

Kunnskapsgrunnlag/områdeanalyse NORDLAND, TROMS OG FINNMARK, SAPMI

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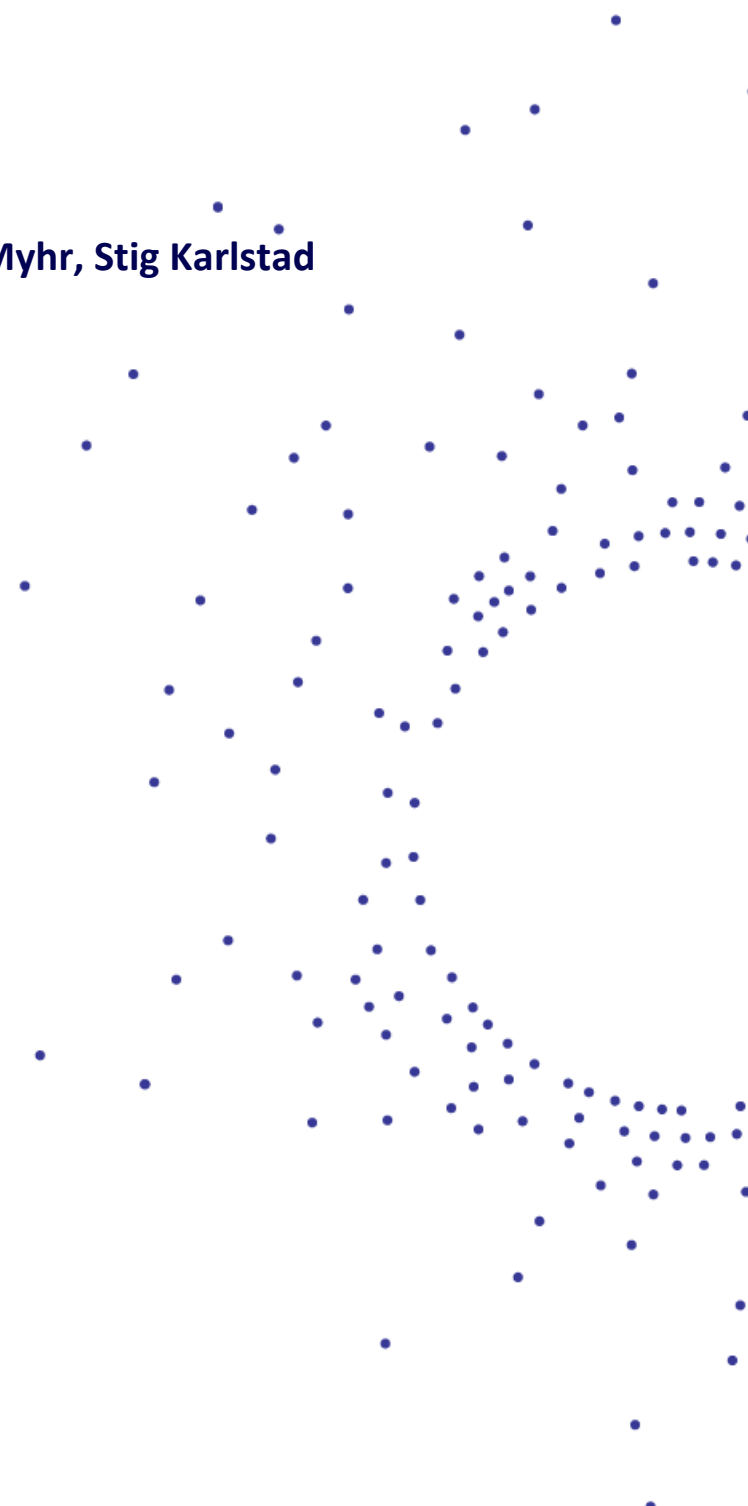


Table of contents

Foreword.....	2
1. Executive Summary.....	2
2. Background.....	3
3. Regional facts.....	4
3.1 Demography.....	6
3.2 Labour market and industry structure.....	10
3.3 Health & Healthcare.....	17
3.4 Smart & green & sustainable North Norway	21
3.5 Infrastructure and connectivity	25
3.6 Sámi area	29
3.7 Functional area	35
3.8 Smart specialisation	36
3.9 Nordic comparison	38
4. Conclusions / SWOT analysis, North Norway	40
References	42

Foreword

As an assignment by Troms & Finnmark County Council, Nordland County Council and Sametinget, an expert work has been made by NORCE to prepare a knowledge base *Områdeanalyse/Kunnskapsgrunnlag* on North Norway with relevance to the EU programmes SV/FI/NO, Kolarctic, and NPA taking place in the years 2021-2027. The expert work took place in September-October 2020.

The reporting of the work includes *Kunnskapsgrunnlag/Områdeanalyse del A* (this document) and *Kunnskapsgrunnlag/Områdeanalyse del B* (Appendix with additional background information and statistics).

1. Executive Summary

Norway has decided to participate in the EU programmes SV/FI/NO, Kolarctic and NPA under the period 2021-2027. This document is a joint knowledge base (*Områdeanalyse/Kunnskapsgrunnlag*) for the North Norway regions and Sametinget to be used in the preparation of the SV/FI/NO, Kolarctic and NPA programmes. The document includes an analysis of the themes of regional development in North Norway selected by the reference group of the project.

The key findings of the analysis include:

- North Norway has the same major strongholds as before the previous EU programme period 2014-2020, including abundance of natural resources and high level of knowledge especially related to Arctic conditions
- Major challenges include e.g. demographic development and attracting competent labour force
- Climate change and green transition are high in the agenda, including new international initiatives such as e.g. the EU Green Deal, with a significant effect on North Norway
- The unexpected COVID-19 pandemics in 2020 has changed the economic and social landscape in North Norway, too, with dramatic changes in the outlook of e.g. tourism and travel. The regional analysis needs to be complemented by constantly updating information of COVID-19 and its consequences to North Norway. Recovery from COVID-19 in the North, as well as building up resilience for potential future shocks, should be given extra attention.

The cornerstones of the EU policy for 2021-2027 are well-suited for the EU programme development in North Norway despite the COVID-19 effect. The major themes of a smarter Europe, a greener and low-carbon Europe, a more connected Europe, a more social Europe, and a Europe closer to citizens fit into the regional development of North Norway in an excellent way. The EU programmes (SV/FI/NO, Kolarctic, and NPA) in 2021-2027 play an essential role especially in unlocking the full potential of interregional and transnational cooperation in the North.

2. Background

Norway has decided to participate in the EU programmes SV/FI/NO, Kolarctic and NPA under the period 2021-2027. Interreg V-A - Sweden-Finland-Norway (Nord) 2021-2027 addresses the most important cross-border challenges linked to the implementation of the Europe 2020 Strategy in the north parts of Sweden, Finland and Norway. Kolarctic 2021-2027 is a financing programme for supporting cooperation between the countries in the North Calotte and northwest Russia. The NPA Northern Periphery and Arctic 2021-2027 programme addresses challenges, joint opportunities and transnational cooperation in the Euro-Arctic zone, parts of the Atlantic zone and parts of the Barents region.

In relation to the programmes, the participating regions shall prepare a joint programme document which will be guiding the selection of the prioritized investment and policy areas (out of the ones defined by the EU Commission). The joint programme document should be based on regional analysis and regional SWOT and to be anchored to regional and national strategies, as well as to the relevant EU strategies such as the Baltic Sea Region Strategy and the EU Arctic strategy.

In order to have the same understanding of the participating Norwegian regions, KMD has expressed their wish for the North Norway regions and Sametinget to prepare a joint knowledge base (Kunnskapsgrunnlag) to be used in the preparation of the SV/FI/NO, Kolarctic and NPA programmes.

The joint knowledge base should be prepared having in mind the five EU policy themes for 2021-2027: a smarter Europe, a greener and low-carbon Europe, a more connected Europe, a more social Europe, and a Europe closer to citizens (fostering the development of urban, rural and coastal areas and local initiatives).

This report is prepared by NORCE. The preparation work has been steered by Troms & Finnmark County Council, Nordland County Council and Sametinget which have also participated in data collection to support the analysis. The Knowledge base for North Norway (KMD 2019), which was prepared for KMD in 2019 by NORCE, has served as one of the major sources for this report, too.

COVID-19 pandemics causes significant changes in the business and social environment and expectations of future activities in North Norway. The analysis presented in this report is based on statistics until the end of 2019. The consequences of the COVID-19 pandemics in North Norway, as understood in the situation of October 2020, have been considered under qualitative analysis where relevant in this report.

3. Regional facts

Like most of the northern parts of the Scandinavian countries, North Norway consists of predominantly sparsely populated, remote regions. With a population density of only 5 per km², large areas of land are mostly unsettled, and the distance and travel time between towns and villages can be long – especially in former Finnmark county, where the population density is 1,6 per km² and difficult weather and terrain makes travelling challenging and time-consuming. Large rural areas and sparse population equates to difficulties providing basic services to the population, and travel time to necessities like postal services, banks and hospitals can amount to several hours or more in some areas. Table 1 summarizes the basic facts of Northern Norway. Figure 1 illustrates the population density in Northern Norway.

Table 1: Regional facts about North Norway. Sources: NORCE, Statistics Norway.

