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Summary Report: Smart specialisation Strategy for Nordland

- Background, summary and proposals

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1 NORDLAND REGION BACKGROUND

1.1 INTRODUCTION

Nordland County amounts approximately for more than half of the population and production in Northern Norway. The total area is about 38000 square km and is the second largest county in Norway, covering 11.8 % of Norway's total area. Population density is 7 inhabitants per square km.

Nordland is covering one quarter of Norway's total coastal areas, leading to a leading position within industry development and R&D within marine aquaculture and feed production. Other major industries are related to clean production of minerals, metals and chemicals, based on vast resources of hydroelectric power, as well as growing tourism and oil related industry growth.

1.2 SOCIO ECONOMIC MAIN FIGURES

1.2.1 Population development

Nordland is the largest county in Northern Norway with a population of 238000 persons in 2012, which was an increase of 3.3 % from 2005.

Table 1 Population development Nordland county 2000- 2012

	2005	2006	2007	2008	2009	2010	2011	2012
Population	236825	236257	235436	234996	235380	236271	237280	238320
In-migration	5064	5307	5754	5973	6152	6684	6893	7423
Emigration	5838	6319	6350	5778	5628	5877	6079	6202
Population increase	-568	-821	-440	384	891	1009	1040	1291

1.2.2 Employed population

The labour force of Norway is 2.67 million people, of which Nordland county accounts for approximately 120,000. The labour force nationally is 72% of the total population, whereas this figure in Nordland county is 68%. The number of employed persons in Nordland is around 116,000 persons or 65 % of the population.

For Norway, the employment share is 69%. The male population in Nordland has a higher participation in both labour force and employment, as shown in the table below.

Table 2 Labour Force in 1000 and in share of population, Norway and Nordland county

			2012	
			Persons (1 000)	Per cent of population
00 All counties	Both sexes	Persons in the labour force	2677	72
		Employed persons	2591	69
	Males	Persons in the labour force	1419	74
		Employed persons	1367	72
	Females	Persons in the labour force	1259	69
		Employed persons	1224	67
18 Nordland	Both sexes	Persons in the labour force	120	68
		Employed persons	116	65
	Males	Persons in the labour force	65	71
		Employed persons	62	68
	Females	Persons in the labour force	55	64
		Employed persons	54	62

1.3 GDP KEY FIGURES NORDLAND

From the National Accounts we have summarized some key figures describing value adding activities in Nordland county. The overall output value in current prices was in 2010 NOK 145 billion, whereas the net value added was NOK 73 billion.

Value added at basic prices. Current prices (NOK million)	73025
Output. Current prices (NOK million)	145435
Intermediate consumption. Current prices (NOK million)	72410
Gross fixed capital formation. Current prices (NOK million)	17497
Final household consumption expenditure. Current prices (NOK million)	47592
Disposable income of households. Current prices (NOK million)	49010
Compensation of employees. Current prices (NOK million)	44381
Employed persons (1 000 persons)	114,5

1.4 MAIN EXPORT AND SUPPORTING INDUSTRIES

In 2010, Nordland had an export value of NOK 23.5 Billion. In relative terms, the export ratio of value adding in Nordland excluding oil and gas is 50% higher than the ratio for Norway – including oil and gas. Nordland also accounts for 94% of the exports of processed goods in Northern Norway, as shown later in the report.

The key industries found in Nordland measured in export value are shown in the table below. The marine sector accounts for most of the export value from Nordland, or NOK 9.1 billion. Processing of metals, minerals and chemicals creates an export value of NOK 5.9 billion, and travel/tourism creates an export value of NOK 2.8 billion from foreign tourists in the county. These export-oriented industries are supported by a large number of supplier

industries (36 sectors) within areas as maritime transport, oil and gas services, oil spill handling services and shipbuilding.

Processing industry excl. oil and gas (metals, minerals, chemicals)	kr. 5.9 billion
Marine sector	kr. 9.1 billion
Travel industry, tourism	kr. 2.8 billion
Exports from the supply industry	kr. 5.7 billion

1.5 R&D STATISTICS

1.5.1 Research institutions and staff, production

Total R&D personnel		Business sector	Institute sector	University sector
Fylke				
Østfold	1 201	501	355	345
Akershus	6 823	3 663	1 922	1 238
Oslo	19 846	6 300	3 728	9 818
Hedmark	624	199	77	348
Oppland	966	469	146	351
Buskerud	1 619	1 315	82	222
Vestfold	1 474	979	125	370
Telemark	1 185	622	130	433
Aust-Agder	497	339	62	96
Vest-Agder	1 609	837	135	637
Rogaland	3 292	1 716	332	1 244
Hordaland	7 861	1 704	1 496	4 661
Sogn og Fjordane	571	292	75	204
Møre og Romsdal	1 798	1 100	224	474
Sør-Trøndelag	9 202	2 315	1 957	4 930
Nord-Trøndelag	639	237	145	257
Nordland	**1 283**	**531**	**194**	**558**
Troms	3 249	336	444	2 469
Finnmark	345	27	79	239
Svalbard	78	22	8	48
Total	**64 162**	**23 468**	**11 716**	**28 942**

The regional R&D level in Norway is closely related to the population structure and the localization of universities. As can be seen from the table above, the number of R&D staff in Nordland therefore is less than half that of Troms county. By establishing the new University of Nordland in 2011 (located in Bodø) this situation is about to change. The location of the R&D institutions in central areas, and industrial clusters in the rural areas, creates obstacles to STI-supported innovation and the connectedness of the industries to the R&D support in development and education.

Table 3Innovation activity in the business sector - Innovation survey 2008

County	Number of companies	Innovation act. In % of population	Cooperation	Regional/local cooperation in Norway	Cooperation in Norway	International cooperation
	Sum	Per cent of the pop.	Per cent with innovation activity	Per cent with cooperation	Per cent of companies with cooperation	Per cent of companies with cooperation
Nordland	**964**	**21**	**44**	**32**	**56**	**35**
Troms	566	21	41	44	54	23
Finnmark	275	20	36	46	46	19
Norway	21 584	25	38	50	66	37

As shown in the table above, Nordland is below the national average level of innovation activities, but has a relatively high score on cooperation with other companies in Norway and internationally.

1.6 ENTREPRENEURIAL DYNAMICS

The three main export industries of Nordland are supported by different innovation network structures. The energy-based processing industry is based on global enterprises with a scientific technology innovation (STI) support outside the region, whereas the marine sector is supported by DUI support regionally, and national/international STI support. Travel and tourism is largely supported by local DUI networks as well as regional R&D support. The structures are described in the summary report.

A gap analysis carried out with a survey and focus group interviews, identified areas to improve the relationships between industry, R&D and regional/national development actors within the regional innovation system in Nordland. The analysis also indicates a high potential for entrepreneurial discoveries in the dynamics between the three main clusters (processing industry, marine sector and tourism) and their competitive supply industries in Nordland.

1.7 LOOKING BEYOND BOUNDARIES

Nordland county has a long record of international cooperation on regional development and transnational learning through participation in EU programs and Interreg programs related to neighbouring countries and the North Sea and Baltic Sea Region. These regional political and research relationships form the platform for expanded cooperation with EU and neighbouring regions in relation to regional S3 development and strategy implementation. Recent analysis of European regions by OECD places Nordland at the same level of regional development as other industrial regions of Norway.

