship contributes to a strong common perception, a strong external environment that feed positively into this kind of innovation. Therefore, the external environment represents a positive facilitating factor for innovation.

Larger firms have more of everything compared to micro firms. And perhaps most important, they often hold awareness, knowledge and competence of how to exploit

public policy support for innovation. This applies for example to one of the largest and most visited tourist firms in Lofoten, the company that runs Lofotr, the Viking site-museum. The company has a distinct strategy of exploiting EU framework programmes and national possibilities for financial support and collaboration about innovation.

## Food and tourism

Although food products and tourism/adventure have been strongly linked up until now, this latest initiative of a National Center of Expertise represents another step forward in the process of integrating food and tourism into a complete Lofoten product.

Lofoten and its natural resources, traditions and culture and specific scenery make up a basis for the tourist product. This is also very important for the food industry. The food products are produced in and are dependent on quiet unique or rare Norwegian climatic conditions and represent important part of the regions image. Lofoten is a famous for its mountainous islands, the rough ocean and the catch of spawning cod in the Lofoten fisheries. The long tradition of exporting stockfish has put Lofoten on the world map, especially in the present most important market, Italy.

The food industry in Lofoten might directly or indirectly make up an important part of the tourist product. They can work as tourist attractions like garden visits and make important part of the cultural landscape, the identity and history of a place. The food industry is also depending on and profit from the tourist industry. Surprisingly there is a poor cooperation and no formal networks between the agri-food sector and the tourism sector. The tourism is much more related to the fishery sector. There is great potential for such cooperation in Lofoten, especially when they now try to build up a branding company for agriculture products in Lofoten.

## Firms' attitude to innovation

Compared to the policy actors' conscious attitude and work with innovation in tourism in Lofoten, the attitude and actions of tourist industry firms concerning innovation and development are more varied. The majority of the large number of small firms offering accommodation may feel that their potential in terms of innovation is small. Many feel that they have offered the same product as long as they can remember, and that their opportunity to innovate is small. Larger firms have stronger financial bases and seem to be more actively involved in innovation. But the complete story about tourism in Lofoten is certainly not as black and white as saying that larger firms innovate and smaller firms do not. When describing innovation and development in this study our perspective is strongly influenced by the fact that tourism as product is difficult to conceptualize. Or to put it more correctly, the definition of the product tourism in Lofoten may be very different, depending on the perspective one takes.

While small family firms offering accommodation are forced to think innovation in a very concrete sense of the term (refurbishing another fisherman's cabin), larger actors

and in particular policy actors need to think innovation in tourism in the comprehensive sense of the term. It has to do with investments in transport and public facilities and land and property regulation policy. It has to do with innovation policy and planning and supporting industrial actors and it has to do with product development and marketing effort of the complete adventure of Lofoten.

## *Summing up tourism development in Lofoten*

A perspective of innovation in tourism as concept development investigates the conditions that are constructed for concrete entrepreneurship and concrete innovation in firms. It has to do with how strategic projects and processes establish guiding principles in public policy, which in turn influence development of and investments in tourist concepts and public tourist infrastructure facilities. It has to do with regulation of land utilization and the development of property regulation policy, and how regulations put restrictions on location and aesthetics of buildings and infrastructure for tourism related purposes. And, more concretely, it has to do with innovation policy and how measures and support for industrial actors guide innovation as entrepreneurship and product development in firms.

Focusing on innovation and development in an industry such as the tourist industry, different perspectives can be employed. The functional perspective implies to look at the tourist industry in commercial terms – i.e. to focus on innovation in tourism as business development. The territorial perspective implies that development is based on how the tourist industry can serve a region or a locality – i.e. the community in question – without merely exploiting it commercially. It is this latter perspective that is the background for the Norwegian tourist industry's emphasis on the development of small communities. This perspective, which is present on a national basis, implies that the tourist industry shall provide communities and localities with vitality. The rationale works the other way around as well. Vital local communities are at the core of Norway as brand name, tourist product and destination.[105]

Yet another perspective looks at the driving forces behind development and is more in line with the aspects we have emphasised above. Within this type of perspective, while Viken focused exclusively on the role of (different types of) entrepreneurship, development is explained as the result of human beings' actions, either actions done individually or on behalf of or within an organisational, institutional or networked context. As part of this we may include explanations at a cultural level where the interaction between the actors (often in networks) and their social and cultural contexts is emphasised. Innovation and development in this context depend on conditions such as natural resources, markets, economic and political institutions and systems. Within these conditions individuals, local cultures and local policy systems may contribute with influence on development and innovation.

The tourist product of Lofoten is built around the common denominator of the traditional fishing industry's activities. In all the six municipalities of Lofoten,

[105] See www.visitnorway.com for an overview.

fisheries represent the most central carrier of industrial activity and cultural heritage. The exotic culture of this central industry is wrapped into the scenic nature in Lofoten, the original architecture, the small, picturesque localities and the way of life in the local communities. The perhaps most common tourist product in Lofoten is the adventure of seeing and feeling the nature and living the life of the inhabitants, in particular getting a touch of how fishermen live and lived. But the tourist experience of Lofoten has been expanded the last decade. In addition to accommodation in the fishermen's cabins and the organised fishing tours, a range of tourist products and services has grown up. It includes the establishment of cafes and restaurants, and it includes a number of galleries, museums and sights. More or less extreme and more or less organised tours and ways of experiencing the culture and the nature, and learning about it, also belong to the product range.

If we recognize this description of Lofoten as tourist product, it is easy to see that the traditional and ordinary life of Lofoten is a central part of the tourist product. Consequently, the knowledge about this life and the competence to reproduce it into a product that is possible to consume for tourists is basic and a central component of the knowledge base of Lofoten's tourist industry. Inhabitants of Lofoten and the actors in the tourist industry are the carriers of this knowledge and competence. And they are the ones that have to maintain the knowledge and competence. In talks and discussions with operators in the tourist industry across Lofoten there exist what we may call a general and shared consensus about what Lofoten is for tourists. This consensus seems to exist also when the theme is innovation or development of Lofoten as tourist destination. But there are important nuances in people's perception of Lofoten as tourist destination and people's attitude towards development of it.

### 3.3.2 Learning from the Norwegian Lofoten case in Central Ostrobothnia, Finland

#### *Context*

The context, scale and characteristics of the tourism sector in Central Ostrobothnia differ markedly from those in the Lofotens. Tourism as an industry is new in Central Ostrobothnia and it is not always seen as a real business but more as a marginal issue. The region has tourist potential, and based on the ISP case study findings, it would benefit from an organisation for developing, coordinating, marketing tourism and for communicating information and knowledge on it.[106] This is briefly the reasoning behind the choice of the Lofoten case to be presented and analysed as a good practice with respect to tourism development in Central Ostrobothnia. The assumption was that there could be some elements in the Lofoten way of organising and coordinating the tourism sector which could be learned from and could be of use for Central Ostrobothnia.

[106] For the Central Ostrobothnia region, its tourism sector and the results of the ISP case study, see Innovation Systems and the Periphery 2005, 133-216.

## *Workshop*

The workshop was held at the Chydenius Institute in Kokkola between 12 noon and 4 p.m. on March 29, 2006. A great effort was made, starting in January, to inform local actors and find a suitable date for the workshop. It was originally planned for March 7, but due to the many cancellations it had to be called off and was postponed to March 29 after numerous contacts with local actors to ensure that all the key persons could attend.

Information on the PLIP project and the purpose and content of the workshop were sent to participants at the time of invitation, and they were informed about the structure of the workshop about a week beforehand and were asked to think over the meaning and development potential of tourism in Central Ostrobothnia and the challenges facing its development there from the participants' own points of view or those of their organisations.

Six days before the workshop the participants were sent a twelve-page description of the Lofoten good practice and were asked to familiarise themselves with it. At the same time they were asked to think through the following issues that would be discussed in the workshop: Are there elements in the Lofoten good practice which might answer some needs of the tourism sector in Central Ostrobothnia? How are these needs met today? Is it possible to use the good practice elements?

The meeting on March 29 started with a welcoming, followed by a very short introduction to the project and the workshop. In the presentation round the participants shared some views on what they thought was important in developing tourism in the region. At the same time the products of Kokkola Tourism were presented and the general findings and conclusions of the ISP project case study dealing with tourism in Central Ostrobothnia were presented briefly.

The Norwegian researchers presented the Lofoten case. This was followed by a discussion on what could be learned from the Lofoten good practice, and on other matters. Most of discussion took place in English, except for the last hour or so, when it took place in Finnish.

The aim of the Finnish research team was that all the key persons dealing with tourism issues within the public sector in the region should attend, bearing in mind the food industry sector, too. This goal wasn't totally achieved. Two of the key persons, one from the Regional Council of Central Ostrobothnia and another one from the Kaustinen subregion, were not able to attend after all. Also, a third person with a significant knowledge of local tourism couldn't come. This person was originally to have spoken on the conditions for enhancing innovation in firms, the potential for organisational innovations and challenges in the tourism sector in Central Ostrobothnia.

A total of nine participants were present, including two Finnish researchers and two Norwegian researchers. One of the participants represented the Regional Council of Central Ostrobothnia, another KOSEK, which is a business development agency for the Kokkola subregion, and a third Pirityiset, a Leader group in the Kaustinen

subregion. The fourth participant represented Kokkola Tourism Ltd, the Kokkola city tourist office, and the fifth the rural department of the Employment and Economic Development Centre for Ostrobothnia (T&E Centre).

The Lofoten case appeared to interest the participants. They put many questions to the Norwegian researchers, mostly on how things work in practice, e.g. where do the tourists come from, do the fishermen take tourists out on fishing trips, are there joint brochures, do the farms participate in the tourism business, how do they get seasonal employees, how is co-operation working, and is there any co-operation at the county level?

The core of the abstraction of the Lofoten case was how to coordinate the tourism sector by establishing coordination agencies or otherwise, and how to start thinking in regional strategies when doing so. The abstraction seemed to be clear to most of the participants, but there were differing opinions on whether, or to what degree, this kind of development is needed in Central Ostrobothnia.

At the beginning of the workshop the participants shared their views on what is needed for developing tourism in the region. There are many good elements to offer tourists in the region which we have to learn to appreciate and to explore in terms of the possibilities they offer. We have to find ways to attract more tourists to the area.

The starting points for tourism in Central Ostrobothnia are totally different from those in the Lofotens, which are a household word around Europe. The participants had various views on whether there are elements in the Lofoten case which might be relevant to developing the tourism sector in Central Ostrobothnia, but most of them seemed to think that an organised system could be useful and that more co-operation is needed between the actors in the region. One participant thought that networking in the context of the present organisations is enough for tourism development. There are some regional agencies covering larger areas than Central Ostrobothnia, but most of these organisations are concentrated only on marketing.

At the moment nobody runs the whole sector and its development in Central Ostrobothnia. In Kokkola the actor is Kokkola Tourism Ltd and in other municipalities tourism development is just one task within general business development. There are even public funding resources available, but they are left unused because nobody is willing to manage tourism projects in the region, apparently since experiences from earlier projects have not been very encouraging.

Emphasis in the discussion was placed on the importance of having large enough packages of products. There is a gap between the tourist and the products, i.e. it is not made easy for the tourist to find the products in Central Ostrobothnia. There is a need to be able to offer more activities inside the region, which would also make tourists spend a longer time there. These activities don't have to be anything unique, but the combination of different activities would attract more tourists. This is one area in which more co-operation and coordination is needed.

There was also a discussion on doing a survey, making a list of actors and starting to develop things based on that. The importance of working on a concrete level was emphasised. Some studies have been made and there is some information available,

but these basic surveys haven't led any further so far. One participant raised the point that coordination tasks were usually done by people alongside their normal work. If there was an organisation for coordination, it would take some of the load off these people.

The participants didn't specifically evaluate the workshop at the meeting, but some said it had been interesting and useful.

### *Evaluation*

In general, the Lofoten context is obviously very different from that of Central Ostrobothnia. There were some elements which could be learned from in Central Ostrobothnia, most notably coordination and co-operation, but it seems very uncertain whether the workshop will lead to any concrete actions. The researchers were left with some mixed feelings after the workshop. The assessment seemed to be quite difficult. A lot had been done before the workshop, however, and in the workshop itself, to explain that the idea was not to say that the Lofoten practice is good and that you should do as they do, but to assess whether there were some elements that could be utilised in this region. An introduction to the Central Ostrobothnia region and its tourism sector at the beginning of the workshop would probably have enhanced the orientation of the discussion, but the lecturer had been forced to cancel because of a prior engagement. No actor exists that is solely focused on tourism development in the region, and hence tourism development is only one of the activities of the workshop participants except for Kokkola Tourism Ltd. Also, the Lofoten case may simply have been too different from Central Ostrobothnia. Perhaps some of the thoughts and ideas presented and discussed in the workshop will have some effect later on.

## 3.3.3 Learning from the Norwegian Lofoten case in Northwest Iceland

### *Context*

When the Icelandic PLIP-project team was faced with choosing one or two foreign good practice cases to visit Iceland, it was the first option to get a visit from the Norwegian team. The reasons were primarily that the geographical setting of the countries is in many ways similar and its industries have many similarities. The tourism case in Lofoten is in many ways similar to Icelandic tourism and there is operating in North Iceland a similar entity as *Destination Lofoten* which is described in the case study. There lacks e.g. in North Iceland a similar structure of governance such as the Lofotrådet and there is less investment in marketing efforts.

## *Workshop*

The workshop was held at Hólar University College in Skagafjorður, North Iceland, on April 27 2006 between 10.00 and 16.00. Before the meeting the participants were sent via e-mail written material on the case presented. This was a short report by a researcher from NIFU/STEP, Oslo, with the title "Lofoten – a good practice in tourism?". After the meeting a MS Power point presentation the Lofoten case was sent to the participants via e-mail.

The meeting was designed so that this case and a case in industry development in Glomfjord could be discussed in the same day. The meeting began with a short introduction and welcome by the Icelandic team and an introduction by the Norwegian team on the Norwegian innovation system and innovation policy. The Lofoten tourism case was introduced and discussed before lunch (10.20-12.30) and the Glomfjord industry development after lunch (13.30-16.00). One participant, a specialist in rural tourism, only took part in the first part of the discussion. During the latter part of the meeting the rector of Hólar University College took part while the Glomfjord case was being introduced. The discussion at the meeting was recorded digitally and took place entirely in English.

The Icelandic team made a great effort to get good attendance to the meeting and there were some changes made to the list of participants until the last minute. The first letter of invitation was sent in Icelandic by e-mail on March 16 and then on April 4. Due to some changes in participants some follow-up was necessary. A week before the meeting a final agenda in English was sent to the participants via e-mail.

The Icelandic team decided to invite participants from the whole of North Iceland to the meeting even if the case study area is the Northwest region. This was because some of the tourism initiatives are planned for North Iceland as a whole.

A total of 11 participants were present at the meeting, seven originated from various institutions in North Iceland and the four researchers from Iceland and Norway. These were as follows: A project manager from the Technological Institute of Iceland, two researchers from the University of Akureyri Research Institute, three consultants from the Association of Municipalities in Northwest Iceland, a lector from the Rural tourism department at Hólar University College (during the first part of the meeting), a consultant from the Þingeyjarsýsla Region Business Agency, a project manager from the Akureyri Region Business Agency, the rector of Hólar University College (during the second part of the meeting) and lastly two researchers from NIFU/STEP, Oslo.

As the list above indicates, these were representatives from both institutes dealing with economic development in general in the respective regions as well as those more specialized in tourism. Three of the practitioners were from the Northeast region and four from the Northwest region, i.e. the study area.

A staff member from the development department of The Institute for Regional Development in Iceland (Byggðastofnun) was missing from the meeting. It would have been very valuable for the project to have that representative present due to her extensive knowledge on the policy framework and economic development in the

Iceland in general. Another important person missing from the list of participants was a person from the marketing office *North Iceland-Arctic North* in Akureyri, either the manager or a person from the board of directors. Despite much effort the Icelandic team was not able to get a representative from there. Perhaps discussion about North Iceland – Arctic North was more open due to this absence and most participants at the meeting were very knowledgeable about the office.

The Lofoten case in general, and its success, seemed to be of great interest to the participants. However, there were specific aspects to the case that received specific attention:

1. The systematic approach in planning the tourism was considered exemplary.
2. The White book on tourism development and its implementation was considered impressive.
3. The budget of Destination Lofoten (approx. 40 million ISK) was considered impressive by the participants and the marketing effort intensive.
4. The governance in Lofoten drew considerable praise from the participants, especially how Lofoten rådet creates a structure that covers the whole region and seems to create the necessary framework for such a cooperation project to materialize and continue to thrive.
5. The relative success in public – private partnership received much attention and was considered a very good example.

The case appeared very relevant to compare to the Icelandic context and the participants did not seem to have any problems in comparing it to their setting and their day to day reality. There were many similarities and yet dissimilarities in institutional structure and the organization of the projects in the two countries.

In the opinion of the Icelandic team, much of the actual abstraction of the case in fact took place *during* the meeting, not in the papers sent out before the meeting. In fact this took place primarily in the interaction between the Norwegian team presenting the case and in discussion with them afterwards where the most relevant/interesting aspects of the case were clarified and summed up.