Region	Area (km ²), land (total)	Population (2020)	Population density	Centrality (1000=most central)*	Typology of region**
Troms & Finnmark	70 930 (115 871)	243 311	3 per km ² land area	668 (Group 5)	Predominantly rural, remote region
Nordland	35 760 (80 558)	241 235	7 per km ² land area	648 (Group 5)	Predominantly rural, remote region
Northern Norway	106 690 (196 429)	484 546	5 per km ² land area	658 (Group 5)	
Norway	304 073 (323 809)	5 367 580	18 per km ² land area	822 (Group 3)	

*Weighted average of centrality levels for municipalities. Grouped into 6 groups where 1 is most central, 6 least central.¹
 **Based on Dijstra & Poelman (2018).

¹ See ssb.no/klass/klassifikasjoner/128, retrieved 2020-10-04.

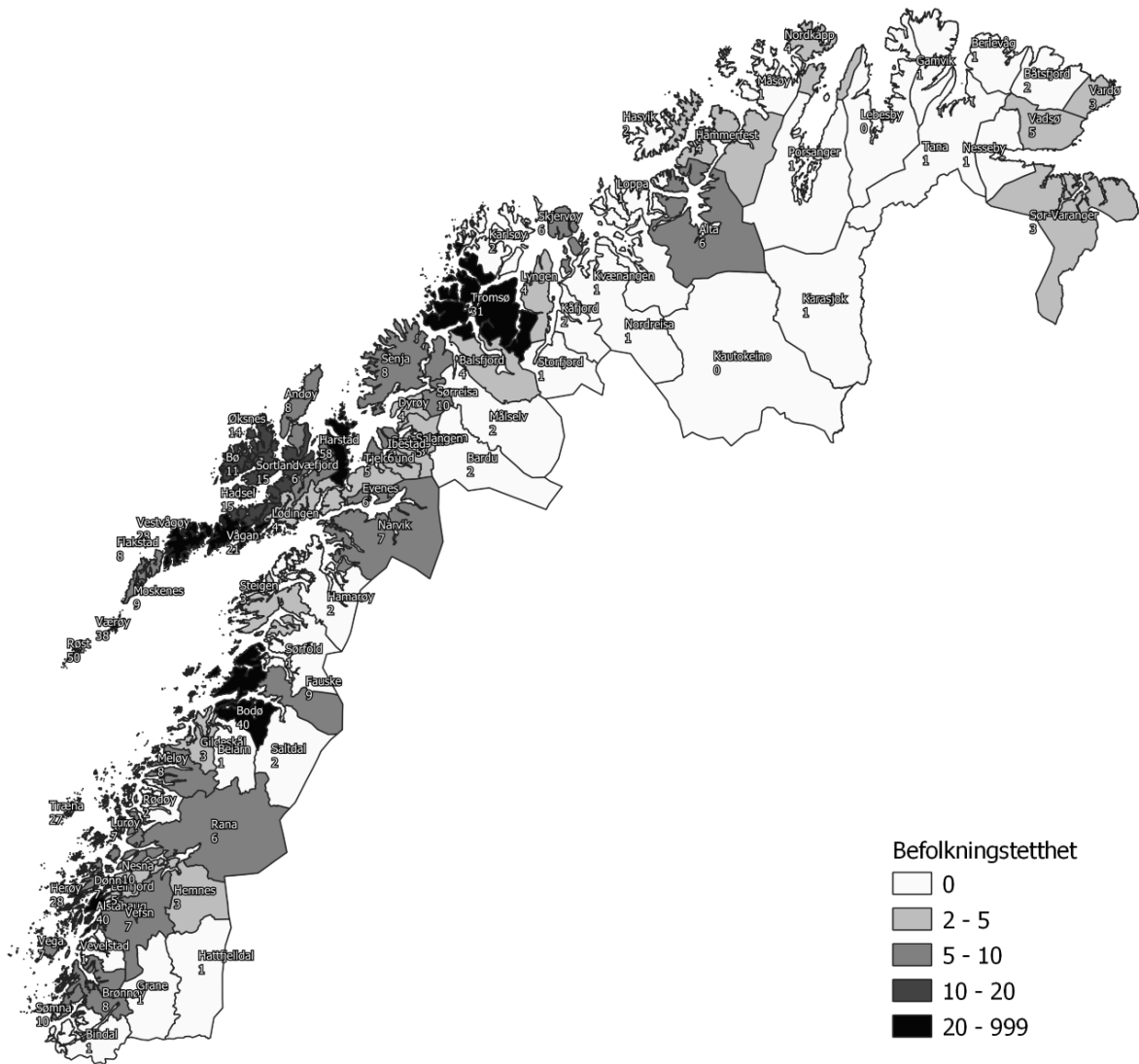


Figure 1: Population per km² land area, 2020. Sources: NORCE, Statistics Norway and the Norwegian Mapping Authority

3.1 Demography

Population and migration

The well-known patterns of an aging population and centralization are central features of northern Norwegian demography. To keep young people and especially competent and relevant labour is a long-standing issue in the region, and more so in the more rural municipalities. Some of the regional centers, such as Alta, Tromsø and Bodø have a history of increasing population, but this is fueled by migration from the less urban parts of northern Norway and from abroad.

Domestic migration streams, also from the regional centers, and especially young women, go south, mainly to the capital area. These migration streams strengthen the trend of a dwindling birth surplus, which in 2019 was down to 140, from around 1000 per year in the first decade of the millennium. Birth rates have sharply decreased all over the country in the last decade, as women choose to birth fewer children, and wait longer than before to become mothers.

To add to the problem of a low birth surplus, immigration, which has been a staple of the northern Norwegian population increase since 2008, has sharply decreased over the last years. Net immigration in 2019 was 1907, down 65% from the peak in 2012. Together, a failing birth surplus and the downswing in immigration lead to the first year of decreasing population in northern Norway since 2007, and the largest decrease since 1997, of 1905 people. Only 13 out of 80 municipalities² had an increase in population, mainly Bodø, Tromsø and Alta. These towns have a strong public sector and university campuses which contribute to attracting young people and competent labour.

In a five-year perspective, the northern Norwegian region has had a small population increase, of 0,8 %, while the population of Norway increased by 3,9 % in the same time period. Only one region in Norway, Innlandet, had a weaker population growth than the northern Norwegian region in the same period (see Table 2).

² Municipalities as of 2020.

Region	Population (2020)	5-year population change (15-20)	Population by centrality of municipality (2020) (1=most central, 6=least central)	People living in villages/towns/cities (2019)	Demographic vulnerability index** (10=most vulnerable)
Troms & Finnmark	243 311	1,8%*	3: 76 974 (32%) 4: 56 940 (23%) 5: 55 234 (23%) 6: 54 163 (22%)	179 346 (74%)	5
Nordland	241 235	-0,2%*	3: 52 357 (22%) 4: 81 612 (34%) 5: 53 547 (22%) 6: 53 719 (22%)	172 457 (71%)	7
Northern Norway	484 546	0,8%	3: 129 331 (27%) 4: 138 552 (29%) 5: 108 781 (22%) 6: 107 882 (22%)	351 803 (72%)	6
Norway	5 367 580	3,9%	1: 1 026 486 (19%) 2: 1 363 366 (25%) 3: 1 364 123 (25%) 4: 878 734 (16%) 5: 499 142 (9%) 6: 235 72 (4%)	4 368 614 (82%)	2
<p>* Note that Tjeldsund municipality was moved from Nordland to Troms & Finnmark county in 2020 (and merged with Skånland). If using the <i>current</i> municipality structure, the 5-year change would have been a 0,3% increase in Nordland and a 1,2% increase in Troms & Finnmark. **Based on 10 indicators in Nordregio Working Paper 2019:1 (age balance, gender balance, birth rates, death rates and international migration balance).</p>					

Table 2: Demographic characteristics of northern Norway. Sources: NORCE, Statistics Norway.