Nordland is at present cooperating with Swedish and Finnish neighbour regions to support transnational learning, and follow up the S3 implementation process and necessary institutional development. This peer process on innovation and R&D support to industry development has been supplemented by the use of industry experts from the globally oriented process industry companies in Nordland. International peer networks and industry focus groups will have an important role in supporting transnational learning and adjusting the implementation of the smart specialization strategy.

Strengthening the external R&D relationships in Nordland will also contribute to increase the relevance to industry development and regional competitive advantage. Methodological cooperation with other Norwegian regions within the national innovation R&D program VRI provide important arenas and processes of knowledge exchange.

2 SUMMARY OF THE SMART SPECIALIZATION PROPOSAL

This report is based on the new agreement in respect of innovation and economic growth developed by the OECD and the EU in recent years. This was a response to the economic crisis which arose in 2008 and which affected the whole of Europe. An important point for the OECD and the EU is that if Europe is to recover from this crisis, all regions – including those on the periphery outside the urban centres with major universities – must have the opportunity to expand. The breakthrough for this new strategy came with the OECD report 'Growth in all regions'. This was disseminated through the EU following the development of Smart Specialisation (S3) as a platform for the EU's new regional policy, the new EU research programme Horizon 2020, and the new EU initiative for the reindustrialisation of Europe.

A basic principle of S3 is that the analysis of regional assumptions for innovation shall control strategies and priorities. In this manner S3 will contribute to innovation being practiced with a new approach. S3 is a continuation of EU's work with the regional innovation system (RIS). S3 is based on the view that regions, more so than national states, are better equipped to find solutions on their own assumptions concerning how research and industrial development shall be combined. Research-based innovation is described in the literature as STI (science-technology innovation) while the alternative is DUI (Doing-Using Innovation). S3 has as its objective linking research and innovation in industry more closely.

A methodical point of commencement in S3 is 'triple helix' analysis and 'quadruple analysis'. 3H (triple helix) is the relationship between industrial activity, research/education and regional administration and policy (sector coordination); 4H is the relationship between society and nature.

The basis for an S3 analysis is:

1. Identification of 'critical mass' in a region, industry, clusters or network of industries with a large volume. The critical mass is the region's specialisation
2. Global competitiveness. Within the critical mass, industrial sectors have to be identified which are globally competitive. In this report we commence with exports out of Nordland as an indicator of competitiveness. In smart regions support industries to strong export industries can also be strong export industries. Consequently the economy becomes increasingly diversified.
3. The analysis shall identify how 'entrepreneurial inventions' occur when new industries are established and new products introduced into existing industries through new combinations of resources within the critical mass. Smart specialisation is the ability to find new possibilities related to specialisation as changes gradually occur in the market.

In the analysis below we present three strong export clusters (the marine sector, the processing industry and tourism/events), and their suppliers. Innovations in the new industries of cores in these export sectors are briefly described below.

Specialisation	Processing industry	Marine sector	Tourism etc.	
SMART SPECIALISATION	Innovation within the specialised core	Local DUI Global STI	Local DUI National STI	Local DUI Cluster development
	Innovation in the supply industry	User-producer relations. Research and consultancy-driven support to supplier-development and network cooperation. Cluster development (Eg. oil pollution services, maritime clusters)		
	Entrepreneurial inventions	Major regional enterprise (E.g. solar cell industry	Driven by strong actors at the core (E.g. cod farming, closed plants)	An emerging regional innovation system (E.g. from B&B and full board to tourism).

A Smart specialisation strategy is seen in the association between;

1. Innovation processes within the specialised core
2. Innovation systems to the supply industry, and
3. Entrepreneurial discoveries where completely new sectors are established.

THE BASIS IN EXISTING REGIONAL DEVELOPMENT PLANS

The existing regional development plans are based on elements which can be included in a smart regional development strategy (see Sections 1 to 1.10). Nordland county administration has concentrated on the development and strengthening of regional innovations systems for long period. The measures employed include:

- The county plan
- R&D strategy and work with the Regional Research Fund
- Work with the development of regional study centres
- Industrial strategy
- Tourism/events strategy
- Policy for the marine sector
- Nord regional strategy.

A common feature of this work is that the county administration has worked systematically with the development of elements in a triple helix, and to develop various relevant strategies for the three export-oriented clusters – industry, tourism and the marine sector. The plans are prepared in close association with the parties involved, firms, research institutions and educational establishments. This is largely through dialogue with 'boundary spanners', experts within the various institutions who are concerned with these relationships.

We thus achieve a research strategy where researchers in the existing establishments suggest what they can do for industry based on their initial standpoint. We find a development need such as is viewed from the educational sector with suggestions for regional centres, and we recommend strategies for the strong clusters constructed according to the firms' viewpoint.

That which is essentially new with the S3 strategy is:

1. to view the different elements in triple helix in the light of indicators for global competiveness, and
2. to enter into dialogue with the various actors in triple helix concerning their mutual opinions. This is done through a GAP analysis.

A smart region specialises in certain strong export industries but which simultaneously is able to develop new export industries based on support industries to the strong industries, and on entrepreneurial discoveries where existing resources are used to develop new export-competitive sectors.

The most important finds in the analysis are:

1. Critical mass and competitiveness. If we take the point of commencement in the regional trade balance as an indicator of competitiveness, Nordland has a stronger economy than Norway as a whole. The critical mass is the exploitation of natural resources. This strength comes from three sectors: the marine sector, the processing industry and tourism/events.
2. Suppliers to these core firms are, in many respects, developing their own advanced export services and products.
3. Nordland has several good examples of entrepreneurial inventions. Some have become established successes; others have not, and some have not been further developed on account of problems with the management of natural resources.

The recommendations include:

1. **Sustainable innovation.** In order to secure sustainable development in the strong export-oriented clusters, it is necessary to strengthen locally-based expertise and innovation abilities. We suggest the establishment of local centres for innovation and researcher education based on professional training in the industrial settlements and coastal societies which are the cores for strong export industries.
2. **Supplier development**. A strategy for supplier development which aims to develop regional, national and global innovation systems which support successful export firms.

3. **Entrepreneurial inventions.** A strategy for innovation of sustainable development which enables the realisation of some of the entrepreneurial discoveries which can create new industries but which today are at the planning stage.
4. **New forms of policy coordination.** Seen in relation to existing policies, this implies that the negotiating space for regional development actors may be extended. This can be achieved through regionalisation whereby the county authorities acquire larger responsibility for education, environmental management and energy, or new forms of state-regional cooperation.

3 PROPOSAL FOR CONTENT AND IMPLEMENTATION OF AN INNOVATION STRATEGY FOR NORDLAND

As seen above, a smart innovation strategy in Nordland has to be based on priorities constructed on an analysis of the competitive sectors in Nordland's economy, their specialisation and their ability to follow Smart new directions which will provide the basis for new export industries.

3.1 NORDLAND HAS A SOLID BASIS

We have seen that exports from Nordland are associated with three central clusters with a large international export trade (the processing industry, the marine sector and tourism), together with 38 sectors (Statistics Norway's Panda sectors) which both supply these major export clusters as well as exporting directly themselves. Some of these 38 sectors have the majority of their supplies to other than the three major export sectors. We nevertheless describe them in this connection as 'supply sectors'.