The lack of some administrative structure covering the whole of North Iceland is one of the issues that the participants mentioned was lacking in Iceland. Interestingly, the participants did not want to limit the discussion solely to the Northwest region (western part of North Iceland). Such an administrative unit would probably be needed if a project, similar to *Destination Lofoten,* i.e. *North Iceland-Arctic North* tourism marketing office in Akureyri, would be to strengthen further during the next years. This was one of the main conclusions of the discussion. North Iceland is furthermore divided into two parts geographically, and to some extent socially, by the vast mountain ridge Tröllaskagi, across which there is however increasingly better transportation connection. Traditionally, this has however proved to be a certain barrier for communication between the eastern and western parts of North Iceland. Also, it was discussed at the meeting that more participation of especially the smaller tourism companies and all of the municipalities in the region is needed in order for

this Icelandic project to be successful in the future. Some marketing of *North Iceland-Arctic North* within the region was considered necessary since there appears to be limited local knowledge of the initiative. If we however limit the discussion to the study area the Northwest region there is in fact such an administrative unit, i.e. an association of municipalities in the region (SSNV) and in fact the same applies to Northeast region.

- Combining traditional food and tourism appears in many ways to be similar in the sending and receiving regions. Closer cooperation between food suppliers and tourist operation is being developed. A specific Lofoten brand is being developed. Such a brand for specific regions has, however, not been developed in Iceland except on a very limited scale. In Iceland it has e.g. proved difficult to get fresh fish all year round and lamb is only offered fresh during a short period. Similar circumstances appear to exist in Lofoten.
- A short tourist season is a problem in both regions but people work in other industries during the off season, especially those who are in small businesses. There are increasingly larger companies operating in the Lofoten region.
- Oil exploitation and tourism development do not fit together in the Lofoten case. This is interesting in the Icelandic context since aluminium production and hydropower projects are being developed in tourism locations, e.g. in North Iceland.
- Guarantees on loans have been offered by official funds in Norway and this has made investment in tourism easier. Investment in peripheral regions in Iceland has often proved difficult due to problems with mortgages. This may change in Iceland if a new law on Icelandic innovation centre will be passed by the Icelandic parliament as is possible.
- Destination Lofoten appears to be partly a bottom-up initiative and a public-private operation, but according to the Norwegian team not all small companies are aware of its existence. There is a lack of cooperation of companies in Iceland and this is according to the participants one of the industry's greatest shortcomings. Small companies sometimes appear to be detached from *North Iceland-Arctic North* and this appeared to be somewhat similar to the Norwegian experience.
- The White book, a strategic plan for tourism in Lofoten was very impressive according to the participants at the meeting and there is no comparable initiative in North Iceland.
- The role of *North Iceland-Arctic North* is solely marketing but consultancy is concentrated in three economic development offices, one in each of the sub regions. It was discussed that one of the problems with that regional economic development system is that it is characterized by a lack of consistency, leading to insecurity and lack of awareness by its potential clients.
- Another disadvantage with the *North Iceland-Arctic North* is that it is set up as a temporary project by the municipalities – in fact an experiment for a three

year period. In the opinion of the participants this ought not to be the case. At least a 10 year period would be desirable – we should be patient.

- The participation of small companies is lacking in *North Iceland-Arctic North*, the PPP appears to one of the key elements to the success of *Destination Lofoten* but the private sector has to be involved more! Also all municipalities have to take part. One reason for the success is perhaps because how well defined the region is, the companies see well the advantages in working together. North Iceland is on the other hand not as well defined geographically.

Apparently there did not seem to be very mixed opinions between the participants on the transferability of the Norwegian case into Icelandic context. Furthermore, the participants did discuss how things could be amended in North Iceland in order for similar development to take place as in Lofoten.

At the meeting, participants did neither specifically evaluate the PLIP project nor the workshop per se. However it appeared that the participants were generally pleased, indicated e.g. by the very active participation in discussion during the meeting. Furthermore, the intentions of a few of them to make use of ideas mentioned at the meeting in their own fields indicates that the project is looked upon favourably and seen as a practical one.

## *Evaluation*

Many elements of the Lofoten case are applicable in the North Icelandic context. However, some changes are needed if a similar development is to take place in North Iceland as a whole. The lack of some administrative structure covering the whole of North Iceland is one of the issues mentioned at the meeting. Such an administrative unit is, however, located in the Northwest region, i.e. the study area of the research and the Northeast region. The support system could, to a large degree, be used in similar ways as in Lofoten, however, it would need to be reinforced with more funding for a marketing effort. Another important issue is more active private-public partnership, especially more participation of smaller companies and municipalities. Both the municipal level and the tourist industry seem to be too fragmented. There needs to be more consistency in the institutional framework and longer development periods.

The workshop in general was a success in the opinion of the Icelandic team. The discussion was fruitful and most participants took active part in it. Using the focus group approach to this work appeared to lead to a positive outcome, e.g. the fact that the number of participants has to be limited. However, it initially proved difficult to get attendance from some of the relevant participants but eventually we managed to get the most important actors to the meeting.

The positive outcome of the workshop applied especially to the Lofoten case and that was probably primarily due to the similarities in circumstances in Lofoten and Northwest Iceland. This also had to do with the fact that tourism is in many ways

similar in both countries but there are differences in how the tourism business is carried out.

### 3.3.4 The small food producers' network and the Knowledge Centre for Food Development (VIFU), Denmark

#### *Weak hypothesis*

Through the latest years, the field of origin labelled food has been increasing in Denmark. A very important step on the road towards this increasing development has been the establishment of networks among the small food producers. First on track were the producers on Bornholm, soon thereafter the producers in Western Jutland started to organise. The Danish ISP-study[107] focussed on Western Jutland entrepreneurs in tourism, food and furniture.

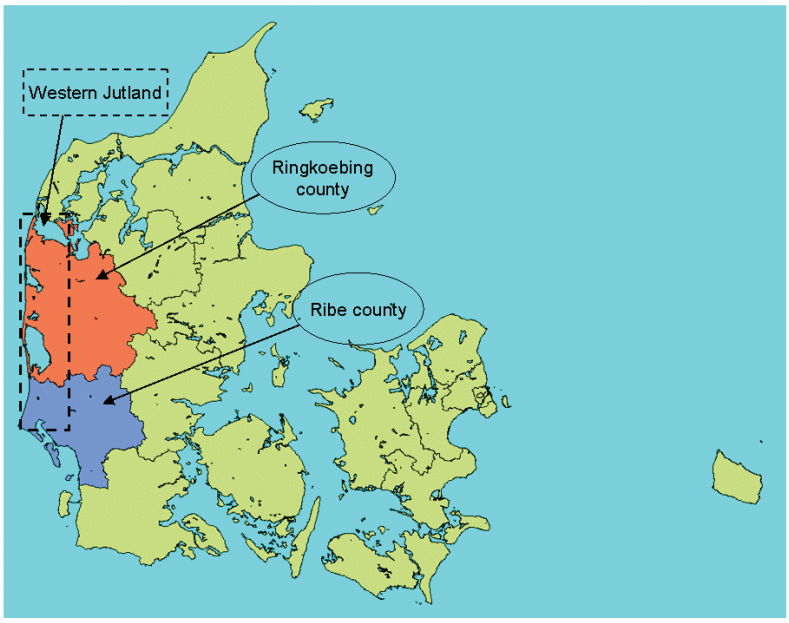
When interviewing the food producers for the ISP-study the small food producers' network and its placing in Holstebro at the Knowledge Centre for Food Development (VIFU[108]) were mentioned several times. The pioneer effort of the Western Jutland network made it interesting to investigate further, especially because the placing in VIFU gave the network promising prospects on most of the buzz words that characterises the PLIP project as e.g. peripheral location, learning and networking amongst producers, local embeddedness and innovation policy at regional level. That is why the small food producers' network was selected as a good practice.

#### *Context*

The operation area for the good practice analysis is Western Jutland. The region is primarily defined as the most westerly part of Denmark, but it has no strict borders except for the coastal line to the west. Normally the region is defined to have Varde/Esbjerg (in Ribe County) as its absolute southern point and the Limfjord as the northern.

[107] Innovation Systems and the Periphery 2005.
[108] Danish: VIdenscenter for FødevareUdvikling. http://www.vifu.net/ (June 2006)

**Figure 18.** Western Jutland and the two counties.




The border towards central Jutland is more indistinct, but would normally be placed somewhere east of main road 11 in the area between Holstebro and Herning. The region is parted in two counties: Ribe County only covers the southernmost parts of the region, the rest – and the main part – is covered by Ringkoebing County.

The region of Western Jutland is thinly populated by Danish standards. The population of the two counties makes up 9.3% of the total population in Denmark. The two counties cover an area of about 8,000 km$^2$, with a population density of around 64 inhabitants pr. km2. The density is thereby about half of the national average of 125 inhabitants pr. km$^2$, cf. Table 4.

**Table 4.** Population density, 2004.

| | Number of inhabitants, 1/1 2004 | Area, 1/1 2004, km$^2$ | Population density, 1/1 2004 |
|---|---|---|---|
| Ringkoebing County | 274,830 | 4,854.0 | 56.6 |
| Ribe County | 224,595 | 3,131.7 | 71.7 |
| Denmark | 5.397,640 | 43,098.3 | 125.2 |

Source: Danmarks Statistik (received data file) (2004).

The region called Western Jutland is the thinnest populated part in both counties. The rather few cities in the region are quite small (about or under 10.000 citizens), with Holstebro and its approximately 32.000 citizens being far the biggest.

Demographically, the share of young people is lower than in the rest of the country. This is primarily caused by young people moving out of the area in connection with their enrolling in an institution of further and higher education in larger cities. On the

other hand, the share of older people is relatively big. The region contains no higher educational institutions and the educational level is generally low.

During only a few decades, the counties of Ribe and Ringkoebing went through a development from primarily an agricultural society to primarily an industrial society. Still, agriculture plays a relatively bigger role here than in the rest of the country, but does not even come close to the employment rate in the production sector or the employment rate in the private and public service sector. Furthermore, the position close to the North Sea has led to streams of tourists, which has again led to activities and employment, cf. Table 5.[109]

**Table 5.** Employment by sector and by counties, 2005.

| | Ringkoebing County Share of places of employment, % | Ribe County Share of places of employment, % | Denmark Share of places of employment |
|---|---|---|---|
| Primary trade<br>- *herein agriculture, forestry* | 6.8<br>*6.1* | 6.2<br>*5.0* | 3.4<br>*3.1* |
| Manufacturing | 24.4 | 20.6 | 14.8 |
| Construction etc. | 6.7 | 7.8 | 6.8 |
| Service trade | 31.6 | 33.2 | 38.6 |
| Public and private services | 30.5 | 32.1 | 36.3 |
| Total | 100.0 | 100.0 | 100.0 |

Source: Danmarks Statistik (2005), www.statistikbanken.dk

In the latest years the situation has changed. Earlier the region offered favourable conditions for the industry, but now the weighty production sector is threatened by the competitiveness of low-pay countries. A coming Structural Reform, dramatically reduces the number of municipalities and jobs in this sector, and at the same time fishing and the agricultural sector is under pressure also resulting in a reduction in the number of jobs.[110]

The food industry still has production plants producing milk, meat and fish products distributed in the whole region, with the biggest ones placed around Holstebro. There are three important fishing ports in the region, but no export harbour. The land area is characterised by farming. Animal husbandry – here especially dairy cattle stocks – and potato breeding are typical production fields for the region's agricultural sector.

There are no motorways to the region or in the region. Especially the western parts of the two counties are so far away from the new growth centres that loss of jobs locally cannot just be compensated for by commuting to other jobs elsewhere. Furthermore, there is a mismatch between the practical qualifications gained in the industrial labour

[109] Innovation Systems and the Periphery 2005, 49.
[110] Innovation Systems and the Periphery 2005, 49.

market (many of the people working here are unskilled and semi-skilled workers) and the need for more academic qualifications in the knowledge based economy.[111]

The regional food sector is characterised by a low education level and small companies with a real entrepreneur as owner. The typical owner is skilled, has many ideas, is good at talking with people and makes good deals, but he/she does not have much more education than primary and lower secondary school.[112]

The innovation activity in the regional food companies does not differ much from the average among companies on Jutland-Funen in general or from the food companies in the metropolitan region.[113] Innovative companies are in this connection defined as companies that have stated to develop new products or production methods in the periods of observation[114]. Generally the Danish food sector has a higher degree of innovation than other similar sectors, because the companies in the food sector have been very effective in their abandonment of workmanship in favour of an automated, industry based production type.

The regional tourism industry has – as the Danish tourism industry in general – a relatively low level of innovation compared to service industries in general. One explanatory factor might be the presence of many small/micro enterprises performing at a low level of expertise.[115] Studies show that the tourism industry is characterized by having a relatively low level of professional management instruments, among these lesser-developed cooperative patterns and less systematic organisation than service industries in general.[116] A seasonal variation also makes it difficult for the tourism industry to attract qualified employees and decreases the level of competence.[117]

## *How did the good practice start and develop*

The network of small food producers was initiated by the local action group of LEADER+ in 'The development network of Northwestern Jutland' in 2001[118]. One of the five themes that the local action group decided to work with – as part of the strategic plan for the development of the region – was development of the food sector.

This work started up with a public meeting in March 2003. The meeting was directed to small and middle sized enterprises (SME's) in the food sector but everybody were allowed to come. On the programme where four small food producers that had had some success, who came to tell how they started and which experience they had gained so far. The meeting was a success in terms of the number of participants and in

[111] Innovation Systems and the Periphery 2005, 49-50.
[112] Innovation Systems and the Periphery 2005, 78.
[113] Jysk Fynsk Erhvervsredegørelse (Sept. 2004), http://www.jylland-fyn.dk/wm1 (June 2006)
[114] Erhvervsministeriet 2000a, 97-99.
[115] Similar to worldwide tendencies, it is estimated that 80 % of Danish tourism firms can be characterized as micro firms and small and medium sized firms. Erhvervsministeriet 2000b.
[116] Jensen & Mattson & Sundbo 2001.
[117] Innovation Systems and the Periphery 2005, 61.
[118] http://www.leader.dk/nordvest/dk/startside.asp (June 2006)

terms of press coverage and was in that way an important booster for the things that followed.

Shortly after the public meeting, the present project manager was employed by the county to run the potential network. The project manager had worked for almost 25 years as home economics consultant in the Farmers' association and as such, she had represented the Farmers' association in the local action group of LEADER+ and had therefore followed the process from day one.

The first task for the project manager was to build up a formal network with the about 30 enterprises that had shown interest. The project was initiated within LEADER+ but even before the project manager was found, the LEADER+ co-ordinator applied for article 33 means to build up the network. From the start, the project was designed to comprise two rounds of article 33 means and it has succeeded in this even if the two periods were parted by an unplanned interval of half a year from January to July 2005 because of a very slow consideration of the second application by the ministerial administration.

Parallel to the work within LEADER+ other regional embedded actors worked in the same period to establish a so-called growth environment in the region[119]. Independently Northwest Jutland Education Centre and Holstebro Technical School got the idea to establish closer relations to knowledge institutions on food and food technology in the eastern part of Denmark. Prompted by the state they managed to work together their plans, so that the two locally rooted projects became a regional initiative. In November 2002 they got the application from the Ministry of Science, Technology and Innovation to start up a regional growth environment called the Knowledge Centre for Food Development (VIFU).

One of the driving forces in the process was the director of Holstebro Technical School, who himself was very inspired by a study tour to Finland, where he – together with the local business council in Ringkoebing – studied the Finnish Centres of Excellence and the way they managed to distribute knowledge from the universities out into the enterprises in the countryside. This study tour motivated him to try to start something alike up at home.

In the first year of the network, the project manager was placed at different departments and institutions under the county. However, in September 2004 the manager moved in with VIFU, and the network was switched from being a project with anchoring in the county's developmental unit to become a VIFU project. So today, the network of small food producers is formally placed as an article 33 project in the house of VIFU. That is, the network's project manager works for VIFU and is working on this project among others, with the network project being the most central and biggest one for her.

[119] Danish: "Regionalt Vækstmiljø".
http://forsk.dk/portal/page/pr04/FIST/FORSIDE/INNOVATIONSPOLITIK/REGIONALE_INITIATIVER/REGIONALE_VAEKSTMILJOER (June 2006)

## *Organisation and financing*

### The small food producers' network

It is the task of the project manager to make events that brings together the small food producers in a network, and to take care of all practical arrangements here included the operation of the network. The project manager has a pronounced gene for 'nursing' the producers connected to the network. That is, she keeps a tight contact with the producers by phone or visits. Often she uses the next network event as a reason for taking contact, but even if the contact has other reasons, she always remembers to remind the producers to enrol for the next event.

The producers are not members of the network – what connects them is primarily the newsletter produced by the project manager. It is sent all over the country. The project manager explained that very few other small food producers' networks have the resources to make newsletters as this, and that – from VIFU's point of view – it is more important to inform the sector generally than to stop the dissemination of the information at the borders of the county or the region as such. The centre nevertheless is an exponent for the wish to boost the regional business development in the Western Jutland food sector. This is e.g. illustrated by one of the network's publications that is named "*The taste adventures of Western Jutland 2006*"[120], but even in this little booklet several producers are situated a long way off the area that is normally understood as Western Jutland.