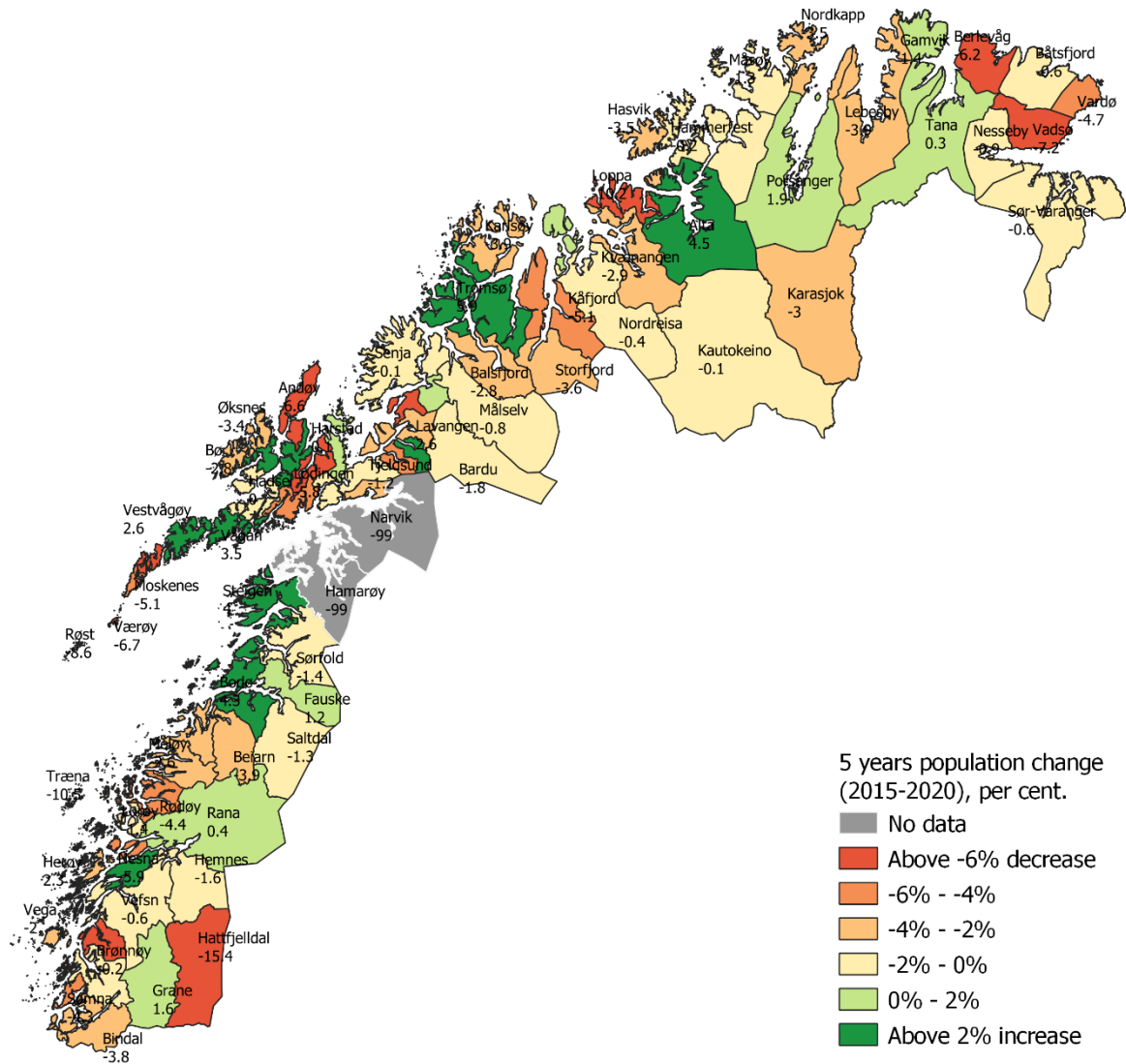


Figure 2: 5 years population change (2015-2020, %).

Note that Narvik and Hamarøy has no data for 2015 due to Tysfjord municipality being split between the two in 2020. Sources: NORCE, Statistics Norway and the Norwegian Mapping Authority.

Ageing

The global threat of an ageing population and a greater burden for the remaining labour force is also present in northern Norway. The share of people in the labour force in the region is expected to decrease steadily over the next decades. The ageing pattern is present across the whole region, and all levels of centrality. The population in northern Norway is older than the national average, with a larger fraction of people aged 50+, who has left or will leave the work force in the next 20 years. In a 30-year perspective, just over half the population in northern Norway will be in the age group 20-64, supporting a growing elderly population.

The situation is most precarious in the less central parts of the region, where the proportion of people in working age lies 7 percentage points lower than in the most central municipalities, Tromsø and Bodø³, which has a large share of inhabitants in their twenties and thirties compared to both less central municipalities and the national average.

The average age in northern Norway has increased from 40 to 42 years over the last 10 years, and in 2020, 58 % of the population was between 20-64 years, expected to increase to 52 % in 2050.

Gender

The trend with especially young women moving out of the region has over time lead to a surplus of men compared to women. While Norway has over 98 women for each 100 men on average in 2020, Northern Norway has 96,5. The discrepancies are particularly prevalent with women in the age group 25-35, which are the typical ages of new mothers, contributing to the dwindling birth surplus mentioned. In this group there are only 91 women per 100 men in Northern Norway, 89 in former Finnmark county. For the age group 35-44, Nordland and former Troms county lies near the national average of 94 women per 100 men, while former Finnmark county has a distinct lack of women at 87 women per 100 men.

Demographic vulnerability index

An index was compiled based on a Nordregio working paper (2019:1), evaluating the age balance, gender balance, birth and death rates and net immigration, resulting in an assessment of the demographic vulnerability of the regions. A score of 10 means the region is vulnerable on all indicators. The northern Norwegian regions score 6 out of 10 on the index, compared to 2 for Norway. Troms & Finnmark does a little better than Nordland, with 5 versus 7. Northern Norway is especially vulnerable when it comes to the number of children and births, while both counties have positive international net migration.

Summary: Demography

- ***Northern Norway has had a downturn in immigration and birth surplus over the last years, contributing to a population decrease in 2019.***
- ***The population is ageing, and this trend is expected to continue, causing a smaller proportion to be of working age over time, especially in rural regions.***

³ The only northern Norwegian municipalities in centrality level 3, the most central represented in the region.

3.2 Labour market and industry structure

Northern Norway has an economic structure where employment in primary industry (5 %) and public sector (43 %) is relatively more important to the region compared to Norway in general, whilst industrial sector is of almost equal importance (18 %). Service industries (trade, transport, business- and personal service etc.) are important, but have less share of total employment than nation (34 vs 42 %).

A long coastline and near located to huge fishery-, petroleum- and mineral resources, but also access to renewable water- and wind power, is the basis for the economic activity and settling in north. The fishery sector, mineral- and process industry has a long history with most of the production exported to world markets. The ownership and competition of access to these resources are of vital significance for the region. The last two decades the oil and gas industry has grown from almost nothing to become an important sector in north, especially in southern part of Nordland/Helgeland, Harstad/Troms and most of all in Hammerfest/Finnmark. Despite huge fishery resources, there has been decline in smaller coastal societies activity related to fish harvesting and -industry, partly caused by structural changes and regulations. At the same time the aquaculture sector has had an enormous growth in Nordland, Troms and Finnmark, and this growth in export to remote markets seems to continue.

Along with increasing outside ownership of this sector there are concerns that local interests gain too little from value added in this profitable supply chain. Later coming up industry is around renewable power-resources from on- and offshore wind, which involve conflicts of interest, like the upcoming mineral sector, related to use of land- and seashore areas between investors and different local users. Together with stabilizing electro-power from water basins, this variable "green" energy is of tremendous interest from national and foreign industry and investors, while locally the question is "what is in it for us"?

While the primary sector, industry and several supplier companies are located to municipalities and clusters in different parts of the region, relatively more in Nordland and Finnmark, more of the substantial public institutions within health and education are located in the larger cities like Tromsø and Bodø. The larger cities also include regional offices for larger institutions and companies in finance, R&D and different business administration services.

Finally, the growing tourism industry in parts of Northern Norway has to be mentioned, with well-known destinations like Lofoten/Helgeland in Nordland, Tromsø/Senja in Troms and North Cape in Finnmark. The widening from one season to all-seasons industry has made tourism a more sustainable sector for investors, small scale entrepreneurs and local communities. Nevertheless, in 2020, the covid-19 pandemic shocked the economic life and future prospects. Especially the tourism and transport industry, but also the culture sector, were significantly influenced. Risk of bankruptcies, and negative outlook for international tourism for some time ahead, is expected to cause several planned investments to be frozen.

NACE	Employed by place of work			Percent of total employment			
	Nordl.	Troms	Finnm.	Nordl.	Troms	Finnm.	NORWAY
01-03 Agriculture, forestry and fishing	5683	2846	2552	4,9	3,3	6,8	2,2
05-43 Industrial activities	22986	13124	7017	19,6	15,2	18,6	19,7
45-82 Trade, transport, hotels, business act.	35704	27641	10885	30,5	32,1	28,8	38,3
84 Public adm., defence, soc. security	9398	7425	3827	8,0	8,6	10,1	6,3
85 Education	10690	9507	3515	9,1	11,0	9,3	8,3
86-88 Human health and social work	28428	22414	8529	24,3	26,0	22,6	20,7
90-99 Other personal service activities	3653	2913	1286	3,1	3,4	3,4	4,0
00 Unspecified	589	351	193	0,5	0,4	0,5	0,6
TOTAL	117131	86221	37804	100	100	100	100

Table 3: Employed persons per 2019 4th quarter, by industry (SIC2007). Nordland, Troms and Finnmark counties, and Norway. SSB, T12907.

The Norwegian trade and industry are dominated by small and medium sized companies, especially in the northern regions. 89% of the companies have less than ten workers and employ 38% of the workers in the region.⁴ Company size 10-50 persons, reflecting 10 % of the companies, employ 35 % of employed people, while the remaining 1% of companies employ 26% of the labour force. Large companies often have owners from outside the region, and attractive smaller companies have in increasing degree been taken over in several sectors.

The general Norwegian economy has been growing for years. A large public sector and favourable world market prices for products from different parts of the North Norwegian industry has caused *shortage*, or mismatch, of labour force in several regions – reflected in a low unemployment rate between 1,5-3% in the last five years, less in Troms and more in Finnmark, especially in some smaller remote districts.⁵ A higher share of young unemployed, and a great share of disabled people locked out of labour market, is a substantial social problem and waste of potentially productive workforce.

