REGIONAL COUNCIL OF KAINUU

BARENTS REGION TRANSPORT AND LOGISTICS (BRTL) – CURRENT STATUS

Final report
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1. Introduction

The Barents region covered in this report is located in northern Fennoscandia and the adjacent areas of north-western Russia. The Barents region covers counties, regions, republics and autonomous areas in four different countries: Norway, Sweden, Finland and the Russian federation. In Norway the Barents region consists, at the current time of writing, of two counties, namely, Nordland and the county of Troms and Finnmark. In Sweden, the Barents region encompasses the counties of Norrbotten and Västerbotten, while in Finland, the counties of Lapland, Oulu region, Kainuu and North Karelia are included. Finally, five different territories from the Russian federation are also included, Arkhangelsk oblast, Murmansk oblast, the republic of Karelia, the republic of Komi and the autonomous okrug of Nenets. The Barents region is visualised in the image below.

Figure 1. Barents counties and regions. (Barentsinfo.org 2022).

The purpose of this work is to examine the current state of the transport and logistics sector across the Barents region. The aim here is to clarify the current state of the sector primarily by means of documentary analyses. In addition, the work also examines the nature and extent of current cooperation and future prospects across the region in the transport and logistics sector, as well as, more generally, the development of cross-border cooperation. In our view, the notions of co-development and cooperation need to be emphasised when describing the current state of the transport and logistics sector in the Barents region.

In outlining the current state of the transport and logistics sector, it should be noted that the sector is made up of many different national and regional transport networks and systems. Naturally, infrastructure development in the transport and logistics sector also involves a variety of regional, national and transnational interests. The majority of the existing transport infrastructure in the region appears to be situated along a south-north axis, in line with the national interests of the countries in the region although the need for west-east transportation has also been identified in the documents and efforts have already been made to develop it. From the point of view of the Barents regional transportation system, west-east connections are, of course, the most important. Particular successes in this area include the development of a Joint Barents Transport Plan and various other concrete development projects, such as the development of an eco-vehicle charging infrastructure in conjunction with the various border crossing points throughout the Barents region.

The transport and logistics sector in the Barents region is significantly impacted by the various challenges associated with climate change. As such, themes and solutions associated with low-carbon and sustainable mobility strategies have been integrated into the cooperation process. In addition, the use of new technologies in the transport and logistics sector has been identified and efforts made to develop new solutions based on best practices to support the development work. Sustainable mobility and new technology adoption have therefore been widely identified as key development themes by all actors in the region.

The report proceeds as follows. In the next chapter, we show how the ongoing work has, in practice, been developed. We therefore review how the data has been collected and analysed as well as describing other steps in the work process, such as the interviews and workshops conducted. Chapter three begins the actual documentary analysis by looking at the supranational organisations and cooperation structures that serve as the framework for Barents cooperation in this sector environment. In Chapter Four, we continue our documentary analysis and look at regional development documents relating to the Barents region. These regional development documents are key to providing an overview of the regional targets and strategic priorities for the region's transport and logistics sector. Chapter five, the final section on the document analysis, reviews regional (sub-national) as well as national transport documents. This chapter discusses the current situation in the transport and logistics sector across the Barents region. Chapter six examines both the current state of transport and logistics sector cooperation in the Barents region and the state of cooperation more generally. The chapter's findings are based on the results of two workshops carried out during the project, in which representatives of the regions participated. In addition, the chapter complements the overall picture with the interviews conducted throughout the lifespan of the project. Chapter seven, on the other hand, outlines the current state of the infrastructure endowment and cooperation initiatives in the Barents transport and logistics sector. In addition, the chapter also presents a number of solution options and development recommendations identified during the project.

2. Implementation of the work process

In what follows we review how the different stages of the work have been implemented, also identifying the methods used.

The inventory of transnational organisations and cooperation structures in the Barents region consists of openly accessible sources of information and covers both websites and official documents. The various intergovernmental organisations have also been described here in a concise manner.

The next part of the document analysis reviews regional development documents in the Barents region. At this stage, regional development documents from different regions were collected from the available open sources. The documents cover the provincial plans and strategies of the different regions which include both short- and long-term regional development plans and strategies. In the review documents, examination of the relevant content related to various themes, such as transport and logistics, the Barents dimension and cross-border cooperation was utilised.

Transportation documents are reviewed in the following chapter. Transportation documents include national plans and regional plans from Barents region countries. Moreover, the review concludes some documents regarding the Barents region, such as JBTP. The development targets of the transport and logistics are especially inspected from the documents. Further, a summary of the documents is made in general. The following themes from the documents are especially presented: transportation, logistics, cross-border cooperation and Barents cooperation.

The knowledge base of the documentary analysis was supplemented by two workshops organised by MDI and Ramboll in cooperation with the regional council of Kainuu. The first workshop was held in November 2021 and the second in January 2022. The workshops were attended by regional actors, specialised in the transport and logistics sector across the Barents region. The workshop(s) participants consisted of representatives of all countries in the region. The workshops were held via an online platform that elicited participants' perspectives and ideas on the topic using participatory methods. The workshop's perspectives were utilised to deepen the knowledge base of the documentary analysis.

In addition, during the project, seven people were interviewed on issues relating to the transport and logistics sector and cooperation in the Barents region. The interviewees consisted of representatives from both state and regional actors. The interview materials were utilised particularly in the sixth chapter of the final report which describes the current state of cooperation in the region. Some of the interviews were conducted as virtual meetings, via Zoom/Teams etc., while others were conducted in written form via email.

3. Transnational structures and organisations in the Barents region

Cooperation in the Barents region is complex in nature primarily because it consists of a multitude of different cooperation structures and organisations at different levels of government. Firstly, Barents cooperation takes place between national level actors, where cooperation is conducted between different national ministers. In addition, cooperation also takes place between regions, i.e., provinces or other regional authorities. Barents cooperation generally aims to promote cooperation on a practical level, complementing wider Arctic cooperation efforts. During the Cold War, The Arctic region was portrayed as a potential area of conflict (ADHR-II 2014) and of high military interest (Heininen 2010). Indeed, when looking back at the history of the Barents region and the aspect of cooperation, it seems that the initiative for "the Barents region" originated from Norway, where the Ministry of Foreign Affairs initiated the proposition (Zimmerbauer 2013). The Barents region was formed after the Cold War and the collapse of the Soviet Union with a view to creating a political platform tasked with handling emerging challenges and exercising the opportunities presented by the newly developing post-Cold War relationships between east and west (Zimmerbauer 2013).

Clearly then a geopolitical agenda has been apparent with the formation of the Barents region, since one of the main priorities has been to reduce tension between 'the West' and the Russian federation (Zimmerbauer 2014). Although this geopolitical agenda remains a factor it has been displaced, at least to some extent, by the economic agenda which has arisen in parallel to it, thus complementing the initial Barents priorities (Zimmerbauer 2014). Indeed, by the second decade of the new millennium the business dimension had become increasingly important in the Barents region (Zimmerbauer 2014). After the collapse of the USSR and the end of the Cold War the emergence of globalisation thus also had a significant impact on the Arctic region, for example in the form of the rapidly escalating usage of natural resources (Heininen 2010). As such, cooperation has significantly evolved at all levels and scales in the circumpolar north, promoting the inclusion of Indigenous peoples and sub-national actors and involving them more frequently in the emerging cooperation networks across the region (Heininen 2010).

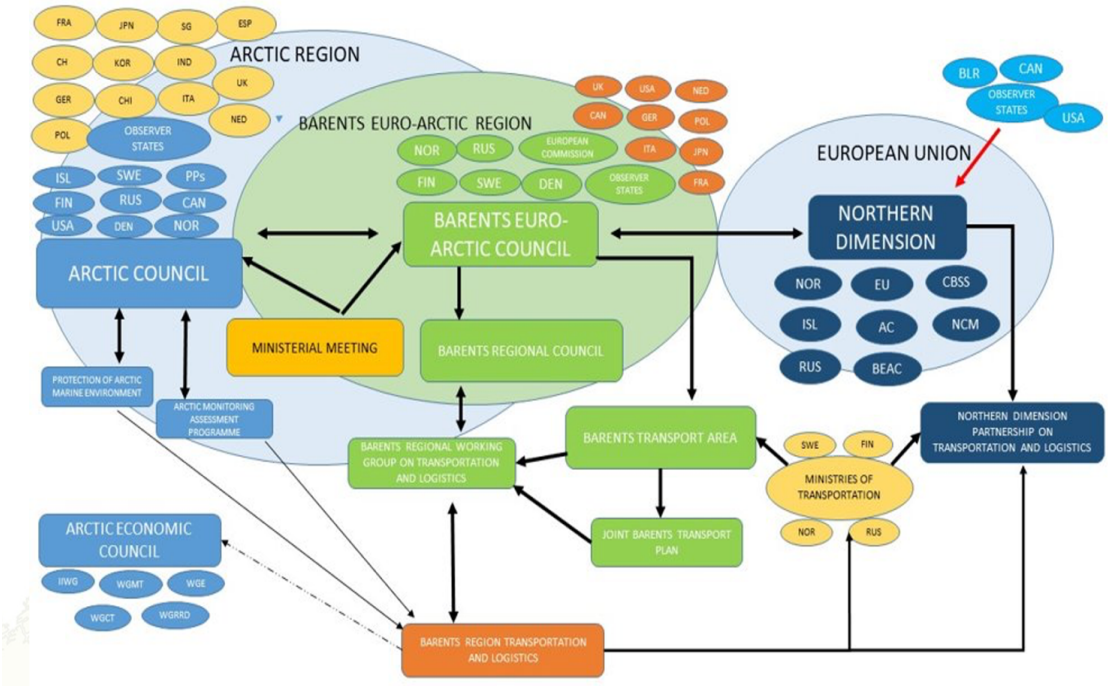

Figure 2. Barents region transnational structures and organisations. (Huotari 2021).

BARENTS EURO-ARCTIC COUNCIL

At the intergovernmental level, the Barents Euro-Arctic Council (BEAC) is one of the most important actors in Barents region development. The Foreign ministers of the member states – Iceland, Norway, Sweden, Finland, Denmark, the Russian federation and the European Union use the BEAC to interact with each other and to develop, together, the Northern region with ministerial meetings organised biennially.

Between the ministerial meetings, cooperation and hence development of the Barents region is organised by the Committee of Senior Officials (CSO) which consists of representatives of each member state and the European Union. There are also a number of Working Groups at the regional and national levels plus Joint Working Groups between the levels tasked with addressing these questions. Their focus is on promoting and aiding national and regional development across the Barents region. One of the most significant working groups in respect of cooperation in the field of transport and logistics in the Barents region is the Steering Committee for the Euro-Arctic Transport Area (BEATA). The main objective of this committee is to enhance cooperation in the region in order to create a robust transport system consisting of various means of transportation. The objectives of cooperation include the management of border crossing points, customs cooperation and infrastructure maintenance and reconstruction as well as new projects relating to new infrastructure in the region. The steering committee consists of ministerial-level members from Finland, Sweden, Norway, the Russian federation and the European Union. In October 2021, the high-level ministerial meeting decided to reorganise the working groups on transportation with a view to merging the various working groups into a single, joint working group (BEATA declaration Oct. 2021). In addition, there is also the International Barents Secretariat (IBS), located in Kirkenes, Norway which focuses on establishing regional coherence and multilateral cooperation in the Barents region.

BARENTS REGIONAL COUNCIL

At the same time as the Barents Euro-Arctic Council was established, representatives from corresponding regions formed together and signed the protocol for cooperation on the collaboration of the Indigenous Peoples which serves as the foundation of the Barents Regional Council. The Barents Regional Council shares the same objectives as the Barents Euro-Arctic Council: To promote and to support cooperation and development in the Barents region. The Barents Regional Council meets twice per year, with the meetings organised by the Regional Committee. As noted previously, the regional level consists of several Working Groups tasked with the purpose of deepening the level of cooperation across the region.