The director of VIFU was also very vague when talking about borders for the operation of VIFU's work. She could easily see perspectives of the work made by VIFU that could and should have national interest. Looking at VIFU's home page it is interesting to see that in the aims of VIFU the "*region*" and the "*western part of Denmark*" are mentioned[121]. Moving to the visions for the centre, these geographical chains are vanished. Here focus is on development in the food sector in general, using phrases as "*the unifying factor for the whole food sector*" and achievement of "*national and international acclaim*"[122].

**VIFU**

VIFU was established as one of 17 regional growth environments under the Ministry of Science, Technology and Innovation. The regional growth environments are the result of a pilot scheme started in 2001, followed by a second application round in 2002. The pilot scheme has defined a regional growth environment to be:

> *[…] a cooperation between enterprises, research and development institutions, technological knowledge communicators and other relevant actors. The cooperation has its starting point in one or more commercial positions of strength in a coherent geographical territory.*[123]

[120] "Vestjyske smagsoplevelser 2006"
[121] http://www.vifu.net/Default.asp?ID=102 (June 2006)
[122] http://www.vifu.net/Default.asp?ID=101 (June 2006)
[123] Oxford Research 2004, 15.

Every growth environment had focus on a specific theme as e.g. offshore, music, sub suppliers, seed-growing etc. VIFU was the only one focusing on food and food production. The pilot scheme contained a detailed set of guidelines for the aims, activities, organizational principles and financing of the regional growth environments. In that way, many structural decisions on VIFU's role and the function of the centre were taken already before VIFU started. A core element in the organisational model of the regional growth environments was the consortia. VIFU's consortia consisted of 11 knowledge institutions of which five were national knowledge institutions placed outside the region.

VIFU started up slowly with only one employee working part time. An important stage in the work of VIFU was achieved when the present director was employed in May 2004. She boosted the number of projects, made new contacts and marketed the centre more actively than it was done before. This boosting of activities was very important to ensure the continuation of the growth environment: an inactive centre would have great difficulties to gain further public funding.

The Danish Agency for Science, Technology and Innovation (at the Ministry of Science, Technology and Innovation) gathered the experiences from the pilot scheme and used these experiences to develop an activity plan called "Knowledge moves out"[124]. Here the pivotal point was the establishment of "regional technology centres"[125]. Therefore a new application round was announced for February 2006, where all regional growth environments could apply, but only the most efficient and promising would be approved.

VIFU's board decided to try to apply for a continuation of VIFU and made this in collaboration with Foodture – Danish Food Innovation Network (Vejle) and Maritime Growth Centre (Hirtshals). In March 2006 the ministry gave their approval for continuing the activities at the three centres as one united regional technological centre for food called: "Centre for Food Development and Innovation". This implies among other things that the consortium is enlarged to comprise 31 members (incl. the three network centres). Hence, the make-up of the consortium has been widened from a focus on knowledge and educational institutions to a much broader representation that, besides the new handful of knowledge and educational institutions, also includes private enterprises, authorities and more organizations.

The task of VIFU is unchanged to be a bridge builder between food sciences and the food trade and industry. VIFU finds this task important because a larger part of the Danish food production takes place in western Jutland, while all knowledge institutions of the sector are placed in the eastern parts of Denmark. To rectify this imbalance and create an innovative environment for food companies placed far away from the knowledge centres, a special effort is demanded. To meet these demands the following aims are set up for the functioning of the centre:[126]

[124] Danish: "Viden flytter ud": http://videnflytterud.dk/ (June 2006)
[125] Danish: "Regionale Teknologicentre"
http://forsk.dk/portal/page/pr04/FIST/FORSIDE/INNOVATIONSPOLITIK/REGIONALE_INITIATIVER/REGIONALE_TEKNOLOGICENTRE (June 2006)
[126] Oxford Research 2004, 56.

- to be an obvious collaborator for producers, enterprises and institutions in and around the food sector, when it comes to development and growth
- to create growth in the food producing enterprises and in the related enterprises that have their starting point in the region
- to create growth through development of networks across trade, research- and educational institutions and through public and private interplay
- to increase the interplay with the higher educations and research units with a view to attracting knowledge and in the long term increase the educational level in Western Denmark
- to increase the interplay with other food development initiatives
- to work for sustainable quality food products

The widened consortium expresses the fact that three knowledge minded networks have merged their activities and in that way have become one accessible knowledge bank for the producers' project ideas. Hence, the original consortium of VIFU (with 11 members) still has a special role to play for VIFU as they make up the board of VIFU. Whereas the role for the members of the consortium in principle is passive – waiting for assignments from VIFU – the role of the board is active as the board members have a great say on the budget, the yearly activity plans and other overall principles of VIFU's work.

The board meets four times a year. The board members take turns in arranging the board meetings. The board always meets for a whole day, where a good part of the day is reserved a presentation of the host for the day. That is, when the board for instance visits the Department for Food Science at the Royal Veterinary and Agricultural University the consortium representative from here is host, and has arranged a guided tour to see the department, and he has seen to that the most relevant of his colleagues make small presentations of themselves and their projects for the consortium. In that way, both the researcher at the department and the members of the consortium meet face to face; all to encourage the participants to use each other's qualifications in the best way.

The executive committee for VIFU should always consist of following five members (the actual representative is mentioned in brackets):

- the initiators of VIFU (Northwest Jutland Education Centre and Holstebro Technical School)
- the chairman (from Rose Poultry A/S)
- the vice chairman (from Danish Technological Institute)
- the director of VIFU

The executive committee meets about 6-8 times a year. They meet when there is a need and always before a board meeting.

The regulations of VIFU can be changed at the annual meeting where all members are admitted, but only A-members have voting right. The A-members are identical with

the consortium. The B-members are enterprises, industrial associations and all other actors that apply for membership in VIFU to benefit from the free participation of VIFU's arrangements and to get admission to the project results collected in VIFU's knowledge bank. The yearly due depends on the number of employees at the applicant's enterprise. Smaller enterprises pay 1000 DKR a year rising to a maximum of about 5000 DKR a year for big enterprises.

The financing of the centre is parted in basic means and project means. Basic means cover the running expenses and are financed by Ringkoebing County and the Ministry of Science, Technology and Innovation. The county gives one million DKR a year, which is enough to cover the running expenses that could not be covered by overhead in the project means and others. The means from the ministry are project oriented and could only fall due when projects are established. All employees are primarily paid by project means.

VIFU has about 10 employees. It is difficult to define the exact number of employees, as the staff is pieced together by[127]:

- 2-3 project managers and the director placed in VIFU
- 3-4 employees that are formally employed by Nupark (the science- and business park in which VIFU is placed) but are used a lot by VIFU (but the opposite is also the case as some of the employees in VIFU have functions in Nupark. The director of VIFU is e.g. also Nupark's administrative manager)
- two project managers at Northwest Jutland Education Centre in Thisted
- two external project managers

This confusing picture is a result of the wide spread project activities of VIFU. In the year 2006 the achieved project means will for the first time exceed the basic means. This has not been an aim for the activity of VIFU but is seemingly welcomed as a positive result of the work by the staff so far. The director of VIFU pinpoints that VIFU never will, and never should attain financial autonomy: a commercialisation of the activities would turn the focus away from the small producers and the oblique projects that is characterising this kind of producers.

VIFU applies for many different project means both on regional, national and international level. An important part of these projects is the local part-financing of the projects. A common condition to get the project means is that VIFU is able to find private financing through enterprises, trade associations, private funds or the like. The enterprises can part-finance a project either by the deliverance of labour or by paying an amount of money. When small enterprises have to part-finance a project they often choose to do it with labour.

[127] As the organization is project based, the picture is changing rapidly. This picture was taken in November 2005.

## *How does the good practice work*

### Activities in the network

The project manager of the small food producers' network – and thereby the network – works with many different kinds of activities:

- newsletter
- network meetings
- organising and/or coordinating the participation on food markets and market days, and coordination and planning the participation on food fairs
- marketing of the producers in the network through different kinds of brochures, folders and the like
- planning and organising different kinds of arrangements and professional training for the producers in the network
- planning and organising study tours for the producers in the network
- contact to Matforsk in Norway
- teaching course in 'entrepreneurship in the food sector' in the regional educational institutions for the youth

*The newsletter*

The newsletter has been with the network all the time. The first edition was published in January 2003 with the primary aim to inform about the meeting in March 2003 that should start up a food network in Western Jutland. Since then the newsletter has been published at least 6 times a year. The newsletter contains of 5-10 A4-pages (often about 8) and the front page story is very often the announcement of the next activity in the network. The last page is reserved an activity calendar containing name, date and place for arrangements, markets, fairs, conferences etc. locally, regionally and nationally. The rest of the newsletter contains general information relevant for the small food producers e.g. new initiatives and developments (regional, national), new legislation (national), general information and new research results (national). The articles in the newsletter are very short but are almost always furnished with possibilities for further information on the subject (contact persons, phone numbers, home page addresses etc.).

It is possible to sign up for the newsletter service for instance on the home page of VIFU or by phoning the project manager, but often the project manager herself finds out new possible receivers for the paper edition of the news letter and just sends it. The newsletter is free and as the project manager only has experienced one producer not wanting the newsletter, it seems to have a general interest amongst the producers.

The project manager is pretty sure that she covers all the region's farm shops with the newsletter, but she has problems finding all direct farm-gate sales. The organic farmers are registered by the state and are easy to find. Butcher's, baker's, cheese shops and greengrocer's are potential receivers of the newsletter, but she does not

send many newsletters to this group as they are normally getting the help and advice they need from their respective trade association.

*Network meetings*

The network meetings and the professional training activities often become fused as the network meetings often are combined with a company visit or a visit by an invited knowledgeable person etc. Once the network visited a well-known dairy in the region, another time a veterinarian from the regional veterinary and food control authorities was invited. She went through rules, permissions, approvals and internal control programs.

*Marketing of the network*

The producers of the network have presented themselves and the network both at national food fairs[128] and in several folders and brochures. The central booklet – that is planned to be published in a new edition every year – is "The taste adventures of Western Jutland". The first edition (2004) contained 27 producers, the next one (2005) 17 and the latest (2006) 26. The number of producers that are presented in the booklet from year to year varies because they have to enrol themselves. The project manager does not call on the producers to enrol. On the other hand, the project manager established a 'quality group', consisting of her and three producers picked by her, with the task to make up a set of criteria for the participation in the booklet. The criteria are still very roughly formulated and have not been published. Until now, they are primarily used by the project manager as a tool / check list when she visits the producers wanting to participate in the booklet. The group met three times to make these roughly formulated criteria but originally the idea was that the work should be continued resulting in the elaboration of a regional labelling system. For the time being this perspective has been laid down in lack of resources.

*Professional training*

At one of the network meetings, the idea was launched to focus on the elaboration of business plans and the like. This idea was realised through a professional training course (called the pilot course) spread over four evenings, containing following themes (the institution that had the responsibility for the teaching is mentioned in brackets)[129]:

- business plan (Ringkoebing County's industry and trade service)
- product development and quality (Danish Technological Institute and the Process department at the Mid-West Academy at Holstebro Technical School)
- marketing (Centre for research on customer relations in the food sector – MAPP)
- sale (Ringkoebing County's industry and trade service)

[128] Food Expo in Herning 2006 had 545 exhibitors and over 34.000 guests. http://www.foodexpo.dk/. (June 2006). The network was also represented at the previous Food Expo in 2004.
[129] Storringgaard 2005, 5-9.

For the participants that were interested the first evening was followed up by a visit of an enterprise consultant from Ringkoebing County's industry and trade service. All sessions started with a joint dinner for all participants. This was highly appreciated. It served as the dividing line between the daily trouble and the theme for the night, and it loosened up the participants to talk with each other.

In the evaluation after the course the participants have noted that they found the chosen themes important and relevant, but they called for less theory and more concrete action oriented learning. Instead of looking at models for marketing it was more relevant for the participants to work with a real newspaper advertisement for their own product or firm. These wishes were considered and the participants were basically very satisfied with the course. Now where the course is finished the producers miss a follow-up, which is directed to producers with some year's of practical experience and producers who have taken the first professional training course.

*Study tours*

The project manager has organised two longer study tours (both in respect of duration and geography) for the network. The first one was a three-day tour to Scania (Sweden) and Bornholm (Denmark), while the second one was a five-day tour to Emilia Romagna (Italy). The two tours had about 20 participants each and the focus was both to get vocational inspiration by others experiences, as well as to get to know each other better in the network and thereby strengthen the network and team spirit. All aims were fulfilled on the tour to Scania/Bornholm, while the tour to Italy was so encumbered with problems that the participants went home angry and disappointed. Not only did the practical part not function, the organisers (a local tourist office) had not understood that the guests were not normal tourists but professionally skilled people with great knowledge on the subject. This implied that the visits were too superficial and did not offer the participants the change of experiences that they had travelled to find. This bad tour has injected a disintegrating tendency in the network as people lost team spirit instead of gaining it.

## Activities in VIFU and facilitated by VIFU

Turning away from the concrete activities in and for the network, VIFU currently initiates projects alone or together with other partners. Many of these projects have the small food producers as pivotal point. These are for instance[130]:

- *Gourmet Denmark*. It is the aim of the project to establish a platform / a network for innovation and growth for rural SME's in the food sector. The project has a regional and a national approach.
- *Regional strategy for farming and food industry* focussing on three fields of interest:
    - Establishment of a development and branding company that can help the small food producers to market and distribute their products nationally and internationally

[130] http://www.vifu.net/Default.asp?ID=198 (June 2006)

    - Environment friendly energy production
    - Grazing of nature areas
- *Innovation and competence building for small-scale food companies*. The project has two aims:
    - to strengthen the producers' competence and create growth in the companies through a row of activities with special weight on academic and vocational training and education
    - to create a network and a connection between the research- and educational institutions and the small scale producers
- *Increased earnings for Danish regional food production*. The aim of the project is to analyze the development possibilities for the small scale producers by focussing on:
    - The use of and need for advisory service (present and future perspective)
    - How to improve the conditions and the general efforts of business promotion for this kind of production
- *Product development and marketing of Danish lamb*. The project uses the qualifications of VIFU's consortium to work very concretely with processing, packing, branding and marketing with the aim to get an agreement between the association of Danish Lamb and a supermarket chain to sell the lamb products.
- *Vitamins for growth*. The project has the aim to establish a 'turn-out service' made up of specialists that can help the small-scale food producers to optimize the knowledge on every part of the production and marketing process.

Several of these projects have the same project manager as the network. The positive version of this is that it gives the project manager possibility to work with different producer groups and in that way support the network with new members and new knowledge. The negative version is that these many projects takes focus and resources from the core project namely the network.

Besides these overall projects, the network of small food producers and VIFU also work directly with the single producer to help with different aspects of the production process and the marketing and sales work. As already mentioned the producers had the possibility to get help with advertising and business plans – also on an individual basis – at the pilot course. Others have had the need to get more technical help to optimize their process or product development and have used consortium members to get this help. This can be illustrated by following examples:

- development of low-fat cheese. A producer in the region had problems producing low fat cheese and contacted VIFU to get help. They found a professor at the Department of Food Science at the Royal Veterinary and Agricultural University in Denmark working with exactly these problems. Now the plan is that a student preparing his/her master thesis, will work closely with the producer to solve the problems in his production.

- contact between an expert in fish farming and fish farmers, among other things to better the taste of the fish meat. The contact was established as the board had one of their meetings at the Department of Food Science at the Royal Veterinary and Agricultural University. On the guided tour one of the researchers attached to the department made a little presentation about his research area to the board, and one of the board members knew that the fish farmers would be interested in hearing about the researcher's results.
- the connection between the conditions under the production and the durability of cold pressed linseed oil. The producer asked for measurements and tests of his oil product and ideas to optimize his production plant that would extend the durability of his oil. A co-operation between Holstebro Technical School and the producer was established to answer his questions.
- development of techniques to extend the durability of a newly developed fish sausage. A co-operation between Holstebro Technical School and the producer was established to find new packaging techniques that could extend the durability of the fish sausage.
- development of new meat cuts of lambs' meat. The organisation Danish Lamb wish to increase sale of Danish Lamb and needed inspiration for new meat cuts to introduce the use of lambs' meat in new dishes. Here the students at the butcher school at Holstebro Technical School helped the organisation with ideas and testing of ideas.

When a producer or a producers' organisation enquire at VIFU with a problem, the normal procedure is that VIFU considers which of the consortium members it would be most relevant to contact with the case. When contacting the chosen consortium member the representative is very often the door opener to his or her institution. That is, VIFU phones the representative and presents the case, after which he/she tries to find the most relevant researcher or the like that could match the problem. It happens that the representative finds out that the best person to solve the case is placed at one of the other knowledge institutions in the consortium. The experience is that the normal competitive status among the higher knowledge institutions is cancelled in the cases where VIFU seeks help in their consortium. This makes cooperation or even this handing over process possible. VIFU never sorts in the inquiries from the producers, but they demand that the producer takes ownership of his/her own inquiry. Without a driving force asking for solutions on a problem, VIFU would not touch the case.