This critical mass provides the basis for a very strong regional economy. We can observe this strength when looking at the export statistics.

According to Statistics Norway, the total exports from Nordland to the rest of Norway and the rest of the world amounted to kr. 23.5 billion in 2010 excluding oil and gas. Our estimates suggest that travel and tourism in Norway contributed a further kr. 2.5 billion, giving a total export of kr. 26.7 billion, and a *net export surplus* of kr. 12.4 billion. The net export surplus from Nordland excluding oil and gas was **30.9%** of the total trade in and out of Nordland. The corresponding figure for Norway *including* oil and gas is **19.9%.** Without oil and gas production including gas transport, Norway as an *export deficit* of -**21.4% of total trade in and out of the country.**

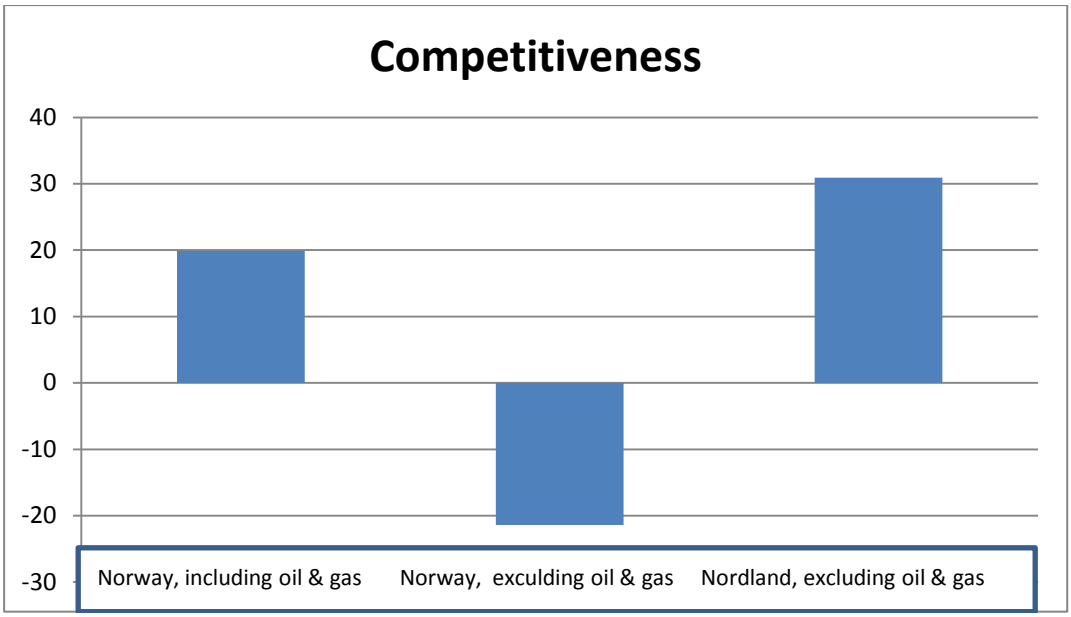

Figure 1 Competitive advantage measured as net exports as a share of total foreign trade for Norway and Nordland

The export figures for Nordland include a significant export to the rest of Norway. Nordland's export figures thus also illustrate a certain degree of integration of Nordland's economy with the Norwegian economy. But if we look at the national statistics, the major export sectors which are important for Nordland also have a high score on RCA (revealed competitive advantage), an index which measures export surplus abroad on a sector basis (see Nordic strengths by Lars Coenen in Mariussen et al. 2005.

If we accept net exports as an indicator of competitive skills in the region, these figures indicate that Nordland economy is more competitive than the national economy taken as a whole.

These competitive export sectors in Nordland survive in a national Norwegian economy which has an extremely high cost level on account of the strong specialisation within one sector – oil and gas. Until recently, the growth of the oil and gas industry in Norway has taken place outside Nordland.

Deliveries from the supply industry to the processing industry and the marine sector amounted to kr. 8.9 billion in 2010.

Exports from Nordland to Norway and the rest of the world are distributed by main sector is 2010:

Table 4 Main export sectors in Nordland 2010

Processing industry excl. oil and gas (metals, minerals, chemicals)	kr. 5.9 billion
Marine sector	kr. 9.1 billion
Travel industry, tourism	kr. 2.8 billion
Exports from the supply industry	kr. 5.7 billion

The unique skills which make this large export surplus possible (excluding oil, and gas) is maintained and developed thought an innovation system with various combinations of innovation through trial and error (DUI), and innovation through research and technological development (STI). A critical factor in maintenance of the type of system which combines practical knowledge and research in profitable strategies are local and regional communities where the combination of DUI and STI are locally established (4H).

3.1.1 Nordland in the North

In addition to distinguishing itself positively concerning economic growth and exports, Nordland also distinguishes itself from the neighbouring counties in North Norway, something which is clearly seen when we look at the differences in the exports of goods from the north Norwegian counties. The differences in structure and scale of the business sector are seen in the diagram below. (For a more detailed figure, see the appendix.) As we see from the table and figure, Nordland's proportion of exports from North Norway combined account for 61%, while the proportion of processed goods (industry) is as much as 94% of the total for the region.

Table 5 Export value by county, production of goods in North Norway 2012

	18 Nordland	19 Troms	20 Finnmark	Nord-Norge
	2012	2012	2012	2012
Goods, total	19084	4649	4996	28729
Food, beverages, tobacco	6856	3994	2828	13678
- Fish	6707	3946	2705	13358
Raw materials excl. food, beverages and tobacco	958	72	1629	2659
Fuel products	2	0	465	467
Processed products excl. Food, beverages and tobacco	11267	583	73	11923

A misconception is that Nordland is a marginalised and de-industrialised peripheral county which is dependent on the public sector with natural resources which are exploited by external operators and companies which do not provide local employment. The population which could have provided the basis for a profitable travel industry, industrial development, marine services and other forms of economic exploitation of nature, are gone. The main industry is care of the elderly. This picture can become reality if certain negative aspects of current policy are continued: short-term economic planning and a lack of sector coordination which result in the local and regional labour market becoming fragmented, and industrial cultures and other local cultures which can establish the basis for entrepreneurial activity within tourism, marine services and travel, fall into decay.

Investment decisions by the two main actors can halt this development: companies which can utilise nature economically and in a self-sustaining manner through long-term investment, and youth who can invest long-term in housing and develop the local community. It is here that 4H enters into the picture. A global competitive regional industrial development strategy which can actuate new industrial investment assumes new forms of

coordination between energy, the infrastructure, resource management, education, research and other sectors (triple helix).

In an alternative forward-looking picture, it emerges that Nordland will be the solution to the strategic question facing Norway when oil production begins to decline and Norway must reconstruct mainland industry in order to maintain a trade balance which can sustain the welfare state. In this long-term perspective, Nordland holds the key to reindustrialisation of Norway through the practical use of new research-based insight into how the natural resources of the county can be utilised profitably within tourism, the maritime sector, processing industries and the suppliers to these industries and in new related services.

3.2 THE BASIS FOR NORDLAND IN THE STRONG INDUSTRIES

In the following analysis, we present three strong export clusters (marine sector, processing industry and tourism) and their suppliers. The innovations in the key industries or the cores in the export-oriented sectors are briefly described below.