THE ARCTIC COUNCIL

The Arctic Council is one of the major forums used to promote Barents cooperation. It was formed in 1996 when the founding document, known as the Ottawa declaration, was drawn up. The Arctic Council consists of 8 founding states, Finland, Canada, Denmark, Sweden, Norway, Iceland, the Russian Federation and the United States of America with the additional participation of six representatives from the region's Indigenous Peoples (Arctic Council Secretariat 2020). The Arctic Council is generally perceived as the most significant actor promoting national political as they relate to the Arctic region.

The difference between the Arctic Council and the Barents Euro-Arctic Council is that the Arctic Council does not cover subjects such as economic- or security policies. However, similarly to the Barents Euro-Arctic Council (BEAC), the work of the Arctic Council is implemented via the six Working Groups which, for example, focus on environmental questions, sustainable development and other special questions concerning the Arctic region. Even though the work of the Arctic Council is not directly aimed at the 'Barents region' as such, clear overlaps exist between the discourses of the Barents region and the Arctic region in terms of both intergovernmental and national policies.

THE NORDIC COUNCIL

The Nordic Council provides an alternative forum for bilateral and multilateral cooperation. The Nordic Council consists of representatives from the Nordic countries Finland, Sweden, Norway, Iceland, Denmark and the autonomous areas of the Faroe Islands, Greenland and Åland. Even though the Nordic Council does not harness any formal power, it nevertheless does have an important role to play in the far North. Similar to the Arctic Council, the Nordic Council does not directly and singularly focus on the development of the Barents region, however, it does influence the region indirectly by means of routine national legislation and reforms.

NORTH CALOTTE COUNCIL

The North Calotte Council is an inter-ministerial and political network and organisation which operates under the auspices of the Nordic Council of Ministers. The North Calotte Council is a network between its founding members, Finland, Sweden and Norway. The council has four members from each member country. The North Calotte Council promotes sustainable and cross-border cooperation between the member states.

NORTHERN DIMENSION

The Northern Dimension is a joint policy programme which provides a platform for cross-border cooperation in the fields of environment, transport and logistics, culture and public health and social well-being (Northern Dimension 2020). The Northern Dimension was initially established in 1999 when four equal counterparts the European Union, the Russian Federation, Norway and Iceland formed the common policy. It was renewed in 2006 and today it serves as a framework for political dialogue and practical cooperation (Northern Dimension 2020).

EUREGIO KARELIA

Euregio Karelia promotes cooperation in the Finnish-Russian border area between the regions of Kainuu, North Karelia and Oulu region (FIN) and the republic of Karelia (RUS). Euregio Karelia was established in 2000 and was the first formed Euregio-area between the European Union and the Russian Federation (Euregio Karelia 2020). Euregio Karelia is based around the fundamental idea of improving the socio-economic determinants of life, such as the living conditions of the people in the cross-border neighbourhood by means of cross-border cooperation. Euregio Karelia promotes the common interests of the Finnish and Russian governments and the European Union particularly in matters associated with the well-being of the population, visa-free travel, connectivity and financing (Euregio Karelia 2020).

CBC PROGRAMMES

Two different Cross-Border Cooperation (CBC) programmes impact the Barents region. The highest profile CBC programme in this regard is the Kolarctic programme between the European Union, Finland, Sweden, Norway and the Russian Federation. The main objective of this programme is to promote economic viability and the attractiveness of the region. Another important CBC programme in the Barents region is the Karelia programme, applicable in the regions of Oulu region, Kainuu and North Karelia (FIN) and the republic of Karelia (RUS). The focus of the Karelia programme is to make the programme area as attractive as possible for people and businesses to (re)locate.

NATIONAL GOVERNMENTS

The final, albeit important, actor group in respect of Barents cooperation in the field of transportation and logistics consists of the National Governments of the member states. The central governments of each member state are significant actors since they all have their own individual strategies and ambitions regarding the Barents region. Naturally there are different levels of cooperation between these national level actors. For example, due to the long and intertwined history between the countries, Finland and Sweden enjoy a long-lasting and fruitful process of collaboration. The levels of cooperation between corresponding regions in the Barents area can however be said to be constantly adapting and evolving.

4. Regional development plans in the Barents region

In this chapter the Barents region's key industries are presented in the sections below. In addition, the regional development documents are reviewed on a county-by-county basis. The contents of the various regional development plans are then briefly introduced. Further to this, the strategic choices and the development targets in respect of the Barents transport and logistics sector are also presented.

The level of infrastructure endowment and the nature of the industries in the Barents region vary significantly between countries and also within them. For example, vast areas of the Barents region are dominated by the forestry industry, especially in its southern areas. The sparsely populated areas in Sweden, Finland and Russia belong to the Boreal coniferous forest zone so the forestry industry is historically particularly prominent in these countries. Moreover, the forests in the northern hemisphere are reproducing themselves at an ever faster pace due to the 'trifecta effect' of climate change, an increase in carbon-dioxide levels and the logging of older forests (JBTP 2019). In the Russian federation, the forestry sector dominates the economies of the Republics of Komi and Karelia as well as that of the Arkhangelsk oblast. In Finland the forestry industry is significant in both Kainuu and Oulu regions. The forestry industry is also a dominant player in the Barents' Swedish regions. However, in Norway, the industry is insignificant with these region's economies dominated by other sectors, such as the seafood/marine and oil & gas industries.

The oil and gas industries remain particularly important in both Norway and in Russia. The Komi republic and the autonomous okrug of the Nenets still possess major reserves of both gas and oil. In Norway also, significant reserves of oil remain undiscovered. In this regard, for example, the Norwegian Petroleum Directorate estimated that there likely remain around 18.5 million barrels of oil in the Norwegian parts of the Barents region. This indicates that the petroleum industry will remain significant in the coming years (JBTP 2019) but we should also remember that extraction efficiency remains sensitive to the dollar price of a barrel of oil while regulatory measures in respect of low carbon and net zero initiatives at the national and supranational levels also play a potentially significant role here.

The mining and metallurgy industries also play an important role across the region, but due to the nature of these industries both are highly centralised in the Barents region. The mining industry is particularly important in the north-west of Norway and Finland. However, the largest deposits of iron ore can be found in northern Sweden and in Russia. As with fossil fuels however the metal and mining industries are also extremely susceptible to various broad fluctuations in the global economy (JBTP 2019).

In the Barents region, the tourism industry is undergoing constant development. The tourism sector, mapped in the image below, is concentrated along the shores of the Barents and the Norwegian Seas. Other areas of concentration include the Scandinavian Mountain range, Finnish Lapland and the northern shores of the Gulf of Bothnia. Finally, in regards to the Russian federation, a nascent tourism industry is developing, particularly in the Kola peninsula, for example, based around the fact that the region boasts outstanding fishing waters (JBTP 2019).

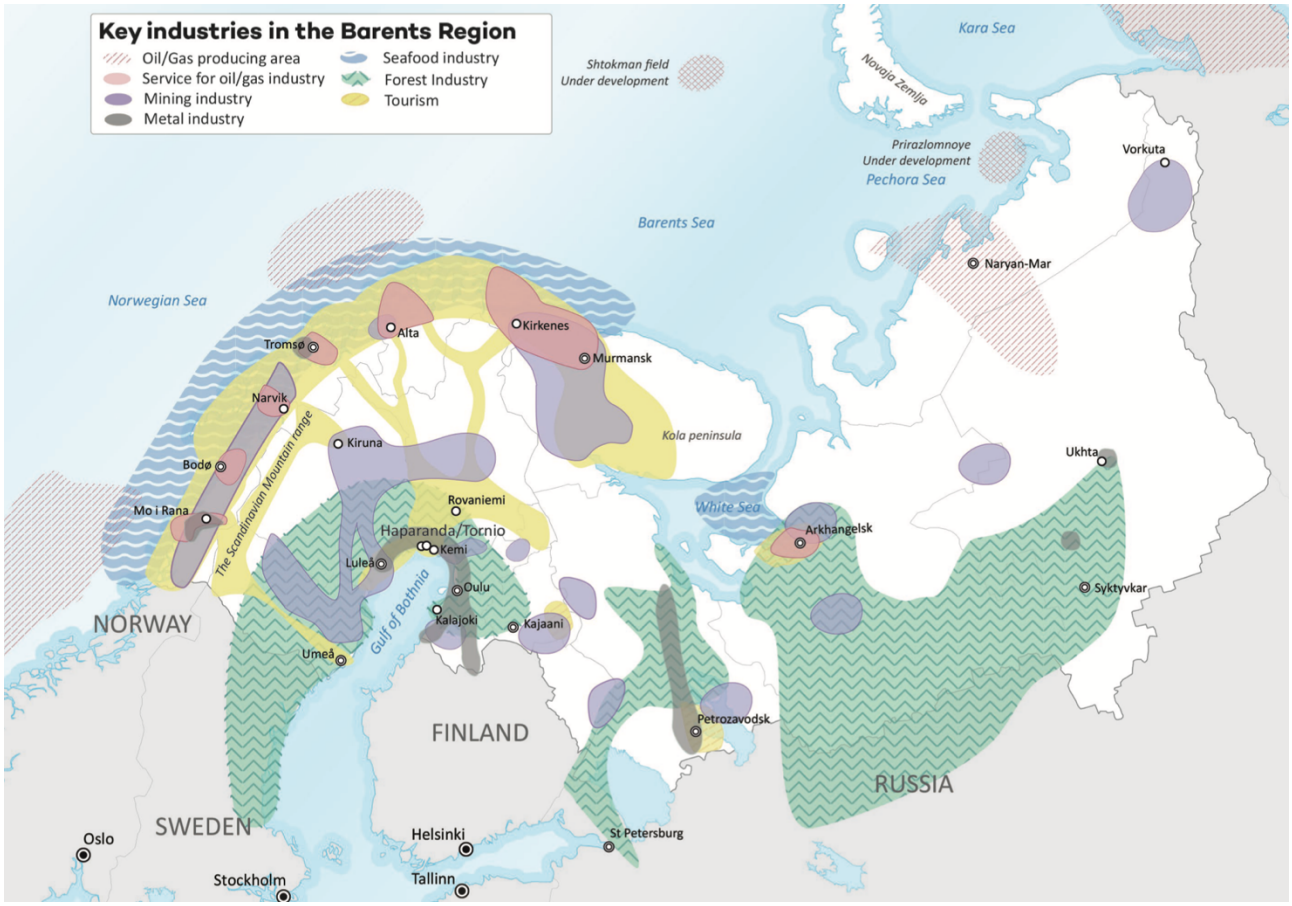

Figure 3. Industries in the Barents region (JBTP 2019)

1. Finland

NORTH KARELIA

The new provincial programme of North Karelia has been prepared for the period 2022-2025. The focus of the new provincial programme is on accessibility, i.e., a well-functioning transport system, competent living environment, e.g., education, climate resilience and the enchantment of nature and on enhancing the province's vitality and well-being. Cross-cutting themes also include digital sustainability and internationalisation.

Since the new provincial programmes in Finland were prepared and unveiled (during the period in which this report was produced), these new provincial programmes are only mentioned briefly with the in-depth analysis focusing on the previous (2017-2021) provincial programmes.

The regional development documents produced by North Karelia include a short-term development plan, i.e., a provincial programme, and a long-term strategic development plan, i.e., a provincial plan. The provincial programme was operative for the period 2017-2021 while the provincial plan is operative up to 2040.

The North Karelia Regional Programme argues that it is particularly important to proactively integrate the needs of the business sector into the planning of the transportation system. In addition, the document emphasises that the starting point for the development of the transport system is to support the development of the region's business life and to provide a reasonable level of transport services to all residents, regardless of their place of residence. In addition, the document emphasises that the development of the transport system is partly guided by the common transport strategy of Eastern Finland. International connections and west-east transport connections in particular, are highlighted separately in the document as development priorities, and, as such, have been identified as important determinants of development activities.