Value added - Gross Regional Domestic Product (GRDP)

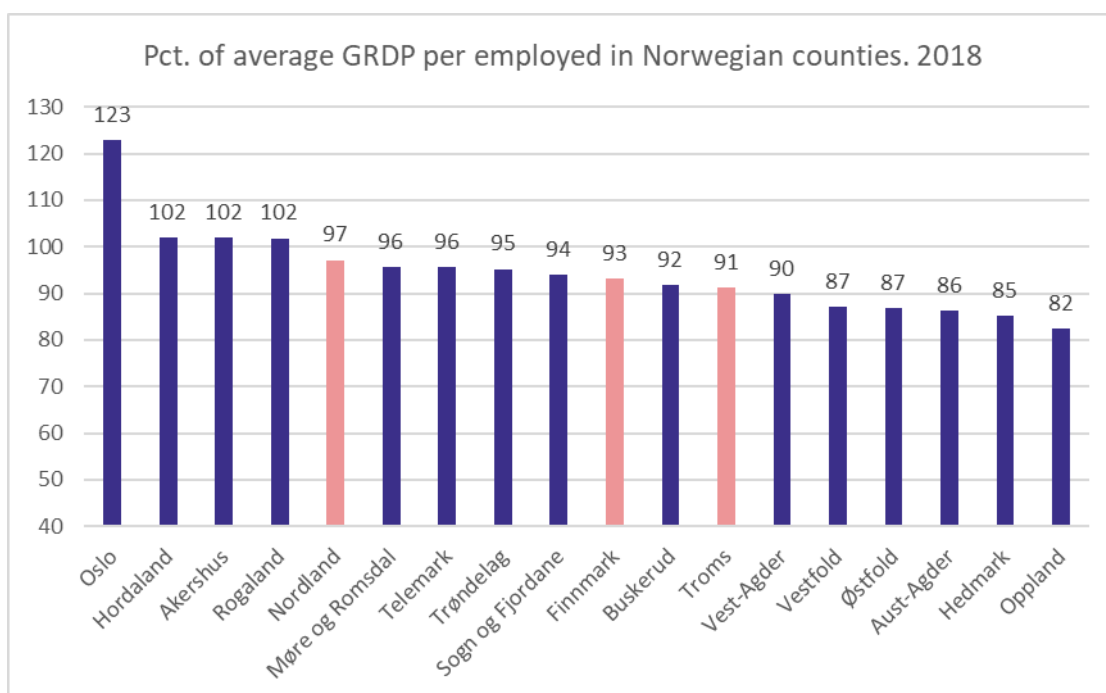
The industry structure often reflects the economic contribution and growth in a region. GRDP per employed is an indicator that measures the average contribution of value added from human capital. North Norway historically lagged behind compared to other regions when it comes to productivity, but over years some industry sectors, cities and clusters have approached, or even caught up with, the overall national level.

⁴ Ref. table of Company size distribution in Appendix.

⁵ Ref. table in Appendix for unemployment in the region 2015-2020.

As illustrated in figure 3 below, North Norway have GRDP per employed⁶ ranked in the middle of the Norwegian counties – Nordland a little higher, Finnmark together with Sogn og Fjordane are median regions, and Troms a little below. Only the Oslo region, Stavanger region and Bergen region have GDPR index more than 100. Typical for regions with higher GRDP is presence of businesses like petroleum extraction and -services, knowledge-intensive business services (KIBS), processing industry, foreign shipping and headquarter functions. The Inland-region Oppland/Hedmark, and some other regions south-east of Norway, have lower productivity per employed.

Figure 3: Gross Regional Domestic Product (GRDP) per employed in Norwegian counties, in per cent of average GRDP per employed. Index=100 for average GRDP per employee. 2 018. Source: SSB, T09391. Details in Appendix.



⁶ We use GDPR per employed, instead of per citizen, as an indicator. This is because GDPR created by commuters from other regions will be included in GRDP. Especially for capital cities like Oslo this will raise the GDPR very much and lower the value much for the neighbour regions that have many commuters to/from work in Oslo, ref. figure in Appendix.

Region (county)	GRDP (mill. NOK)	GRDP per employed (NOK)	GRDP per citizen (NOK)	Employed persons (1 000)	Population 1.1.2019
Nordland	108 183	899 277	444 493	120	243 385
Troms	77 921	845 130	466 029	92	167 202
Finnmark	34 534	863 350	455 215	40	75 863
Troms and Finnmark	112 455	850 643	462 654	132	243 065
All Norwegian counties	2578665	926 145	483 964		

Table 4: Gross Regional Domestic Product (GRDP) in North Norway regions compared to all Norwegian counties, 2018. SSB, T09391. Details in Appendix.

Education, competence and supply of workforce

The supply of workforce for industry and public sector is depending on population growth and demographic structure. A problem in some regions is that the population has developed weaker than the demand for manpower. In addition, access to workforce with the *relevant competence* is always a critical aspect - for private companies being competitive in the market, and in public sector for covering the needs of specialised occupations in hospitals, education institutions, infrastructure planning etc. The educational level in North Norway has raised substantially over years, and especially for higher education. The share of adults with "Basic school" as their highest education level has lowered with 10 percentage points to around 30 % the last twenty years in north. The share of people having higher education (1-4 years) is raised by 50 % to around 22 %, and higher education more than 4 years is doubled in the same period to almost 8 %. The share having upper secondary education is almost unchanged but lowered a few points in Troms (see figure 4).

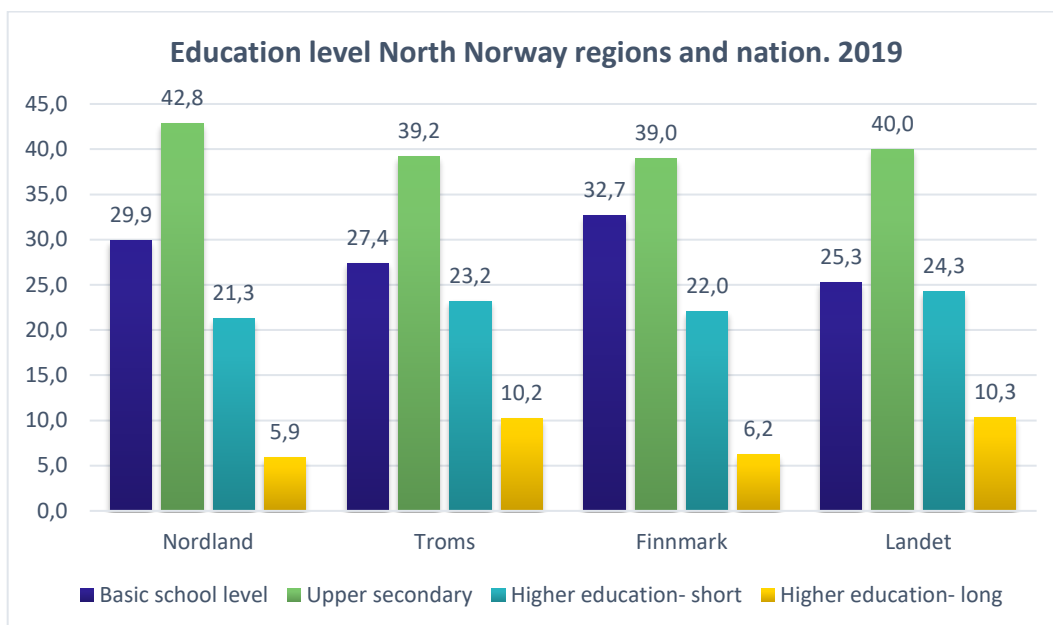


Figure 4: Educational level - North Norway regions and nation. 2019. SSB, T08921.

The education level has still not caught up with the rest of the country, but there are differences within North Norway according to different structure of industry and public sector, and especially higher education in counties dominated by large cities. While Nordland and Finnmark are closer in education level, Troms have clearly more people with higher education longer than 4 years. Because of Tromsø city, Troms now has reached the national average educational level and structure. Even though there has been progress in the education level in Northern Norway, there are still some challenges – like higher dropout rates in upper secondary school, especially in former Finnmark county. The share of population with "only" basic school level is also substantially higher in Finnmark and Nordland. Another interesting development that is more distinct in the North, is the redundancy of women currently having higher level of education than men.