<table>
<tr><th>Specialisation</th><th>Processing industry</th><th>Marine sector</th><th colspan="2">Tourism etc.</th></tr>
<tr><td rowspan="3">SMART SPECIALISATION</td><td>Innovation within the specialised core</td><td>Local DUI

Global STI

Regional STI support</td><td>Local DUI

National STI

Regional STI support</td><td>Local DUI

Cluster development

Regional STI support</td></tr>
<tr><td>Innovation in the supply industry</td><td colspan="2">User-producer relations. Research and consultancy-driven support to supplier-development and network cooperation. Cluster development (Eg. oil pollution services, maritime clusters)</td><td></td></tr>
<tr><td>Entrepreneurial inventions</td><td>Major regional enterprise (E.g. solar cell industry</td><td>Driven by strong actors at the core (E.g. cod farming, closed plants)</td><td>An emerging regional innovation system (E.g. from B&B and full board to tourism).</td></tr>
</table>

A Smart specialisation strategy is seen in the association between:

4. **Innovation processes** within the specialised core
5. **Innovation systems** to the supply industry, and
6. **Entrepreneurial discoveries** where completely new sectors are established**.**

In the following we examine more closely the point of commencement with the strong industrial sectors in Nordland which provide the basis for further regional specialisation and innovation.

3.2.1 Companies within the processing industry; Global/National STI – Local DUI

The processing industry and the marine sector are dominated by large companies with an innovation network producing STI. With the metal and chemical industries global innovation systems are important while the innovation system in the marine sector is national.

The figure below illustrates a 'typical' innovation network for a company.

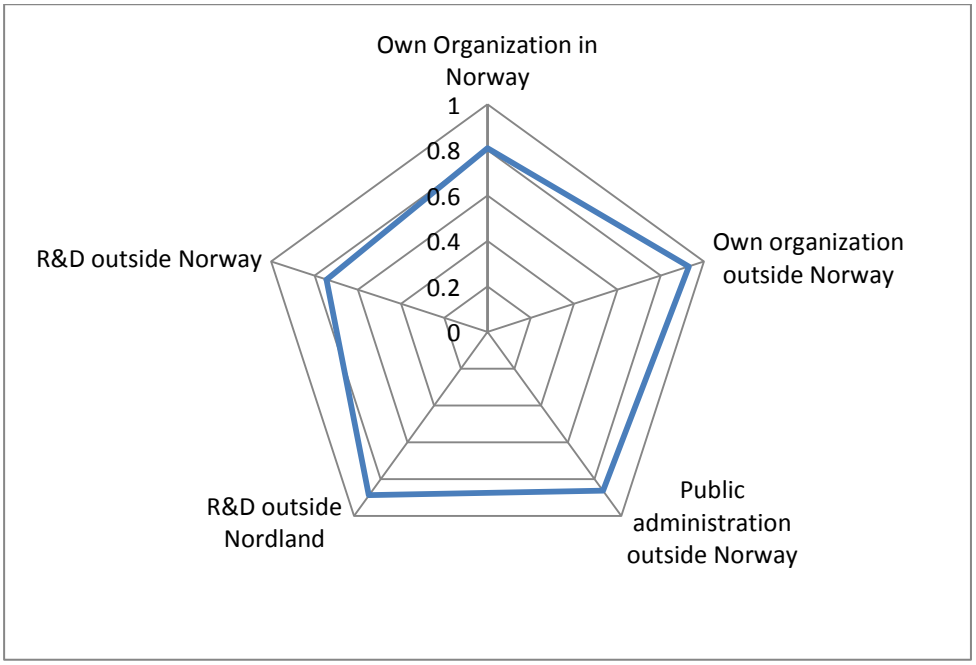

Figure 2 Typical innovation network for process industry global enterprise

The central parts of this innovation network comprise its own organisation (internal in the company group) inside Norway and abroad, R&D institutions within Norway and abroad, and public institutions abroad. In these STI-characterised innovation systems within fish farming and oil and gas, world-leading research essentially takes place outside Norway. For the company's STI-dominated innovation system, the regional innovation system is considered to be of little relevance. The company group is however extremely concerned with its own ability to innovate internally within the companies. This ability is dependent upon the regional labour markets in which the companies are operating. The processing industry's competitive ability both in the short term, in relation to the product market, and in the long term in respect of investments, is dependent upon the firms' organisations with world-leading productivity and is based on local knowledge and DUI which contributes to innovation within the firms.

A central institution within the processing industry's DUI-characterised regional innovation system is vocational training within the upper secondary school. The processing industry will only continue to exist in an extremely high-cost environment concerning wages because it has highly skilled workers. The management in these firms is much concerned with the significance of these regional innovation systems since they are an important element in

maintaining productivity and the regional labour markets which is the most important competitive factor in the processing industry in Nordland in competition in investments from the companies. Several leading firms consequently have a close and active cooperation with the upper secondary schools and are interested in strengthening these relationships.

For the processing industries which operate in global market- and innovation structures, one finds little R&D support regionally, and largely choose to acquire this through the company structure and/or abroad. This represents a strong challenge for R&D to make a contribution and to become relevant expertise partners for these company firms.

Another experience arising from the establishment of R&D support from the Narvik community (Regional college and Norut) comes from the establishment of the solar cell industry (PV-industry) in Glomfjord and Narvik. Here, R&D was introduced over a short period in the development of the process while at the same time the R&D unit in the company became centralised within the company group (at Herøya and Oslo). This resulted in the local industry become extremely sensitive at the same time as the production units became 'branches'. Simultaneously, the establishment of the new production process lacked the normal cooperation found in the processing industry, something which, at a later point in time, contributed to the management introducing a quality-improvement organisation of the production process to ensure the necessary quality and costs improvements. Together, this resulted in very few links and possibilities to influence the closure process decision while at the same time the productivity-improvement measures were introduced too late.

In order to strengthen the regional STI supporting Nordland, it emerges in the focus groups' discussions in the firms that that R&D communities in Nordland were not regarded as particularly strong or relevant. Within the industrial communities in Mo and Glomfjord, R&D expertise and support was largely required by NTNU (The Norwegian Technical University) and SINTEF where there was often an association between previous education and recruiting. The result has been that the establishment by the Narvik community of divisions in Helgeland has been problematic, Another point of view is nevertheless that the processing industries also experience that the distance in involving the NTNU/SINTEF system can be long and accessibility correspondingly low.

Improvement of both accessibility and relevant broad R&D support could possibly be established by increasing the extent of R&D support to the industrial community such as has been the case with the establishment of 'Campus Helgeland'. From the regional partnership side this would result in a reorientation from influencing the extent of relevant R&D support through controllable incentives to a focus on organising regional/local solutions with increased competition on the R&D offers.

3.2.2 Tourism; Local DUI, cluster development and STI support

Some of the main trends in the establishment of 'events-based' tourism are seen in:

- Personal networks between active and knowledgeable series entrepreneurs with a sound knowledge of the branch. These are central persons in several of the key firms.

- Regional innovation systems with close connections to regional institutions and weak links to regional and global networks.

One example of the latter is illustrated in the figure below. The central actors in this network are institutions implementing development on a regional, national and international basis combined with regional R&D institutions.