Internationality is outlined in the document as the basic value of development activities and the basis for competitiveness and vitality. Russia's proximity is seen as a significant opportunity with the Russian dimension linked to all the priorities of the provincial programme.

The long-term development plan of North Karelia, i.e., the provincial plan, is quite similar to the provincial programme in terms of strategic transport priorities. The plan emphasises the need to safeguard business conditions, promote competitiveness and support the development of low-carbon transportation. In addition to this, the regional plan strongly emphasises the Russian dimension and the business opportunities that it offers from an international cooperation perspective. The proximity of the border is to be utilised specifically from the perspective of business environments.

OULU REGION

The new provincial programme for Oulu region was made for the period 2022-2025. The provincial programme is divided into two strategic entities: 1) the province of happy and active people and 2) the province of internationality, high capability and resolutions. The former includes the vision of an accessible, active and functional life in the area. The latter, in turn, promotes the sustainable growth of internationalisation as well as entrepreneurship and innovation. The provincial programme also contains long-term strategic goals up to 2040.

The development plans for Oulu region have been assembled in one document, i.e., the provincial programme. In this case, the provincial programme includes a list of long-term strategic guidelines.

With regard to transport and logistics, the provincial programme states that accessibility is important for competitiveness and attractiveness. In the case of the Oulu region, accessibility refers to a well-maintained transport network and well-functioning transport services, but also to high-speed telecommunications connections that are sufficiently comprehensive. In addition to this, the programme highlights the connection between the business sector and the functioning transport networks. The internationalisation of companies and of their operating environment is considered to require effective connections to key foreign markets.

At the level of targets, the programme sets out to further integrate Oulu region into the European transport network. According to the regional programme, European Union funding will be directed towards the development of the TEN-T core network. The main projects are Highway 4 and the Ostrobothnia Railway, as well as the development of cross-border traffic. In addition to this, the aim of the provincial programme is for the transport system to facilitate the cost-effective operation and development of the business sector.

The Oulu region Provincial Programme does not specifically mention the Barents dimension and cooperation, but the special expertise of the Northern Arctic region has been chosen as the cross-cutting theme of the programme. The programme emphasises that cooperation between the Arctic countries and regions is the starting point for regional action. In addition, the programme defines, though at a fairly general level, the investments still required in relation to the Northern Dimension. The special Arctic expertise in Oulu region is also highlighted.

KAINUU

The Kainuu programme, approved in December 2021, includes a provincial plan up to 2040 and a provincial programme for the period 2022-2025. The objectives of the provincial plan focus on the well-being, employment and livelihoods of Kainuu residents; the digital transition, the green and just transition, accessibility and the development of the regional structure. The same priorities have also been chosen as key points in the provincial programme. In addition to this, the general values of the regional programme are positivity, the development of the whole region of Kainuu, equality and sustainable development. In addition, the programme identifies internationalisation, cooperation, partnerships and contract-based agreement as important themes in the attainment of the desired results.

Kainuu's regional development documents consist of a provincial programme for the period 2018-2021 and a long-term strategic development plan, i.e., a provincial plan.

With regard to transport and logistics, the regional programme outlines that the transport system, logistics centres, communications networks and travel chains will be developed to improve Kainuu's external and internal accessibility also strengthening its competitiveness. In addition, it is noted that external accessibility requires the development of

transport connections which means investing in the availability of air connections, speeding up train connections and developing robust travel chains. In addition, the development of border stations and smooth and safe connections to other regional centres in Eastern and Northern Finland are prominent wish-list items. The general goal is that Kainuu should be reached quickly and smoothly by various means of transportation and that it should be easy to move around the area. In addition, one of the primary development goals is the development of international east-west transport connections.

Barents Euro-Arctic cooperation has been identified as one of the main directions of international cooperation in the regional programme. The document also emphasises Kainuu's active involvement in regional networks, such as cooperation between the regions of Eastern and Northern Finland and the NSPA network in the sparsely populated areas of the north. Russia's geographical proximity is also highlighted and the importance of the Russia dimension for Kainuu is culturally, socially and economically important.

The strategic priorities of the Kainuu Provincial Plan are largely in line with the Provincial Programme. Both documents highlight the connection between the functioning transportation system and local business life. Transport and telecommunications connections from Kainuu to the Arctic Ocean are defined as long-term development targets. In addition, the document notes that the development of accessibility generally and the transport network in particular across the Barents region has been identified as one of the main priorities of cooperation. The goal of the region's transport and logistics partnership is defined as accelerating development projects related to the northern transport routes and maintaining partner dialogue.

LAPLAND

The renewal process for the Lapland agreement was ongoing during the preparation of this study. The new Lapland agreement includes the Lapland Provincial Programme for the period 2022-2025 and the Provincial Plan up to 2040. The new Lapland Agreement was ratified in late 2021 but had not yet been published at the time this report was concluded.

The Lapland Agreement serves as the provincial development document for Lapland. It includes both the provincial programme and the provincial plan.

Functional transport connections are identified as vital for the development of businesses and services in the document. Furthermore, it is also noted that transport links are crucial from the point of view of the company location decisions, a factor which remains important for regional vitality. In addition, the document highlights the trans-European network of TEN-T transport infrastructure and states that the European Commission's strategic goal is to extend this network to Lapland. At a general level, the programme notes that both the south-north and west-east passenger and freight connections must be in functioning order. The importance of communication connections is also emphasised in this context.

According to the programme's vision for Lapland in 2040, Lapland has a strong brand as a vibrant and international region. Internationality is an integral part of the Lapland lifestyle and that Arctic cross-border cooperation utilising the northern region's resources guarantees competitiveness in international markets. In terms of strategic choices, internationality is placed at the centre of Lapland's regional development. With regard to the target state, the programme notes that the Arctic is involved in all activities in Lapland. The Barents dimension is not however highlighted in the programme. On the other hand, Lapland's role as an Arctic actor in the Arctic region is a strategic choice and a theme that strongly permeates and defines the programme.

2. Sweden

VÄSTERBOTTEN

With regard to the Västerbotten regional development documents, the inventory contains the development plans for 2014-2020 and 2020-2030.

The strategic choices of the programmes outline the need to improve the performance and capacity of the transport system through new investments in infrastructure. Particular emphasis has been placed on sustainable mobility and

logistics in infrastructure development. In addition, the strategic objective is to strengthen international cooperation in the field of transport which can be promoted in particular through joint strategic planning.

The programme identifies regional transport and transport networks more generally as an important factor in regional development. In addition, emphasis is placed on the region's specific characteristics, large area, low population density and gendered labour market which make high-quality and efficient transport links and networks increasingly important for the region's development. The programme also highlights the extension of the trans-European TEN-T network to the county and the importance of east-west transport networks, especially for traffic between Sweden and Finland. In this context, the importance of the Bothnia Corridor in particular will be taken into account. The theme of sustainable mobility and logistics can also be identified in a cross-cutting manner in the programme, something which is highlighted on a number of occasions at the target level.

The programmes recognise the importance of international cooperation, both in terms of transport and logistics and more generally. It is specifically mentioned here that cooperation between regions and states has the potential to increase common understanding and strengthen the effectiveness of common goals. In addition, it is noted that Västerbotten has a long tradition of operating in international networks and cross-border cooperation. Barents cooperation is mentioned as one of the regional forms of international cooperation.

NORRBOTTEN

The Norrbotten Regional Development Documents include development plans for 2014-2020 and 2020-2030.

Firstly, the documents identify transport infrastructure as an important factor in the pursuit of regional development and international competitiveness. However, the geographical location of the county as well as the long internal distances between settlements and the low nature of its population density are factors that have made it impossible to develop the transport system sufficiently. With regard to east-west connections in particular, the transport system has not been developed to be efficient enough to meet the demands of international cross-border traffic, particularly in respect of the growing Asian market. In addition, the documents noted that, due to regional specificities, the region lacks a critical mass that could contribute to the development of more efficient connections.

International cooperation is repeatedly mentioned in the documents. Moreover, they also emphasise geographical and strategic positioning in relation to the surrounding northern regions and states. Cross-border cooperation is highlighted at a strategic level, highlighting its benefits, such as strengthening international competitiveness through companies in the region and sharing information and best practices.

The Barents dimension is strongly emphasised in the documents. The documents state that the county is responsible for Barents cooperation between the states at the regional level. The multidisciplinary nature of Barents cooperation is highlighted and science, research and the mining industry are given as examples of this. In addition, the participation of young people is sought to strengthen Barents cooperation further, thus there is a drive to involve young people in various cooperation processes.

3. Norway

NORDLAND

The regional development document for Nordland, Norway, is the Regional planstrategi for Nordland 2021 – 2024. Transportation and infrastructure are recognised as fields of great importance for the people and businesses of the Nordland region. A good infrastructure endowment gives people more freedom to relocate and for businesses good transport solutions contributes to better mobility in respect of goods and services, for example, it is noted that many northerners are employed in the trade service. The Nordland planning strategy places significant emphasis on carbon emissions and green shifts in the field of transportation and logistics. As such, the transport planning strategy is seen as contributing to sustainability via the reduced need for traveling, land usage and greenhouse gas emissions.

There does however seem to be minimal emphasis on the Barents region as a whole in the Planning strategy for Nordland 2021- 2024. However, different forms of cooperation are identified as the “one of the most important tools in the

toolbox" regarding regional development. It seems that inter-regional cooperation has been highlighted as being the most significant means of cooperation, for example, by highlighting the regional growth agreements.

TROMS AND FINNMARK

The regional document for Troms and Finnmark is Se nord – regional planstrategi for 2021 – 2024. The planning strategy notes at the outset that during the preparation of the planning strategy, the status of the regional unit was changed in principle – the merger dissolved – though the practical implementation of this decision has yet to be realised. As such, there is a distinct possibility that the aforementioned planning strategy will be obsolete by the time the report is released.

The main objective for the planning strategy was to develop the region from the northern perspective regarding the business environment, sustainability and infrastructure. The need for well-developed communication and transport opportunities, both in an east-west and a north-south perspective, was highlighted as absolutely crucial for the region's export industry and for contact and cooperation across borders in the north. International cooperation is thus also regarded as an important tool for solving the transport and communication challenges in the Arctic and in the Barents.

Development of both the Arctic and Barents regions was seen in the strategy as of great importance for Norway as well as for the northern Norwegian municipalities. As such, relationships with neighbouring countries in the Barents region and the North Calotte area must be managed in a good way. Regarding cross-border cooperation, the strategy states that cross-border cooperation in the north makes a valuable contribution to the achievement of the region's own regional objectives, for example to ensure access to labour, a competitive business community and a rich and diverse cultural life. This is highlighted further by stating that Troms and Finnmark county is the only county in Norway which shares a border with more than one neighbouring country.

4. Russia

MURMANSK OBLAST

Regarding the Murmansk oblast, the regional level document roughly translates into English as "Socio-economic strategy of the Murmansk region 2025".

The Barents dimension is referred to in the Murmansk regional development strategy. For example, the strategy states that "*The Murmansk region is a part of the Barents/Euro-Arctic Region and is involved in international cross-border cooperation programmes*". In addition, it was also noted that the Russian Arctic agenda and format of the Barents Region are basic frameworks for international cooperation.

International and cross-border cooperation was noted in the Murmansk regional development strategy, where cooperation is promoted in the form of information exchanges at the national, regional and human levels. The recognised main partner of international cooperation in the Barents Euro-Arctic Region is Norway. The main subjects for international and cross-border cooperation are natural resources, environmental issues, sustainability and functioning basic infrastructure with the addition of long-lasting cross-border cooperation in the field of cultural interaction. It was also noted that the Murmansk region is ideal for cooperation, since the region serves as a target market and a source of ideas, experiences and best practices.

