TEN TRANSPORT POLICY AND PROJECTS IN THE FUTURE
PUBLIC CONSULTATION – QUESTIONS TO STAKEHOLDERS

HIGHLIGHTS

- **Logistics are vital to LKAB and other core industries in the Barents Region. The main industries in the region are the dominant European "in-house" suppliers of minerals and ore products, forest products, energy and seafood - products which are all major contributors to European sustainability and future competitiveness.**

- **From the industrial perspective – the future development within TEN in this region should focus on two main issues:**
  a. The development of an improved East-West railway systems with effective links to the present dominant national North-South railway systems.
  b. The connection of the railway systems to inter-modal ports and the sea corridors in the Baltic and the Atlantic Seas.

- **This paper comments and give suggestions on present plans and processes in the Barents region within rail, road, "Motorways of the Sea" and aviation from an industrial perspective and the reason why further development of the Barents region is of great importance to the rest of Europe as well.**

- **Environmental issues are of great importance in this region and TEN can play a decisive role for sustainable development to the benefit of future European generations.**

- **Even in the sparsely populated Barents Region problems of logistic bottlenecks apply. Furthermore a shift from road to rail and sea in these Northern Areas is also a contribution to the reduction of congestion and pollution further South as cargo is being shipped mainly by truck from this large Barents "warehouse" to consumers markets in Central Europe.**

- **Security in terms of operations and optimal infrastructure is important.**

- **The pay-off for TEN is large in this region as challenges are manageable and even fairly modest investments will give substantial results.**

- **A continued TEN focus on the Region is also a contribution to economic and political stability in the new member states and in Russia.**

INTRODUCTION

This response is related to the Public hearing initiated by the EU Commission High Level Group on the future of the TEN program. The focus is the Barents transportation area and the need to develop infrastructure and logistics within the TEN frame.

LKAB is one of the major industries in the area and would like to act proactively on this issues as the development of TEN is considered as vital for the industries and business communities specifically, and in general also of great importance to the rest of Europe.

The following pages are a response to the questions posed by the Commission. Subject to demographic and climatic conditions, not all questions seem relevant for the Barents Region, however the chronology in this paper follows mainly the "questionnaire" form the High Level Group.

The Barens Region – an overview

In geographic terms, The Barents Region is by TEN defined as the parts of Sweden, Finland, Norway and Russia mainly North of the Polar Circle. More precisely the region includes Norrbotten and Västerbotten in Sweden, Nordland, Troms and Finnmark in Norway, Lappi, Pohjois-Pohjanmaan (Oulu) and Kajana in Finland, parts of he regions Leningrad, Archangel and the Kola Peninsula in Russia. Of the Arctic regions, the Barents Region is the most populated, but is still the last almost unexploited wilderness in Europe. Climatic most of the region belongs to the Arctic or Sub-Arctic zone.
The region is characterized by vast uninhabited areas, unspoiled nature consisting of deep woods and permafrost areas. Islands and fjords at the Norwegian Atlantic coast, a large mountain ridge between Sweden and Norway, mountainous plateaus in Finnmark, the deep woods in Lappland, Norrbotten, Västerbotten and Russia, coastal landscapes in the South - are some of the geographical features of this area. For climatic reasons, the biological recovery is very slow under these conditions. Of special importance are the rich fisheries in the Norwegian Sea, The Barents Sea and The White Sea.

The region has been one of the priority transportation areas in the TEN program.

For the purpose of this paper, information on Russian infrastructure and logistics is included when relevant, but emphasis is on the Swedish, Finnish and Norwegian parts of the region.

An industrial perspective

LKAB, the leading European iron ore mining company in Northern Sweden, has strong interests in logistics and development of infrastructure in the Barents Region. The rationale is evident –effective logistics is vital for LKAB and as the dominant supplier of iron ore to European steel mills, development of effective transport corridors is of great importance. TEN issues are crucial for competitiveness and in the end the sustainability for LKAB and other raw material based industries in this area.

The future of TEN and TEN issues related to the needs of a dynamic business community has been discussed with fellow industries in the region. It is evident that the perception of TEN as a very important tool to develop infrastructure and logistics in the region is shared by these other major industries. In the time to come, LKAB would like to further develop a partnership in conjunction with other industrial partners and take an active part in designing the "TEN of the future".

Focus on actions and partnership

In the next phase of the TEN program, focus should be on concrete actions. Seen from the industrial perspective there have been many plans and analyses in this area, but practical results are implemented slowly.

It is likewise important to act in close relation with regional and national authorities. LKAB has already been discussing co ordination of approaches to TEN with Swedish and Norwegian authorities.

In the response to the TEN High Level Group, the industry would like to bring in the industrial perspective regarding corridors and future TEN development. This is reflected on the following pages in answering the three main issues:

- Which are the major axes?
- Which investments and how?
- How to ensure seamless and efficient use of the axes?

As an introduction to the responses, there is however a need to give a general explanation of the rationale for a continuously strong TEN commitment in the Barents Region. For both industry, people and authorities in this region, there is a growing uneasiness regarding the fact that future focus of the Union is moving towards Southern and Eastern European regions rather than the Barents area. The industry would like to point out that there are still many unsolved logistic issues in the North – which are of great importance to the rest for Europe as well.

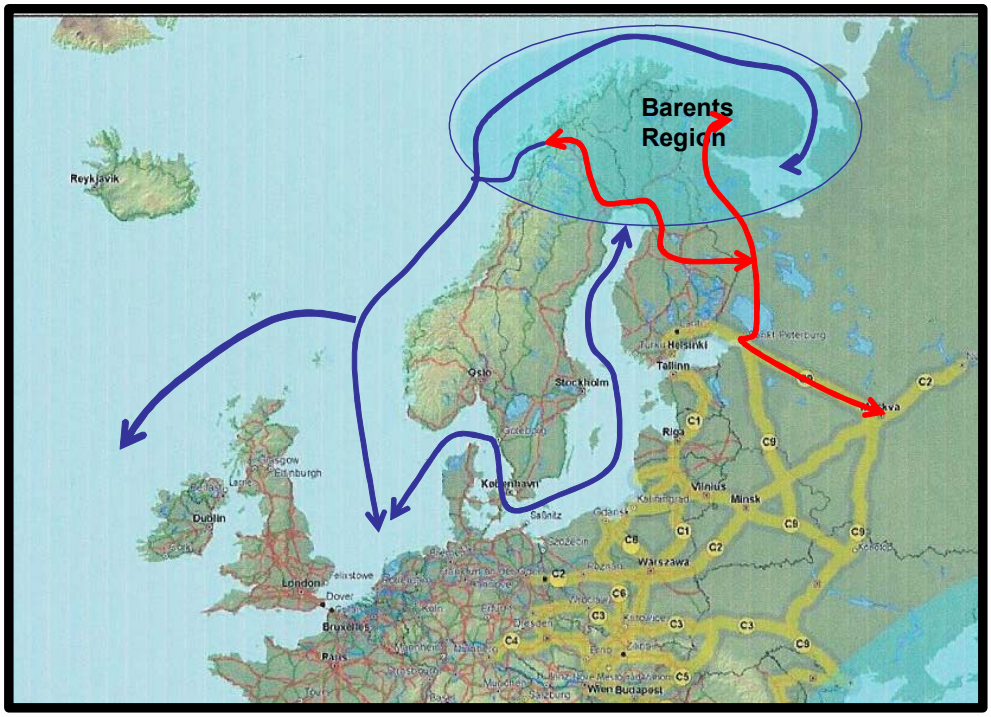
From the industrial perspective – the future development within TEN in this region should focus on two main issues:

1. Develop an improved East-West railway systems with effective links to the present dominant North-South national railways.