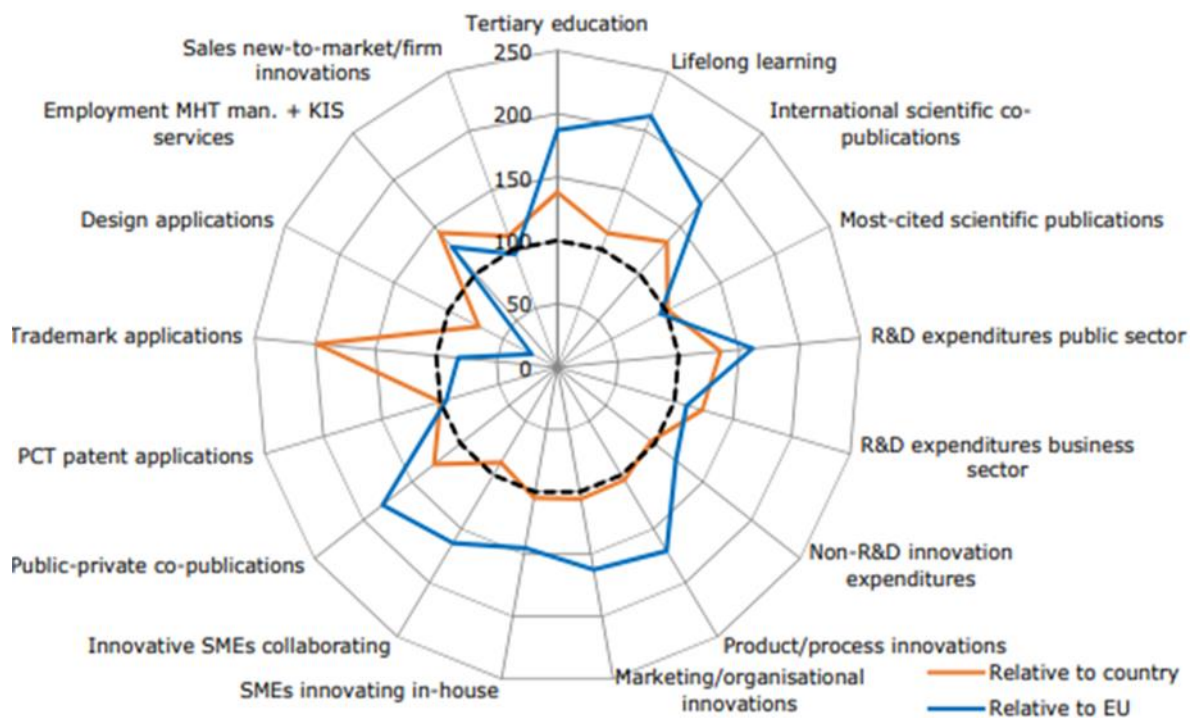
Overall there is absolutely a trend in the north that young people consider relevant secondary level or higher education, but one challenge for many young people is whether there will be access to relevant competence work in their home-region when they have completed their education. And when a mismatch arises, maybe the newly graduated student prefers to resettle outside North Norway.

		Persons				Pct.			
		Basic school level	Upper secondary	Higher education-short	Higher education-long	Basic school level	Upper secondary	Higher education-short	Higher education-long
Nordland	Total	59887	85662	42592	11894	29,9	42,8	21,3	5,9
	Males	31132	47505	16460	6026	30,8	47,0	16,3	6,0
	Females	28755	38157	26132	5868	29,1	38,6	26,4	5,9
Troms	Total	37563	53596	31834	13986	27,4	39,2	23,2	10,2
	Men	19885	30336	12516	6726	28,6	43,7	18,0	9,7
	Females	17678	23260	19318	7260	26,2	34,5	28,6	10,8
Finnmark	Total	20395	24330	13705	3877	32,7	39,0	22,0	6,2
	Men	11590	13913	4985	1703	36,0	43,3	15,5	5,3
	Females	8805	10417	8720	2174	29,2	34,6	29,0	7,2
Landet	Total	1100884	1738594	1057705	448184	25,3	40,0	24,3	10,3
	Men	568264	951911	427611	234055	26,0	43,6	19,6	10,7
	Females	532620	786683	630094	214129	24,6	36,3	29,1	9,9

Table 5: Educational level - persons above 15 years of age. Region and gender. Number and per cent of total. 2019. SSB, T08921.

Innovation scenery in North Norway is divided. On the one hand, North Norway, largely characterized by product and process innovation and incremental innovation, has the lowest R&D intensity in Norway (Regionale utviklingstrekk 2018). This is due to industry structure with less R&D intensive sectors, relatively large amount of daughter companies without headquarters investing heavily on R&D, and limited supply of qualified labour force. On the other hand, North Norway is characterized as strong innovator by Regional Innovation Scoreboard, with increased innovation performance of 34,2 % in the period 2011-2019 (Regional Innovation Scoreboard 2019). As Figure 5 illustrates, North Norway is scoring high compared to the rest of Norway and to the EU regarding e.g. product and process innovations and marketing/organizational innovations.

The recently published study by the Research Council of Norway includes a more detailed description on R&D and innovation in Troms & Finnmark and Nordland (Norges forskningsråd 2020). Moreover, the study includes information e.g. on private sector R&D investments and on research funds gained by actor in Troms & Finnmark and Nordland.

Figure 5: Innovation Radar in North Norway (Regional Innovation Scoreboard 2019)**Summary: Labour market and industry structure**

- *The North Norway industry based on rich natural resources is growing - but is challenged by mobility of people and services to city regions and lack of control for production resources.*
- *Despite increasing education level and low unemployment in general, large groups of young people and disabled persons are left outside school system and labour market.*
- *North Norway has improved the innovation performance in the 2010s. The R&D intensity remains, however, lowest in Norway*

3.3 Health & Healthcare

Mortality rate

Residents of Nordland county have slightly higher mortality rate compared to Troms and Finnmark, and somewhat higher than the national average. Note that mortality rates are mainly a result of the age pattern in the region, giving a higher mortality rate for the elder population in northern Norway than the national average. A higher mortality rate of women is explained by their dominance in the higher age groups.

Region	Mortality rate, men (mortalities per 1000)	Mortality rate, women (mortalities per 1000)	Mortality rate (mortalities per 1000)
Troms & Finnmark	8,2	8,5	8,4
Nordland	8,8	9,8	9,3
Northern Norway	8,5	9,2	8,8
Norway	7,4	7,8	7,6

Table 6: Mortality rate by gender, 2019. Source: NORCE, Statistics Norway.

Loneliness

Statistics about the share of people without good friends can be an indicator of loneliness. The share is slightly lower in Northern Norway compared to the national average in almost all age groups. Loneliness increases with adult age.

	Norway	Northern Norway
Sum	9	8
Female	9	8
Male	10	8
16-24 years	3	3
25-44 years	8	7
45-66 years	11	10
67 years or older	13	11

Table 7: Share of people without good friends or that see friends less than once a month, 2019. Sources: NORCE, Statistics Norway.

Lifestyle and prevalence of sickness

Northern Norway has a higher incidence of some lifestyle connected diseases (Norwegian Institute of Public Health). Especially Troms & Finnmark has a high incidence of lung cancer, which may be connected to more smokers in the population. In both counties, overweight prevalence is markedly higher, which may be connected to more hospitalizations and deaths due to

cardiovascular diseases. On a more positive note, Northern Norway has relatively few cases of skin and breast cancer, the former being correlated with the exposure to UV light, which is lower in northern Norway than in more southernly parts of the country. (More info see Part B: Statistics)

Exclusion from work and education

The counties in Northern Norway have for a long time had a problem with higher dropout rates from school, more sick leave and more people on disability benefits than the rest of the country. The completion of upper secondary education is especially low in former Finnmark county, 17 percentage points below the national average of 64,4 % (Statistics Norway) for 2013-2019, but Troms and Nordland also scores well below the national average. Both northern Norwegian countries have a larger sick leave and proportion of their population on benefits than average, especially Nordland, where Bodø is the only municipality with fewer people on benefits than national average (NAV). (More info see Part B: Statistics of this study)

Hospitals and health care centers

Northern Norway Regional Health Authority is a trust that runs hospitals serving the people of Northern Norway. The University Hospital of North Norway – UNN in Tromsø is the biggest and most specialized hospital. All together, there are 11 hospitals with emergency functions (see figure 6). The trust also run policlinics in many cities and villages.

The challenges of providing high quality and specialised health care in Northern Norway include significant geographical distances. As Figure 6 demonstrates, some communities have more than four hours travel time by road to their nearest hospital. This challenge is met by a network of medical helicopters and small planes mobilized in an emergency situation. The climate, difficult weather conditions and organizing of the service have an influence on the regularity of the flights.