On transportation, the Murmansk development strategy notes that the development of Murmansk as a transport hub is a major priority in terms of utilising the potential of the North Sea Route and the Barents Euro-Atlantic Corridor. Other development priorities include transportation, specifically, the modernisation of passenger transports, i.e., Airports, railways/railway stations etc.

REPUBLIC OF KARELIA

The regional level document of the Republic of Karelia is entitled, "Socio-economic strategy of the Republic of Karelia for the period up to 2030". The main goal of the socio-economic strategy of the Republic of Karelia is to improve the quality of life of the population of the republic on the basis of the sustainable balanced development of the economy,

building the potential for future development and active participation of the republic in the system of international and interregional exchange. The strategy specifically notes that interregional and international cooperation in the field of tourism and transportation present a significant opportunity for the region. One of the main objectives of international cooperation is to expand cooperation with foreign countries and partners potentially interested in trade, economic and cultural interaction, ensuring the maximum possible use of the benefits of the border position and accumulated competencies in the field of international cooperation. The Finnish-Russian border is seen as an important issue for the Republic of Karelia, even though it is stated that all of the roads In Russia which lead to the border-crossing points are currently administered by the Russian federation. This suggests that promoting the reconstruction and development of border crossings on the border with the Republic of [JH1] Finland is viewed as an important national-level priority.

In the field of transportation and logistics, the republic of Karelia seems to have produced a comprehensive strategy promoting the development of the region. The republic of Karelia focuses on the development of the road network and infrastructure as well as the development of railway transport, air transport and water transport. The idea here is to develop and improve the network of public roads, ensuring safe and uninterrupted passenger and freight transportation, increasing the availability and quality of transport services and the mobility of the population more generally.

ARKHANGELSK OBLAST

The Arkhangelsk regional level document roughly translates as “Strategy of socio-economic development of the Arkhangelsk region up to 2035”.

The strategy does not take into account the Barents region *per se* however, it does note that the Arctic region is important, particularly in respect of the growth of the region’s political and economic importance, the development of international cooperation concerning Arctic development the development of the Arctic’s natural resources and the involvement of the countries of Southeast Asia in economic and political cooperation in the Arctic.

The notion of cooperation is highlighted in the strategy which states that there is an opportunity to expand long-term international cooperation on sustainable development issues due to the region’s significant environmental potential and advantageous geographical location. The other way in which cooperation has been discussed in the strategy is by using examples, such as in reference to the fact that a significant number of international and interregional projects in the field of culture and intercultural interaction are being implemented.

On the transportation and logistics sector, the strategy firmly states that in the Arkhangelsk region one of the major challenges faced is the lagging development of transportation and logistics, for example there is lack of year-round land transport links in part of the territories and a lack of roads or highways to service a number of settlements. The importance of the Arkhangelsk region is identified in the regional strategy which notes that the Arkhangelsk region's importance is growing as regards the international and interregional transport systems sector.

THE REPUBLIC OF KOMI

The regional development strategy document of the republic of Komi can be translated as the “Socio-economic strategy of the republic of Komi for the period up to 2035”.

The strategy generally follows the same pattern as those of the other regional territories from the Russian federation in the Barents area. There, again, seems to be no specific emphasis on the Barents region while the greatest emphasis is placed on the transportation and logistics strategies.

However, the socio-economic strategy of the republic of Komi pays little attention to international and interregional cooperation in the area. The strategy states that it is necessary to strengthen bilateral cooperation with the regions of the North-West of Russia and with the regions bordering the Republic of Komi. That being said, it was also noted that the development of effective relations with foreign partners was important for regional well-being. For example, the identified development methods were, participation in integration agreements and in international forums and conferences on the development of health care, culture and art, sports, tourism, ecology and environmental protection as well as active participation in international student and specialist exchange programmes.

Regarding transportation and logistics, the socio-economic strategy states that the infrastructure in the republic of Komi needs to be further developed. Potential ideas on this include ensuring the stable and safe functioning of road transport, increasing the level of accessibility and the quality of road transport services, ensuring the stable and safe

functioning of the railway transport system, as well as reconstruction and modernisation of the railway transport infrastructure and ensuring the stable and safe operation of air transport.

THE NENETS AUTONOMOUS OKRUG

For the Nenets autonomous okrug the regional level strategy can be translated as “the socio-economic strategy of the Nenets autonomous okrug for the future up to 2030”.

The strategy document notes that in recent years, the Nenets Autonomous Okrug has been actively involved in international cross-border and global research, encompassing political, educational and ethnographic events. Examples of the participation of the Nenets Autonomous Okrug in these kinds of activities include the meeting of senior officials of the Council of the Barents Euro-Arctic Region, the international conference on "The ecological state of the Pechora Sea region - EcoPechora 2008" and the Days of Nenets Culture in St. Petersburg. It is also stated in the strategy that the development of horizontal network connections between organisations is the most important condition for creating an image of the region and participating in an adequate information field.

On the issue of transportation and logistics, the socio-economic strategy of the Nenets autonomous okrug notes that the transport infrastructure of the region is poorly developed. Due to the fact that the roads of the Okrug have no connection to the public roads network in Russia, while, in addition, despite the long coastline there are no large ports in the okrug and finally, there is no railway service in the Nenets Autonomous Okrug, with air transport alone playing a key role. It is also noted in the document that the development of the district's transport infrastructure is a strategic goal not only at the regional, but also at the federal level, primarily from the point of view of ensuring the development of mineral deposits and increasing the availability of transport services for the population of remote and hard-to-reach areas.

5. Regional transport plans in the Barents region

1. Finland

NATIONAL PLANS

Finland's national transport system plan contains analyses of the current state of the transport system, the future of transportation, a vision of the development of the transportation system, the national objectives of the plan, an action plan, the government's financing programme and an abstract relating to the impact assessment (Finnish Government 2021).

Finland's current transportation system plan encompasses the period 2021-2032 and uses the same 12-year period as the other Nordic countries. The objectives in respect of the development of the transport system are the promotion of Finnish economic competitiveness, the prevention of climate change and the improvement of accessibility. The plan also highlights the importance of cooperation between stakeholders and the promotion of knowledge-based decision-making (Finnish Government 2021).

The plan lists the main future trends and challenges that may affect transport including global trends such as climate change, globalisation, urbanisation, and population ageing. On the national level, the plan identifies the following changes which, it argues, may affect the transportation system:

- areal centralisation: population and workplaces centralise to the biggest urban areas
- climate change: increased use of alternative fuels
- technological development and digitalisation: challenges in cyber security and reliability
- Maas (Mobility as a service): more diverse range of services promoting more flexible and efficient services

The main content of the plan is the vision for the development of the transport system up to 2050. In 2050 the Finnish transport system will be sustainable guaranteeing satisfactory accessibility for all people and businesses. Some aspects of the vision are however rather optimistic such as, "Finland has figured out new methods for financing transport investments". The main objectives of the national transport system plan are listed below:

- accessibility
- sustainability
- efficiency

In addition to these objectives, the plan also lists a number of subtopics to the main objectives. In conclusion, the vision contains a lot of themes but there is little substantive text on any of them. This makes it quite hard to undertake further analyses in respect of the vision and how it is implemented (Finnish Government 2021).

Finland's goal is to have zero-emission transportation in 2050 which is the same goal as Eu has. This goal is achieved by increasing use of walking, cycling and public transport and reducing use of private cars. Zero emission vehicles have lower taxes which promotes use of these vehicles. However, there is not an overview in the plan from the future of new technologies and this theme is only mentioned here and there. (Finnish Government 2021)

Finland's national plan contains numerous objectives but few concrete measures to attain them. The plan does not, for example, even contain a list of projects to be implemented. Funding of different road-type investments as well as other investment category types such as railways are presented at such a conceptual level that it is hard to really analyse how these goals are to be achieved. Some concrete projects are presented in the plan, but the implementation of these projects remains rather utopian or is only to be realised far into the future. For instance, the plan introduces railway projects to Turku and Tampere. The report does however, albeit briefly, mention that in relation to the Northern-Finland section of the Barents region, cooperation is important (Finnish Government 2021).

NORTH KARELIA

North Karelia region's transport system plan contains a current state analysis of the transport system, the transportation of people, impacts of transport, future trends & challenges and opportunities. The forestry industry plays a significant role in the region and therefore roads for raw wood transportation should be in a good condition and have enough bearing capacity to facilitate such activities. The technology industry is also one of the major industries in the region (North Karelia region 2020).

The main objectives of the regional transportation plan are as follows:

- transportation is safe
- industrial logistic chains are cost efficient
- The need for transportation is fulfilled

Cost efficient transportation and safe transportation are listed as the main objectives in eastern Finland's traffic strategy which is produced in cooperation with three regions. North Karelia does engage in cooperation with other neighbouring regions in transport related strategies (North Karelia region 2020).

The report lists some of the future trends that may affect the transportation system. The following factors must be considered during the planning process:

- Change in land use
- Population ageing and decrease
- change in the volume of border traffic
- emission reductions
- MAAS
- Region's future accessibility

Land use planning should aim to create a denser urban structure which would promote the use of public transport. Population decrease and ageing will reduce transportation volumes in the rural areas. Border traffic has also declined since 2015 and thus new investment in border routes is unlikely. North Karelia will reduce emissions by improving walking and cycling connections, creating travel chains and moving transport from roads to railways (North Karelia region 2020).

OULU REGION

Oulu region's transport systems plan begins by setting out the principles of work. The regional transportation plan covers a 20-year period from 2020 to 2040. The main objectives of the regional transportation plan are as follows:

- improvement of industrial competitiveness
- reduction of fossil fuel emissions
- improvement in accessibility

Russian transit traffic is quite common in the Oulu region: for example, mining products are transported from Kostamus to Raahe and Kokkola by railway. The plan also analyses northern Sweden's infrastructure projects and their possible impacts on transportation across the region. The Oulu region's transportation plan also analyses industries located outside the region but which may generate traffic across Northern Finland. While the plan analyses interregional and international transportation needs and possibilities quite well, there is no direct mention of cooperation in the Barents region (Oulu region 2019).

The second chapter introduces four different measure groups to develop the region. All of the upcoming projects in regional development should follow these principles. These are as follows:

- Northern Finland more strongly part of the European transportation network
- transport system that meets the needs of industry
- transport system that promotes sustainable transport
- easy and fluid transportation in the region

The first measure group aim is to improve north-south connections by improving roads and railways. The second measure group aim is to support industrial competitiveness by paying attention to the maintenance of the existing roads and railway networks. The third measure group goal is to encourage people to use public transport as well as promoting walking and cycling as opposed to private car usage. This is done primarily through land use planning which tries to avoid urban sprawl and the need for private car usage. Walking and cycling conditions are also improved to support this goal. The last measure group is safe and fluid transportation in the region which basically means well-functioning connections between different travel modes and terminals. This is achieved with park and ride areas and intelligent transportation systems.

The last chapter describes the current state of the transportation system in the region. This is done by analysing the road, railway, port and airport network (Oulu region 2019).

KAINUU

Kainuu region's transport system plan contains a current state analysis of the transport system, future trends, objectives and list of the most important future transportation projects.

Kainuu region has dense land use in urban areas, strong commuting within a municipality and recognised industries. Kainuu region's challenges in respect of the transport system relate to long distances, sparse population density and the small number of transport users, each of which present a challenge to road network maintenance and the viability of public transport. Kainuu region's main industries are tourism, mining and the biobased economy (Kainuu region 2018).

The main objectives of Kainuu region's transport plan are:

- sustainable transport system
- regional competitiveness
- fluid and safe everyday transport

Walking and cycling must be fluent and safe in the urban areas of the region and public transport must be usable on routes between regional centres, which are recognised as useful tools to reduce emissions from private car usage (Kainuu region 2018).