2. Connect the railway systems to intermodal ports and the sea corridors in the Baltic and Atlantic Sea.

WHY BARENTS?

The Barents Region, consisting of the Northernmost parts of Sweden, Norway, Finland and Russia, has been classified as a Transport Area of specific TEN-T interest:



Source: European Commission

During the last 15 years EU and the TEN programmes have had special attention on this region, as a consequence of political initiatives like the “Northern Dimension”. This reflects the industrial importance of this region in a European logistic context as well.

The objective of the “Northern Dimension” has been to strengthen the Northern parts of Europe in terms of

- Industrial development
- Infrastructure
- Cross-border partnerships
- Environment
- Research and Development

Politically the Northern Dimension initiative has been followed up by action plans, the most recent is expiring in 2006.

From a TEN perspective the Barents area and its transport corridors have been relatively high on the agenda during the existence of the TEN Programme. When it comes to concrete actions, however, priority

has been given to projects further south, which in the longer run is unfortunate from the industrial perspective. E.g. the Nordic Link project between the capitals of Denmark, Sweden, Finland and Norway.

Some TEN funds though have been allocated to railroads and roads in Northern parts of Finland and Sweden.

Four major groups of raw material coming from this region are of significant importance in general for Europe and consequently TEN. These are:

- Iron Ore
- Energy
- Forest products
- Seafood

In popular terms, the Barents Region may bee regarded as an enormous European "warehouse" for raw materials. The real challenge is to build sustainable logistic systems to get these raw materials from the production sites in the North to the large consumer markets in EU. Cost effectiveness, competitiveness and environmental friendly transport networks are vital both for the regional industries and for Europe in general.

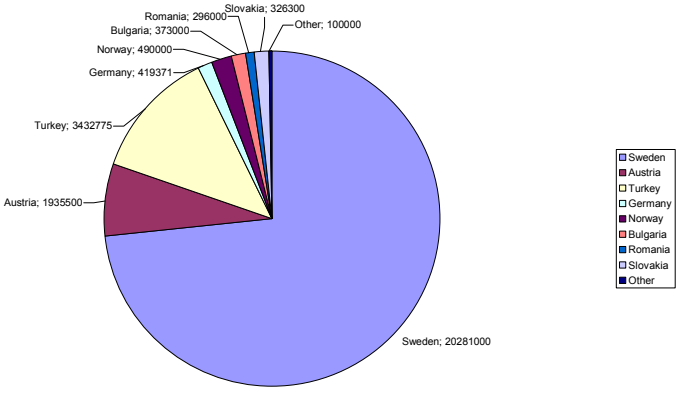
What is the European importance of these products?

The relative importance of these product categories is evident when looking at the annual production in the three Nordic countries. The case becomes even stronger if Russia is included. The statistics below is intended to give an idea of the Barents contribution to the rest of Europe in terms of raw materials and industrial products within the four categories

Iron ore mining and production (metric tonnes 2002)

Minerals and ore can be found in several parts of the Barents Region, however the widest range of ore reserves are located at the Kola peninsula with more than 700 different mineral and ore varieties. The Kola peninsula is considered as one of the most promising regions for minerals and ores in Russia. In the Archangel area, valuable diamond reserves are just at the beginning of exploitation.

¾ of European iron ore production comes from the region:



Source: Euromines

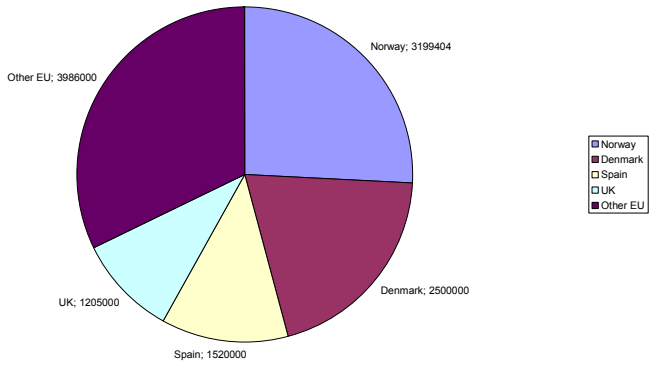
The Swedish production has a dominant role in Europe with LKAB as EUs “domestic mine”. The iron ore production in Sweden is certainly not sufficient for total supplies to European steel mills, but is competitive just because of the geographical closeness and effective logistics.

There are plans to increase the production in the years to come, and decisions have been taken to start up new mill in North Sweden.

Seafood production (metric tonnes 2003)

Seafood production is another area with great contribution to the European markets. The northernmost waters of Europe remain one of the largest seafood “stores” in the world and with superb quality. This is also a sector with a high growth rate – the Atlantic coast is ideal for seafood farms and volumes are supposed to grow rapidly over the next years. As for the iron ore, infrastructure and effective logistics are vital, while long distances and rough waters pose logistic challenges. Industrial fish farming poses both environmental and competence challenges.

Almost half of Europe’ s seafood production originates in the Barents Region:



Source: Norwegian Ministry of Fisheries

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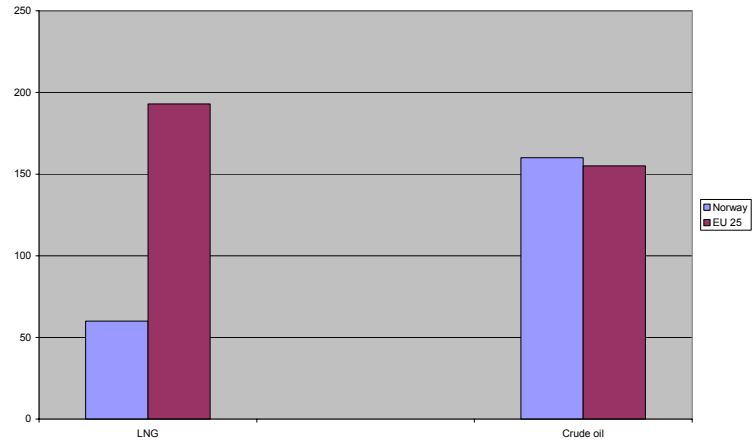
Energy production (metric tonnes 2002)

When considering energy in the Barents Area, crude oil and Liquid Natural Gas (LNG) are the two products with highest future potential for the energy situation in Europe. It is true that hydroelectric power and to some extent nuclear power also play important roles, but in terms of production and exports, other kinds of energy do not surpass oil and LNG.