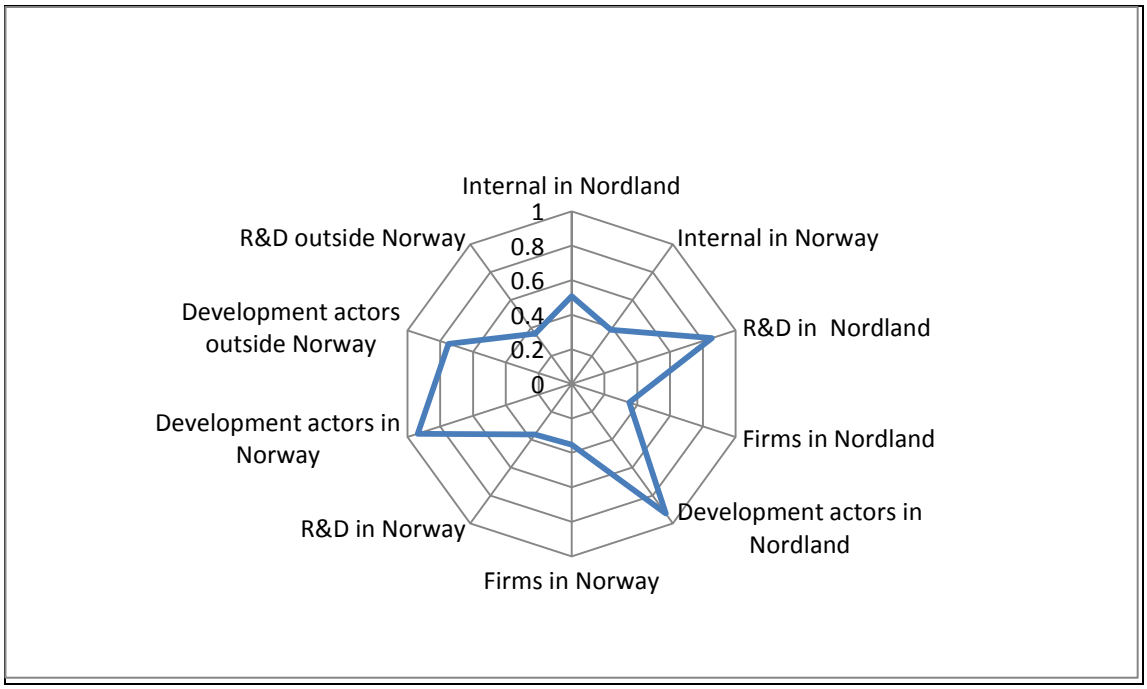

Figure 3 Innovation network for tourism enterprises in Nordland

For tourism, research-bases regional support functions to UDI innovations in core firms have been developed.

Similar to industry and other branches, tourism was previously characterised by a practice-based knowledge base and relatively limited research support. This has changed significantly in recent years through the emergence of a firm network which has contributed to the structuring of the relationship between industry and research, education and the support apparatus in Nordland.

On the research side, support has been introduced for the 'events-based' tourism. This aspect of tourism is relatively new in Norway and the R&D and education community in Bodø has previously established development of skills and research support related to events-based expertise development in North Norwegian tourism. Through the program 'Research stimulation Nord' and the focus on 'Events in Nord', a broad cooperation was established in 2009 between the expertise communities in Bodø (Nordland research/University of Nordland/HHB) and the University of Tromsø within events-based product development and events design.

The program is focused on research-based knowledge production associated with new client perspectives, production and destination development. The pioneer to this R&D consolidation was the event-economic perspective of Pine & Gilmore together with the establishment of strong firms and destination networks which had seen the need for increased R&D support for further innovation activities with a basis in event establishment. Nordland Research has participated in the establishment and follow-up research to the arena cluster 'Innovative experience' in the northern part of Nordland in association with the county council.

Through the development activities in the arena program (InnOpp) and regional network establishment in the destination communities (Helgeland, Vesterålen, Ofoten) both the relevant knowledge support through research and education have been notably extended. Institutional improvements have also occurred in the experience structure regionally, among other things through the establishment of the research-based expertise centre Novadis (Nordland Research, HHB) with important functions as the contact point and coordination body for event-based tourism. The supply of research-based support via education and research has also contributed to a reduced risk of 'lock-in' and that tourism in Nordland has established itself on the international research arena and contributed to increased visibility of the industry in connection with administration and increased events-based industrial development in the county.

3.2.3 The marine sector: Local dui, regional and national STI support

The marine sector accounts for a significant proportion of value-added in Nordland and plays a leading role in the industry nationally, particularly within fish farming. Access to rich coastal areas and localities provided the basis for growth in fish farming and support industries along the coast of Nordland. Increased production in this industry in the county also resulted in a concentration process on the ownership side (among others the firm 'Fjord') with the main office in Nordland. The establishment of a national arena cluster within fish farming strengthened this development, later resulting in the basis for the establishment of a national expertise centre (NCE) within aquaculture and fish farming in Nordland. The NCE establishment was decisive both for research support in important development areas related to salmon, and to increased research and focus on new marine species such as cod farming. Through the establishment of NCE, the regional relationship to national research institutions such as Nofima and Sintef has also been strengthened and restructured, and their presence within the relevant areas of expertise has been strengthened.

The establishment of NCE has been major factor in strengthening the association between the marine sector and the research communities. The research and educational community at the University of Nordland has been closely associated with the establishment and development of the Arena and NCE networks in Nordland, among other things on the basis of regional cooperation with the Fjord group of companies (*Fjord-skolen*), which established the basis for increased investment in training, further and higher education. In this manner a practice-based expertise area gradually linked more strongly to the STI structures and support activities through research and appropriate education.

The development of closer R&D support to the marine industry (fish farming) in Nordland also led to the University of Nordland (Section for Bio-science and Aquaculture) establishing a national expertise centre within aquaculture which has contributed to broader and decentralised further and secondary education courses for key personnel within fish farming. Several other half- and full-year courses directed at the industry have also been introduced at the university as a result of this development.

Today, the marine sector in Nordland is a leading national milestone with significant STI-links providing a basis for further development and innovation in the sector.

3.3 INNOVATION IN THE SUPPLY INDUSTRIES

Innovation systems for the supply industry are more complex. For the events producers the suppliers of equipment are important partners in the core of the innovation processes. Within the other two sectors important technological support functions have been developed such as laboratory services, equipment for net pens, oil protection equipment, logistics and so forth. Two central functions are the production of electricity and feedstuff used in fish farming. Feedstuff for fish farming is a central part of the value chain in the marine sector and is driven by STI. Several other supply sectors are similarly integrated in the activities of the core firms such as IKT, production of maritime equipment and textile (net pens, oil protection). At the same time they have, in several instances, a significant export out of the region.

A notable trend of several important sectors within the supply industry is that contact with the technological research community is regarded as weak. By way of example there are labouratory services within the processing industry and marine sector which are operated on a purely commercial basis without publically financed research being an integrated part of the firms' functions. Several of these firms are at different technological levels, and risk falling out of the technological research programme which is oriented towards the research front and not towards industrialisation.

Policies directed towards the sector are partly based on supply expansion through diverse types of firm networks. The firm's network is important for strengthening the ability of DUI innovations in weak firms. In an extension of this work we propose that closer contact with buyers is established (the major concerns or the public sector), and relevant technological research.