Measures to meet these goals have been divided into inter-regional and region-specific approaches. Inter-regional measures relate to the main roads and railways in the area. On the other hand, region-specific measures consist of traffic safety improvements and the reduction of transport-related emissions. The plan also lists the road and railway sections that should be improved but does not however contain a specific action plan for the coming years. Connections to neighbouring Barents areas via the main roads 22 and 89 are mentioned as one example of the Joint Barents transport plan (Kainuu region 2018).

LAPLAND

Lapland's transport system plan contains sections on the basis of planning, the objectives of the plan, development strategy and an action plan and impact assessment. Lapland's plan is quite broad compared to other regional documents in the Barents area. Lapland region recently produced a new version of the plan because all of the planned measures in the previous plan have been implemented. This approach differs from commonly found in Norway and Sweden where the regional plan is renewed every fourth year. Its time span covers a period of 20 years while other plans cover only 12 years. The plan highlights the importance of cross border connections and transverse connections as a foundation for economic activities (Lappi region 2021).

One of Lapland's problems is that it has only a limited connection to the TEN-T network and then only in the southern part of the region. The regional transport system plan is based on the transport system reports of (sub)regional land use plans (Northern Lapland, Rovaniemi and Eastern-Lapland, Western Lapland and Fjell Lapland) (Lappi region 2021).

The report also lists some of the future trends that may affect the transportation system. These factors must be considered during the planning process:

- carbon neutrality in the transportation system
- Sami culture and its impact on the Lapland region

- population has declined and centralised
- The main business sectors in Lapland are tourism and the mining industry

The future trajectory for various business sectors is seen as being relatively positive. There is growth in tourism, investments in bioindustry-related factories and interests in the mining industry. It is however important to find ways to promote Lapland's experience-sector and its industrial goals. The road network forms the basis of the transportation infrastructure in Lapland, though some airports, ports and railways can also be found in the region. The plan also analyses various future travel trends in public transport, walking, cycling and logistics (Lappi region 2021).

Lapland's regional plan contains a holistic review of current transportation flows in the Barents area including Northern Norway's port plan while Västerbotten and Norrbotten are also recognised as providing potential opportunities for Finnish business (Lappi region 2021, 35).

After analysing these future trends, the transport system plan introduces a number of objectives in respect of the transport system. The main objectives for future development are as follows:

- Lapland's transportation system is carbon neutral by 2045
- Improvements in accessibility supports Lapland's competitiveness
- Lapland will develop into a logistics centre for the Arctic area

The transport system plan only contains strategic objectives for future development which describes the planning principle for future investments. There is also a list of future projects, but project costs and financing are not listed. Therefore, the list cannot be taken as a proper action plan which could be implemented immediately (Lappi region 2021).

2. Sweden

NATIONAL LEVEL

Sweden's national transport system plan determines the financial framework for county plans for the regional transport infrastructure. The goal of the plan is to build a robust, environmentally friendly and reliable transport infrastructure. The government has increased the level of funds related to the operation, maintenance and reinvestment of roads and railway networks. Sweden aims to be the first fossil-fuel free welfare state. Transport systems will also contribute to these aims (Sweden government 2018; 2021).

The national plan for the transport infrastructure describes the best ways to maintain and develop the national infrastructure. The plan includes the following themes:

- operation and maintenance of state roads and railways
- investment in state roads, railways and waterways
- measures to reduce the environmental impact of infrastructure building and usage
- support for municipalities to promote sustainable urban environment
- funds for innovations and research

The financial framework for measures relating to the transport infrastructure is SEK 799 billion for the period 2022-2033. The largest share of the funds is distributed towards the development of the transport system with smaller funding allocations given to maintenance of state roads and railways. Overall, 45% of the fund is given to maintenance and 55% for new investments. Regional plans are allocated a portion of this money, SEK 42 billion (5%). The share allocated to regional plans is quite small compared to other beneficiaries. Due to the financial framework some of the projects have been postponed for a number of years (Sweden government 2018; 2021).

The goal of carbon neutrality by 2045 can largely be achieved as the share of electric vehicles increases significantly over time. The report also highlights the need for extensive electrification and for research and innovation in both shipping and aviation. Fossil-fuel freedom can be achieved through a combination of transport system efficiency, more efficient vehicles and a change to renewable fuels (Sweden government 2021).

The Swedish transport administration has initiated a forum between the Nordic authorities from Denmark, Finland and Norway. The aim of this collaborative effort is to find a consensus on bottlenecks and shortcomings in cross-border relationships and to discuss authority documentation, measure proposals and transport plans.

The transport sector's climate goal is to reduce emissions to zero by 2045 (domestic traffic). Electric power must become the dominant factor in road traffic in the coming decades which requires the expansion of the charging infrastructure. The government's action plan for fossil-fuel free transport has three elements:

- transport efficient society
- energy efficient and fossil-fuel free vehicles
- renewable fuels

According to the plan's authors with these key elements, the goal can be achieved.

At the regional administration level, Sweden consists of counties (län) and provinces (landskap). The Barents region in Sweden consists of Västerbotten and Norrbotten regions (län in Swedish). Regional plans deal mainly with smaller projects while the main responsibility for large-scale projects is held by national level actors.

VÄSTERBOTTEN

The Västenbotten transport plan contains current transport system analyses, an outline of future goals in relation to the transportation system, action planning and an overview of the effects of transportation policy goals. The four priority themes of the transport plan are gender equality, economics, environmental and climate sustainability. The report highlights the types of challenges that this northern part of Sweden faces such as long distances within the region and from the region to its markets. Investments listed in the report will strengthen the business community, provide better accessibility and a healthier climate as well as addressing the issue of gender equality (Västerbotten region 2018).

Roads and railways will receive the largest share of the available funds (37%) with the second highest portion going to pedestrian and bicycle paths (24%). Walking and cycling paths have been afforded a high priority in the region. The main priorities of the county transport plan are as follows:

- Railway-related measures
- road measures focusing on road safety
- strengthening the east-west cooperation route
- walking and cycling measures

Although many plans in the area concentrate on the south-north axle, some sort of east-west cooperation is also sought. The East-West collaboration route is highlighted as one of the primary opportunities to which the region's transport plan will contribute (Västerbotten region 2018).

The major investments in the region are the Norrbotnia line (Norrbotniabanan) and the new Kvarken ferry. The ferry will travel between Vasa and Umeå. The Kvarken ferry is a practical example of cooperation across the border although Vaasa itself is not considered part of the Barents region (Västerbotten region 2018).

The county transport plan is based on a regional system analysis which was undertaken in collaboration with Norrbotten län (region). Västerbotten län has also initiated cooperation with regional and interregional neighbouring areas. The measures are determined in collaboration with the Swedish transport agency and Västerbotten region (Västerbotten region 2018).

NORRBOTTEN

In late 2022 a new regional transportation plan will be produced by Norrbotten region. The plan defines and prioritises the measures that should be undertaken in the next twelve years to create sustainable regional development. The final proposal will be published at the end of April 2022 and will be sent for approval in the summer or autumn of 2022 (Norrbotten region 2018).

Regional systems analyses have been undertaken for both Norrbotten and Västerbotten counties with interaction between counties common. The regional transport plan is produced by The Norrbotten region in cooperation with the county's municipalities, authorities and organisations. The plan highlights the priorities of the regional transport infrastructure for the next 12-year period. The plan contains an environmental impact assessment, how to fulfil the objectives and a description of the implementation approach. Norrbotten county's most important industrial sectors are mining, forestry, energy and the hospitality industries while the service sector is also growing (Norrbotten region 2018).

43% of the funds are for "named objects" such as road and railway investments while 55% are for "areas of action" which contain smaller projects. The main topics in the areas of action include, for instance, pedestrian and bicycle measures on state roads and road safety measures. In addition, 11% of the funds are given to measures which come from identified deficiencies (Norrbotten region 2018).

A system analysis highlights four priority functions which help to attain the region's goals. The priority functions are:

- gender equality
- economic, environmental and climate sustainability
- The county will stay strong and grow in the 2030s

Norrbotniabanan is a planned coastal railway from Umeå to Luleå offering significant positive effects for the area, reducing transport costs and halving travel times. Railroad expansion will be funded by the government while parts of the travel centres and accessibility connections are funded by the county (Norrbotten region 2018).

National officials play a major role in regional investments in Sweden while the counties focus on smaller measures. This can be seen in the context of the Norrbotniabanan primarily in relation to the shares of the infrastructure funds allocated, of which only 5% are given directly to counties. In conclusion, the county transport plan is drawn up in order to generate positive effects for the national economy, the accessibility of people and goods and to contribute to meeting the long-term objectives of sustainable transport (Norrbotten region 2018).

3. Norway

NATIONAL LEVEL

Norway's national transport system plan analyses the future of transportation, the efficiency of the transport sector, financial resources, accessibility, good urban growth, freight transport, transport safety, climate and environment, social security in the transport sector and the investment programme. Overall, the report is rather broad, providing a holistic presentation of the future of transportation in Norway (Norway government 2021).

Norway's current national transport system plan is operative for the period 2022-2033. The government has emphasised development of a good transport system that increases quality of life, contributes to value creation, protects lives and contributes to better health, a better environment and a better climate. The goals of the national transport system plan are as follows:

- accessibility: better accessibility for people and goods across the whole country
- transport safety: reduce transport accidents in line with the zero vision
- climate and environment: reduce greenhouse gas emissions by moving towards the low-emissions society while also reducing other negative environmental impacts

It is not desirable to have a transport plan that locks in resource use and promotes projects that do not consider cost increases, new technological opportunities and changes in transport needs. The plan also introduces a number of ways to improve efficiency. One such approach is portfolio management of investment, where those projects that best adopted this optimisation tool are implemented first (Norway government 2021).

Norway has an ambitious goal to reduce greenhouse gas emissions by 40% by 2030 compared to the 1990 figure. New passenger cars must be zero-emission vehicles by 2025 and 50% of new lorries will be zero emission vehicles by 2030. Other transport modes will also have similar emission reduction aims while they are not as strict as those applied to car traffic. In urban areas all growth in passenger transport is to be taken up by public transport, bicycles and walking. The

plan introduces the use of batteries, and fuel cells as zero emissions technologies and the use of hybrid solutions as low emissions technologies (Norway government, 2017).

Digitalisation and the development of artificial intelligence, better algorithms and increasing computing power ease the problems formerly associated with analysing large amounts of data, something which will be important for the development of autonomous solutions and interacting with intelligent transport systems. For example, the testing of self-driving vehicles is made easier with digitalisation (Norwegian government 2021, 57).

Norway has doubled investments in the traffic sector, measured as share of the economy, since 2003. The level of public investments is high compared to that of many other countries. The plan period's financial framework is NOK 1200 billion. Most of these funds come from the state (89%) with the rest coming from (road) tolls (11%). The economic situation will affect the phasing and implementation of the plan. Funding is given to national roads (43%), railways (33%%), measures in the urban areas (7%) and subsidies for county roads (4%). The government will also focus on the following aspects:

- renewal fuels, improve reliability and operational safety while paying attention to climate change
- develop infrastructure with significant investments in large projects, road improvements, landslide protection
- increase the state's grants to county roads

One of the focus points of the NJS is on the maintenance of the current network. Norway will invest 37% more into the maintenance of the transportation systems than it has done in the previous period. The Government payment period (2018) will be the first one where provision for the maintenance of roads will be sufficient and railways are in a better condition than at the start of the funding period (Norway government 2021).

The national plan mentions the Barents region several times in respect of Barents watch and cooperation in developing corridors across national borders. The plan also has its own chapters for Barents cooperation and Barents watch. Barents cooperation primarily handles the Barents transport plan which contains 17 cross-border connections, road conditions on these routes and other possible bottlenecks. Barents watch is a monitoring and information system for sea and coastal areas (Norway government 2021).

The national objectives of the transport system plan form the guidelines for regional transport solutions and policies.