The Barents Region is at the departure of becoming Europe’s most important supplier of energy. Energy will be seaborne by vessels and pipelines in the future from the oil and gas fields in the Barents Sea, while there are plans for on-shore pipe lines through Russia, Sweden, Finland and Norway. The region will be playing a role both as producers and as transport corridor in the future. North Western Russia is of great strategic importance to Russia because of the rich natural resources. There is a need of enormous investments on the Russian side (“mega projects”) in infrastructure for this purpose.
The large natural gas and oil resources in North Western Russia are now ready for exploitation. This implies heavy investments in this region specifically in infrastructure and logistics. The Duma decided in

Spring 2000 to start developing the enormous Schtockman oil and gas field and the Russians will be willing to invite foreign capital and expertise to this project. The development of the oil and gas industry will have substantial side effects also for other services and suppliers

More than half of Europe's oil production and an increasing volume of LNG Gas is produced in Barents:



Source: Norwegian Directorate of Oil and Gas

In the present situation Norway is the dominant producer of LNG and oil in the Barents area. Norway is the third largest net exporter of crude oil in the world.

Only 1/3 of known oil and gas fields are in production/been exploited so far, and especially the Barents Sea seems very promising in the future if exploration and production can be taken care of in an environmental friendly way.

Logistic challenges for the oil and gas sector is shared with the other industries in the Barents area. The energy transportation system should also be seen in accordance with TEN-E plans.

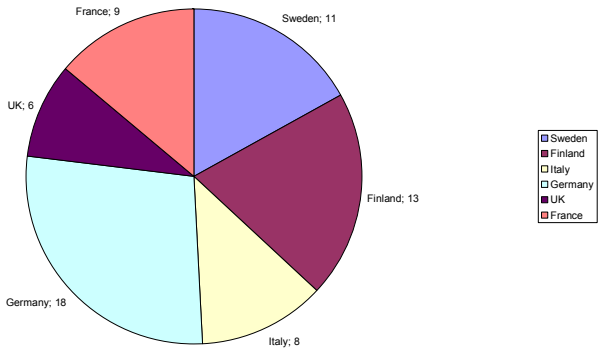
Forest products

Forest products is the fourth of the large commodities from the Barents Region. Operations are taken care of by large global companies, mostly of Nordic origin. In the statistics presented below also the Southern parts of the Nordic countries are included. It should be noted that the forest industry is very integrated both domestically and internationally with logistics and transportation systems to back up this structure.

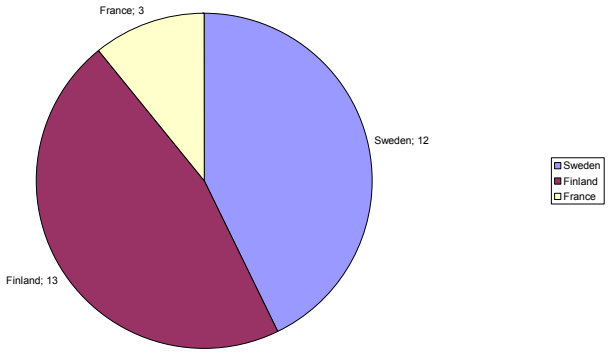
The Nordic countries – major producers of forest based products (% of EU production):

- 25% of paper production
- 89% of pulp production
- 31% of sawn material

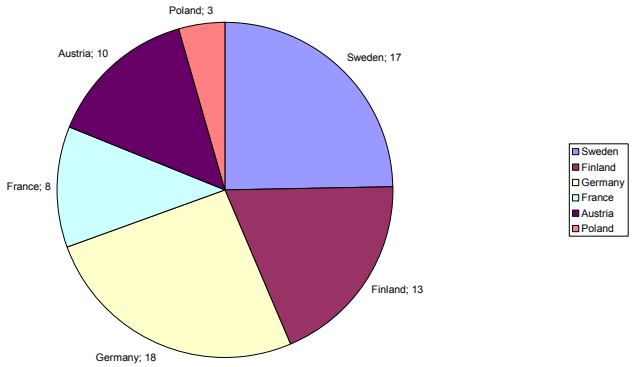
Paper production mill tonnes 2002



Pulp production mill tonnes 2002



Sawn forest products million m3 2002



Sources: National statistics of Sweden and Finland, Interreg projects

For the forest industry there are the same logistic issues as for the other industries in the region, but in addition there is the challenge of balancing production and logistics between the different production sites

in the rest of Europe. A change in the logistics in the Northern parts will influence the supply chain other places.

"Competition" with other TEN projects?

It is quite clear that the Barents region compete poorly with other parts of Europe if "importance" and "selection criteria" for the TEN Programme is guided by e.g. density of population, volumes and some other macroeconomic factors. As described above, other criteria and other issues apply.

Beside the relative importance of the Barents industry, some other important issues related to the TEN Programme may be:

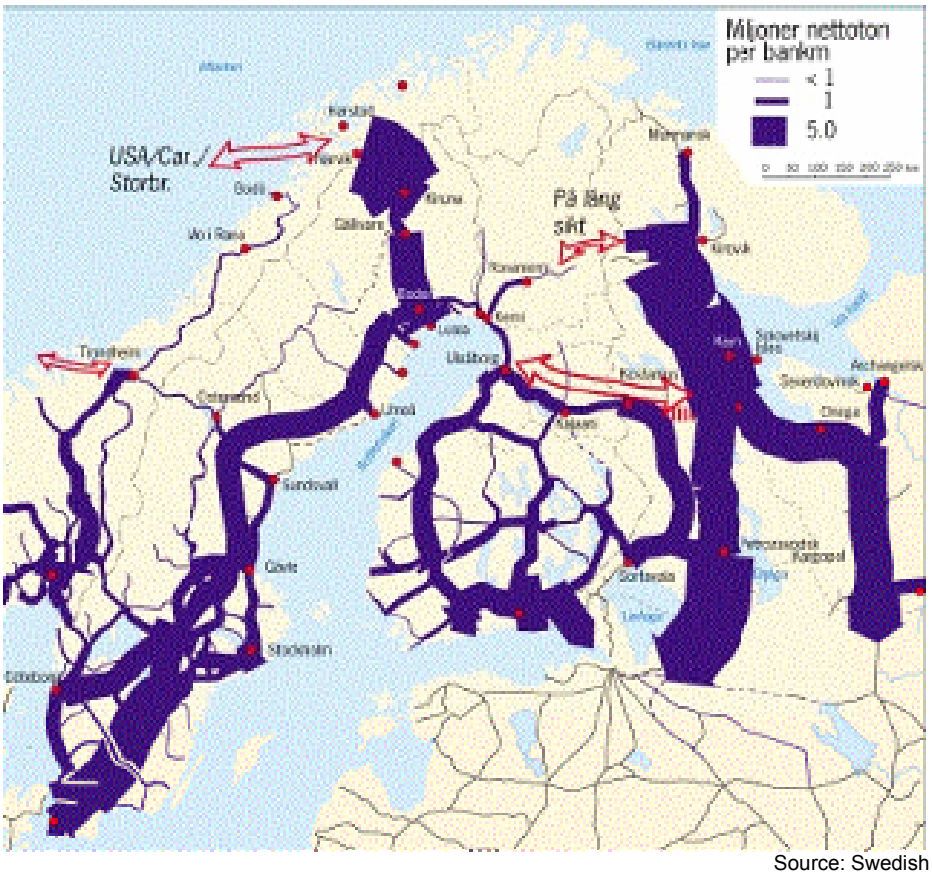
Arguments regarding the general importance of the Barents Region:

- Road and rail systems are in strong need for upgrading, removing of bottlenecks and investments in new infrastructure.
- Land based infrastructure is very dependent on sea connections and the development of Motorways of the Sea
- Barents infrastructure should be seen as part of rail links to Russia with extension to Euro-Asian countries and westward to North America.
- Environmental and safety issues are of great importance in this area. Better infrastructure will be directly helpful in other parts of Europe by shifting volumes from road to rail and sea.
- A fairly "modest" effort in this area to improve logistics and infrastructure will give substantial results.
- Maintaining a competitive and future oriented industry in the area is the best way to safe-guard employment in a part of Europe where there exist few other job opportunities

On the next pages there follows descriptions of improvements and need for investments for the transport modes rail, road, sea and aviation. The material is based on facts and analyses from Interreg and other programmes in the Barents Area. The importance of each of these issues is then considered form an industrial perspective.

RAIL PROJECTS

The rail corridors of importance to the industry would be the following



Source: Swedish Rail Authority

In more detail – needed actions are:

Axes	Problem	Planned actions	Impact for industry
Sweden-Finland	Different railway gauge	Development of at gauge changing system (pilot is operational) Development of a more effective terminal system for changing goods	A basic condition for a "seamless" transport system. Will open up for new regional transport of iron ore (2 mill tonnes), stainless steel from Finland, forest products and LNG to Northern Finland
Finland-Russia	Border crossing operations	Terminal for timber transport Terminal for container transport Completion of electrification and train information systems in Russia	Reduces present transportation with 500 km. Opens up for access to Russian raw material and export from EU to Russia.

Norway – Russia - China	Congestion in Chinese ports make it feasible to develop a new land based corridor from the Atlantic side to China.	NEW railroad project on initiative by UIC	Could open up Asian markets for the EU and be a shorter and more time effective route than the existing ones.
Domestic Sweden	Capacity on existing rail and inferior quality Boden - Haparanda	Construction of a new railroad between Haparanda and Kalix, upgrading of the existing railroad between Boden and Kalix Completion of the Norrbotnia Banan	An important condition along with the new gauge system in Haparanda – Tornio to attract industrial volumes Will help railroad congestion on the Swedish network in the North-South direction
Other domestic	Inadequate infrastructure and economic ineffeciency	There are national programmes in Finland, Norway and Russia for upgrading existing railroads in the area	Will be more cost effective for the industry. Enables shift from road to rail
Norway - Sweden	Need for upgrading terminal in Narvik and "Malmbanan"	With more intensive use of the railroad between Norway and Sweden there is a need for more passing tracks and a new terminal in Narvik	Avoid present and future bottlenecks. Enable effective interoperability between rail and sea transport. Develop a major Atlantic port to the benefit of businesses in the Region

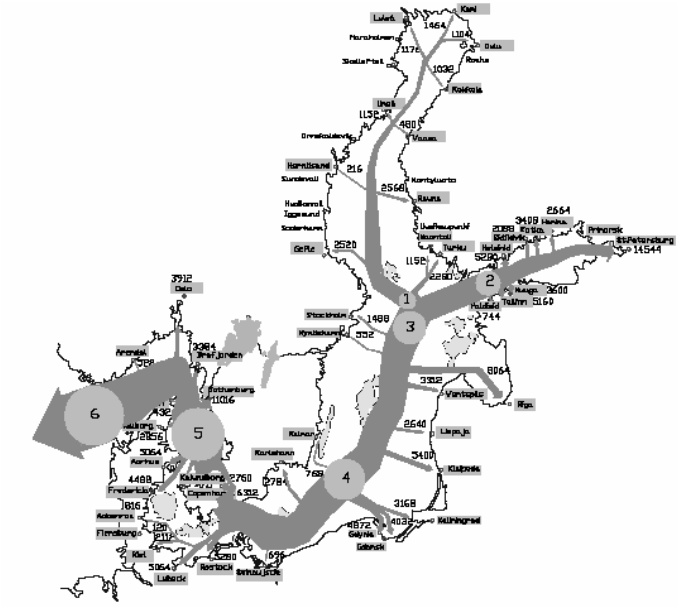
Costs

Country	**Roads/corridors**	**Costs in MEuro**	**Actions**
Finland/Sweden	Rail gauge	2	New system
Sweden	Haparanda-banan	400	Upgrading/new railroad
Sweden	Norr bottnia banan	2100	New railroad
Finland	Oulu-Seinäjoki	205	Improvements
Finland	Kontiomäki-Vartius/Iisalmi	70,6	Electrification
Norway	Nordlandsbanen	100	Signal systems

MOTORWAYS OF THE SEA

A more effective transportation system at sea is a TEN priority through “Motorways of the Sea”. In the Barents Region, there are mainly two “Motorways of the Sea” which should be included in the TEN programme:

- The Baltic Sea



Source: MERA, Finland

- The Northern Maritime Corridor from the White Sea along the Norwegian coast to continental Europe.

Source: Northern Maritime Corridor

There are no exact figures on volumes for the Northern Maritime Corridor, however Norwegian authorities are working on this. Some available facts from the Barents region:

- Crude oil from Russia along the Norwegian coast – 8 mill metr. Tonnes. Is likely to increase heavily in the future with new oil and gas fields
- Seafood products 0,5 mill metr tonnes.
- Iron ore, minerals, 20 mill metr tonnes
- Other industrials, 2 mill metr tonnes
- Further south – North Sea oil production

Axes	Problems	Planned actions	Impact for industry
The Baltic	A very large amount of short sea shipping is passing through the area, posing potential threats to safety and the environment Ice problems, especially in the Bay of Bothnia is a special problem Need for better co ordination and ITC-based systems	The Baltic is proposed as a TEN MoS – there are so far no planned common actions	Ice problems are causing larger costs as only ice classed vessels are allowed into these waters in winter. The lack of effective ICT systems for booking and surveillance for safety and environmental causes.
The Barents Sea and the Atlantic	A sea lane with very tough weather conditions, but often with poor vessels. Need for coordination with other sea corridors and adoption as a MoS within TEN		Large volumes of energy and seafood products are transported in this corridor. Better navigation and safety regulations will be in the interest for the industry.