After establishment of the first contact, all further contacts takes place directly between the producer and the researcher. It has turned out that the work gets more precise if the two parts have the possibility to meet directly face to face. Often lack of time implies that the parts have to restrict themselves to phone calls and email, which is not optimal for the working process. Picking out the researcher it is furthermore important to find a person that has the ability to pass on his or her theoretical knowledge to practice. Bad matching gives bad results.

VIFU's status as regional technological centre means that the efforts of the knowledge institutions are paid by project means from the Ministry of Science, Technology and Innovation. It seems to be attractive to work with the VIFU-cases among the

employees at the knowledge institutions and as the payment question is solved most cases end out with a positive result for the producer.

## *Impacts of the network*

When establishing the network for small food producers the initiators caught a trend of food, origin labelling and cooking in east Denmark and brought it to the producers in west Denmark. For the producers it started as a network, but developed to VIFU. As a knowledge centre, VIFU has much more resources to help, advice and guide the producers to a better production process and product development than the network would ever have a chance to do. The establishment of the network and VIFU is also a manifestation from the county of their awakening interest in food, here not seen as the end product from agriculture but as a story from Western Jutland worth telling and as a possibility for entrepreneurs in the region. The county's interest in the food field has been growing in direct ratio to the development of the network.

As many of the network participants had activities that were very interesting from a tourist point of view, the amalgamation of the single producers into one network also brought about a new link from food production to the tourist industry that was not seen in the region before. In practice, the combination of the county's new focus and the new link to the tourist industry has so far resulted in a double page in the regional tourist catalogue about the network paid by the county. The catalogue is printed in five languages and 400.000 copies. Advertising in this catalogue would normally be far too expensive for the single producers.

The placing of the network in VIFU is functioning well because VIFU is a neutral body that is only working with positive elements to help the producers. This could be compared to e.g. the role of the county that should monitor, supervise *and* help the small producers. That is, the image of the county is muddier and a placing directly in the county administration would therefore be more difficult. On the other hand VIFU's administrative and financial link to the county is important because it gives good synergy with all the other parts that are also attached to the county.

The merge of the network into VIFU has made the network very dependent on the existence of VIFU. Primarily because of the extra resources that are available through the employees at VIFU but also because of the many related activities that are inspired by needs detected in the network and/or are used by the producers in the network. The approval of VIFU to become a Centre for Food Development and Innovation and thereby the co-operation with the other knowledge centres on food in Jutland is seen as a very important project by the director of VIFU, but still only as one of many other projects. So should this co-operation fail and the approval from the ministry expire VIFU will continue its activities on all the other running projects.

All the different projects gradually helps VIFU to become even better embedded locally, regionally and nationally. A good marker for the acclaim of the centre's success so far has been the minister's appointment of the director for VIFU to participate in the new regional growth forum (as one of 27 members). This gives the

director of VIFU direct access to the many regional decision-makers placed in this forum and can thereby help VIFU to become even better rooted.

Generally local and regional politicians, authorities, educational institutions and companies support the continuation and further development of VIFU. They are very aware of the problems that VIFU tries to solve; hence the centre has wide support to their activities especially now where VIFU after the first successful years of action have been able to show the need for a regional based knowledge centre on food. For the time being, the weakest link in the chain is the very important contact to the small food producers in the region. Some of them feel exploited, as they have been asked to participate unpaid and use time and goods on courses, markets, food fairs and other arrangements in the long start-up phase of the network and VIFU. They do not have the perception that they got a sufficient feed back e.g. professionally that could justify their effort. What they see are employees at VIFU being much focused on ensuring their own seat through the continuous flow of projects instead of focusing on the needs of the producers. A good contact to the producers is crucial for VIFU as the producers constitute the fundament of the centre's activities. While VIFU has some work to do towards the local and regional producers, the contact to producers and producers' networks nationally is improving continuously.

## *Lessons to be learned – transferability*

There are possible lessons to learn concerning 4 aspects of the good practice: Human resources, relevance and focus, the organisational model and decentralised thinking. The good practice can be summarised as follows:

- The cardinal point for the network and for VIFU is human resources. Decisive factors are timing, persons and matching in terms of having the right employees on the right tasks to meet the users' inquiries in the best way, but also to find themes, projects and activities that catch the interest of the users. A very important person in this regard is the director of VIFU. Her broad and deep understanding of the food sector, her ability to make contacts, create projects and engage people (employees, users, consortium members, external personnel etc.) in activities is decisive for the future prospects for the centre. On the other hand, to give her and the centre the right working conditions it is important that the consortium members are chosen carefully. They have to be fairly agreed on the vision for the centre to be able to join hands. The whole construction only functions because a smaller group of initiators made a pretty good preparatory work grounding the idea locally/regionally but still with strong links to the surrounding world and generally took their time to describe as much as possible in detail before commencing.
- From the producers' side it is important that the centre deals with relevant themes in their educational activities, in their projects and other activities. Far the most important thing is that the employees are focused and involved. To give the employees the opportunity to be focused it is decisive that the centre limits their activities to themes related very narrowly to the situation of the producers. The

producers are very touchy about having project leaders that sit on their chair only to earn their salary not working to better the conditions for the producers. Accordingly, it is very important to have a professed focus to make a difference in the companies, so that the activities do not end up in one-way communication and academic exercises as newsletters and conferences. Open communication and information are key words – also when things go astray.

- The organisational model is interesting, because state means are provisioned to pay for an innovative development processes initiated by and driven by the producers. That is, when a producer turns to VIFU with a problem concerning the produced product or the production line, VIFU will transmit the contact to the most actual knowledge institution in the consortium, where the development process then happens in co-ordination with the producer, but paid by state means. The principle has shown to be functional as the producers get good and manageable solutions while the researchers and developers feel it stimulating to work close to praxis. On top of this, the payment is not project based or has to be applied for every single case but just runs in effortlessly.
- Decentralised thinking – also related to competences and project leadership – is important when working with SME's. The establishment of partnerships and the way these partners work together has to be handled very carefully. Bigger companies are to a higher degree able to travel to find project partners, supplementary training, experts etc. while the smaller ones have problems to prioritise activities like this placed outside the region. This further pinpoints the importance of placing VIFU where the small producers are situated namely in the outer rural areas of Denmark.

### 3.3.5 Learning from the Danish food development case in Lofoten, Norway

#### *Context*

The region of Lofoten and the case of tourism/food development is in the PLIP-project used and presented as a good practice in Finland and in Iceland. Networking and organization of co-operation is characterising the Lofoten tourism case and the Danish case as well. If there is one aspect that is lacking in the Lofoten tourism development case, it is the presence of local/regional institutions for knowledge production. In Lofoten people talk about the lack of education within food and tourism, and it seems evident that Lofoten is lacking a targeted unit around which knowledge and competence can be developed and spread. This latter point about the need for a knowledge centre may have been the main explanation for wanting to "transfer" the Danish case, or exploring whether and how Lofoten can learn from the Danish case.

There is a similarity between the Danish and the Norwegian cases of tourism and food in terms of networking, but difference in terms of education and a knowledge centre type of institution. In terms of industry structure and demography the regions are not that different, the volume of production and demand is however much bigger, but these aspects should be of less relevance for the eventual transferability of the case. The ability of Lofoten to pick up inspiration and good ideas from the Danish case would depend on other aspects, such as individual openness and social competence and network in Lofoten, participants' ability to abstract, peoples' creativity in Lofoten, and so on.

## *Workshop*

The workshop in Lofoten was organized 15 May 2006 in Leknes, which is the centre of the Vestvågøy municipality. Vågan municipality is bigger and is dominated by Svolvær, which is the "capital" of Lofoten. Vestvågøy is the biggest agriculture municipality in Nordland County. Leknes is the geographical centre, it has its airport, many roads meet there and "many" people live there. Leknes is also the industrial centre, in terms of agriculture, other industrial activity, public administration and services, and so on.

A draft of the Danish good practice was distributed to the participants some days before the meeting. The agenda of the workshop was made as simple as possible. Introduction with presentations of participants took almost an hour, but was valuable because you get to know people and their context of work and their interests.

The workshop was organized in the Lofoten industry park (Næringshage), which in fact is an important institution when it comes to industrial development and innovation in Lofoten. A local consultant, who is also a profiled local politician, was the key person in the organization of the workshop, in the sense that he suggested persons to invite, he helped organize meeting facilities, and he actually used his experience and acquaintance with the participants to push them a little to express their opinions.

There were 6 participants in addition to the two researchers present in the workshop. The 6 participants represent the tourism/food development processes in Lofoten reasonably good. There are several processes of tourism/food development going on in Lofoten, on different arenas, hence the possibility to have all key persons in the workshop was low. It is therefore always possible to say that key persons are missing.

The following persons participated in the workshop: There was one representative from the regional education unit at high school level. The second participant is employed in the municipality and is working with regional development issues. The third participant represents the destination company Destination Lofoten. The fourth participant represents Forsøksringen in Lofoten, a company/organization that gives advisory help and support about agricultural products, food products, agricultural techniques and operations. The fifth participant was the director of Lofoten Industry park (Næringshage), which is the regional arena for efforts that create jobs and firms through co-localisation and networking. The sixth participant is the mentioned local

expert, politician and consultant. He is clearly a node and resource for the region by means of his knowledge and competence, but not the least by his engagement and social/political activity. His firm is member of the Industry park.

The presentation of the Danish network was very well done and the presentation was very well received. There were several areas of interest. On the one hand the presentation and the reactions created aggregated inspiration and associations in terms of ideas for what can be done. On the other hand, there were questions about details of the Danish network and efforts and activities in it: about organization of collaboration, participation, dimension of activity/meetings, role, strategy, management, participation payment or not. One of the more concrete suggestions for learning and copying was the brochure called West Jutland quality products. Other more aggregated issues were addressed, such as the limitations of the network and knowledge centre in terms of tasks and areas of activity. Who is for example responsible for branding and marketing if the network is not taking care of it? Broader questions also included issues such as conditions for networking made by state, municipality and public mechanisms and culture.

The presentation was done in an open-minded way, in the sense that the presenter was aware and conscious about the idea of transfer, learning and inspiration. The participants were open-minded as well. They were able to abstract the material and rethink it into their own context. But I guess the challenge was not that big because the culture of networking in Lofoten is strong. People are generally quite open-minded. They are used to be gathered and think about what is good for them all. For example, the participants were able to discuss concretely how Lofoten can learn from the case, by motivating firms and individuals to join. A concrete positive effect was addressed by our helping consultant. He was of the opinion that Norwegian culture implies that it is easier to establish new things, for example a knowledge centre, if it is possible to refer to a success in another region, and even better if it is in another, in particular in a Scandinavian country. If they did it, we can do it as well, is the thought.

The presentation was very interesting to the participants, made them think about what they have and what they have not.

West-Jutland has its own brochure that focus on delicacies that the region can offer. This type of brochure was brought forward as a good idea in the discussion concerning transferability/learning. Moreover the organization of the co-operation and the way that news and events were communicated in the network, were two subjects that were discussed as inspiring.

In terms of organization it was expressed interest among the workshop participants about the fact that the Danish case implies a kind of a consortium model, in which the participants of the consortium do not contribute with finances to the operation of VIFU. However they receive payment in the case they contribute with work and knowledge/competence/experience into events or processes of help or contribution to the participants of the consortium. There are examples of networks in Lofoten, for example the Destination Lofoten case, and it is organized with paying participants. It is a solution that has given mixed experiences. Some firms may feel that they receive

something (marketing effort for example) but many firms find it not so meaningful to pay for participation without being able to see any concrete results from the effort. In light of such experience the idea to let participants pay only insofar they contribute, is a good idea, according to our local expert and consultant, who is thinking about how to suggest that a future National Centre of Expertise in Lofoten should be organised.

The workshop participants had not thought about the possibility to have non-paying members of a network. The Danish network consortium case engages firms by including them in the periodic newsletter. The newsletter always addresses an up-coming event that could be of interest. However it is only so that small food producers enjoy membership without paying in an introductory phase. The next phase, which is to start soon, the organisers are looking for a kind of membership payment. So the network is starter by offering a free newsletter to the members, but the next phase then implies payment.

To the analysis of transfer and learning, we are looking at the case where the Lofoten party sees the possibility to learn from the Danish case even when there are only slightly different ways of organizing the networks. It can also be that it is these relatively minor differences between the networks that makes it worth while to try to transfer experience and inspiration.

The discussion also turned into mentioning other regions in Denmark, where other solutions were chosen. In Bornholm they have a food products ambassador, a Danish celebrity. So while Bornholm started with the marketing part, lacking the knowledge part, it is the opposite with West-Jutland. They started with knowledge. Lofoten is therefore more like Bornholm. Lofoten is lacking a formalized food/tourism-effort. There are things in the pipeline, but for example not as part of the tourism development process. One has to talk together before one can cooperate. But even though it looks like cooperation came at the same time as networking in Denmark, it might be wrong. Participants assessed the case as positive, giving inspiration and consciousness about the fact that development processes are established by many initiatives, untraditional contacts, a lot is going on, fearless people drive the development, solve problems with new methods. There is a lot going on in Lofoten, in particular in product related networks, but the region lacks an innovation system, and regional development in the sense that the development integrates industries and branches.

One aspect of learning that was addressed was the fact that a Lofoten based application to become a National Centre of Expertise (NCE), which basically is funding to operate a cluster of the food and tourism industries, need an international component. The Danish case could therefore be a region with which it is possible to benchmark Lofoten.

The participants had a workshop summary that focused on challenges and the need for quality in all joints of the chain, distribution and sales channels, education, competence building, recruitment and entrepreneurship. Lack of locally based

competence is seen as a challenge, problem and a barrier to regional development within tourism and food.

The Danish good practice was about a knowledge centre, which in fact is lacking in Lofoten. This and most other issues addressed were agreed upon as challenges by the participants. Generally the Danish case and the PLIP project as a whole was well received by the participants. They were interested during the meeting and some of them even after the meeting. Contacts were made but I do not know of any concrete plans for follow up.

### *Evaluation*

Is it possible to use the elements of the good practice in Lofoten? The answer is yes, both in concrete terms (brochure), and in terms of ways of organizing the network (the consortium model without paying participants). The broader inspiration that this process gives, containing a presentation and a discussion, is also important and may be of concrete help. It may give momentum to processes that are already started, Lofoten is about to increase the effort of integrating industrial development of tourism and food. But it is of course not possible to say much about that kind of results (inspiration, momentum) at this point of time. There is not need for very much support. Regional actors have the ability to take this further.

As to whether there is need for new policies, one could argue that the effort within tourism/food could gain momentum and attention by being target area in local/regional public policy. The director of the Industry park, which is in the process of being evaluated, indicated that the industry park would like to adjust its target areas and activities in the direction of serving what is really going on in Lofoten right now, and this of course includes the efforts within tourism and food.

## 3.3.6 Networking and knowledge transfer between large and small firms – IUC Dalarna, Sweden

### *IUC Dalarna – the Swedish good practice case*

#### IUC in Sweden – a short exposé

The first IUC companies were started in 1997. At that time the government decided to try a new concept to stimulate growth, new enterprises and strengthened competitiveness of small and middle size enterprises.[131] The ministry of Industry, Employment and Communications signed a deal with the IUC companies of a network to carry out the UPA-commission (Finding, Product Development and Product Pre-study Spin-offs) at a national level. The commission is aimed at identifying, supporting and intensifying product development and spin-offs especially in small and medium size enterprises within industrial sectors. The development is to

[131] IUC is an abbreviation of *Industriellt Utvecklingsentrum* (Industrial Development Centre).

happen in close cooperation with large enterprises, higher educational institutes and research institutes and other competent centres in regions.[132]

Today IUC is present in 20 places across Sweden and every centre cooperates in a national network. Each IUC has its own niche, which means that various competences are supplied. The services offered for firms are to support product innovations, business management and competence development. Thus the concept involves partly organising through separate regional IUC companies and cooperation in the national IUC network. The different IUC companies vary in their volume and nature.[133]

### IUC Dalarna

The industrial development centre IUC Dalarna was started in 1997 as one of the first IUCs in Sweden. It is owned by two of Dalarna's large steel corporations, by some municipalities, labour unions and several SMEs in the region.