The analysis presented in this report indicates that several supply sectors have come a long way in combining local supplies with exports of products and services. First and foremost, concentration should be placed on focussing the regional support means towards these advanced firms with the aim of strengthening the export-oriented strategies which are based on local advantages.

Support should be given to project based on one or more of the following criteria:

- Potential for industrialisation of technology and are export-driven growth
- Contact with demanding regional, national or global clients

- Contacts with regional, national or international expertise institutions and sources for national or international research financing (Horizon 2020).

The projects should contribute to:

Long-term development of regional innovation systems with national and global networks;
Control of the local innovation centres (the German model) whereby projects are linked with these.

In this respect the region has considerable room for negotiation through coordination between Innovation Norway, The regional research fund Nord, and regional development means through VRI. Here, VRI could be a 'low threshold level' which contributes to initiate large projects with alternative finance.

3.4 ENTREPRENEURIAL DISCOVERIES ASSUME A STRATEGY FOR SUSTAINABLE DEVELOPMENT

If society in Nordland is to acquire the opportunity to develop on the basis of natural resources, a better coordination is required between the protection of nature and coordination of resolutions enabling economic development which make it possible to arrive at legitimate conclusions regarding growth and protection in difficult conflicts. In a number of areas which are central to development in Nordland, attempts to achieve such coordination have failed. The result is a 'conflict' between growth and conservation interests. In practice, this conflict contributes to long centralised decision-making processes which effectively prevent investments in new projects by creating uncertainty and by prolonging decisions. The result is often that investments which could have led to sustainable development and provided a basis for innovation in Nordland are instead located elsewhere.

Should one consider sustainability at a regional level, this will necessitate two types of necessary change as an assumption for the innovation strategy. First is the key to develop a re-industrialisation strategy for strong Norwegian resource and industrial regions (such as Nordland) whereby this takes place within an international/global context which is larger than the Norwegian. By way of example, priority given to reindustrialisation within the EU as the basis for the further development of innovation and welfare provides direct leads to industrial policy, regional policy, environmental policy and sustainability in adaptation. The priority given to reindustrialisation as an innovation-political strategy in Norway also requires a stronger integration and consideration of the balance between national political areas which determine the framework for regional development.

In addition, a pro-active regional adaptation to leads from international and global competitive and innovation frameworks require that the negotiating space and distribution of functions at national and regional levels must be developed along the lines of increased regionalisation. In order to integrate the increasing demands for sustainability in the development of the industrial structure and innovation, it is required that objective management and organisation is also developed which is able to manage the entire

development and contribute to increased sustainability based on various conditions stated in the regional plan.

SWOT ANALYSIS: STRENGTHS, POSSIBILITIES, CHALLENGES AND THREATS

The above discussion may be summarised as follows:

Strengths: Nordland has the solution – Norway has the problem	**Possibilities: Sustainable development**
If we overlook oil and gas, Nordland is more competitive than Norway. The county has three global competitive clusters with supply industries which are also undergoing development of related export-oriented activity. Industry in Nordland has a well-developed ability to make advanced entrepreneurial discoveries by establishing new industries related to the exploitation of natural resources.	Pursue the positive experiences with RIS and cluster development in new sectors Introduce 'the German Model' for education and innovation in the export clusters Entrepreneurial discoveries and utilisation of new possibilities based on natural resources which are the solution to Norway's strategic problem
Weaknesses: Sector coordination outside regional control	**Threat: The Dutch sickness**
Limited room for negotiation of regional strategies 'Conflict' between growth and conservation interests. No national strategy for reindustrialisation and sustainable development A national labour market which strengthens 'the Dutch sickness' in Norway	The disintegration of regionally-based expertise continues Disconnection of societal development and export-oriented industrial activity continues

The Norwegian economy has developed a strong dependence on a large export industry, the production of oil and gas. In spite of a successful strategy of keeping oil and gas income separated from the Norwegian economy through the Oil Fund, the trend has been in the direction of 'the Dutch sickness'. This 'sickness' implies that income from oil and gas is used to finance consumption-driven growth in protected industries and the public sector. This results in industries exposed to competition outside oil and gas accounting for a steadily declining proportion of BNP and that the trade balance between Norway and other countries becomes negative when oil and gas are excluded.

At the central level, this results in the motives for coordinating sector polices with a view to sustainable development, including industrial policy, no longer exist. This development also creates a dynamic in the national labour market resulting in youth selecting jobs in the public sector and protected industries rather than in the exposed industries. This is strengthened by Norwegian educational policy which operates with a clear distinction between, on the one hand, academic training in technical subjects which, on historic grounds, are concentrated in the urban areas without their own industry such as Oslo and Trondheim, and on the other hand, local technical training adapted to global competitive industry which is often the loser in youth choice of employment.

This study documents that regional economy in Nordland is a healthy exception to the Dutch symptoms. The county has three global competitive clusters: the marine cluster, processing industries and tourism/events with supply industries which in some areas are also experiencing growth in their own export-oriented activities. The regional economy in Nordland is therefore far more competitive than the Norwegian economy when we exclude oil and gas. The threat is that Nordland will be affected by the Dutch sickness and that the region will not be able to maintain its international competitive power.

This conclusion results in the recommendation for a strategy that must also be included within the regional negotiating space in Norway where sectors are decisive for the development of Nordland such as energy policy, industrial policy, and a policy for sustainable development is a state and not a regional responsibility.

3.5 PROPOSALS FOR RIS STRATEGY ELEMENTS AND MEASURES

Introduction

The analysis in the above chapters examined and described the regional assumptions for development of a regional innovation strategy for Nordland in accordance with the principles of Smart specialisation to which importance is currently attached by the EU and OECD. The main elements in such a strategy are to strengthen the association between localised strong industrial areas with a critical mass, export linkages, and the potential to develop a more differentiated industrial structure. In order to achieve this, a development of the expertise base and the manner in which the organisation of the expertise support is linked with firms and industries must occur simultaneously. This implies the stimulation of both practice-based (DUI) and research-based expertise support (STI). By basing this strategy on export-competitive and global industries, a solid base is established for innovation which will ensure the development of a comparative advantage which will become increasingly important as the value of the resource-based advantage declines. A stronger association with R&D support will in itself become more central in ensuring access to relevant global new knowledge and technological development which counteracts regional attachment in the strategy.

In the development of a new innovation strategy for Nordland based on these principles, importance is also attached whereby an improvement of the innovation ability in the important industrial areas in Nordland will become increasingly reliant on sustainability in most circumstances. We are therefore talking about an innovation strategy which has to

incorporate this dimension and whereby regionally managed and defensible administration of the resource base is developed within the framework of the strategy, something which analytically and conceptually is initiated through an extension of the model for the regional innovation system from triple helix (3H) to quadruple helix (4H).

Regional Smart specialisation and innovation within these frameworks can be supported through three categories of innovation support:

1. Innovation within the specialised core
2. Innovation in the supply industries
3. Support for entrepreneurial inventions.

In the following, a summary is made of the main elements we propose as the point of departure for establishing and developing a regional innovation strategy for Nordland in accordance with Smart specialisation. Base on the strategy's assumptions, it must be emphasised that the proposals for measures and priorities are directed towards systematic improvements, and areas for the measures will have to be specified more precisely in respect of the content and form of the support for development and innovation within the basic industries and support industries in Nordland.