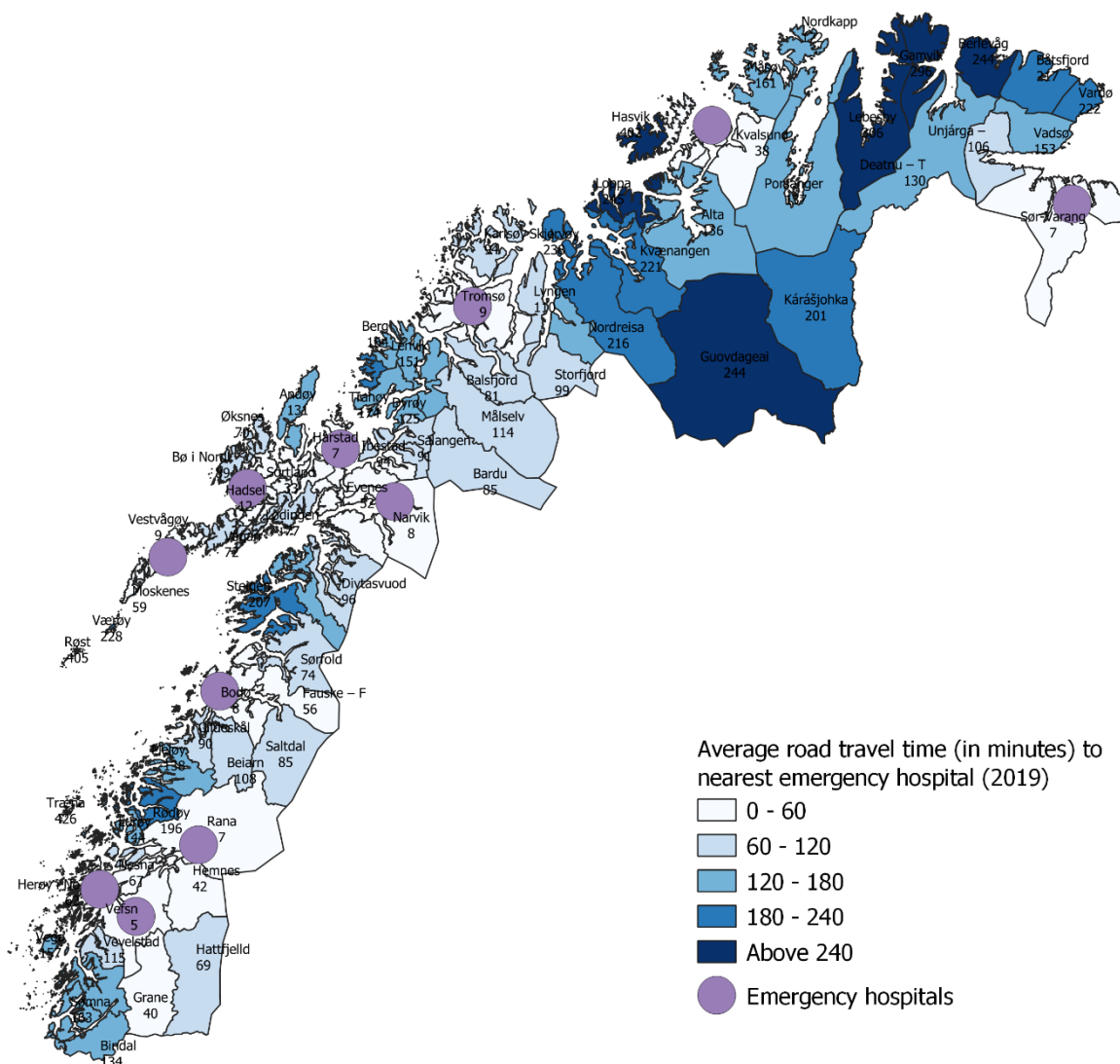


Figure 6: Average road travel time (in minutes) to nearest emergency hospital in 2019, and placement of emergency hospitals. Sources: NORCE, Statistics Norway (travel time), Ministry of Health and Care Services (emergency hospital locations) and the Norwegian Mapping Authority (Map data).

Northern Norway Regional Health Authority is responsible for 6 national competence centers and 11 regional competence centers.

Sámi Clinic in Karasjok offers specialist health care to Sámi patients, and consist of two departments. The somatic clinic mainly serves the inhabitants of five Sámi municipalities in Inner Finnmark, while the Sami National Centre for Mental Health (SANKS) has the status of a national competence centers serving the whole Sami population with emphasis on language- and culturally sensitive knowledge. SANKS has its main base in Karasjok with branches in different Sami communities.

Cross border health service and cooperation

Finnmark hospital has signed an agreement with Region Jämtland Härjedalen, Sweden and the Lapland region in Finland to receive Sami patients in need of consultations and treatment at the Sami National Centre for Mental Health (SANKS). The Sámi people in Finland and Sweden do not have a similar service, and they can be referred to SANKS by their GP or hospital. SANKS has experienced an increase in the number of patients from the Swedish and Finnish part of Sapmi.

Emergency treatment

Norway has signed agreements with the neighbouring countries to assist in emergency on the other side of the border and vice versa. Medical help will be provided from the clinic closest to the accident/medical incident. Kirkenes hospital has a key role towards the Russian borderland, and regular emergency exercises involving different services take place on a regular basis.

Summary: Health and healthcare

- ***Residents often experience long distances to the nearest hospital***
- ***Lifestyle choices causing obesity and smoking is slightly more prevalent in Northern Norway***
- ***Residents of Northern Norway have a higher prevalence of cardiovascular diseases and lung cancer, but a lower prevalence of other types of cancer.***

3.4 Smart & green & sustainable North Norway

We start by presenting an overview of the main business sectors in North Norway, based on the bi-annually published Regional Development Trends by KMD (Regionale Utviklingstrekk 2018), and the KMD/Norce (2019) analysis of North Norway. The following major businesses and economic activities will be introduced: bioeconomy/fishery and fish farming, oil and gas, tourism, construction industry, process industry and minerals/metal industry. Moreover, we introduce the private and public services as the “fifth major sector”.

Bioeconomy: The northernmost counties in Norway play a significant role in the value creation of Norway related to marine industries. Fishery and fish farming account for 7,0 % share of GNP in Nordland and 6,12 % in Troms and Finnmark. The marine related industries are of specific importance for employment in the more peripheral municipalities with. Fishery, fish-farming, and related industries are export-dependent and thus exposed to changes in global marketplace. Both Troms & Finnmark and Nordland cover a broad range of the value chain of fishery and fish farming activities, including cooperation with R&D organisations and cluster cooperation. According to SINTEF (2018), fishery with 4900 employed in 2016 is the dominant employer in North Norway, and fish farming, with 2 600 employed in 2016, has provided highest value added of NOK 13,2 mrd. in 2016. The marine industries have high expectations for growth in the future, too, in North Norway. Agriculture included production of reindeer meat is a sustainable industry with a predominately national market. The share of agriculture employment is considerably higher in Northern Norway compared to the national average, and reindeer herding is most intensive in Finnmark. Contested land areas challenge the reindeer herding and meat production expansion.

Oil & gas: Troms and Finnmark count for 2,4 % of gross production, and for 0,8% in Nordland. Oil & gas sector has been highly important employer with 3 700 jobs in north Norway (SINTEF 2018). The oil and gas sector is well-established in northern Norway but continues to be an important source of investment, skills and business development. The oil and gas industry has emerged over the past two decades and provides direct and in-direct benefits for the regions. This includes the on-shore supply of goods and services, investment in transport and energy infrastructure, and emergency response and environmental protection services (OECD NSPA 2017).

Tourism: The tourism sector has been characterized as a sector with considerable growth potential in North Norway, and the sector is prioritized by the County Councils and the Sami Parliament. The estimated value added for the sector in 2018 was NOK 9,3 billion, and tourism share of the employed work force in 2018 was 7,1 % (Nordnorsk reiselivsstatistikk 2018), including 44 % of growth in international overnight stays by international tourists in 2014-2018 (compared to national average of 24 %). The challenge has been the low profitability of businesses. The balance between value creation and sustainability of tourism activities in North Norway has become an issue of growing importance. Big volumes of northern lights tourism from Asia challenge this, while Sámi tourist companies often have focus on sustainability. Sámi culturally based tourism has the potential for growth both in the Sámi villages and cities and have experienced increased attention internationally and in Norway. The recent dramatic downturn of

international tourism in North Norway, caused by the covid-19 pandemics in 2020, puts tourism in a new, unexpected situation. Important questions include: How to assist the sector in the short term to survive the economic consequences of pandemics? How to build up an economically, socially, and environmentally sustainable roadmap for the tourism industry in North Norway?

Construction industry is the most important sector of infrastructure business in North Norway, with 17,3 % of gross production in Nordland and 14,8 % in Troms & Finnmark. Construction industry in North Norway, despite its importance in value creation and employment, has not been extensively highlighted in the regional strategy documents. Based on SNN 2019, the construction industry has experienced considerable growth in the latest years. Public sector investments in infrastructure, social and healthcare, and housing have contributed to the growth of the sector, as well as investments in the marine sector. The challenge has been to retain the benefits in the North Norway, as many large construction projects are managed by companies and entrepreneurs from outside North Norway.

Energy: A significant proportion of recent and planned offshore activities is located in North Norway in the Norwegian and Barents Sea. The northern regions also play an important role in the national energy sector with the renewable hydroelectricity and wind power (OECD 2017). The electricity sector in Norway relies predominantly on hydroelectricity. Hydropower utilization includes several significant hydroelectric power stations in North Norway. Hydropower is the dominant energy supplier; 18,1 TWh was produced in Nordland, and 4,1 TWh in Troms/Finnmark in 2018 (SSB 2020). Wind industry is increasing, and alternative use of wind to produce hydrogen is planned. Northern Norway had 8 land-based wind plants in production in 2019, with the following production: Finnmark; 576 GWh, Troms; 176 GWh, Nordland; 202 GWh (NVE 2020). Offshore wind market has opened new possibilities in North Norway, including subcontractor industry. Several potential areas for increased offshore wind power have been analysed in North Norway, too.

Process industry is an important industry in Northern Norway, especially in Nordland, where process industry has an annual export of more than NOK 13 billion. The basis of the industry is access to renewable energy and local and imported minerals. The industrial centre of this industry in Northern Norway is Helgeland in Nordland. The eight largest process industry companies in northern Norway, seven of which located in Nordland, employed appr. 2100 people in 2018. (Index Nordland 2019, SSB/NVE 2019)

Minerals and metals: If the UN is to achieve its goal of reducing greenhouse gases by 40-50 percent by 2030 and the EU is to realize its Green Deal, the access to certain minerals and metals will be crucial. The mining industry in Northern Norway is already producing some of these minerals, and the potential for finding new resources of copper, nickel and graphite is good. In North Norway, the mineral industry In 2019 had a turnover at approximately 2700 million NOK, and 1100 people were directly employed by this industry. (Mineralstrategi for Nord-Norge 2019, Index Nordland 2019).