Costs
There are no estimates for costs and investments concerning Motorways of the Sea, but costs are likely to occur on solving issues like navigation control and facilitation, icebreaking, ICT and environmental issues.

PORTS

So far, many national ports within the Barents region have defined “themselves” as TEN ports. In the on-going process there seems to be a radical change with fewer ports. As seen from the regional perspective of Barents, it is unfortunate if this happens to be ports further south.

For the industry these would be the major ports/port areas:

- Oulu/Kemi
- Luleå/Piteå
- Umeå
- Narvik

- Mo I Rana
- Tromsø
- Bodø
- Kirkenes
- Murmansk
- Archangel

Especially the ports along the corridor Narvik – Piteå/Luleå and Oulu/Kemi should be nominated for the new list of TEN ports.

Costs
There are several plans for development of ports. In Narvik alone, there is an investment plan for 100 Mill Euro for the next 3 years.

ROADS

Axes	**Problem**	**Planned actions**	**Impact for industry**
Finland domestic	Congestion between Kemi and Tornio	Motorway under construction	More cost effective transport, relevant especially to forest industry
Norway Domenstic	Several bottlenecks and poor road condition in many areas Need to improve year round connection between Mo i Rana and Sweden	National plans for 2006 -2015 give priority to North-South axes and to the East-West axis from Lofoten Islands to Narvik and from Mo to Umeå (new tunnel)	Mainly important for the fishing industry
Sweden and Finland	Extensive problems with mud roads during spring time because of thaw	There are existing plans, but with very long time perspective	Very important for the forest industry as mostly all local transport is based on road haulage of timber to the saw- and paper mills.
Russia	Crossing of Murmansk Bay	Constructions has been under way since mid 1990s. Completion probably in 2005	
Russia - Norway	Bad road condition from Nikel on the Kola peninsula to the Norwegian border	Road improvements under way	
Russia - Finland	Improvements between Ylätumoland and Lotta	There remains 40 km to be built	
Russia - Finland	Alakurtti – Salla road to be completed	40 km are missing	
Russia domestic	St. Petersburg - Mumansk	Several parts need improvements	

Costs.

Country	Roads/corridors	Costs in MEuro	Actions
Finland	E4 Kemijoki	49	Construction of motorway
Finland	E 78 Palojoensuu	27	Upgrading
Norway	E 6 and E 10 (whole region	610	Upgrading – new roads/bridges/tunnels
Russia	St-Petersburg - Murmansk	100	Improvements
Sweden and Finland	Local roads		

AVIATION

The main problem in the region is that almost all aviation is North-South meaning that passengers have to travel to a central hub further South (most often the capital city) and change aircraft to get up back North to the final destination.

The issue for business travel is the need to have easy access to cross border services by air. At least one service in the East-West perspective would be preferable.

ENVIRONMENTAL ISSUES

In the Barents Region the situation regarding protected natural areas compared with Southern areas of the countries and the rest of Europe is fairly good. 90 % of Finland's protected natural areas are located in Lapland, which corresponds to more than Belgium's land surface. Protected natural areas also have a long tradition in Russia, were e.g. in the Murmansk region 9,5 % (1,4 billion. ha) are protected natural areas. In the Archangel region the figures are approx. 8 % (3,4 billion. ha).

The national authorities guarantee the protection of Natura 2000 areas, and will secure these areas so they will be unaffected in relation to projects co-financed by the European Union e.g. TEN. The authorities will act according to the 94/43 EEG concerning the environmental trials. The Northern parts are important areas in respect of the birdlife, and there are a lot of very rare specimens. This goes as well for other kinds of animals, of which some are almost unknown in other parts of Europe.

Through the Gulf Stream the climate in Barents Region is warmer than in other regions located on the same latitude. The mountainous areas also lead to a more continental climate inland in the region compared to rest of the areas along the Atlantic coast. This means fewer periods of rain, colder and snow-richer winters and warmer summers than in the coastal areas. The vegetation changes further up North, and in higher areas from forest to almost no vegetation at all.

The Northern location means that the area is vulnerable for contamination and pressure from different sources e.g. industry were the sub-artic climate with long cold winters and many times no wind at all

increase the effects of pollution. Snowfall effectively washes the air from contamination, why deposition of e.g. airborne long-distance transported toxic waste could be exceptional high in the area.

The environmental situation in the area seen from a national and international perspective is however fairly good, were the pollution in the Barents Region is highest around the Gulf of Bothnia, since most of the forest and steel industry is located in this area. The forest industry and power exploitation e.g. of water has in many ways changed the nature in some areas of the region.

With the hydro electric power exploitation the eco-system has changed. Deposition of toxic waste has been decreasing over recent years but for lakes with natural low pH, and alkalinity spread over different areas of the region, the situation is critical. The last decades of very intense forest industry have also lead to serious implications on lakes and some waterfalls. In the region there are several base industries e.g. mining, steel industry and paper mills, which effects the environment with their controlled contamination of heavy metals, smog and NOX. The people in the close-by areas have been exposed to noise and smog. The actions taken have reduced the exposition of the recipients.

The environmental problems in Murmansk and Archangel area are more or less due to the economic activities and production structure, since work with sustainable development has not been high on the agenda compared to developing the industrial activities.. Nowadays the situation has improved thanks to initiatives from authorities, NGOs and the industry e.g. Kuolas mining company. These actions have been directed towards modernization of companies and to
the reduction of toxic waste, which causes polluted air and water. Another problem in the area is radioactive waste, but in Murmansk the authorities give high attention to this as well as the problem with lack of up-to-date wastewater treatment causing poor drinking water quality. The poor drinking water quality is the main reason of epidemics. The problem is mainly concentrated around certain industrial areas, were the inhabitants also are concentrated in an area otherwise unexploited.

To protect the biological content in all aspects it is important to address the causes, especially essential is to secure ecological utilization of natural resources, were the threatened and sensitive nature should be protected, so that very important threatened, sensitive kinds of nature and landscape could be preserved.

Due to the harsh climatic conditions, nature in this region is vulnerable to pollution, since the natural decontamination is poor. Due to the vast landscape, the low density of people living in the area and the concentration of the industry, the pressure from human activities is directed towards a very small area, which is likely to change due to future industrial exploitation in the region. Solving the environmental situation versus the future investments in transport-infrastructure demands cross-border co-operation which effectively could be managed within the framework of a TEN-project.