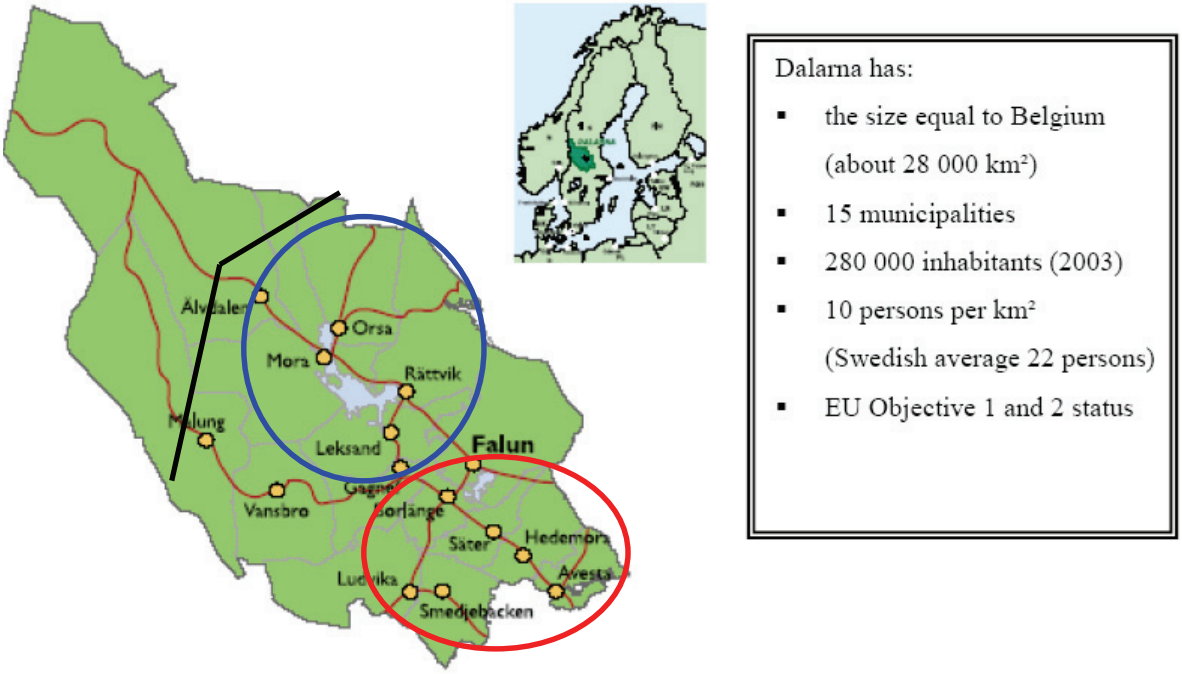
IUC Dalarna is a private limited company and the major shareholders are local and regional companies. Through their services IUC helps companies to initiate and develop their businesses by working jointly with other companies and interested parties. IUC Dalarna is specialised in the raw-material manufacturing sectors – predominantly in wood, steel and metal industries. The focus is on industrial and regional growth through strategic development of: in house expertise, markets, products, processes and technology. IUC can offer key skills in the following areas:

- Product development
- Financial solutions
- Company growth
- Staff and management development
- Resource management
- Enhancing business competence
- Liaison between key stakeholders
- Sales and Marketing

IUC Dalarna offers a meeting point for regional and industrial development where entrepreneurs, business sponsors, researchers as well as experienced public and private sector managers are able to meet and work together. In doing they have a real opportunity to become a viable business in the region.[134]

[132] IUC Affärsplan 2006, www.iucdalarna.se
[133] IUC Affärsplan 2006, www.iucdalarna.se
[134] See Innovation Systems and the Periphery 2005, 374.

**Figure 19**. Dalarna and its three different economic areas (Source: Dalarna County 2002).




## *Context*

### Regional economic structure

IUC Dalarna operates in the whole Dalarna region even if its main office being located in Borlänge in the relatively densely populated part of the county (see Figure 19). This chapter will give a description of the local and regional context, social and economic conditions, where the chosen good practice operates.

Dalarna is – as many of the Swedish counties that since long time have been dominated by raw-material based industries - dual in character. In the southern part (the red circle) – Bergslagen, the Swedish rust belt – big companies based on especially mining, iron and steel but even on forest raw material have dominated the production but also the local entrepreneurial culture. In the surrounding of Lake Siljan (the blue circle) the production and business structure is quite different. Here it is small and medium-sized enterprises that have dominated and the tourist sector is large – it is the 4th biggest tourist region in Sweden after the three metropolitan urban regions. In the northern sparely populated part of the county the business structure is dominated by the seasonally vulnerable tourist sector especially then in the western part along the mountain regions (above and to the left of the black line).

**Figure 20.** Business sectors (%) in Dalarna and Sweden 2004 (Source: Region Dalarna, http://www.regiondalarna.se).

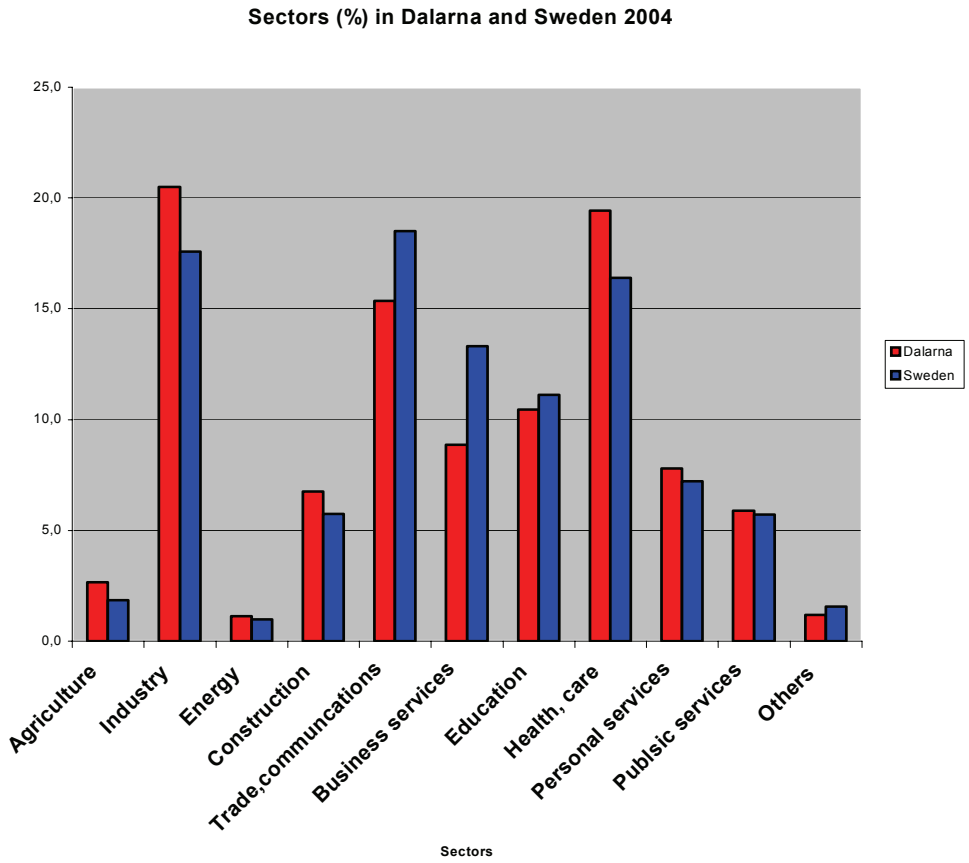



**Table 6.** Sector development 1975-2004 in Dalarna. (Source: Region Dalarna, http://www.regiondalarna.se).

| **Sector** | **1975** | **2004** | **Change %** |
|---|---|---|---|
| Agriculture | 6960 | 3300 | -52,6 |
| Industry | 43610 | 25500 | -41,5 |
| Energy | 700 | 1410 | 101,4 |
| Construction | 10270 | 8420 | -18,0 |
| Trade, communications | 19990 | 19100 | -4,5 |
| Business services | 3910 | 11040 | 182,4 |
| Education | 9650 | 12990 | 34,6 |
| Health, care | 13060 | 24160 | 85,0 |
| Personal services | 4700 | 9690 | 106,2 |
| Public services | 5930 | 7310 | 23,3 |
| Others | 3830 | 1460 | -61,9 |

Figure 20 and Table 6 tell not the whole story as the industrial structure of the country is difficult to analyse on aggregate level. As mentioned above, enterprises are relatively small in the northern and western parts of the county, while larger companies dominate in central and southern parts. In the north and west, there are many small forest based companies, furniture and wood processing as well as building industry. Metal firms are more frequent in Borlänge and Falun – that also are the capital with a large public service sector - in Ludvika and southern Dalarna. Avesta Sheffield, Domnarvet, Kvarnsveden, Stora Koppaberg (today Stora Enso) and Asea are large companies that are – or have been – related to the industrial development regionally as well as nationally. In these parts there is some food industry and machinery. The industrial sector is important in Dalarna and according to labour market outlook 2004 it is considered as a ”key industry”. It employs 25 500 people.[135] This matches a share of 20,5 percent of total employment in Dalarna – the correspondent figure concerning Sweden is lower, 17,6 percent. Dalarna is thus still an industrial region with a relatively high share in the metal and engineering industries.

Traditional branches thus, dominate the industrial structure in Dalarna. The largest branches are the traditional raw-material oriented industries – the steel industry has an employment share of 3,7 percent, the metal industry 2,8 percent, the el-optics industry 2,7 percent, the wood industry and the paper mills have both a share of 2, 0 percent each and engineering industry 1,8 percent – all over the corresponding figures for Sweden.[136] All of these industries have experienced a deindustrialisation process like the one characterised the Swedish economy.

Dalarna’s central labour market area consists of important regional centres such as Borlänge, Falun and Lundvika. Borlänge and Falun are considered as a common regional centre for the county and is also the largest local labour market in the county[137]. Together the municipalities have about 103 000 inhabitants, from which about 55092 in Falun and 46943 in Borlänge.[138] The population in the region has increased with 20 % after 1960, which means also concentration of the county’s population in Borlänge and Falun.[139] A regional committee of Falun-Borlänge was established in 1972.

The local industry companies, often former service companies for large enterprises, produce in general not very specialised products implying rather “heavy” product profile in the region. Most of the enterprises operate in the local or regional markets. There are 15-20 enterprises that are international and these are tried to be used as “drivers” for the smaller enterprises. In general it is considered difficult to find early stage financing for the smaller enterprises.

The industrial sector in Dalarna is very dependent of the economic fluctuations in Sweden as well as at the world market. Currently, the SMEs in Dalarna experience

[135] Region Dalarna 2006, www.regiondalarna.se/sysselsättning
[136] Region Dalarna 2006, www.regiondalarna.se/sysselsättning
[137] Based on data from Nutek & Statistics Sweden. See also Adolphsson & Johansson & Van Well 2006.
[138] Statistics Sweden, 2005, www.scb.se
[139] Region Dalarna, 2006, ww.regiondalarna.se/befolkning

strong business cycle. Labour shortage is the most important obstacle for growth in the SMEs. In spite of a general decrease in employment in the sector, there is a need for replacement of retiring labour. The mean age for industrial workers is second highest in Dalarna among all Swedish counties and this is partly a consequence of the lop-sided age structure in the county, partly on the fact that many of the enterprises are working in relatively mature branches. Among enterprises with less than 1000 employers, the demand for labour is expected to grow.[140]

In recent years, labour shortage has been obvious for welding operator, machinery mechanics, workshop mechanics, metal pressing, electricity and telecom technicians. As enterprises cannot recruit staff there is generally a drop in production. Manufacturing industry programmes in secondary schools have in recent years had less applicants and the program is threatened by close down. However, there are positive local efforts leading to more students. One example is wood education in Falun, which now is a part of the Hand Craft Programme called ”Wood and Design”.[141]

Personal relations are considered to have much influenced on the economic life being decisive in financial issues. In Dalarna people it has traditionally been difficult to get people together and cooperate. However, during the last years there have been developed such projects as Rostfritt and Nätverk Tunnplåt, Nätverk Hydraulik that have improved the cooperation in the region. In general it is still difficult to get the companies in wood industrial sector together in Dalarna. There are many small enterprises in the sector that are not real integrated in a well-functioning network even though e.g. IUC Dalarna has also made some attempts to improve this precarious situation. In a situation like this IUC Dalarna has a great mission to get rid of the shortage of high-skilled workers in the region and act as a coordinating link between supply and demand of labour.[142]

## Local supporting organisations

There are several local and regional supporting organisations that work importantly in the context of the good practice. The County Administration, region Dalarna and ALMI are important local supporters of enterprises. Dalarna has also a regional innovation centre, Innovation Dalarna. Teknikdalen, the technology valley in Dalarna, is considered a good environment for enterprises to develop new products and participate new projects. In addition there exists one higher educational institute, University College Dalarna.

*ALMI*

The ALMI-group was founded in 1994 and consists of a parent company, owned by the government, and 21 regional ALMI offices. ALMI's mission is to stimulate growth and development for small and medium-sized companies and innovators offering financing and business development consultation. All the regional ALMI companies are owned by the ALMI parent company (51%) and by the county council

[140] Region Dalarna, 2003, ww.regiondalarna.se
[141] Region Dalarna, 2003, ww.regiondalarna.se
[142] Based on the interviews.

in which they are located (49%). ALMI companies are particularly familiar with local conditions and each one plans its activities based on variations in the local business structure. This ties ALMI's organisation strongly to the regional level while providing full national coverage. ALMI's goal is that more innovators reach the market, to stimulate new businesses and to promote the development of competitive companies – and to thereby create growth and renewal in Swedish industry and commerce. The services are oriented towards innovators, new entrepreneurs, as well as small and medium sized companies.[143] The ALMI group in Dalarna has currently about 11 employees.

*Innovation Dalarna*

Innovation Dalarna is a regional innovation centre associated with the national initiative Innovation Sweden. The services provided are counselling, networking and limited seed financing to innovators across the county. Innovation Dalarna can, partly, thus be seen as a complement to IUC as they also have a seed-financing role. Funding is provided by the County Board and EU structural funds. IUC is, as mentioned earlier, not a seed-financing organisation – instead it is a regional actor with the aim to stimulate contacts between innovative firms and give them a helping hand in the start-up phase.[144]

In co-operation with national, regional and local actors and (public) financial agents, the regional innovation centres evaluate new product ideas. The trademark for these centres is a common logotype and similar name. This trademark authorizes the activities and certifies the innovation counselling and the right to approve grants from the funds of Innovationscentrum Foundation, which are directed to each county.[145]

*Teknikdalen (Technology Valley)*

IUC is located in Teknikdalen and has connection with them in their daily work. Teknikdalen was initiated in 1988 and is managed by a foundation with the corporations STORA Enso and SSAB, the National Board for Road Administration, a bank and the Municipality of Borlänge as founders.[146] Dalarna University College and the National Board for Rail Administration are also represented in the board. During the 1990s, a large number of IT firms have moved to Teknikdalen. Today, the site also includes Transportcentrum (Transport centre), parts of the University College and research institutes as VTI (Road Research Institute) as well as IUC Dalarna.[147]

Teknikdalen is also a very good environment for enterprises to develop new products and participate new projects. There is a strong and diversified manufacturing industry with extreme strong material enterprise in the region and closely outside it e.g. Sandvik, Avesta and Fagersta.

[143] www.almi.se
[144] Innovation Systems and the Periphery 2005 and the interviews.
[145] Innovation Systems and the Periphery 2005.
[146] www.teknikdalen.se
[147] Innovation Systems and the Periphery 2005.

*Högskolan i Dalarna (Dalarna University College)*

Dalarna University College has – as other universities in Sweden - three major tasks, namely to provide courses and study programmes, to pursue research in several disciplines and multidisciplinary fields, and finally the "third" task given by the state, namely to co-operate with the surrounding society in education and research.[148] One of the problems concerning research at the university colleges in Sweden is that they have no research funds of their own. Instead, they are dependent of external resources from research councils, foundations, private enterprises and public authorities and institutions. This is also valid concerning Dalarna University College.

IUC is also located ideally in the university college's localities causing that it has close contacts with the college and the branch organisations that are located there e.g. IM (*Institutet för Metallforskning*) and JK (*Jernkontoret*). The wood division is localised in Carpenberg to get close education there.

*Region Dalarna/County Administrative Board*

Region Dalarna is a federation of municipalities built from county's municipalities and the county council. Region Dalarna is together with the County Administrative Board one of the central actors in coordinating topics concerning regional development. The work encompasses e.g. regional development planning, regional growth programme, project support for regional development, infrastructure questions and strategic work. The EU objective 1 and 2 secretariat is Region Dalarna's responsibility.[149]

*VINNVÄXT*

The VINNOVA's VINNVÄXT programme (regional growth through dynamic innovation systems), initiated in 2002, was the first one with a regional perspective. VINNVÄXT is different from earlier initiatives in Sweden with its long-term perspective, its process support and the fact that the programme selection procedure is competitive. The programme's biggest achievement is the concentration of efforts around a strategic idea in the regions.[150]

During the years that VINNVÄXT has existed, a number of processes for developing dynamic innovation systems have been initiated. With regard to Dalarna, Triple Steelix (System for innovation of advanced steel products and applications) is worth to mention. In this project through wide-ranging co-operation within different applications and customer segments for advanced steel products, the R&D work can be revived and new networks established. "By bringing out new advanced technical solutions, the value of the steel can be further increased and the degree of refinement can be raised, thus creating new business".[151]

[148] Innovation Systems and the Periphery 2005.
[149] www.regiondalarna.se
[150] www.vinnova.se
[151] www.vinnova.se

## *How the good practice works*

According to IUC's employees the characteristic for IUC Dalarna is to work from a bottom-up perspective and to have a very practical view on the development. IUC Dalarna gets usually involved in a project in the early phases, as the risk then is high. Usually there is some kind of a "crisis" in the background when IUC gets involved.

When IUC finds a project idea, it is almost always presented to county administration and ALMI, the projects being prepared together. Earlier when IUC Dalarna had also own money to finance the ideas the projects were not prepared together. IUC and the county administration have regular meetings about once in a month.