The public sector plays an important role in the economies of North Norway. There is a higher proportion of the labour force employed in the public sector within these regions than the national average. Troms & Finnmark has the highest proportion of public sector jobs among the Norwegian regions (counties) whereas Nordland is number three in national comparison. This is

due to locational and demographic factors as well as geopolitical position on North Norway related to defence, which lead to higher public sector spending. The over-representation of the public sector is also a symptom of a weak private-sector economy (see below), and is a risk for the future as fiscal consolidation and population decline in some areas may lead to reductions in public sector employment.

Private sector services are not highly represented in North Norway. In Troms and Finnmark, private sector services account for 23,3 % of regional gross product, and in Finnmark 21,4 % as the national share is 34,5 %. A specific challenge is the lack of KIBS (knowledge-intensive business services) in North Norway.

Green transition: In relation to the Paris agreement on climate goals, to which also Norway has committed, the global warming should not exceed 2 degrees. This requires a radical transition in relation to the usage of global resources. There is growing public and political pressure across most EU member states for more ambitious action on climate change. This particularly affects Norway as a supplier of energy to the EU, and as a member of the European Economic Area obliged to adopt at least similar binding domestic carbon reduction legislation (Chatham House 2020). In the Arctic, the temperature rise is accelerating even more dramatically (IPCC 2014:10). This means big changes in North Norway.

For reindeer herding, the climate change causes challenges in many ways ranging from managing the reindeer pasture districts facing climate change to potential diseases (Kelman & Warg Næss 2019). The mild temperatures with warm air or rain has led to melting of snow during the winter, creating extremely bad grazing conditions for the reindeer. These events are predicted to increase in the future. Reindeer herders have previously adapted to such condition by moving the herd to other pasture areas with better grazing condition. Loss of grazing lands will reduce the reindeer herders' possibilities to adapt and respond to the future climate changes (Gaup et. al 2018). For fish-related activities, important fish stocks may need to leave their current places due to water temperature rise. Climate change is expected to cause significant changes in our travel patterns, too, having effects on e.g. travel infrastructure in North Norway. The chase for additional renewable energy sources e.g. wind power, sets North Norway in transition, too (KMD 2019).

North Norway, as other areas in Europe, need to increase efforts to overcome climate change and environmental degradation. The European Green Deal is one of the major programmes in the EU for making the EU's economy sustainable with action to boost the efficient use of resources by moving to a clean, circular economy, and to restore biodiversity and cut pollution. It outlines investments needed and financing tools available and explains how to ensure a just and inclusive transition. The 2030 Agenda for Sustainable Development is also another major objective for the EU, with the 17 Sustainable Development Goals (SDGs). North Norway, as all areas, have a shared responsibility to achieve the SDGs, and all have a meaningful role to play locally, nationally as well as on the global scale.

Some examples of current initiatives on green transition in North Norway:

- Klimapartnere network, with regional hubs in Nordland, Troms, and Finnmark, as part of the national Klimapartnere network. An arena of knowledge generation on climate challenges in North Norway (Klimapartnere 2020)

- Strategy work in Nordland in 2020 under working title "Et bærekraftig Nordland", starting with a preparation of knowledge base and status report on UN SDG goals in Nordland (Nordland fylkeskommune 2020)
- GROM Green transition in North Norway 2019-2021, a research project co-funded by RFF Nord, NORCE as the Lead Partner. The project studies green transition in North Norway in relation to innovation in businesses working in sectors such as maritime industries, waste treatment and logistics (NORCE 2019)

Summary: Smart & green & sustainable North Norway

- ***The northernmost counties in Norway continue playing a significant role in the value creation of Norway related to marine industries and oil & gas***
- ***The North Norway economy is exposed to global changes and fluctuations***
- ***Public sector not only provides a buffer for external risks but also contributes e.g. to competence building in North Norway***
- ***Knowledge-intensive business services (KIBS) are not well-represented in North Norway***
- ***Green transition has not yet fully reached the business life in North Norway (KMD 2019). The period 2021-2027 is going to include an accelerated green transition in North Norway***
- ***COVID-19 pandemic is set to have very severe and long-lasting effects on many economic sectors in North Norway. The COVID-19 challenges need to be taken into account, parallel to responding to e.g. climate change and digital transition.***

3.5 Infrastructure and connectivity

Northern Norway's scattered population, long distances, long winters and mountainous terrain make it challenging to maintain a good and stable infrastructure. Many roads through mountain passes are often closed during winter, with the most exposed roads being closed up to 70-80 times in a season. The E6 stretch over Saltfjellet, the main connection between north and south in Norway, was closed a total of 508 hours during the 2019/2020 winter. Climate change brings more extreme weather and more challenges for these connections, and winter 2019/2020 was a record year for the number of closings.

Closed roads and longer distances translate to larger transportation costs for businesses in northern Norway, and longer travel for people traveling to access services. An average bus route in former Finnmark county is 26 km of length (2018), compared to an average of 10 km for the country underlining both the lack of large urban areas and long distances between population centers.

Mountainous terrain, archipelagos and long distances have also given rise to many regional airports in Finnmark and Nordland, serving local traffic. There are 25 airports and one helipad in northern Norway, making up almost half of the Avinor airports in the country – serving 9% of the population. The region's many islands and fjords make sea routes effective in many areas, and passenger routes along the sea is widespread. In total, passenger boats travel 4,4 km per person in northern Norway, way more than in any other region.

There is limited railway in northern Norway. Nordlandsbanen goes as far north as Fauske/Bodø in Nordland. In addition, Ofotbanen stretches from the Swedish border to Narvik and there is a 9 km railway in Sør-Varanger that is not operational.

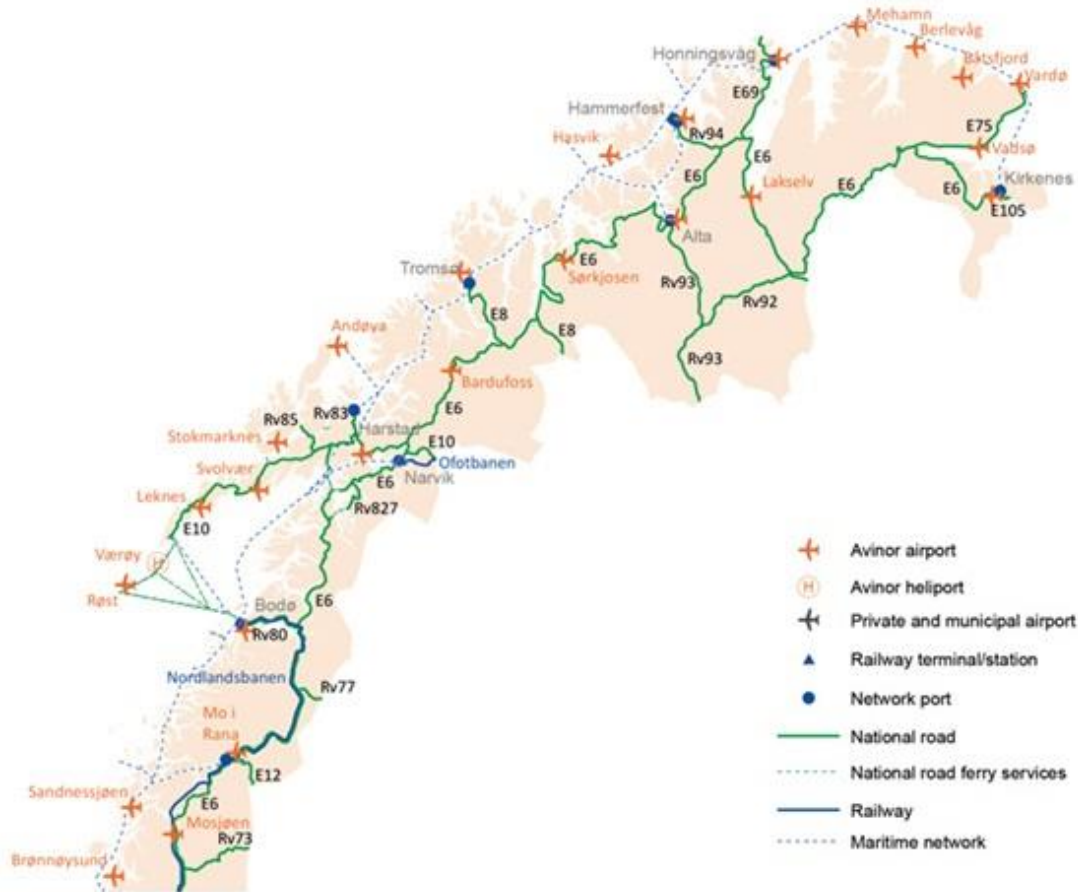


Figure 7: Infrastructure in northern Norway. Source: Norwegian Ministry of Transport and Communications, Meld. St. 33 (2016–2017) Report to the Storting (white paper), p.9.