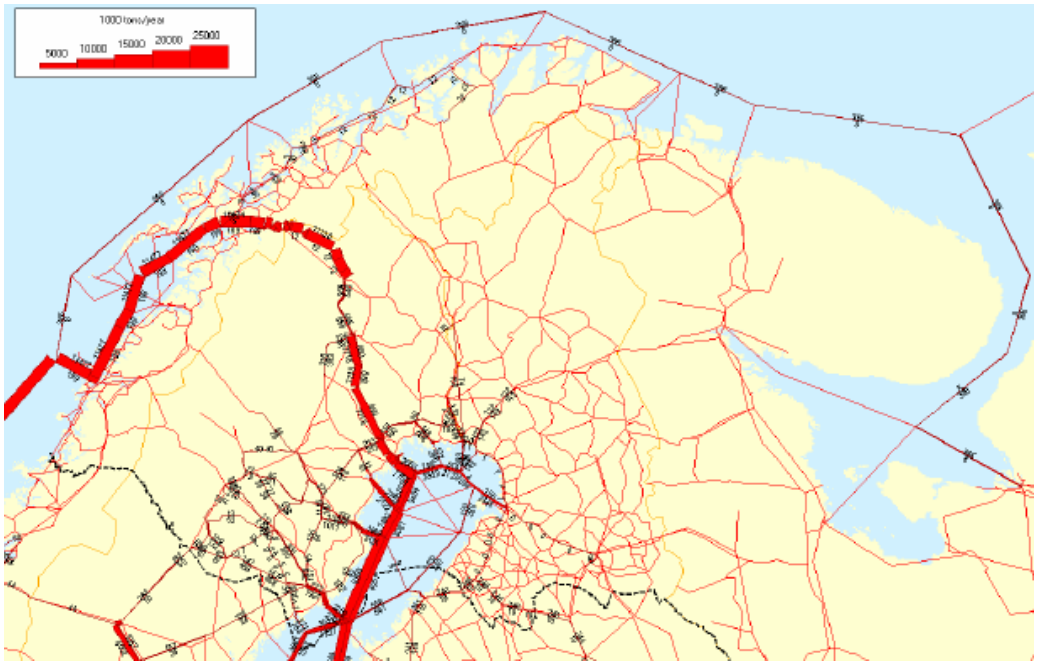
To minimize the negative influence on the environment in the region, common orchestrated actions should be taken in the region e.g. in the frame-work of a TEN-infrastructure. This will facilitate and enhance the companies' opportunities to take care of the environment and to use the best state-of-the-art technology. This implies development of production methods and systems for logistics in accordance with the principles for sustainable development e.g. inter-modal/combined (sea-rail-truck) transport solutions. TEN-attention is an essential part for the development of the transport systems in the Barents Region in order to gain positive effects on the environment by developing transport-corridors where it is possible to decrease pollution and noise. Beyond this, traffic movements should be kept stable, and from the perspective of sustainable development increased investments in rail is necessary. An example is the increased axle load on the so called "Malmbanan", which means fewer trains with less pollution but at the same time opens up for higher frequency of personal transports by train in this area.

To facilitate the development of sustainable utilization of natural resources in Barents Region a deeper partnership between regional authorities, municipalities, industry, NGOs and EU is required. This could effectively be done within the framework of the TEN programme, were the up-coming infrastructural investments in a upgraded intermodal/ combined east-west bound transport systems in the Barents Region could be addressed.

Environmental arguments

- *Reduction of pollution and disturbing noise*
- *The number of traffic movements could be kept at a stable level*
- *Increased axle weight on new freight trains means fewer trains*
- *Increased personal transports by trains*
- *Transports with trucks will be reduced*
- *The share of empty vehicles is quite high today compared to inter-modal solutions*
- *Use of best possible technology*
- *Conserve the biological content*
- *The climate e.g. ice-problems decreases the competitiveness today*
- *Secure ecological utilization of natural resources*
- *Threatened, sensitive natural types and landscape will be preserved*
- *The impact of the environment will be minimized and will not be effected by pollution*
- *Future industrial exploitation demands environmental friendly logistical solutions*

CONGESTION AND BOTTLENECKS



The characteristics of the transport system in the Barents Region is that it is mainly adapted to the exploitation of the raw material hosted in the region, and the needs of the processing industry connected to these. The main part of the production today is exported by a combination of truck, rail and sea, why there is strong needs for a matching transport and logistic infrastructure. This was however not the case presently.

The East-Western railway connections in the region are insufficient. In the area there are two relevant connections for cargo and personal transports. Between Lappland and North Sweden and between

Norway and Sweden (Luleå-Narvik). Finland and Sweden have different rail gauge, which is why rail gauge switches are required. To Russia there is a newly completed railroad over Levmozero, but with no significant traffic at present. On Russian soil however, approx. 80 % of all transports is by rail. As Finland and Russia have the same rail gauge, interaction is not a technical problem between those two countries.

National priorities so far imply that the major part of investments in transport-infrastructure have been concentrated on domestic North-South lines rather than East-Western transports. This has led to congestion in the Southern parts of the Nordic countries, and there is a need to develop alternative transport corridors. A recent example is the initiative undertaken by the International Rail Union (U.I.C) to develop an alternative corridor to access markets in China, Russia and Central- and Eastern Europe via Narvik. All studies made on the topic point out that there is huge need for East-Western transport corridors, mainly for freights of wood-products, minerals, iron and fish-products, but also for single goods, gas and personal-transports.

The border to Northwestern Russia is one of EUs external borders, which has proved to be a bottleneck for inter-regional transport in the region. This border also means a distinct difference in living standard, while the Murmansk- and Archangel areas and the rest of Barents Region have similar problems and needs for development as the rest of the region e.g. share size of the region, periphery location, people moving out and the absence of ready capital for investments.

A partnership between the different national authorities is now being established to identify different bottlenecks, and administrative barriers causing barriers for development of east-western communications both regarding freight and personal transports. Furthermore this partnership in future could also be a forum for investments in infrastructure aiming at linking together existing national networks as well as technical up-grading of the transport-networks.

Freight traffic on Malmbanan (Luleå-Narvik) is of national and international importance, since approx. 45 % of all freight volumes in Sweden and all iron ore is carried by this railroad. Besides the mining industry volumes there are also other important transports e.g. ARE-trains (Artic Rail Express) carrying seafood products with time guarantee via Malmbanan from North to South. An extension of ARE to seafood transports to Eastern Europe has an interesting potential. The interregional personal travel on Malmbanan reaches approx. 320.000 persons /yr, whereas the regional travels reaches approx. 110.000/yr. 70.000 out of these approx. 430.000 are border crossings to Norway, where during high-season (July) the traveling is 4 times higher compared to low-season (September).

Malmbanan is of national interest according to Swedish environmental law (miljöbalken kap 3:8) and is part of the so called main-rail network (riksnätet). The rail-traffic is of great importance for both freight and personal traffic to and from and across Sweden. There is functional and cross border connections within several sectors along Malmbanan, where the mining industry has developed connection between Malmfälten (mining-district) and Narvik (sea/shipping/harbor) and Luleå (sea/shipping/harbor). The tourism in the region is in strong growth and the sector has big potential for development.