Today IUC Dalarna has no financing activities. The organisation would surely become even better if it continuously had more employees and an organisation and capital to help with financing enterprises at early stage but this is not the case today.[152] Product and techniques development activities are more oriented towards business and marketing development. IUC Dalarna is considered as an important "third" component in the regional economic life with ALMI and the County administration as it knows the actors and has the practical knowledge concerning their activities. These different niches are considered complementing each other. The regional cooperation between IUC, County Administrative Board, ALMI and Region Dalarna has led e.g. to a new start of Innovation Dalarna that now is financed by the county government. The three actors that before all were contacted by the same innovators separately established this cooperation.

During the last years the cooperation especially between IUC Dalarna, ALMI and the Country Administrative Board has become important. There has occurred new kind of cooperation between "the enterprises friends", the county administration, IUC and ALMI that meet now regularly and discuss issues concerning enterprises. This discussion concerns partly innovations since ALMI has a programme for small innovations. IUC is the party that knows the enterprises and their activities and ideas. The county administration has also much contact with the enterprises but IUC has the more practical knowledge concerning them. IUC works with enterprise activities, technical solutions, product development, patents while ALMI works with financing. Earlier ALMI worked more with the same type of activities as IUC but now it has much less activities. It seems that IUC has filled that role since the reduction of ALMI's activities and personal (from 30 to 10 employees).

Most of the employees have a practical background and they have experience of working within the industry themselves. Starting point for the work is enterprises' own needs. Instead of organising seminar or trainings more usual is that the projects initiating from small enterprises' own needs are started.

Networking is a central part of the company's support. By using its knowledge and relations to financers it helps small enterprises to find the right combination of different financing sources and cooperation partners. As IUC Dalarna is well aware of the work of the local and regional actors, the consults know how to contact and approach them. This is considered as one of the most important issues from

[152] Interview with Björn Fredriksson.

companies' point of view. IUC's activities include also organising common fairs exhibitions where enterprises and people can meet and create new contacts and networks.

IUC Dalarna offers services in a wide area and with flexibility. This includes also such practical things as following a customer to a bank or county government and filling application forms. IUC Dalarna's idea is to help the customers in a long-term – not only in the early financing phase.

Until recently IUC Dalarna had a contract with the Ministry of Industry, Employment and Communications giving a possibility to allocate some venture capital at a very early development stage. That is something unique since it was at the same time a free private limited company. The venture capital was not a financial aid but a royalty agreement. The contract regulated how the risk capital is used: it is allocated only for new projects and at least one third of the owners have to be small or middle sized companies, no more than one third large enterprises and no more than one third other organisations such as municipalities.

IUC is seen as a link between public and private and according to interviewees there are only few other organisations taking that position. IUC goes into enterprises, works from bottom-up perspective and involves the enterprises to the larger system. Today almost all the financing is canalised through research allocations. In this case IUC can help by formulating enterprises' problem to research contributions.

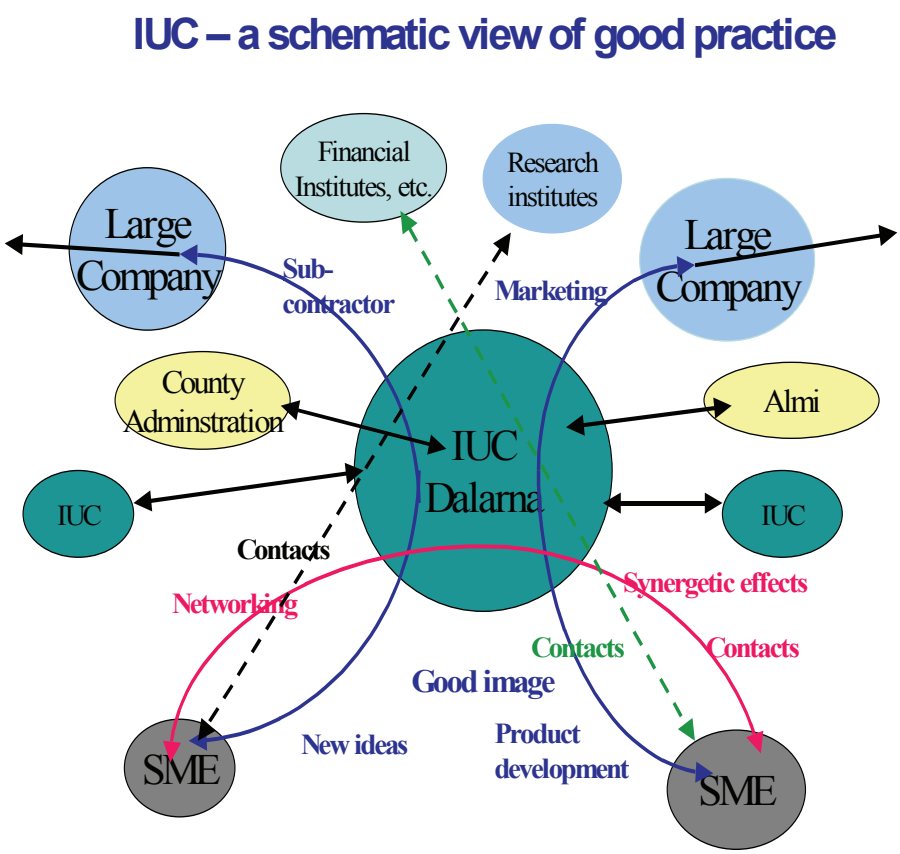
IUC Dalarna has various cooperation partners locally, nationally and internationally:

- Both formal and informal cooperation with universities. For example with Högskolan Dalarna, University of Gävle, Royal Institute of Technology, Luleå Technical University.
- Public and private non-profit research institutes: Spin-off firms ("avknoppningsföretag") from Luleå Technical University.
- Commercial R&D companies: Prinox (Autocompus) in Avesta and Mariestad.
- Public national authorities: Nutek, Vinnova.
- Development companies: Almi, other IUC-corporations, local developing company, Inland Wood (Orsa), Woodex, Stiftelsen Skog & Trä. (Cooperation locally, regionally and nationally).
- Consulting companies: In the first place enterprises in Dalarna.
- Branch organisations and professional networks: National such as TMF ("Trä- och möbelindustriförbundet") and "Teknikföretagen".
- Interest associations: Informal with regional developing company owned by interest alliances, "Svenskt Näringsliv", enterprises.

The structure and organisation of good practice in Dalarna, including the central actors in the county are shown in Figure 21. It ought to be kept in mind when interpreting the figure from an IUC point of view that the purpose concerning IUC are threefold – the first as a contributor in the networking process in general, the second as a link between SMEs and big companies and the third to contribute to the local and

regional development in a wider scale as a consequence of the implicit links to the national and international market as a consequence of their connecting activities.

**Figure 21**. A schematic view of "Good Practice Dalarna" with IUC in focus.




## *Impacts of good practice*

The following part is based on seven interviews with officials and entrepreneurs. The opinion seems to be that it has been easy to work with IUC due to – among other things - short decision times and that it has been easy to make decisions. The personal working at IUC is high-qualified, flexible and anti-bureaucratic – things that seems to be preconditions for effective organisations that are working in the field of networking and contact creating activities. Despite IUC's limited organisation, they are involved in many different activities - they usually take part in e.g. conferences and fairs to keep and develop their contacts and networks.

Important working methods have included networking consisting of the whole steel and wood region and even outside Dalarna – branches of utmost importance for county and its development. The only "problem" has been the lack of long-term perspective since the chiefs have been changed many times and the short-term financing decisions.

IUC has lobbied the Ministry of Industry (*Näringsdepartementet*) to make contributions to enterprises at different stages. In addition it has been good at getting own projects on the side of the different type of enterprise constellations. IUC has initiated projects and discussed together with the country administration how much money is put into those projects. The enterprises in the region seem, however, earlier to have been a little "self-righteous" but during the last years there seems to have been changed attitudes that also have improved their situation.

Financing and increased global competition seem to be the biggest problems for enterprises to operate in Dalarna. "Innovationsbron" is meant for supporting product development and to strengthen the possibilities for enterprises. One problem is, however, that many small and medium-size companies do not anymore have their owner in Dalarna. This means that these enterprises in Dalarna cannot anymore operate as independently as before or make their own decisions.

*Financing seems also to be a common problem for enterprises within the wood and metal industries in order to operate in Dalarna and finding venture capital is very difficult. The state funds are centralised and a large part of this funding should be allocated at regional level. For the new entrepreneurs, the division between ALMI and IUC is difficult to understand. One suggestion is that it would be better to put these organisations together and let IUC become also responsible for the financing part.*[153]

In general it is difficult to make the wood industry to cooperate in Dalarna. There are many small enterprises in the sector and there is still no real structure for those enterprises even though IUC Dalarna has tried to organise more of cooperation. Important results of IUC encompasses, also many wood projects and contribution to build a wood industry cluster.

IUC is relative known in Dalarna but there still are many enterprises that do not know much about it or are unaware about existing funds for the enterprises. IUC is targeted to what there is in Dalarna: wood industry and metal industry. They look at what is important in Dalarna and they know the people.

It seems also to be a common opinion that it is of utmost importance that IUC works with product development and not with financing because as there are other organisations with focus on the latter. When there are different niches, they complement each other and it works well. Complementary and networking seems to be keywords for the development of the enterprises in Dalarna.

### IUC projects – some cases

*Rostfritt*

The aim of the project Rostfritt, finalised in 2003, was to support small enterprises' competence development process so that they can better use the possibilities of rust-free material. Importantly small enterprises were to create contacts with AvestaPolarits' R&D division. The overall aim of the project was to increase use and knowledge of rust-free material.

[153] Interview with Björn Frediksson.

The project was to develop AvestaPolarits R&D division so that it would become more available for small and medium size enterprises and in general improve technical skills in the region's enterprises. The project was started since there was much knowledge in the region concerning rust-free material but only few enterprises having significant processing of rust-free products.[154]

Participating enterprises could receive help in technical analysis, product and marketing development within the project. The project was financed by IUC Dalarna, AvestaPolarit, Avesta municipality, Hedemora municipality, Länsstyrelsen Dalarna, Stiftelsen Svensk Industridesign and EU's objective 2. The project was finished in the end of year 2003 resulting in several development projects and some new enterprises.[155]

The Rostfritt project was special in its way to get closely related to research and development divisions and the personal in Avesta Sheffield taking them to concrete projects in small enterprises. Usually this kind of cooperation does not exist – small enterprises seldom get an idea to get help from research and development divisions that are considered rather "far-off" to their practical work.

An important result of the project is the built contacts between the small enterprises and the large companies and their research and development divisions. This is also considered as a significant breakthrough of the project. Usually the large companies do not have much direct contact with their customers but thus they have also had more contact with their end producers and got some input – thus the both sides have got benefits of the project.

When Rostfritt was finished, NUTEK started the VINNVÄXT programme (innovation systems). IUC Dalarna made an application in cooperation with Järnkontoret, the branch organisation for metal branch and thus started the work in the whole Berglags region. The Rotsfritt's ways of working were noticed successful and the project was continued as this larger *"Triple Steelix"* project. The project is Rotsfritt's follow-up but in the new project SSAB and Sandvik are also included. Järnkontoret owns the project instead of IUC. Even though Järnkontoret owns the project now, IUC's project leader works as before being now a consult.

Triple Steelix includes eight municipalities: Fagersta, Avesta, Hedemora, Smedjebacken, Vansbro, Borlänge, Huforsta, Sandviken and Gävleborg. Three counties: Gävleborg, Västmanslän and Dalarna. Region Dalarna and VINNOVA are financing the project and eight large enterprises such as SSAB, Sandvik, Outokumpu as well. The project has received a ten years financing decision.

All the projects within Rostfritt have not been very successful. However, according to the project leader it is considered more important to awake development thinking in the enterprises. In this sense the project is also seen as a success. The small enterprises are good in making their own thing but they are not any "businessmen" –they are practical people.

[154] www.iucdalarna.se
[155] www.iucdalarna.se

*Sittab*

Sittab is a 15 years old enterprise with 2 owners and 15 employees. The focus of production is driver's seats – not any special model – instead they are user driven concerning construction and design.

Sittab started with a project together with IUC with a seat that should be automatic and IUC supported with economic resources as well as personal ones as the project was a little too big in the starting up phase. IUC's most important contributions were probably within with the networking activities – contacts, new actors, formalities, etc. – and the project should perhaps has stopped up already in the up-start phase without the contribution from IUC. This is a good example of good practice where shortage of money is one problem but ideas to be exploited are the prime drivers. Sittab is located in Gustafs – a small village outside Borlänge – and this means also that the costs are lower compared to more densely populated areas in cities or metropolitan areas.

*Swed-logs*

Swed-logs is an enterprise that started 1977 with producing timber houses. The largest market is the Stockholm region but even USA, Germany and Norway are markets for log-houses. IUC supported Swed-logs with venture capital in the beginning and was also supporting in finding new financial resources. IUC is, however, not a venture capital enterprise and this resulted also in a situation where IUC changed its policy from supporting firms with capital to work with the networking field.

*Wood Fiber Composite "Träfiberkomposit"*

Mixing wood and modern environmental friendly thermo plastics is a fairly new technology. Products based on this technology are increasingly substituting several other plastic products. There is an increasing market for windows and doors in Europe. The only wood fibre factory in Sweden is located in Orsa, Dalarna.

The purpose of the project is to develop the unique competence in the region and to strengthen the comparative advantage relatively to other countries. The aim is a cluster based on cooperation between the businesses, R&D-centres and the university. The target group consists of plastic industry, wood, automobile, furniture and food industry, R&D-centres and the university.[156]

*"Träindustri och Högskolan"*

Since more developed wood industries in Dalarna and Gävleborg are small they cannot practice own research and development. To avoid stagnation and difficulties the regions have to learn use better research results and experiences from higher education institutes and universities to promote positive development in the enterprises. Thus there was started a project as preparatory work to create a *"Kunskapsnätverk-Trä"* in the region. The knowledge network is supposed to function as a central actor between the regions' two higher educational institutes and region's more developed wood industry and to create cooperation between the partners.

[156] Innovation Systems and the Periphery 2005.

The aim of the project is to make an inventory and map the needs of cooperation between the more developed wood industry, the public sector and the higher educational institutes in Dalarna and Gävleborg; investigate how the higher educational institutes competence can be used in wood industry in an effective way; make an operational parameter for Dalarna and Gävleborg with a suggestion for cooperation between higher educational institutes and enterprises to create a system in which economic life and higher educational institutes can meet and interact; prepare the enterprises in the region to absorb the unique competences that the students in Design and wood techniques education have at the higher educational institute in Gävle.

The aim of the project is to find adequate ways to create a regional *"Kunskapsnätverk-Trä"* where higher educational institutes can offer education, cooperation, R&D projects etc. and that can contribute to better regional cooperation between higher educational institutes and the more developed wood industry in Dalarna and Gävleborg.

## *Lessons to be learned - transferable elements*

### Experience from working in a dual economy

From a learning point of view it is important to keep in mind that IUC is working in a "dual economy". Dalarna consists of three different areas with three different images – the south that is the most industrialised area with a high dependence on the raw-material based big enterprises and the public sector, the middle that is characterised by tourism and small and medium-sized enterprises and the third that is the sparsely populated area where tourism is the prime driver of change and development and also dependent of the public sector for survival and development. IUC Dalarna is specialised in the wood and other raw-material based industries. Based on these preconditions, and restrictions, the focus will thus – at least implicitly - be on industrial and regional growth through strategic support and assistance e.g. in house expertise, market knowledge, products and product development, processes and technology.

### Large as well as small enterprises are partners

The dual character of the economy is also of importance concerning the industrial sector. The SMEs are – at least to some degree – dependent of the development in the big companies and the national and international development. This put some restrictions on the activities of IUC in their networking role as even IUC is effected by economic fluctuations as they have no money of their own to act as a buffer with regard to economic fluctuations. This restriction is something that must be kept in mind when discussing the transferable elements concerning the IUC´s activities. One of the lessons to be learned from this is that an actor as IUC has no possibilities to act as a bank or a buffer in bad times. The focus of IUC work is product development and not financing even if IUC contributes to find organisations that are familiar and are more oriented towards financing activities.

Instead, IUC contributes to networking between small and large enterprises. It has in its projects linked small companies closely to the research and development divisions of large companies. IUC also helps in picking up new ideas from research and educational institutes even though this is not of major importance. Thus, IUC´s advantages are in the networking and connecting fields – things that perhaps are even more important in bad times. The economic development has in general resulted in a situation where the links between big and small companies are less tight in bad times compared to good times. This also means that the networking activities probably are of more importance in bad times than in good times. In good times the upswing will by itself create a rising demand for the products of the SMEs.

The above reasoning implies that the connection between big companies and SMEs are asymmetrical in the sense that SMEs that operate locally and regionally are more dependent of large companies than vice versa. Despite this the large companies can use the SMEs as sub-contractors and pick up and/or introduce new ideas there and the SMEs are dependent of the large companies as customers and links to other markets both within Sweden and around the word. IUC has, thus, an intermediary role in connecting the two sides in order to stimulate business and regional development. A result of IUC's work is that larger companies have noticed a need and advantages of knowing the SMEs better and working more closely with them. One lesson to be learned is that there are synergetic effects by strengthen the links between big companies and SMEs and this in a symmetric - and not asymmetric - way.