3.5.1 Innovation within the specialised core

Based on our analysis of the critical mass and competitive advantage in the form of high export proportions and/or the export potential, we identified three core areas as a basis of the strategy: the processing industry, the marine sector and events-based tourism. In addition there were a number of strong supply industries with deliveries to these industries and with a significant export on their own accord, something which provides a potential for growth and increased regional differentiation in the industrial structure.

Through GAP analysis and focus group meetings (tourism and industry), and secondary data analyses, the innovation networks for these industries were described with a view as to where the most important sources for expertise and innovation are located today, and also in the future. The results show that there is a broad difference between the three industrial areas with regard to the expertise base and where relevant support is to be obtained for this expertise. This has implications for the strategy's possible measures needed to stimulate increased 'connectedness' between areas with a critical mass regionally, and their necessary and relevant expertise basis in order to innovate and remain local/regional. With increased global competitive exposure, this implies that it will be strategically more important to ensure a regional linkage on a broader expertise base with relevance for the core areas, This contributes to increased heterogeneity in the region's strategic resource base and supports the development of expertise-based competitive advantage.

The German model

That which we have previously referred to as 'The German Model' implies a strengthening of vocational further education through the establishment of offers for further polytechnic education at university level, combined with the establishment of local innovation centres, closely attached to the larger actors in the marine industry, processing industry and tourism.

The German model will contribute to a stronger locally-established expertise base with a closer connection between research-based expertise (STI) and innovation through experiment and practice, or DUI in the strong export-clustered events, processing industry and marine sector. Development of a more differentiated and integrated local expertise structure is a pre-assumption for attaining increased regional differentiation of expertise-based industrial development simultaneous to maintaining and developing established competitive advantage.

Proposal for measures: Transfer of the successful experiences of Finland (and other European areas) which have shown how vocational colleges and local innovation centres can contribute to industrial development. An adoption of this scheme must be built upon the coordination of a number of involved institutions and policy areas, and engage expertise institutions both within and outside the region.

Stronger regional STI support and presence

Nordland currently has a regional innovation system with good linkages between regional specialised institutions and entrepreneurs in industry – event tourism. Seen in an international context, this innovation system deserves international attention

In spite of the fact that Nordland is a very competitive region, we do not have a strong technological-natural sciences university which is able to meet the challenges of the processing industry and marine sector.

The regional STI institutions are very important, but seen in relation to the challenge, these are quite weak. An important task is to strengthen the DTI institutions' ability to function as regional nodes in global and national innovation systems in interplay with local and regional actors in the strong clusters and in the supply industries.

Proposal for measures: Regional authorities do not have power over the state university and college sector. Therefore, one possibility here is the strengthening of the regional partnership within the sector. It is important to support Nordland College as a scientific college, but at the same time it is also important to realise that this can only succeed in supplying expertise within a limited number of areas. In the same manner it is important to support the events-based and marine activities at the University of Nordland. In order to achieve a regionally more relevant and broader offer of R&D services, it is important to strengthen coordination in the division of tasks and broader and more relevant decentralised offers by the higher education establishments in the county.

In a number of areas, industrial development in Nordland is restricted by national policies and laws. It is therefore necessary to raise the issue of a better dialogue between the state and regions regarding a broad industrial policy. One suggestion is for a national institutionalised solution where separate forums are established for R&D, transport, area management and the environment, small industry policy and other important areas.

3.5.2 Innovation in the supply industry

The other type of innovation measure in the Smart specialisation strategy for Nordland is directed towards exploiting the large potential for innovation and profitable growth which we identified within the related support industries with a large export potential.

Examples of such industries are given in the analyses of the industrial structure and innovation network in Chapters 4 and 5. The supply industry and service supplies have been traditionally developed – and as a pre-assumption – in association with the growth of industrial centres in the county. We also find good examples within areas such as the development of oil protection equipment as oil activity has gradually moved northwards, and a strong regional and nation industrial community with a large potential for growth and innovation. Another strong industrial area is to found in association with the maritime cluster with related supplies within shipping and sea transport, ship-building and shipyards, machine industry, offshore services and transport means.

Within the strategy, systematic measures related to the development of the supply industry will be an effective means for stimulating Smart regional specialisation. These supply industries have also developed links with R&D and the means processes. Measures and means are also decisive in order to be able to further develop and strengthen the localised base industries. Since the supply industries partly overlap on the marketing side and have a considerable export activity, the stimulation of growth and innovation will lead to market differentiation. The supply industries have also had an effect on the means apparatus, R&D and expertise support as well as strategic alliance partners regionally and nationally, and through continued stimulation have the potential to develop new core areas with a potential for growth and innovation.

Concentration on further growth within events-base industrial development and innovation similarly assumes a more system-oriented interplay and development of the infrastructure in order to be successful.

Proposal for measures: In order to stimulate further growth of entrepreneurial discoveries and new value-added export industries in the region, it is important to continue with the good experience which one has had in managing systematic research and consultancy support to supply-development and network cooperation. The content of such measures should aim to further develop these experiences and methods from the established cluster cooperation which was encountered in events-based tourism, oil protection, (petro)maritime industrial development and the marine sector. Experience from time-limited strategic joint input projects such as the *Forskningsløft Nord* programme within events-based tourism and arctic technology also shows that the effect of such measures could be improved through closer strategic and operative coordination in the means apparatus and partnership.

In order to stimulate supply industry development in Nordland, it will be important to eliminate the innovation-restrictive regulations and obstacles. The characteristics of such obstacles vary according to the particular industry and market focus. Further, more predictable framework conditions and clearer administrative roles and division of tasks at national and regional levels are required.

Another area where the county and other regional development actors can contribute to the development of the supply industry is through the development of a strategy for supply development related to purchase and regional production/service development which contributes to supporting the strong aspects of regional development and innovation.

3.5.3 Sustainable development as an incentive to innovation (stimulation of entrepreneurial inventions)

Many attempts at encouraging innovation in Nordland encounter a number of regulatory hindrances to innovation. One example is oil protection equipment where state regulations of the oil sector effectively prevent the development of better equipment. This theme often emerges in the tension between growth and conservation.

The long-term challenges in this area are to achieve new forms of sector coordination with a view to developing a strategy for sustainable development which puts an end to this 'war' between conservation and industrial interests, and establish the basis for innovation strategies which make development in the new nature-based export industries possible.

In the short term we expect than many projects which are initiated within supply industry expansion and with a point of departure in the new local innovations centres may result in various forms of obstacle in the form of controls of public purchases or of different sector policies.

Proposal for measures: Increased regionalisation in administration, together with linkages and balancing policy areas which determine the framework for industrial development and innovation, provide the conditions for long-term development of new activities with a basis in regional resources and comparative advantage. In order to support this development of new and innovative industrial activity, with a Smart specialisation there is a need to stimulate new ideas and activities on a large scale and over a long term. This implies increased reliance on various national and regional means together with a closer clarification of long-term financing of such measures and the infrastructure.