NORDLAND

The plan (2018-2029) deals with topics such as the current state of the infrastructure endowment, vision & strategies, and the action programme. The purpose of the regional transport system plan is to ensure that the desired level of development across the county is achieved. It must however have ambitious and realistic goals. The region's population has also become more centralised and slightly declined in recent years. Retaining and attracting younger people will therefore be crucial for the county's future. The strategic initiative "from coast to markets" is listed as an important basis for the transport plan. Nordland is rich in resources and therefore it is important that infrastructure can transport these resources to create value and welfare (Nordland region 2021).

Good transport systems are essential for business, settlement and commuting both in urban and rural areas. The need for efficient and targeted use of resources thus remains significant in the transport area while financing is limited. The county is responsible for the management, planning, operation, maintenance and renewal of the county's road network. The regional planning strategy contains six long-term development goals with the following goals having a direct impact on the transport sector:

- attractive society with a good culture and service supply for all
- innovative and sustainable business and industry that contributes to the green transformation
- efficient, safe and environmentally friendly infrastructure that addresses residents', travellers' and business needs

The plan's programme sets out the purpose of the planning work, identifies planning process deadlines, participants, the choice of topics and notes the need for further studies. An invitation for suggestions relating to the plan programme is sent out for consultation for a minimum of six weeks with announcements in the media and in electronic form. After public inspection all inputs will be added and commented upon. Final proposals for the programme are then presented to the county council. Stakeholders are invited to two meetings to better understand the challenges associated with the transport system in the county at an early phase (Nordland region 2021).

The regional plan forms the basis for regional activities as well as municipal and state planning in the region. The regional planning strategy lays down the guidelines for work with all other regional plans. The main priorities of the regional transportation plan are as follows:

- traffic safety
- maintenance of and investments in the county road network
- landslide protection
- detours
- public transport
- cycling and walking

Corona pandemic-related measures have limited people's mobility and reduced travel activity, especially in respect of public transport. The pandemic may have a long-lasting and indeed permanent effect on travel habits as more people use home office and digital meetings for work. Other future challenges mentioned in the plan are increased use of online shopping which may increase the transportation of goods and reduce daily shopping in cities (Nordland region 2021).

The transport system plan only analyses the role of a county's own road sections and whether these should be prioritised, but it does not determine road standards, intersection design and land use related to the road projects. The plan should also contain indicators that can measure developments within the themes of the plan in order to be able to assess goal achievement in the regional transport plan. The Joint Barents Transport Plan 2015 is mentioned briefly in the 2018-2029 version of the plan (Nordland region 2021).

FINNMARK AND TROMS

Finnmark and Troms have been a single region for a few years however their transport related documents have been drawn up before the fusion took place and as such, they are analysed separately.

TROMS

The main topics addressed in the report are the financial framework, challenges and a proposal for the county's action programme. The quote below describes the purpose of the regional transport plan and why it is undertaken. The regional transport plan is based on assumptions which are made in the regional planning strategy for Troms and Finnmark. [Note: Troms and Finnmark counties were merged in 2020 but the merger has not worked as planned and a de-merger will likely soon occur] (Troms 2018; Troms 2022).

"The regional transport plan (RTP) for Troms is prepared in accordance with the Planning and Building Act (Pbl) § 8 and adopted by the county council which is the regional planning authority. A copy of the plan is sent to the ministries briefing. The regional plan shall form the basis for the activities of regional organs and for municipal and state planning and activities in the region."

The regional transport plan for Troms is a management tool that provides predictable priorities and which address important initiatives in the municipalities and at the region level. The RTP will not assess specific land allocation, for instance, in respect of the development of transport infrastructure. It will only study the future county network structure, bicycle/pedestrian paths etc., on an overall level. The ministry of local government and modernisation publishes for each election period a paper, "National expectations for municipal and regional planning" which guides counties' planning work. It lists four major national challenges:

- to create a sustainable welfare society
- to create an ecologically sustainable society through climate policy and resource management
- to create a socially sustainable society
- to create a society safe for all

The government decided to transfer road administration of county roads to the county municipalities. This includes tasks relating to planning, construction, management, operation and the maintenance of county roads. Tasks related

to safety and emergency preparedness will continue as a national task organised as part of the Norwegian public roads administration (Troms 2018; Troms 2022).

The county road network consists of 2982 km of road, with 37 tunnels and 382 bridges. Only 5% of the county road network has traffic volumes of over 3000 vehicles per day. The main challenges in the road network are:

- excessive utilisation of bearing capacity
- short cover life
- insufficient maintenance volume
- increasing lengths with critical tyre condition
- gravel roads

Repair debt in the county road network in Troms was estimated to be NOK 6-8 billion in 2017 (Troms 2018; Troms 2022).

The goal of an increased public transport share requires a long-term increase in funding for public transport. The national goal is to facilitate increased use of public transport. Public transport should be easy to use. Customer orientation involves measures to reduce the user threshold by offering good information and payment solutions. Other solutions are the facilitation of interaction between transport modes (Troms 2018; Troms 2022).

Troms retains a significant need for investment in the county to meet national objectives in respect of its transport systems by 2050. This includes the maintenance of old road sections, completely new investments, investments in public transport such as ferries and buses and measures to improve conditions for cycling and walking. The county municipality does not have sufficient resources to meet these investment requirements. It is therefore planned to map opportunities for external financing to better meet the needs of business, industry and society. The plan deals briefly with themes such as transport preparedness, climate change and technology & digitalisation (Troms 2018; Troms 2022).

FINNMARK

Finnmark county was merged with the neighbouring county of Troms in January 2020. The merger has however, seemingly failed and thus Finnmark is again becoming a separate county. As such, the latest regional transport plan available for Finnmark spans the period 2018-2029 (Finnmark region 2017).

Finnmark County is responsible for country roads and public transport in the region. Finnmark faces challenges in relation to the long distances between towns which creates challenges for public transport and the operation of the road network. Finnmark county experiences long winters while its harsh and mountainous topography necessitates column driving and closed road sections. International cooperation is important to ensure access for businesses and industry in the county. The plan highlights the county's significant role in better coordination between regional, national and international plans for the Barents region (Finnmark region 2017).

The regional transport plan deals with themes such as today’s trends & future needs, ongoing challenges and an action plan for the period(s) (2006-2009 and) 2018-2029. The plan is a long-term transport policy that lays down guidelines for detailed action programmes. According to the report Finnmark should have a safe, efficient and predictable transport system for the county's people and business. The report contains detailed action programmes for public transport, county roads and traffic safety (Finnmark region 2017).

The transport sector is currently experiencing something of a technological shift and it is important that the county follows this development and encourages use of these new emerging technologies. Transportation is important for business and wellbeing but it also causes pollution, queues and noise. Therefore, it is important to reduce the need for transport. The report briefly mentions intelligent transport systems (ITS) and together with other technological solutions it provides the county with many opportunities such as real-time information and the testing of autonomous vehicles (Finnmark region 2017).

The regional transport system plan addresses issues relating to public transport which is administered by the county municipality, operated under the Snelandia brand and includes buses, speedboats, ferries and taxis. Daily transport to schools and weekly transport from small hamlets to municipal centres set guidelines for opportunities for business development and significantly impact commuting patterns. Finnmark will have fossil-fuel free public transport by 2026 (Finnmark region 2017).

The county is responsible for county roads and for the coordination of measures to promote traffic safety. The county wants to prioritise improvements on important food corridors which follows the national “Coast to the market” strategy with the Corridor Hammerfest-Alta Finnish border mentioned as one such link. The financial framework guides the county in the use of funds and provides a study in more effective and cost saving measures. Overall, the county has an important role to play in maintaining and operating county roads and public transport. Decisions regarding bigger projects are however made at the national level (Finnmark region 2017).

4. Russia

NATIONAL LEVEL

The Federal Road Agency (Rosavtodor) which works under the Ministry of transport of the Russian Federation (picture 1. below) has commissioned a federal transport strategy for the period up to 2030. This strategy also includes a description of the federal transport system and its priorities for 2030. The strategy also mentions the development of the Russian economy in the Barents / Euro-Arctic and Council of the Baltic Sea States (Rosavtodor, 2022).

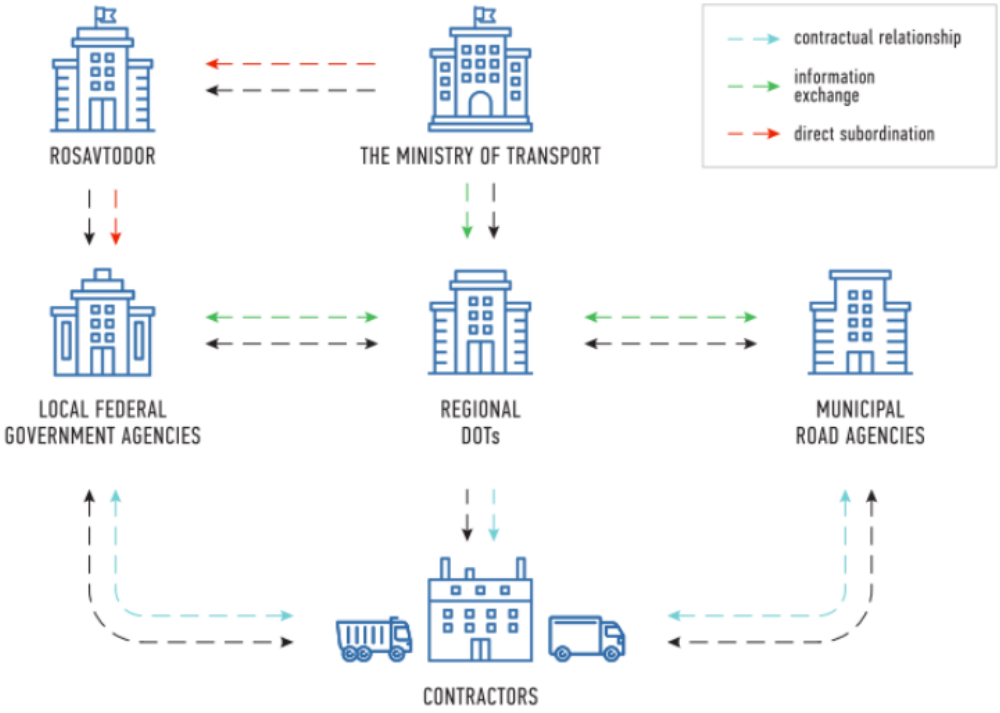

Figure 4. Federal and local (Traffic and) Road administration entities. (Rosavtodor 2022).

National transport system development priorities (Rosavtodor, 2022):

- The formation of a single transport space in Russia based on the balanced development of an efficient transport infrastructure.
- Ensuring the availability, volume, and competitiveness of transport services for cargo owners in accordance with the needs of the innovative development of the country's economy.
- Ensuring the availability and quality of transport services for the population in accordance with social standards.
- Integration into the global transport space and implementation of the country's transit potential.
- Increasing the level of safety of the transport system.
- Reducing the harmful effects of transport on the environment.
- Development of transport equipment, technologies and information support.

The Barents region contains five federal subjects in the Russian Federation, Murmansk Oblast (region), Republic of Karelia, Arkhangelsk Oblast (region), Republic of Komi and Nenets Autonomous Okrug (county). Each regional administration has created its own documentation for socio-economic development. The documentation objectives of these strategies and the development of the transport infrastructure are described by region in the sub-chapters below.

MURMANSK OBLAST

Transport plays an important role in the economic development of the Murmansk region, due to the predominance of industries focused on the supply of large quantities of raw materials, metals and fishery products outside the region, its favourable geographical location and the possibility of year around navigation with direct access to international shipping (Murmansk Oblast, 2022).

The transport complex of the Murmansk oblast is represented by enterprises and organisations of sea, railway, air, road transport and electric transport (trolleybuses). Land, air, and sea transport communications ensure the traditional economic ties of the region and create favourable conditions for expanding business cooperation with Russian and foreign partners. The share of transport in the structure of the gross regional product is 11% (Murmansk Oblast, 2022).