### Local and regional companies as partners – focus on regional development

The major shareholders of IUC are local and regional companies within the manufacturing industry. The idea behind IUC – that is of interest from a learning and transferable point of view - is to help and serve companies to initiate and develop their businesses by working jointly with other companies and interested parties. As local as well as regional companies are shareholders, this ought to have positive effects on both local and regional development in the same way as the complementary approach concerning big companies and SMEs. Complementary and networking are keywords for IUC as well as for the companies in Dalarna and these things are also preconditions for a successful development in Dalarna as well as in other regions and on other markets.

### Interest associations are involved – working in the same direction

IUC Dalarna offers a meeting point for regional and industrial development where entrepreneurs, business sponsors, researchers as well as experienced public and private sector managers are able to meet and work together. The involvement of both large employers and trade unions means that both sides of the traditional labour market dividing line are working in the same direction. The opinion seems to be that they have a real opportunity to become a viable business in the region and they are working in a win-win situation. Complementary and non-antagonistic approach to business and regional development are keywords for IUC as well as for the companies in Dalarna and these things are also preconditions for a successful development in the region. This fact is reinforced by the involvement of public as well as private actors

both at local, regional and national levels. This solution is of even more interest in a "dual" region as Dalarna characterised by traditional relations between big companies and trade unions but where even SMEs are of growing importance.

#### Practitioners' point of view and a bottom-up approach

Many of the employees at IUC are practitioners and with experience from practical working life and the field they are working in. This contributes to a straightforward communication and understanding of the "clients" own needs. This has perhaps also effects on the training activities that are client-oriented and on SMEs' preconditions and put into practice in their own milieu. This bottom-up approach seems to be better than a top-down variant as it is special firms' requirements that are in focus. This is also a rational behaviour in the sense that the budget restriction otherwise would have had a hampering effect and perhaps even stopped the implementation.

### 3.3.7 Learning from the Swedish IUC Dalarna case in Skive, Denmark

#### *Context*

The main idea why to "transfer" the good practices of IUC Dalarna, Sweden to the Salling-Mors area of Viborg County in Denmark, was the possibility of benchmarking and learning from the innovation services of competence-building and knowledge dissemination in the Danish innovation services of this kind related to manufacturing activities in the periphery. From the viewpoint of the receiver area, it is hypothesised that the IUC Dalarna case can provide a good practice on linking and disseminating knowledge and innovation between small and larger firms in the manufacturing sector.

Both the areas of Dalarna and Salling-Mors are characterised by a mixed business structure of small and large firms across the manufacturing sector. Wood-based and furniture industry plays a varied role in the areas. While it has a minor role (handicraft-based) in Dalarna, it has an important role in the Salling-Mors area. In the Salling-Mors area hosts a genuine business cluster of (pine wood) furniture production.

The good practices of IUC Dalarna are suitable for benchmarking of innovation support and competence building practices as compared with the Danish case. The comparison of different practices of relative similar organisations gives room for learning across the areas with regard to innovation support activities and experiences for the manufacturing sector in the peripheral Nordic areas.

#### *Workshop*

The workshop was held at the Skive Technical Institute at the department for the new educational programmes for the production technologist students between 12 noon

and 4.30 p.m. on May 18, 2006. The visiting researchers had a guided tour to around the STI and the cabinet maker workshops. The PLIP good practice transfer workshop started after lunch time with a presentation of participants, a presentation of the STI and of the general aims and objectives of the PLIP project. Following this, the Swedish case of good practice of IUC Dalarna was presented by the researchers. The workshop also included the transfer of the Finnish good practice, why the Finnish good practice case of Centria Ylivieska was presented by the researchers present. Then followed a around of comments and a group discussion of the transferability of the cases to the Danish context of innovation services for the furniture industry around Skive in the Salling-Mors area. The discussion was managed by the Danish coordinator. The working language was English with a few comments in Danish as the discussion evolved. Written presentation of the good practices presented was distributed by email to the local participants together with the programme and an introduction to the PLIP project. The workshop was jointly organised by the Head of the STI International Department and the Danish research coordinator.

The workshop had 11 participants of which 5 represented the local educational actor together with business services in the Salling-Mors area, while 2 researchers where represented from Finland, Sweden and Denmark respectively. The 5 local participants where the head of the Skive Technical Institute International Department and Director of the Development Centre for Furniture and Wood Working Industry, a senior teacher at the cabinet makers programme at STI, a private consultant to the furniture industry, the director of the Skive Business Centre and the Director of the Morsø Trading House services. The local participants were all key persons in business development with emphasis on the furniture industry, education, training and innovation as well as entrepreneurship and international marketing in the area. Representatives from the industry organisation, labour organisations as well as municipal and regional policy makers where missing. They were not able to participate at the workshop. The participants present at the workshop gave emphasis to the roles and practices of especially education and R&D services to the furniture industry.

Generally, the case was interesting and important in the view of participants, though no elements or features of the story were of specific interest. The presentation of IUC Dalarna was too broad and comprehensive in order for the participants to focus and relate to the good practice. There should have been more concrete emphasis on the linking mechanisms between small and larger companies for innovation and knowledge-building and the role of IUC Dalarna here, if this hypothesis really should have been tested and discussed in depth.

The local workshop participant saw the situation/status of the development of the furniture sector in the Salling-Mors area as hard. The firms are under tough competitive pressure on the national and international market especially for pine wood furniture. For development, the businesses are in need of enhanced capabilities for design and innovation. The pressure for outsourcing of production to low-income countries is counterbalanced with initiatives for export promotion to new markets, e.g. China. Bottlenecks are found in the area of knowledge and competencies as well as future supply of skilled labour, especially how to attract young people into the crafts.

The workshop discussion was focussed on the interesting elements of the good practice presented from Finland, the other good practice case presented at the workshop, where there where a good match to the specific development needs of the furniture sector. There was expressed a clear interest in a closer examination of the possibilities to use the elements of the good practice.

The participants had little time to discuss how to support the implementation of the good practice elements in the region, though the question of designing and attracting funding was emphasised.

The local workshop participants considered the idea of the PLIP project as very positive and relevant. They found the idea of learning across the Nordic periphery as important for their own activities both in general and with regard to innovation support to the businesses. In a similar way, the workshop was considered as a good way to actually have the dialogue and communication of good practices. More could be done in the way of involving the participants in the discussion and evaluation of the cases presented, though this would require more time from all parties and time is a constraint for all. A way forward could be to include a larger group of local actors in the project in order to have a more continuing communication and interaction, though this would require project funding of another magnitude.

The local workshop participants found consensus on the following points:

1. Similarity in organisation, staff and funding between the IUC´s and the Danish business service centres.
2. No relevance of a (formal) linking mechanism between small and larger companies in the manufacturing sector in the Salling-Mors area for innovation and knowledge-building.
3. No need for bridging role of business services to technological services, laboratories and research.
4. No explicit focus on innovation, product and process development in the local Danish business service centres. Their main emphasis directed towards advice for entrepreneurs and market information, export promotion for existing firms.

The local business service centres did not seem to play any role in assisting companies in access to financial resources for investment etc., why this aspect of the IUC Dalarna activities was not touched upon by the participants. It is clear, that the presence of representatives from the Viborg County business development office and Technological Information Centre would have fostered more possibilities for benchmarking and learning, because they are having some of the same functions with regards to e.g. bridging to research and development as the IUC Dalarna. It should also be considered, that the need for inter-firm cooperation may be dealt with in more informal ways in the Danish context via meetings and arrangements made by the business service centres for the business managers in the area.

### *Evaluation*

As a general conclusion, it seems not fair to reject the possible relevance of the IUC Dalarna good practice in knowledge dissemination and innovation cooperation between small and larger firm. This good practice was not dealt with at the workshop in sufficient detail and some key local actors were lacking for this.

The participants present at the workshop gave emphasis to the roles and practices of especially education and R&D services to the furniture industry and were directly or indirectly linked to the Danish good practice case of competence building for innovation in the furniture industry. This representation narrowed down the workshop discussions to lessons directly relevant to the Danish case. This gave a more practical focus to the workshop, while on the other hand, left little room for more general evaluations and discussions of policy issues, which representatives from industry organisation, labour organisations and municipal and regional policy makers could have provided. This also caused a bias in the discussions towards learning from Centria Ylivieska case on the account of the IUC Dalarna case at the workshop.

It seems, that learning and transfer of good practices are most likely to succeed, when there are essential overlaps between both the organisations actually conducting the good practice in question (business services versus vocational education and training) and the industrial sectors in focus for innovation services (broad manufacturing versus narrow wood and furniture industry).

## 3.3.8 Learning from the Swedish IUC Dalarna case in Glomfjord, Norway

### *Context*

In Glomfjord, the challenge had been to manage a fission-out process where one large corporate actor was set up as a node in networks of small firms. Also, the development coalition was busy promoting entrepreneurship and innovation, in setting up new firms.

IUC Dalarna had good experience in facilitating networks between small and large firms. The expectation was that experience from IUC Dalarna could be seen as relevant to the developmental challenges in Glomfjord.

### *Workshop*

The workshop was held in the office of Meløy Næringsutvikling in Glomfjord on May 30, 2006. A total of five participants were present in the workshop, including two Swedish researchers and one Norwegian researcher. The two local participants represented Meløy Næringsutvikling.

The following aspects of the IUC Dalarna case were emphasized:

IUC is working in Dalarna with its dual character of the economy. Dalarna consists of three different areas with three different images – the south that is the most industrialised area with a high dependence of the raw-martial based big enterprises, the middle that is characterised by tourism and small and medium-sized enterprises and the third that is the sparsely populated area where tourism is the prime driver of change and development.

The major shareholders for IUC are local and regional companies. The idea behind IUC is to help and serve companies to initiate and develop their businesses by working jointly with other companies and interested parties.

IUC Dalarna is specialised in the wood and heavy industry sectors. The focus is on industrial and regional growth through strategic development of: in house expertise, markets, products, processes and technology. IUC can offer key skills in the following areas:

- Product development
- Financial solutions
- Company growth
- Staff and management development
- Resource management
- Enhancing business competence
- Liaison between key stakeholders
- Sales and Marketing

IUC Dalarna offers a meeting point for regional and industrial development where entrepreneurs, business sponsors, researchers as well as experienced public and private sector managers are able to meet and work together. In doing they have a real opportunity to become a viable business in the region.

IUC is *not* a financial supporting company. Instead, its advantages are in the field of networking, contact creation, formal supports, etc, things that many small and medium-sized firms find difficult to take care of. It must be kept in mind that the large raw-material based companies have their own research and marketing departments and IUC primarily is oriented to serve the middle sized and small enterprises in their networking and marketing activities and picking up new ideas from research and educational institutes.

Many of the employees at IUC are practitioners and with experience from practical working life and the field they are working in. This contributes to a straightforward communication and understanding of the “clients” own needs.

The focus of IUC work is product development and not financing. Instead, IUC contribute to find other organisations that are more familiar and are more oriented towards with these things.

Complementary and networking are keywords for IUC as well as for the companies in Dalarna and these things are also preconditions for a successful development in Dalarna as well as in other regions and on other markets.

The local development coalition in Glomfjord is involved in two success stories:

The Hydro plant integrated "everything" in a single factory, with all support functions operating internally. Through a restructuring process mobilizing all employees, what used to be the core of a single-company town was transformed into an industrial park with several successful firms.

This process has involved several challenges, such as redefining support functions from being an integrated part of the firm, into becoming a supplier, with market relations to several firms in the park, transforming the industrial estate from the property of the corporate actor, into facilities available for new, innovative firms, including support and promotion of new entrepreneurs on the premises.

The Scan-Wafer success story, which was initiated by Meløy Næringsutvikling, was a challenging process of trial and error, where Meløy Næringsutvikling teamed up with corporate and global entrepreneurs.

In this local – global game, the local actors were active in several areas, such as in promoting funding, as well as facilitation of the challenges in setting up the local production unit, and facilitating its effort in achieving a sufficient level of productivity to be able to stay in business.

Today, a sustained effort is made to develop new industries and facilitate for new entrepreneurs.

### *Evaluation*

When restructuring started in Glomfjord, and the development coalition was set up, in-depth personal experience with IUC practises had been one of the sources of inspiration. It was obvious that there was a problem of incompatibility of level and scale between the IUC Dalarna case and the local micro-level activities in Glomfjord. IUC Dalarna is a regional level actor operating on a broader scale than the considerably more hands-on activities in Glomfjord. It was decided that further contact with IUC Dalarna would be seen as interesting, but the meeting did not result in any identification of specific elements of the IUC Dalarna which could be transferred.

## 3.3.9 Conclusions on the networking and co-ordination good practices

Three good practices have **networking and co-ordination** in common. They are operating in different fields in different countries and they interpret networking and co-ordination very differently. But they have all taken a point of departure in branches

that are characteristic for their region. In Sweden the good practice (IUC) is placed in the middle of the Swedish rust belt in Dalarna. The region of Dalarna is characterised by having a dual economy, with the mining and forest industries, and its big companies, being very dominant. Hence, the involvement of the big companies in network activities for the smaller companies on iron, steel and wood is the core element for the Swedish good practice. In Norway, the good practice is focused on networking and coordinating initiatives in the tourism industry of Lofoten – a very important trade for the region. The Danish good practice (VIFU) is placed in Western Jutland where farming and fishing has characterised land and people for ages – the latest century supplied by a growing coastal tourism. All three branches are included in the work of the small food producers' network and VIFU.

An interesting element in IUC is the contribution to the network establishments between small and large enterprises e.g. through projects where the small companies are linked to research and development divisions of large companies. The larger companies have noticed a need, and they get advantages of knowing the SME's better by working more closely with them. IUC helps in picking up new ideas from research and educational institutes. The educational and training activities are based on a bottom-up approach, as this "bottom-up networking" is perhaps the only way to get out of the dilemma caused by lack of seed finances and low formal education levels in the SMEs.

Another notable element of IUC as a good practise is the straightforward communication between the companies and the employees at IUC as the IUC employees are practitioners having a good understanding of their clients needs. IUC complements the other supporting actors in the region with its practical view and knowledge on the companies. This element would be interesting for VIFU as they have some problems in their communication with the small food producers. VIFU is engaged in many food related projects, and tries to draw some synergy out of these different engagements. For the small food producers' network it is however much more important that the focus is clear and that the employees are committed. Without focus and commitment, neither network nor coordination has an interest for the small food producers.

The most significant elements of the Lofoten good practice are related to the systemic approach in planning and coordinating the tourism development as a large-scale innovation process. It includes the co-operation body between the six municipalities called Lofotrådet (The Lofoten Council), which creates an overall structure that covers the whole region and seems to create the necessary framework for such a cooperation project to materialize and continue to thrive. Another institution (Destination Lofoten) also represents the whole region. Both the destination company and the Lofotrådet are recognized as spokesmen and representatives for the whole region. Moreover the Lofoten good practice includes the so-called Masterplan process, which is a scenario based process aiming at development and innovation in tourism and lately integrating the food industry. The Masterplan process is basically the implementation of the White book on tourism development, a cook book in destination development, financed by Innovation Norway and made by a national tourism development expert. The Masterplan process has involvement of stakeholders

and public-private partnership as central idea. The vision is to make a majority of the inhabitants in the region aware about the importance of development and make them pull together in roughly the same direction. The well-functioning communication about the progress of the plan is certainly helped by the strong Lofoten identity among inhabitants, however also made dynamic by strong and diverging opinions about how Lofoten should look like as destination in 2015.

The Norwegian and the Danish cases of tourism and food have similarities in terms of networking, but difference in terms of education and of the institutionalised knowledge centre. Learning and networking are focal points for VIFU's work with the small food producers' innovation processes. The learning activities are formed by and directed towards the small food producers. An important knowledge input comes from the knowledge institutes attached to VIFU's consortium, which helps VIFU to fulfil its aim of being a bridge builder between knowledge institutions and the producers. Neither the producers nor the consortia members pay to participate in the network – all activities are funded by the state/EU:

- The consortia members are paid a salary when helping the producers
- The newsletter is published in paper and distributed free of charge
- The producers' participation in e.g. the yearly folder and sundry study tours is made below cost

The fact that the consortia members do not contribute with finances to the operation of VIFU, but on the contrary are paid to help the producers was an organisational model, which turned out to be useful for the Lofoten case. There are examples of networks in Lofoten (e.g. the Destination Lofoten) but they are organized with paying participants. This solution has given mixed experiences as some firms feel that they receive something (marketing effort for example), while many other firms do not find it so meaningful to pay for participation without being able to see any concrete results from the effort. To have non-paying members of a network was a new idea in Lofoten.