In the Swedish Railroad Authority plan for the period up to 2007 there are measures to raise the axle load from 25 to 30 tons. The trains thereby could load another 66% from today's 4100 up to 6800 tons. The number of trains will be reduced corresponding to this, assuming unchanged transport volumes. The trains will however be longer, from 52 up to 68 wagons, which will complicate meetings and passing on the railroad. Meeting tracks therefore needs to be rebuilt to match this requirements between fast going personal trains and longer but slower freight-trains, which will lead to higher speed for public transport trains and thereby possibilities to increase the frequency and offer shortened travel time.

Seen on the background of the fast growing knowledge-based industry and service sector which requires close and frequent face to face contacts, there is a demand for continued expansion of public transports in the Barents Region. The counties in the region in both Sweden, Norway and Finland today have matching connections to the national and international aviation network. On the other hand the region is missing East-Western airline connections apart from the route Luleå-Rovaniemi-Murmansk and quite recently the new connection between Luleå – Kiruna and Tromsø. Business people and private persons today is

forced to go via the national capitals to reach close-by cities in Barents Region, which means extra time and costs.

In the Barents Region there is a partnership who is planning to launch a feasibility-study in order to examine the possibilities for establishing a fast-train link between Narvik-Kiruna-Gällivare-Luleå, and possible also further Eastwards towards Finland and Russia, were a further development of Malmbanan could be a suitable option. The pre-study so far has shown that public rail transports requires a high level of integration of different types of transports modes (truck-fly-bus-train-sea) to increase the flexibility of travel.

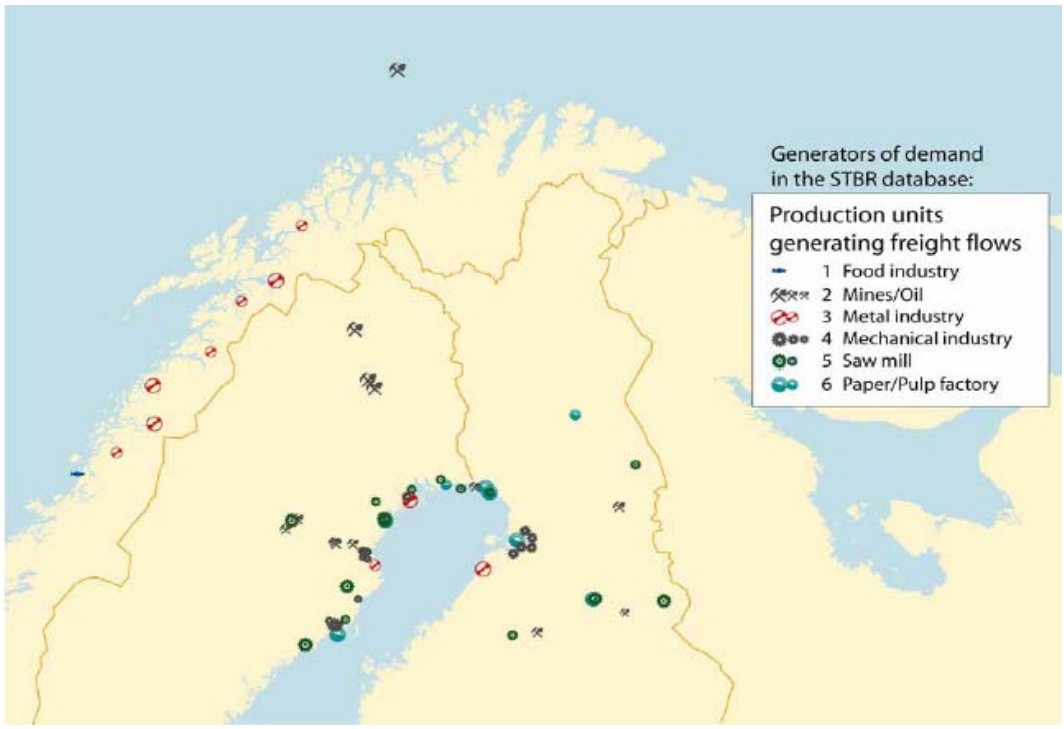
To foster rational transport solutions for the industry in the Barents region, it is necessary to create strategic alliances consisting of public authorities, industry, ports, industry- transport operators and between other transport actors within and outside the region. The EU and the Commission now has decided to revise and expand the existing TEN-map for important combined transport corridors. It is evident that the East- West corridor to the Russian border of which Malmbanan is a part, should be a clear candidate for TEN together with the ports along the axes and the adjacent sea corridors. This railway together with the sea-link along the Norwegian coast to Murmansk represents without competition the most important transport-link in the Barents Region. Development of this East-Western link is in the long run the most attractive to connect the sea in Norway with the areas in Russia and China, which also leads to easier access to these future enormous markets compared to the transport axes further South.

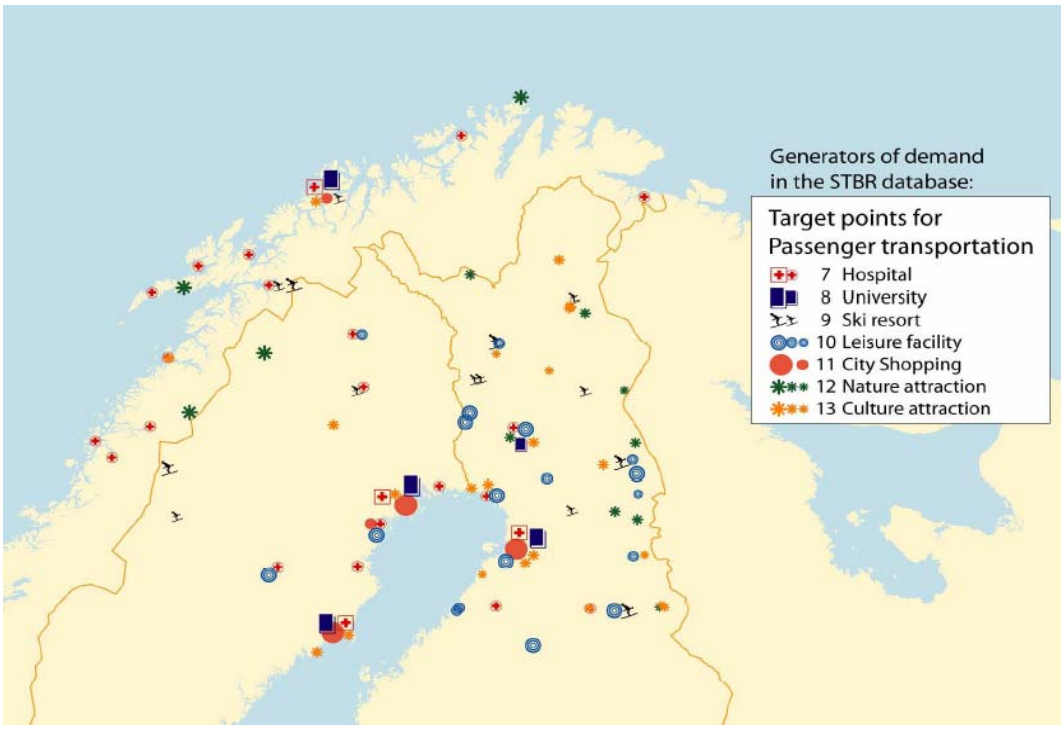
Congestion and bottlenecks arguments:

- *Different gauge width between Norway/Sweden and Finland/Russia*
- *Exploitation of nature requires infrastructural investments due to the up-coming mega project in the Barents Region*
- *Planning of gas-pipelines from the northern sea-regions to Murmansk is ongoing*
- *Trains on Malmbanan will be longer which complicates meetings and passing*
- *Higher speed for public trains gives increased traffic and shorter travel time*
- *Growing knowledge based industry and service sector demands extension of public transports*
- *Variations between different cross-border stations along the same borderline are high*
- *Access to track capacity is limited*
- *The Atlantic Sea corridor via Narvik will be connected with areas in Russia and China*
- *Bus services the only mode of public transportation that covers the whole area*
- *Rail connections are located mostly on the coastlines and serve only the major cities*
- *Without optional transport modes, there is a risk of a downward spiral of demand*
- *Where growth, new needs may rise quickly*
- *The demand will change in the near future, both in nature and volume*
- *The result of the non-cooperative environment today is an unbalanced supply structure as the market based operations concentrate within the national domains*
- *Inter modal system (sea -rail-truck) in the region joins national north south road and railway networks*
- *Logical continuation of national logistics networks*
- *Use of existing infrastructure, fairways and railways (Malmbanan)*
- *Freight potential in US and Russian exports and imports (gas and oil industry)*
- *Sea and rail link governed by well established international rules, regulations and practices*
- *Can be implemented in fairly short time*
- *Compared to some other regions, limited public funding will give substantial results*
- *In order to have a high frequency service to continental Europe and other main destinations the flows of medium and high value density goods should be concentrated to one port attractive to the shipping lines.*
- *The risk is imminent that the cargo will be carted to the southern ports, if nothing is done.*
- *Help consolidating import and export material flows from and to smaller and medium size businesses*

- *Attract logistics services providers*
- *Fast transport service to ports*
- *Public owned distribution routes*
- *Operated by successful tenders*
- *Public-Private- Partnerships apply*
- *Benefits from good solutions in countries with similar administrative and logistics environments*
- *A TEN-railway could serve as a starting point.*

SECURITY





The geographical location and long distances within the region stresses the importance of high standard on the infrastructure as well as for the transport solutions. The Barents Region has its weakness in terms of time and logistic costs. On the other hand the geographical location in a global perspective can be advantageous e.g. the airport in northern Sweden Luleå/Kallax is attractive for air cargo to Asia due to low costs and closeness to main air-routes..

Well functioning transport systems and excellent communications are fundamental to take advantage of the potentials the region holds for growth, and to the benefit of whole Europe, the ability to exploit extremely valuable commodities (e.g. mining, steel, wood, pulp, paper, oil, gas). The transport-system needs to be developed in a long-term sustainable manner to offer the services the industry and the community demand to make use of the development of the regions potential. Cost-effective freight transport is a very important issue for the competitiveness of the regions industry. Approx. 60% of the total freight flow by rail in Sweden is performed in the northern part of Sweden, why it is highly essential to get a infrastructure standard corresponding to the needs of the industry in this region. The integration between different industries in northern Sweden, Norway, Finland and in the future even the Russia e.g. StoraEnso (paper), Outokumpu Stainless (steel) further emphasize these needs. The development of such a standard also is important for other freight- and personal transports were the railroad plays an essential role.

The regional local market very often is too small to create a critical mass, due to the fact that the region is far away from the large international markets. Effective transports therefore are even more vital compared to competitors located closer to these markets. Especially this goes for the transport links between Norway, Sweden, Finland and northwestern Russia to develop trade and industry. In other words an effective transport system reduces the cost of freight and transport for the companies and persons. Delivery often is to take place in short and right time (just in time), and with long distances to the main markets a effective logistical flow and high transport security is necessary to continue to exist, which also goes for the freight-subsidies.

Most areas in the region do not have a sufficient transport system with high quality, which today is a barrier for growth and employment in the industry. The transport possibilities for products of today foster high freight costs and lack of delivery security, which is a competitive disadvantage for the business-community in the region. Another problem is the huge lack of access to the road- and railroad network, which is serious especially for the heavy industry and tourism – two appointed sectors of growth. These sectors today suffer from large losses of production. Better public transports communications strengthen the employment-regions and offer employment-opportunities, especially for women.

Establishment of optimal freight-corridors between Norway, Sweden, Finland and northwestern Russia is one of the most central actions to be taken for developing the trade, were terminals equipped with efficient functions for rational linking between the different transport modes (sea-rail-truck) are crucial.

Actions with the objective to raise the traffic security are needed in the Barents Region e.g. create a network to implement a common traffic security strategy. Cross border information flow calls for being up-graded and harmonized, which could be done through electronic and traditional media. A program for exchanging experience between rescue- and police forces to increase the knowledge of communication and cross-border co-operation is also an issue which should be addressed. The rescue actions needs to be coordinated in case of e.g. nuclear accidents, risks of hazardous/ inflammable freights, traffic accidents with person injuries etc.

Connecting freight- and personal transports between cities in the region and to/from the region have to be developed to strengthen the region's competitiveness. The national and international connections, between the local markets of employment has to be increased by better use of existing and new infrastructure together with more effective transport solutions, were the existing railroad "Malmbanan" with its eastward extension could form the platform for further development of East-West cross-border communications.

Actions must be taken on the physical infrastructure to facilitate better environment, increased access, traffic security, effectiveness, intermodality and to strengthen the connections between cities and countryside – coast line with inland. Business contacts must be facilitated via establishment of new railroad corridors with the aim to create a sustainable development of the Barents Region.

The existing transport systems in the region correspond with the political targets and ambitions for transport and communication in the region and are as well in line with EUs efforts within this field e.g. the TEN-network. It is therefore important that the East-West connection Malmbanan with adjacent sea corridors is being integrated as a priority project in the future European TEN-network.

Security arguments

- *Disadvantages of time and costs for transports and cargo*
- *The standard of infrastructure does not correspond to the needs of the industry*
- *The important industries often have problems with delivering on short notice and get the goods delivered just in time.*
- *Transport systems does not have accurate quality*
- *Existing infrastructure generates lack of delivery security*
- *The industry today suffers from massive losses of production*
- *Problems of accessing the road- and railroad network*
- *Different standards in the region*
- *Provision of information is not sufficient*
- *Transfer characteristics differs*
- *Customs procedures varies*
- *Administrative barriers are high*
- *Taxes and charges fluctuates*