The socio-economic development strategy for the Murmansk oblast (region) for the period up to 2025, contains multiple tasks in respect of increasing the competitiveness of the transport systems of the region in both domestic and foreign markets. Providing opportunities for all categories of the population for achievable, safe, and reliable transport with vehicles or without them, while also considering road safety. The documentation of this strategy contains priorities for increasing the competitiveness of the region's transport systems in relation to both domestic and foreign markets. Development priorities are listed below (Murmansk Oblast, 2019).

- The competitiveness of the region will be realised through the development of the seaport of Murmansk. Operating year-round, the seaport is a centre for the processing of raw material resources such as oil, liquefied gas, coal, iron ore, fish products and other concentrates
- Integration of the Murmansk transport hub into international transport corridors
- Assistance in increasing the capacity of seaports on the territory area
- Assistance in the development of air, road, and rail transport for interregional transportation. Expansion of the transport network for interregional aviation routes and creating an effective system for aviation services
- Development of the railway network, the creation of new railways lines and expanding the capacity of existing lines

Development of transport system 2014-2025 (Murmansk Oblast, 2019):

- Development of road facilities
- Organisation of transport services for the population
- Improving road safety
- Federal technical supervision and control

REPUBLIC OF KARELIA

The main infrastructural problems of the republic, including those associated with modern transport and communications systems (mobile communications and the internet in all settlements points) are expected to be resolved by the end of the 2020s as the level of federal support, including in the framework of projects with co-financing from the regional budget, attract extra-budgetary funds (Karelia, 2018).

The socio-economic development strategy of the Republic of Karelia notes that the development of transport in the Republic is part of the state programme, "Development of the transport system". It includes a strategic direction called "Infrastructure for life" and describes it in terms of the improvement of transport, engineering, housing and communal infrastructure as a prerequisite for the development of the economy and social sphere (Karelia, 2018).

The strategic direction "Infrastructure for life" includes reference to future developments in the transport sector (Karelia, 2018):

- Development of road network and roadside infrastructure

- Development of railway transport
- Development of air transport
- Development of water transport

In this socio-economic strategy, the development of transport has however received less attention than in other regions of the Barents area.

ARKHANGELSK OBLAST

The main objective is the organisation of a transport system that provides spatial connectivity for the Arkhangelsk region, as well as transport links with other constituent entities of the Russian Federation and foreign countries. Achievement of fast and uninterrupted transport links in Far North and equivalent areas contributes to the creation of comfortable conditions for residents and guests of the Arkhangelsk region and the growth of trade and business contacts (Arkhangelsk, 2015).

The future image, up to 2035, envisages that the transport system of the Arkhangelsk region will be serving as a framework connecting the space of the Arkhangelsk region and providing international and interregional contacts. The population of the Arkhangelsk region will be satisfied with the high level of transport services and guests of the Arkhangelsk region will enjoy comfortable travels. It will be possible to eliminate transport and communications restrictions for the development of the economy of the Arkhangelsk region and the implementation of loading and transit functions in servicing the Northern Sea Route (Arkhangelsk, 2015).

Directions shaping the future of the transport system in the Arkhangelsk region are at the heart of the attempt to achieve the connectedness of space is the organisation hierarchical system of transport communications. Equally important is the availability of transport communications along the settlement framework. Mostly it concerns land and river transport. Due to the considerable distances associated with regional accessibility as well as the presence of natural barriers, it is used in relation to the regional aviation system. Development of the city of Arkhangelsk as an aviation hub helps to strengthen contacts not only in the Arkhangelsk region, but also contacts with other subjects of the Russian Federation and foreign countries (Arkhangelsk, 2015).

The transport system of the Arkhangelsk region must provide conditions for the comfortable movement of people and goods. For strategic planning in the context of project strategizing, several projects, the implementation of which will allow for the attainment of a new quality of transport infrastructure (Arkhangelsk, 2015).

- Project "Road frame of Arkhangelsk region”
- Project "Arkhangelsk - air gates of macro region and the Russian arctic"
- Project "Formation of a high-efficient railway system of the Arkhangelsk region"
- Project "Development of inland waterways of the northern Dvinsky basin"
- Project "Quality passenger communication"

The strategy also mentions the global tendency to reduce the role of distance as a deterrent to international and interregional cooperation through development of multimodal transport and logistics systems using intelligent technologies (Arkhangelsk, 2015).

REPUBLIC OF KOMI

The socio-economic development strategy of the Republic of Komi for the period up to 2035 mentions that the primary development part of the transport system is the construction of the railway route Sosnogorsk - Indiga (Nenets Autonomous Okrug). Developing a transport system that meets the needs of the population and the economy of the Republic of Komi is also mentioned (Komi, 2019).

Priority policy directions are listed below (Komi, 2019):

- Development of road facilities
- Development of automotive transport
- Development of railway transport
- Development of air transport

- Development of water transport
- Development of pipeline transport

The most important implementation tools in the strategy are described as follows, comprehensive plans, state and regional projects, multi-projects and a portfolio of projects and other investment projects (Komi, 2019)

Expected results are described as follows: (Komi, 2019):

- Meeting the needs of the population and the economy with high quality, affordable and safe (in all modes) transport
- Integrated transport
- Increasing the level of transport services for the population by promoting increases in speed, timeliness, predictability, flow and the functioning of the transport system (increasing the manageability and controllability of development in all modes of transport)
- Modernisation of the existing transport infrastructure
- Unification of the transport system of the Komi Republic with other Russian Federation subjects (regions) and the creation of new promising transport routes in The Arctic
- Implementation of the transit potential of the Republic
- Increasing the level of road safety for heavy traffic and pedestrians

In addition, it was also noted that the development of transport systems and transport infrastructure is in the interests of cities and municipalities such Vuktyl, Inta and Petšora (Komi, 2019).

NENETS AUTONOMOUS OKRUG

The socio-economic development strategy of the Nenets Autonomous Okrug (county/region) for the period up to 2030 notes that the transport complex of the region is represented by road, air, inland waterways, sea, and pipeline types of transport. It includes a network of highways of various importance, encompassing both permanent and seasonal use. Currently, this region is the only one in the European part of Russia that does not have permanent ground transport connections with other regions of the Russian Federation. Road transport is the main channel for the delivery of goods in and to the region in the absence of a railway connection. The use of road transport is limited, due to insufficient length and the low quality of highways in the district (Nenets, 2019).

National priorities for infrastructure development (Nenets, 2019):

- Increase in the share of regional roads, meeting regulatory requirements
- Increasing the capacity of seaports
- Development of the Northern Sea Route and an increase in cargo traffic along it to 80 million tons up to 2024
- Increasing the level of economic connectivity of the territory of the Russian Federation through the expansion and modernisation of the railway, aviation, road, sea, and river infrastructures

The main regional challenges (Nenets, 2019):

- Overcoming the overland isolation of the territory of the Nenets Autonomous constituencies
- Restraining oil and gas production due to the lack of pipeline infrastructure
- Formation of unambiguous competitive advantages of implementation infrastructure megaprojects on the territory of the Nenets Autonomous Okrug and their "Protection" at the federal level

Regional priorities (Nenets, 2019):

- Stimulating the construction of pipeline transport infrastructure
- Modernisation of existing ports and construction of new one
- Construction of ground infrastructure to overcome the transport isolation of the county

5. Other plans

BARENTS REGION TRANSPORTATION STRATEGY

The aim of the Joint Barents transport plan is to improve cooperation between the countries in the region and promote cross border networks to create better access to regional and global markets. Transportation is largely based on a road network with railway connections. The plan lays out the objectives for the region's transport system, the characteristics of the region, its transport needs, the status of transport system, related plans, deficiencies, and recommendations. The objectives of the plan are recommendations only and thus do not entail a commitment to implementation by the member countries. These objectives are as follows:

- Barents region remains competitive in the transition to sustainable solutions that consider climate change
- The transport system should facilitate regional developments
- Good internal connectivity between Barents countries with good external links to world markets.

Realisation of the significant industrial potential of the area requires a new approach to infrastructure planning and building. The plan lists a number of recommendations to improve the transport system in the region: increase knowledge about transports needs, create the conditions to reduce greenhouse gas emissions, increase road safety and reduce border crossing obstacles. It also contains a list of planned projects in the area across all transport modes.

- 1.Route “the Bothnian corridor”: Oulu–Haparanda/Tornio–Umeå
- 2.Route: Luleå–Narvik
- 3.Route: Vorkuta–Syktyvkar–Kotlas Arkhangelsk–Vartius –Oulu
- 4.“the Northern maritime corridor” Arkhangelsk–Murmansk–the European continent
- 5.Corridor: “the Motorway of the Baltic Sea”: Luleå/Kemi/Oulu–the European continent
- 6.Route: Petrozavodsk–Murmansk–Kirkenes
- 7.Route: Rovaniemi–Salla–Kandalaksha
- 8.Route: Kemi–Rovaniemi–Kirkenes
- 9.National Route through northern Norway, Kirkenes–Mosjøen
- 10.Route: “the northern lights Route”: Haparanda/tornio–Tromsø
- 11.Route: Karesuando/Palojoensuu –Alta
- 12.Route: “the blue road”: Vasa–Umeå–Mo i Rana
- 13.Route: “the silver road”: Skelleftå–Bodø
- 14.Route: Murmansk–Raja-jooseppi–Ivalo
- 15.Route: Svappavarra–Pajala–Kolari
- 16.Route: Kajaani–Petrozavodsk
- 17.Routes in the air: East-west flight services in the Barents region

NORTHERN FINLAND TRANSPORT AND LOGISTICS STRATEGY

The Regional Council of Lapland has created documentation relating to the “Northern Finland transport and logistics strategy” which contains development guidelines and the most important project entities in the coming years in northern Finland. The strategy supports the vitality of the business community and its development as well as sustainable regional and community structure across northern Finland. Northern Finland plays a significant role in the Barents region due to its central location. Northern Finland’s traffic and logistics system allows for the smooth operation of, and secure connection within, the area as well as with the rest of Finland and other countries. Durable passenger transport chains using digital services are currently running smoothly and have proven to be cost-effective (Lapin liitto 2020).

The main priorities of the traffic and logistics system:

- Cost-effective travel and transportation chains
- The development of transport services, considering long distances between cities and low population density
- Support for traffic reduction of emissions and the spread of modes of transport (sustainable mobility)

The most urgent measures mentioned in the strategy are the TEN-T core network corridor evolution, the economic development of road maintenance, funding business investment needs, the development of seaports and land connections and the development of railway connections (Lapin liitto 2020).

The long terms strategic objectives are connection with international transport corridors in cooperation with neighbouring countries, more studies with Barents region neighbouring countries, the development of travel chains by improving the ticketing and passenger information systems, generalising alternative propulsion (electricity, biogas) usage, the development of sustainable mobility especially in urban areas, developing the regional economy and improving the accessibility of northern Finland by building a major airport network and developing better broadband connections (Lapin liitto 2020).

EUREGIO KARELIA COOPERATION STRATEGY 2021-2027

The Euregio Karelia (described previously in Chapter 3) government has drawn up a cooperation strategy for the development of the region for the period 2021-2027. Euregio Karelia cooperation priorities include entities such as well-functioning transport and telecommunication connections, competitive and renewable business life, clean environment, diverse nature and climate-resistant activities, everyday well-being and increasing interaction between citizens. The main development measures for transport are described in the following paragraphs.

Efficient and smooth transport and telecommunications connections are the basis for interregional cooperation. The competitiveness of the business community requires good accessibility and reliable smooth transport connections (such as environmentally friendly rail transport).

Preparations for the introduction of electronic visas for travel to Russia must be prepared in such a way that border crossings are smooth and secure for growing domestic and foreign tourist numbers. The importance of air transport for business and tourism will continue to be high. Maintaining adequate air connections at international airports in the region is thus very important.