When analysing IUC and comparing it with good practice concerning VIFU and Lofoten, it must be kept in mind that IUC is working in a surrounding characterised by some form of economic dualism. The dual character of the economy especially in the southern part of Dalarna, has the result that the SMEs are – at least to some degree – dependent of the development in the big companies and the national and international development. The dual character of the industrial structure adds some restrictions on the activities of IUC in its networking role. Economic fluctuations has e.g. as a consequence that the links between big and small companies are less tight in bad times compared to good times, which in turn means that it is easier to act as coordinator in good times compared to bad times. The pressure on IUC is, however, the reverse – during bad times its networking and coordination activities are of more importance than during good times especially for the SMEs. They need more of assistance and networking during downturns compared to upswings. Working with networking activities in a dual industrial milieu stands out clearly from working in surroundings characterised by small and medium-sized enterprises where the

entrepreneurial spirit is a central ingredient in daily life. All the three good practices are however characterised by many entrepreneurs and small companies. They all have strong entrepreneurial cultures, and it is very difficult for all the entrepreneurs and the small companies to stay innovative and at the market. All three good practices also work proactively to strengthen and develop the possibilities and conditions for the small companies and entrepreneurs in the region.

The three good practices contribute to networking and coordination in the regions in different ways. The IUC contributes to networking between the small and large enterprises whereas a central element for VIFU is the learning activities formed by and directed towards the small food producers. In the Norwegian case, the Destination Lofoten creates common framework and coordinates the development in tourism industry sector, which provides the destination company with a more comprehensive view. When comparing various forms of networking it is however, of outmost importance to put in the various kinds of economic structures explicitly in the analysis. The surrounding economy is the most influent factor on networking and co-ordination activities and put the prerequisites as well as the limits for what is possible and not possible to do. This fact is, probably, as valid for IUC as well as for VIFU and Lofoten.

# 4 CONCLUSIONS

Initiatives to promote and support local and regional development are often very "inward looking". The good aspiration to base initiatives on local involvement and engagement to some extent block for the possibilities to link up internationally and create the object networks for transfer and learning good practices across regions.

National support programmes and regional innovation policies could easily move forward by integrating good practice networks for learning across regions, as initiated by the PLIP project in its activities.

The PLIP project has been based on a broad approach to innovation policy. First, we should stop believing that a successful innovation policy is just a matter of spending money on R&D, in the light of some exotic "best case" model. Secondly, we should remember that the competitiveness of any national economy depends on the ability to make all parts of the country more competitive, not just certain large cities. In short, it is time to look for the indigenous potential for innovation not just in the cities but also in the periphery, and not just in the universities but also in other educational institutions, such as within polytechnic education.

The point of departure for the PLIP project was the belief that learning from other Nordic countries can be useful when moving in such a direction. This belief was encouraged by our experiences. First, as we will show below, we found that the regional and local policy actors were willing and able to relate to what was going on in other Nordic countries. Secondly, we were reminded throughout our studies how different we Nordics are, after all. This mixture of similarity and difference opens up channels for learning, because it creates a context in which it sometimes is possible to identify something different, which may be useful in our own context.

## *4.1 Embeddedness of good practices*

All the good practices analysed in the PLIP project are examples of local or regional bottom-up activities in which the initiatives have come from the regional level. In the Oulu South case national level policies were not determinants, although the activities had received both national and EU resources for projects. In the Lofotens the national level was not prominent, either. The STI case grew up out of a local effort to move the industry forward, together with being part of the national-level Regional Growth Environment programme, and the VIFU case in Denmark was also an implementation of that programme, but embedded in local networks. The Swedish good practice, IUC Dalarna, is part of a nation-wide network of regional development agencies responsible for networking and knowledge transfer between large and small enterprises. The Icelandic Emigration Centre is a local initiative which has

subsequently gained national support, and the development of Glomfjord is an interplay of regional and national factors.

Some good practices were uniquely dependent on local or national systems in certain aspects, but the national context was never very prominent, even though some national characteristics could be seen.

The Danish business system, with its specific entrepreneurship model (SMEs) and user-driven innovation system, can be perceived in the STI good practice, and the characteristics of the Danish food sector are reflected in the efforts made by VIFU to counterbalance mass production. The Finnish science and technology-driven innovation system and the national policy of cluster development provide the context for the innovative co-operation between Centria Ylivieska and local SMEs. The strong Icelandic entrepreneurship culture combined with small resources for supporting local initiatives can be seen in the individual efforts of Mr. Valgeir Þorvaldsson. The powerful input of state resources in Norway can be seen as a support for developing peripheral areas such as Glomfjord, while the Lofoten case is an example of a strong local identity and culture. The dual economy dominated by large firms forms the national background to the Swedish good practice, IUC Dalarna, an organisation that has the role of a networking manager between large firms and SMEs.

## *4.2 Learning to transfer good practices*

**Sharing an objective**

Communication builds on mutual understanding, and understanding depends on some form of shared opinion of who "we" are, and what "we" are doing, e.g. in a meeting. What are we going to achieve together? A common definition of "we" also rest upon some form of shared understanding of the border between "us" and "the others". Who are they, and how can we relate to them?

In transnational dialogues these forms of shared understanding are often established through what can be called "fields"[157], often constituted through an allusion to a pre-existing institution which is used to define the frame of reference. Fields may also be constructed.[158] Indeed, if you are going to be innovative by codifying tacit practices and discussing them in order to change them, creating new modes of action based on new combinations of knowledge, you need to construct a field, a common point of reference, a space where this codification and dialogue may unfold. These spaces are the cradle of innovation.[159] We were aiming at constructing this kind of field through the workshops of the PLIP project.

[157] The concept of field stems originally from Bourdieu, and has been applied and developed by Djelic in the context of transnational learning networks. See Djelic 2006.
[158] Nonaka 1994, 14-37.
[159] Nonaka refers to this place as BA.

The process started smoothly. The ability to engage in learning discourses was widely distributed across the countries involved, and representatives from various institutions participating in regional development partnerships in all of the countries instantly seemed to have enough social capital and pro-active capabilities to be able to mobilize interest in the debates. More often than not, a "quick trust" emerged between the foreign researchers, local organizers and participants, creating a relaxed atmosphere in the workshops.

**Do we belong to a regional partnership?**

The assumption we made when we organized the workshops was that participants from different local institutions would already have a shared institutional framework, some form of local or regional partnership aimed at regional development through joint efforts.

By way of introduction, we therefore started by presenting this assumption as a rationale to explain why the meeting had been organized in the first place. We were doing this, we said, because we were jointly engaged in building institutions to promote regional and local development. That was why people had been invited to come there.

The participants then introduced themselves by *explaining* the institutional framework they came from, including its objectives, values and modes of operation. The relevant institutions from which participants could be invited to the workshops were chosen quite broadly by the workshop organisers.

Our assumption of a pre-existing, institutionalized regional development partnership was widely accepted across the table without further discussion in some of the workshops. By building on this joint point of reference, the regional partnership, actors started to discuss their own institution and its modes of operation from the perspective of outsiders. This is a clear empirical indication of a common field and an existing institution – a regional partnership.

As expected, this point of reference opened up a space for further discussions in some workshops, and for codification of the participants' rationale, modes of operation and achievements.

**Challenging the partnership**

In other cases, however, the hypothesis of a regional partnership was challenged. Some participants refused to take the position of an outsider looking at and evaluating their own institution. Instead, they continued to speak from within the institution and explain its mode of operation. This did not mean that they rejected learning, or anything like that. What they could learn from others would have to be improvements in the specific modes of operation which could best be transmitted from others whom they could recognize as experts, including professionals like themselves in other countries.

In some cases, the solution was that the search process should be continued in the form of dialogues to be taken up later *between actors who recognized each other as professionals*. These findings might indicate a certain rivalry between regional

partnerships and sector specialists. If the good practice involved *professionals* from outside the field of regional policymaking, a strategy of "transnational linkage between professionals" who would recognize each other instantly as equals, would seem to be a promising solution to the problem.

It was decided that this could be done by a dual presentation team, *combining researchers and professionals matching the professionals in the receiving group*.

**The structure of the partnership**

Mature institutions tend to develop leaders and borders, and our findings suggested that the institutionalisation of some of the regional partnerships could already be seen in the case study areas, resulting in a structure in which certain core institutions and actors were the central leaders. If they were not present in the regional workshops, this became a problem, particularly when we were approaching the more operational questions of what could be changed. "We", or a regional partnership, could hardly be constituted *as an actor* without *their* presence.

In the case of some of the very well-organized regional partnerships, the border with respect to the national level was also quite clearly established and defined. This was another critical point. Some of the receiving case areas had institutionalized configurations between the regional and national level which were clearly different from those of the area supplying the example of the good practice. Successful transfer seemed to depend on a redefinition of the regional – national divide. This, again, opened up the same kind of issue on participation in the group, as we had not included national actors. Without their presence, there was obviously no point in suggesting changes in the regional – national division of labour. At this point an interesting difference emerged between the countries. In some countries the regional – national divide is obviously dynamic and under debate, while in others this proved to be a fixed issue. Similarly, it was hard to translate between the local and regional levels.

Extensive comparisons of how the good practices were embedded in national and local policy systems were undertaken when preparing the presentations, and the forms of embedding were reviewed and discussed analytically. Our expectation was that the dis-embedding of the good practice and its re-embedding into the new context could be achieved *analytically*, through the discourse in the workshop.

Seen in retrospect, successful discussions tended to take a short cut and plunge directly into a search for the good practice itself as a micro-level phenomenon. In this way the analysis of the context within which the good practice was embedded was bypassed and not put on the table as an analytical challenge.

The implication of this finding is that in transferring good practices which are outcomes of *multi-level policy* processes, great care should be taken to *construct a receiving group* which *matches* the various levels involved in achieving the good practice in the donor group. In some cases this may involve national-level institutions and actors.

**The dominant institution design**

Some of the workshops followed a somewhat different strategy, avoiding this problem by deliberately constructing dialogues between similar institutions, in this case educational institutions. There was a good match between the two in terms of competence building. At the same time, there were differences, as the institutes had different contexts, specialisations and strengths. The Danish institution placed emphasis on new knowledge and crafts embodied in the people and the function of bridging and networking between actors, while the Finnish one was the research and development unit of an educational institution which is pursuing innovative co-operation with SMEs in its home area. The reasons behind the good match were probably the similarities in the aims of the two educational institutions involved and the fact that the woodworking sector was of interest to both parties. There were some elements of the good practices that were obviously both interesting and at least partly transferable. Also, the local actors participating in the workshops in Ylivieska and Skive had an obvious ability to abstract and learn new information.

**Destabilizing as a pre-condition for learning**

Since any system tends to maintain itself in a state of balance, learning builds on destabilization – input from an outsider who shakes up the system. This stimulates actors into looking for problems to be solved.[160] The destabilizing factor in the PLIP project was the good practice – and the story supporting it. The actors were asked by the researchers to explain what they were doing, and to assess whether the good practice could improve their own performance. In other words, the expectation of the researchers was put on the table to be tested, and the participants presented their conclusions as "equals" in a multi-disciplinary dialogue.

An alternative strategy would have been to dress up as scientists and present indicators calling for the authority of science. A supplementary approach would have been to use the authority of a transnational institution, as often is done with OECD reports. We deliberately did not pull this trick. Instead, we exposed ourselves to the audience as equals. Was this sufficient to destabilize the actors? In some workshops, it clearly was.

In some countries the future organization of regional-level partnerships is a hot issue open to debate and subject to future decisions. Here the actors were already more or less destabilized and looking for new solutions. This heat created a fruitful atmosphere. The case was seen as highly interesting and relevant, and arguments pointing to some kind of defence of the existing order were examined and cast aside. In other cases, local actors were somewhat more self-reliant and confident of their own achievements. Stories alone were not convincing.

The PLIP project design assumed destabilization to be a part of the process of analysing a good practice and comparing it with one's own practices. In other words, we had not developed any systematic indicators for comparing performance between the donor and recipient areas. There were good reasons for this choice of design. We all know from other experiences that any scientifically based top down indicator suggesting that something is wrong may be explained away. Indeed, experiences from

[160] Sabel 2004.

the recent evaluation of the Lisbon process in the EU seem to indicate quite clearly that the use of EU indicators to achieve policy changes in member countries outside the formal competence of the Commission has not been a big success. National-level actors know very well how to escape any criticism from EU indicators.

The construction of indicators of the performance of regional actors may accordingly be seen as part of a sustained process of bottom-up analysis in the follow-up to PLIP. We will return to this issue below, in the section on recommendations.

**What can be transferred?**

As expected, what the participants *perceived as transferable* could in many cases only be identified during the workshop discussion. In some cases, the good practice was regarded as a single package, a complex "regional development model". Complex models should be rejected – for several reasons.

In other cases, the transferable elements were more abstract, analytically defined relations between actors and institutions, typically describing ways of organizing learning processes. These could be abstracted from the "model" and re-embedded into another context, thus creating not a copy of the other model but rather a new, hybrid solution.

## *4.3 Policy implication: Innovation through transnational good practice networks*

Let us start by looking at the object to be transferred, a good practice.

*Phase 1, the practice*

Good practices emerge as systemic relations between institutions, actors, sectors and levels which enhance learning processes and result in economic success. At the point of departure, these good practices may very well be tacit. Even the actors producing them may take them for granted and just look upon them as standard procedures which do not require any attention.

*Phase 2, codified receipt*

Then the good practice is discovered by the researchers, who make a codified description of it, trace its story and analyse its embeddedness in local, regional and national systems. In a pure form, these descriptions may be seen as forms of codified receipt dis-embedded from the tacit specificities and self-evident nature of the regional and national contexts in which they emerged.

*Phase 3, the new practice*

These receipts are then re-embedded into another context, thus creating not a copy of the original model but rather a new, hybrid solution, which transforms the *practices* of the receiving networks. The good practice is turned from a codified story back into a new practice somewhere else.

Most well-known *shortcuts* to transnational learning are unable to transfer this kind of object. Let us look briefly at three possibilities which do not work.

Transnational learning may be embedded in transnational networks of professionals. The really easy way out is to go for an existing institutionalized field of knowledge, such as a professional field, and arrange meetings between professionals of the same kind in different countries. These networks may lead to learning within the profession, but it will stop short when it comes to providing the skills needed in transferring our object.

Transnational networks may be embedded in institutions with compatible "packages" of professionals, and this does add an extra level of complexity. These institutions can talk to each other and explore possible changes in their own curriculum, based on what they see elsewhere. Again, the danger is that these exercises may just provide food for the sector involved, such as education policy, with limited overall answers to the issue of how new educational agendas may be applied in a systemic manner, building upon other sectors, such as labour market policies and welfare policies, in order to provide learning.

The shortcomings experienced in some of the PLIP workshops were situations where the group of participants was incompatible with the network which could actually implement the good practice. We believed that the regional partnership was composed of actors who were all operating at the strategic level of the partnership, but this assumption was wrong. Instead, it turned out that even though the actors were reflecting upon themselves and their role within the context of the partnership, the full capacity to act *strategically* on behalf of the *partnership* depended on the "completeness" of the participants present, including certain leading institutions. This problem points to its own solution.

## *4.4 A recommendation: good practice networks*

In order to transfer good practices successfully, the *receiving group* should be organized in a way which *matches* in a 1:1 manner the system of actors and institutions *creating* the good practice in. In other words, the *receiving* group should also be *identical* to the network which could potentially *finalize* the transfer, and *implement* the good practice in a different context.

This receiving group aspiring to implement the good practice combined with the network which is already implementing it and the researchers capable of codifying its receipt may be regarded as a good practice network.

Within the context of such a comprehensive approach to innovation, different methods such as institutional networks, indicators, professional networks and other approaches should be available as *supplementary tools* to enhance transfer. Within this context, a bottom-up approach to indicator production could be seen as useful, for demonstrating to the actors involved that the good practice is a better practice, thus

shaking them out of their routine behavior. Besides this, of course, there is a lot of tacit and professional knowledge involved in actually *implementing* a good practice which is not included in its codified receipt.

Since the *receiving* network should be *designed in accordance with the good practice*, this places the analytical capability of the researchers in a core position in the early stages of the process**.** Their challenge is to identify and distil the receipts – and define suitable groups of institutions and people who might be tempted to apply the process for the creation of a good practice. However, taking into consideration that the process of transfer is likely to *transform the good practice* into something different, this process of transnational learning should be regarded as a long–term, interactive one, taking the tacit knowledge of the institutions and actors operating within the field into due consideration. The original receipt has to be rewritten, and upon applying it in different institutional contexts, the new good practice may end up with different variations. Just as the good practice can alter in this process of re-embedding, so can the good practice network. This approach to innovation requires long-term, interactive learning processes based on tacit and codified knowledge that is passed back and forth between researchers and practitioners.

A good practice network should not be seen as a single project, aiming at a quick fix. In order to create *functioning* good practice networks, we need some kind of institutionalized facilitating mechanism that provides suitable conditions for long-term processes of learning within wide-ranging networks. The proper institutional context for taking this approach further could possibly be the EU Structural Fund programmes.

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## Nordic Innovation Centre

The Nordic Innovation Centre initiates and finances activities that enhance innovation collaboration and develop and maintain a smoothly functioning market in the Nordic region.

The Centre works primarily with small and medium-sized companies (SMEs) in the Nordic countries. Other important partners are those most closely involved with innovation and market surveillance, such as industrial organisations and interest groups, research institutions and public authorities.

The Nordic Innovation Centre is an institution under the Nordic Council of Ministers. Its secretariat is in Oslo.

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