We therefore propose a strengthening of reliance on entrepreneurial discoveries by strengthening the necessary long-term means and seed capital. In order to stimulate robust industrial development and innovative differentiation between regions, it is important that the state provides increased finance for infrastructure measures in areas which contribute to strengthening the regional industrial structure until innovations become profitable. This implies a systematic support for long-term development of weak projects with a large potential for commercial growth, exports, and which contribute to a more differentiated regional expertise and industrial infrastructure. From the standpoint of industry, this need is seen together with an easier access to means for piloting and commercial up-scaling.

We have pointed to the situation whereby stimulation of sustainable regional development and administration will make an important contribution to innovation and Smart specialisation in Nordland. Such development implies a continuous need for experimental activity in the development of objective regional action opportunity. In many respects such experiments with a division of functions at national and regional levels will be comparable

with the 'free county' experiment. This will now be within the S3 framework with a clear focus on the interplay between a more rationalised administrative structure and increased opportunity of industrial specialisation of regions based on competitive advantage and with sufficiently broad and relevant expertise support.

The suggested main elements are summarised in the following table.

Table 1. Summary of proposals for elements and measure in S3 specialisation in Nordland

Specialisation		**Strategic priorities and measures**
SMART SPECIALISATION	**Innovation within the specialised core**	<u>Strengthening of relevant industrial and vocational education and local support to R&D and innovation</u> - Strengthening of identical approach to industrial-oriented and vocational training in the industrial communities - Regionally adapted development of vocational school (college) models adapted to industrial and strategic requirements (with transfer to university/college education and engineering studies) - Stronger coordination of courses offered of educational and industrial-oriented means <u>Regional strengthening of relevant STI support and availability</u> - Establishment of local innovation centres (based on model from Finland) which contributes to linking expertise and R&D support to long-term industrial development and differentiation - Development of global network to universities - Supplement the strategy for expertise support with focus on more open competition in addition to regional administration
	Innovation in the supply industry	<u>Strengthening of User-Producer relations</u> - Research and consultancy-operated support to supply development and network cooperation. Cluster development. (Example; events industry, oil protection, maritime cluster) - Remove regulatory innovation hindrances - Public use of purchasing strategy for supply development
	Entrepreneurial inventions	<u>Regionalised administrative regime for sustainable development</u> - State contribution to basic investment - Long-term innovation financing - Support for weak projects with large potential - Development experiments for increased regional operations

3.6 PROPOSAL FOR INDICATORS OF INPUTS AND RESULTS

Focussing on the development and implementation of a regional innovation strategy based on the Smart specialisation, the establishment of a systematic follow-up is also required to strengthen development, input and results/effects over time. The elements in the follow-up occur both through experience and management activities and indicators/target for inputs, results and effects over time. The indicator system and activities must cover both the need for benchmarking and effect measurement over time.

3.6.1 Continuation of the GAP analysis and dialogue arenas

The proposal for a regional innovation strategy is ambitious concerning coordination of sectors which are currently not controlled by the regional authorities. The proposal assumes

a pro-active cooperation between several different institutions and sector authorities, regional plan authorities and other triple helix actors. The experience with the GAP analysis shows that there is a large interest for this type of dialogue in industry, and it is possible to relate questions on expectations and experiences in a realistic manner with a dialogue on how these gaps can be created.

An important part of the work with executing the parts of the 'German Model' and 'sustainable development' should therefore be a continuation of a combination of dialogue and measurement of Gap as has been used in this analysis. In order to follow up this work, a 'Forum for Smart 4H' should be established with tripe helix actors who carry out an on-going discussion of experiences and follow-up. Such a forum would also ensure a strategic industrial base for priorities and revision of the strategy's main elements. Following up development of Nordland's innovation system also provides important premises for forum and development measures enabling the development of the regional negotiating arena in Nordland.

3.6.2 External reference development and method experience

Strategy revision and experience derived from the execution of the S3 strategy for Nordland must be institutionally based, both externally and internally. Externally, participation in EU support activities and networks in the S3 process in the regions will be an important arena for developing relations to 'critical friends' through professional and industrial strategic learning processes which provide access to methodological learning, network building and cooperation with other European regions with relevant experience in the development of strategy and regional organisation.

Method experience in relation to Smart specialisation will also contribute to the systematisation of Nordland's international development work and network construction through Interreg and EU programmes, something which will be even more important when, during the next framework period, The EU will link its regional and research policies through the Horizon 2020 platform. Regional stimulation of innovation through Smart specialisation is precisely one of the most important aspects and assumptions for this reform with broad support for regional-differentiated growth and expertise support for innovation.

Internally and regionally, it would be objective to base methodical experience and follow-up evaluation on the preparation, execution and development of the S3 strategy within the VRI programme, regionally and nationally, something which results in synergies with the programme's mobilisation and dialogue-based means and R&D support.

3.6.3 Programme-based evaluation of effects

In addition to monitoring and development of the entire system and the interplay within the regional innovation system based on model 4H, a more traditional programme evaluation design must be established/continued, and which is directed towards revealing the association between the strategic platform and the development objectives, use of

means/measures and the results and effects which are the result of the strategy based on inputs and follow-up (additionality).

The indicator system which is utilised will be able to be built both on the existing design and use of means, and will be capable of comparison back in time concerning previous means. The main objective of the follow-up can be directed towards main areas of strategic measures –existing cores, development of supply industries and exports together with long-term evaluation of the effects of the measures for stimulating entrepreneurial discoveries and the development of the extent and success rates from the idea-phase until the successful commercialisation and contribution to differentiation of regional industrial and expertise structures.

3.6.4 Development of regional arenas and sustainability

A further development of the regional innovation system and management of the resource base for innovation will, as a Smart specialisation, occur in the form of increased regional political responsibility and negotiation. This will stimulate both regional innovation and more sustainable industrial development. The main elements in the follow-up will be related to the development of increased regional (and national) sustainability in industrial development and innovation which contributes to the region being able to expand further on the basis of comparative resource- and competitive advantage with importance attached to export-oriented competition and growth.

Institutionally, increased sustainability focus (4H) in the innovation system is developed in areas so as to reduce the fragmentation of means/measures. This can occur whereby a regional development arena is established in the form of experimental activities and dialogue-based explanations of national/regional role distribution with state authorities and policy areas. The activities within this area should occur in association with the regional methodological experience in association with VRI.

The elements are a tentative follow-up system are summarised below.

Table 2 Elements and processes in the follow-up system for S3 development in Nordland

Follow-up system S3	Indicator area and improvement/management processes
Strategic activities in follow-up of the strategy's impute areas and results: - **Benchmarking and learning** - **Development** - **Effect evaluation** - **Strategic interaction** - **Regional arenas**	<u>Continuation of the GAP analysis and dialogue arenas</u> - Gap analyses - Focus groups - S3 Forum - VRI basis for methodology experience from S3
	<u>External reference development and method experience</u> - Transnational learning through participation in EU method development and experience with Smart specialisation - Integration of S3 strategies and other regional development networks (Interreg, EU R&D programmes) - S3 joint activities in method development in VRI nationally
	<u>Programme-based evaluation indicator system</u> - Inputs, changes, results and effects within strategy 3 main focus areas and coordination activities - Follow-up evaluation - Benchmarking
	<u>Development of regional arenas and coordination (sustainability)</u> - Development of increased sustainability - Establishment of regional development arenas (trial projects) - Management dialogue on regionalisation and integration of relevant policy areas