Facilities and infrastructure at state border crossing points (land and rail) need to be renovated to meet the requirements of increased traffic volumes, the functioning of inspection facilities and the speed and reliability of telecommunications connections. Temporary border crossing points will also be opened in the future to facilitate logistical cooperation.

The daily bus connection between Joensuu and Petrozavodsk facilitates cooperation. The possibility of running passenger train services between Petrozavodsk-Joensuu and Petrozavodsk-Kostomuksha-Kajaani-Oulu however needs also to be explored.

In relation to water transport, plans are in place to increase the functionality of the Saimaa canal by building larger lock-gate points and raising the water level. The estimated cost for both operations is €95 million. In 2020, the Finnish government decided to finance the whole arrangement. The arrangement will have a positive effect in terms of increasing cost-effective and environmentally friendly freight transport from the inland waters of Eastern Finland through the inland waters of Russia to the ports of Central Europe.

Euregio's aim is preparation and implementation of border area projects and improving cooperation between actors. Strategy lists local projects for lobbying and the focus of cooperation. The plan analyses current border stations and border traffic, the road network, railway network, air connections and water traffic. Euregio cooperation can be seen as a complementary tool for improving cross border connections in the Barents area.

6. Barents cooperation

Next, we look at the current state of cooperation in the Barents region in general and specially in the transport and logistics sector. The comments and ideas presented in the chapter are based on workshops organised during the project and interviews with Barents actors.

The current state of cooperation is seen to be fairly solid and its importance is seen as important throughout the region. The materials highlight the fact that the collaboration is recognised as having a long and impressive history which is also viewed as something to be cherished. Cooperation is seen as occurring within an identifiable international framework, in addition to which cooperation is carried out regionally.

Transport and logistics are identified as one of the most effective themes in Barents cooperation, as it is easy to find common interests and goals that benefit all parties. Barents cooperation is however challenged by the existence of common problems in the operating environment, such as climate change, debt relating to infrastructure repairs and the global political situation. In addition to this, national interests sometimes seem to take precedence over international interests which in turn limits the effectiveness of Barents cooperation. The coronavirus pandemic has also made cooperation more difficult on a practical level.

A particular success of Barents cooperation is the Joint Barents Transport Plan (JBTP) which guides cooperation in transport and logistics. In addition, the importance of joint development projects in terms of effectiveness is also emphasised. In particular, small concrete development projects, focusing on specific problems, are seen as the most relevant in terms of effectiveness. Such examples here include the development of border crossing points and the development of the eco-charging infrastructure. In addition, it is viewed as a positive that international cooperation in the Barents region can seek to influence national decision-making. The maintenance of communication and partnerships with partners at a general level is also considered a positive achievement of Barents cooperation. Cooperation is therefore seen as valuable in itself.

The conflict between national and international interests in the Barents region is seen as a challenge for Barents cooperation. At a practical level, this means that, for example, transport and logistics networks are built primarily on the basis of national needs and interests. The development of transport links on a West-East axis in particular is generally seen as important, but cannot be resolved through Barents cooperation alone, as funding and decision-making on transport networks is a matter for national decision-making. Additional cooperation challenges are acknowledged as relating to the intensity of cooperation, language barriers and the availability of sufficient time for cooperation.

Based on the workshop materials and the interviews, cooperation in the transport and logistics sector is aimed in particular at supporting the business community which is perceived as a common interest among all actors in the Barents region. A well-functioning transport infrastructure is seen as vital from the perspective of business opportunities. In addition, low-carbon transport and new technologies are identified as important themes for the transport and logistics sector in particular which can be promoted through Barents cooperation. Sharing research knowledge and best practices is also seen as a keyway to work together to promote common goals.

The development ideas for Barents cooperation place great emphasis on predictability, continuity and perseverance. In other words, collaboration should be viewed as a continuum and as a project that will never be completed. In addition, with regard to development ideas, the use of EU funds in support of Barents cooperation and as one of the funding sources is also highlighted. Environmental and technological issues should also be more closely integrated into cooperation, as their impact on the future of the Barents region and on the development of the transport and logistics sector is seen as highly significant. The development of the transport system, based on digitalisation, is seen as defining the future direction of travel, something which should also be taken into account in the context of Barents cooperation.

BARENTS COOPERATION SWOT

Strengths	**Weaknesses**
Long tradition of cooperation Multinational cooperation structures Concrete development projects Common development plans, i.e., JBTP Common interests in transports and logistics Interregional cooperation effects to national decision making	Lack of funding to Barents cooperation Lack of common vision regarding the development targets Intensity of the cooperation Poor coordination between regional, national and international level National interests are more dominant than cross-border
Opportunities	**Threats**
Sharing knowledge and best practices Cooperation between businesses, decision makers and science Development of the carbon neutral transport and logistics Implementing new technologies in the field of transport and logistics	Climate change Political tensions Culture and language barriers

As an outcome from the second workshop, a Barents cooperation SWOT-analysis was formed. Results of this SWOT analysis can be found in the above figure. Further, the subjects chosen for this SWOT-analysis were based on the interviews conducted during the project.

Structures of cooperation and common interest in developing the Barents region are emphasised in the strengths. Concrete cases such as development projects and plans (for ex. JBTP) are highlighted. The lack of funding and the common vision regarding development targets are pointed out in the weaknesses. Furthermore, the diverse interests of the different administrative levels are also regarded as weaknesses. Opportunities in respect of Barents cooperation include the sharing of knowledge and cooperation between diverse sectors of society and the development of carbon neutral transport and logistics. The challenges of the greater scale, such as climate change and tense political atmosphere, are emphasised in threats. Further, practical threats, for example culture and language barriers can obstruct functional cooperation. It should also be noted that there are different interests at play in the development of the Barents region across the various regional, national and international levels of governance. As an example, we can look, for instance, at the funding directed to transport and logistics as well as to the development of transportation networks, both of which are decided nationally.

7. Discussion

In this final chapter we draw some conclusions on the previous sections and discuss the findings produced. As the nature of the Barents region is rather complex, there are four countries, 13 regions and numerous, additional, sub-regions and cultures involved, our aim is not to make concrete or one-size-fits-all suggestions but rather to simply raise awareness of and promote discussion about the Barents region in general and transportation, logistics and cross-border cooperation in particular. Our goal was to compare how the various transportation plans reflect the regional plans or strategies across the Barents region. An additional point of interest here was to evaluate the similarities and differences discernible in the plans and strategies discussed in the previous chapters. Finally, attempted to highlight the current status and the importance of cross-border cooperation in the Barents region.

When reviewing the Barents regional documents and the transportation and logistics plans at a general level, a broad level of cohesion between the analysed documents is apparent. For example, similar recurring themes emerged in respect of the transportation and logistics sector. In particular, the themes of accessibility, sustainability and economic competitiveness are generally highlighted in most regional development documents as well as in the transportation plans. In addition, most transportation and logistics plans seem to take into consideration the importance of safe and proficient transportation. However, since the Barents region is diverse in nature, there are a number of discrepancies while, on closer inspection, different emphases emerge in the documents at various points. The countries and thus the regions in the Barents are currently at different levels of development. For example, in the documents, Norway seems to place the most consistent emphasis on carbon-free transportation. In the same manner, the Norwegian documents have identified the enormous possibilities presented by new technologies, such as intelligent transportation systems (ITS) compared to the other regions in the Barents.

Specifically, on the transport and logistics plans themselves; it seems that in most countries national actors have a major role in transport investments while regional actors are only responsible for smaller investments. This can be seen in Norway, Sweden and Finland as well as in Russia. In Norway the regions are mainly responsible for county roads and arranging public transport. Sweden's regions have a small share of the funds allocated to the development of transportation and these funds are generally provided for minor investments in roads, railways, cycling and pedestrian traffic. The main objectives of national and regional documents are economic competitiveness and sustainability while other objectives vary significantly between different documents. National plans generally guide the regional development of transportation and regional plans.

In the current transportation infrastructure, the national focus, in each country, is primarily on the North-South axis. Given its importance in national integration, this transportation axis is therefore much more developed than the East-West axes across the region. That being said, the regional level documents stress that the significant overall development of the East-West transportation infrastructure is absolutely vital for the future of the regions within the Barents area. As such, we can witness a growing emphasis on the need to further develop the East-West infrastructure. It remains however to be seen how the growing importance of the East-West axis in the High North will be reflected in the national strategies of the participating countries.

All of the regions in the Barents's area face similar challenges in terms of long distances, extreme climate conditions and population decline. Some of the regional plans also consider neighbouring areas in their analyses and have a broad perspective (e.g., Northern Ostrobothnia), while others deal in the main with primarily 'regional' things. Some of the regional plans analyse international cooperation and cross border connections. For example. international cooperation is important for Finnmark's region to ensure market access for business and industry in the county. International cooperation is seen as key in the promotion of a good business environment within the Barents region while passenger transport clearly plays a smaller role in cross border connections.

The Barents dimension is somewhat opaque in character with a structure that remains difficult to pin down in terms of power, responsibilities and network hierarchies. The Barents dimension is, for example, in some instances completely absent from regional level documents where others generally and enthusiastically take the Barents region concept into consideration. As such, significant differences remain in terms of integrating the Barents concept and policy implementation process into the work of the area's regional authorities.

Nevertheless, the Barents concept is generally viewed as important for the various political sub-units across the region. Particularly in relation to cross-border cooperation, the Barents is generally perceived as a crucial forum by all

interested parties. There is already a long tradition of cooperation between the nations in the area and thus, as a result, cross-border cooperation has generally been rooted in the development strategies of the Barents region and it is mutually accepted that maintaining fruitful working relationships between actors is in everyone's interests. In particular, the most important cooperation issue is recognised to be that *within* the various countries of the Barents area and, specifically between the regions within the same country. Nevertheless, intranational cooperation remains the most obvious way to carry out plans or projects which require some form of cross-border cooperation. Even though intranational cooperation is the primary approach, the strategic objectives for those regions which have a shared border with other countries, for example Lapland, Norrbotten, Troms and Finnmark and Murmansk, are hugely facilitated by cross-border cooperation. Even the relatively small-scale local development projects are seen as highly important and influential for regional well-being and development. For example, the development of border crossing points and charging stations for electric vehicles are mentioned as somewhat small scale, but influential, projects.

There are, nevertheless, several bottlenecks in the Barents region hindering its overall development and preventing the deepening of cross-border cooperation. For example, language barriers are perceived as a particularly difficult in some parts of the region. Other significant bottlenecks include the lack of easily accessible information regarding the Barents region and the perceived superiority of national politics. In this context, while the proclivity for top down policy-making across the Barents region seem to be relatively common, it remains unclear just how synchronised these 'national-level' views on regional development are with those held at the sub-regional level. As such, we can say that the sharing of information between national and regional levels seems to be somewhat dysfunctional. The final bottleneck recognised in this report relates to the current disturbances in the geopolitical environment. Naturally changes in the geopolitical environment fundamentally affect cross-border regional development promotion in the Barents region at every level of governance.

In conclusion, there are a number of development suggestions which can be made after evaluating the Barents region's current status and a review of the regional and transportation documents. Firstly, basic and easily accessible public information on what the Barents region is, who the actors are and how the region can be fruitfully developed would generate significant added value in cooperation terms. Similarly, there seems to be room for the greater harmonisation of national and regional strategies across the Barents region, although it is acknowledged here that this will continue to be extremely hard to accomplish given the various obstacles and bottlenecks identified above. That being said, perhaps the lower-hanging fruit here is the promotion of some kind of collective and shared databank for the regional developers to utilise. The databank could contain the national and regional strategies and plans of the member countries regarding the Barents region and in particular their transportation and logistics-related planning documents. Other development suggestions potentially relate to the boosting of communications linkages and a re-doubled effort to promote more interregional projects with local participation. Maintaining partnerships, particularly during this period dominated by global pandemics and geopolitical stresses is thus regarded as key to long-lasting and mutually beneficial cooperation.

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CHAPTER 3

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