Border crossing arrangements are an essential part of infrastructure and connectivity regarding international cooperation. Figure 8 illustrates the border crossing stations in North Norway.

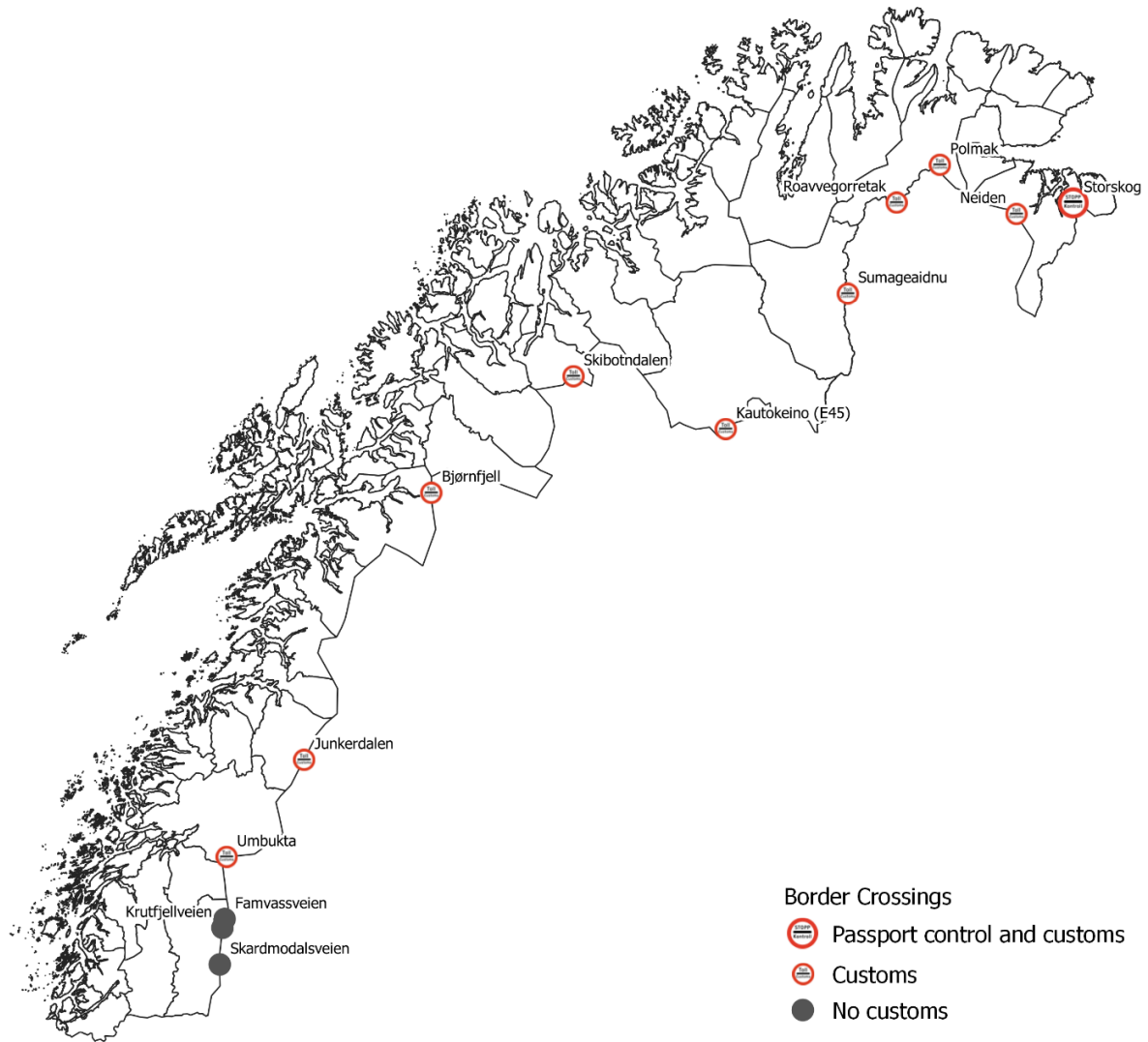


Figure 8: Border crossings between Northern Norway and Russia, Finland and Sweden (roads without gates or barriers between the countries). Sources: NORCE, The Norwegian Mapping Authority.

Digitalization

The coverage of private broadband subscriptions has increased steadily over the last decades, both in northern Norway and elsewhere. The last couple of years seemed to have been a turning point though, perhaps broadband giving way to modern mobile networks with broadband speeds. In 2019 the coverage in northern Norway was 80% of households, which is 5% below the national average.

Security and emergency response in North Norway

Northern Norway has high professional security and emergency response institutions well equipped to operate in harsh Arctic environments. This includes search and rescue (SAR), environmental protection, firefighting, and actions against terror or other forms of destructive action. The institutions cooperate with neighbouring countries and have regular training activities.

Summary: Infrastructure and connectivity

- ***Northern Norway has long distances and a scattered population, making maintaining infrastructure expensive.***
- ***The region has professional emergency response teams in many areas trained for Arctic conditions.***

3.6 Sámi area

The Sámi people traditionally inhabit the rural areas and villages in the Northern Norway, but also stretching further south along the Swedish border as far south as to Femunden. This demographical pattern has changes during the last decades as an increasing number of Sámi people move to the cities and municipal centres.

Statistical information on the Sámi population is geographical based and have several shortcomings⁷. It will not be possible to include all Sámi living in Norway in a geographically based statistic. A simplified collection of statistical data is necessary and will give a correct picture of the development in the Sámi Area⁸. Statistics Norway - SSB uses the STN-Area, developed by the Sami Parliament defining eligibility for Grant Scheme for Business development⁹.

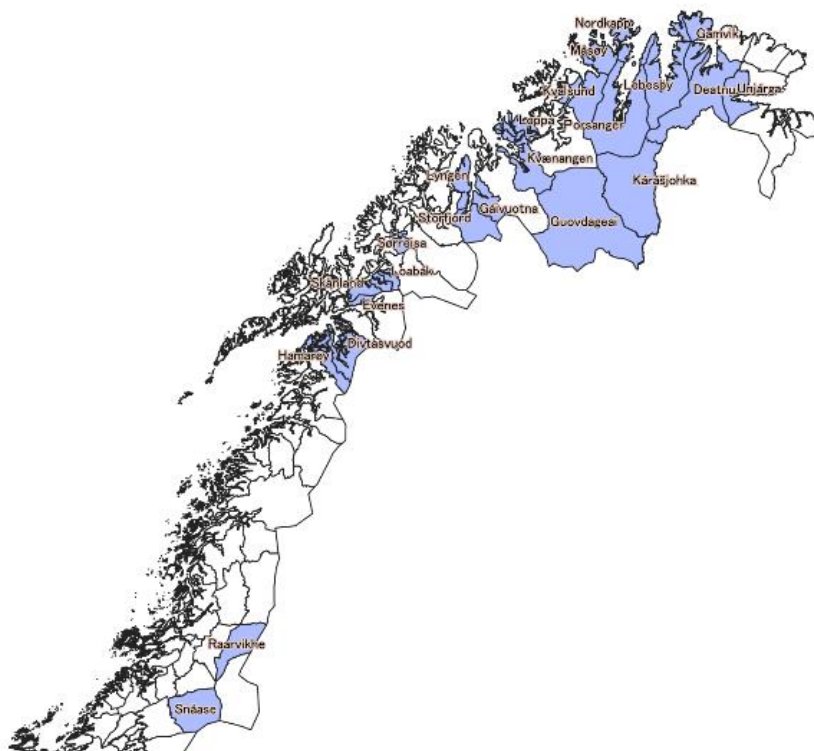


Figure 9: Sami Area, used by Telemarksforskning

⁷ Statistics on the personal level is only available for education and competence. A recent report from NIM (2020) believes that the current approach to Sámi statistics in Norway does not provide an adequate empirical basis for monitoring the equal enjoyment of the Sámi people's human rights.

⁸ Statistical based Sámi area is not the same as the programme area.

⁹ This includes municipalities - 21 wholly and 10 partially included in Nordland, Troms and Finnmark regions. These are sometimes referred to as "Sámi settlement areas" because of their long association with the Sámi people and the specific funding arrangement of the Sámi Parliament.

A simplified definition of the Sámi Area is developed by Telemarksforskning, including 24 wholly municipalities¹⁰, leaving out the most populous municipalities and those partially included in the STN-Area. Telemarksforskning also includes two southern Sami municipalities. The definition of Telemarksforskning will be used in the following presentation.

Demography

The population of the traditional Sámi area (as defined by Telemarksforskning) has decreased by more than 4000 people between 2000 and 2010, but stabilized during the next decade, only followed by a new decline from 2018. The first decline is explained by a negative birth rate, negative internal net migration (less people arriving than departing) and limited foreign in-migration. The stabilizing period is explained by a similar development on the first two indicators, but a substantial foreign in-migration that balanced the negative development in birth rate and internal net migration. The foreign in-migration in this period is important on national, regional and local level, and started to decline in the Sami Areas from 2018. The further prognosis for the demographic development of the Sámi Area is alarming as the internal outmigration and low birth rates continues to dominate.

This demographic development in the Sámi Area is in line with the changes in other rural municipalities in Northern Norway.

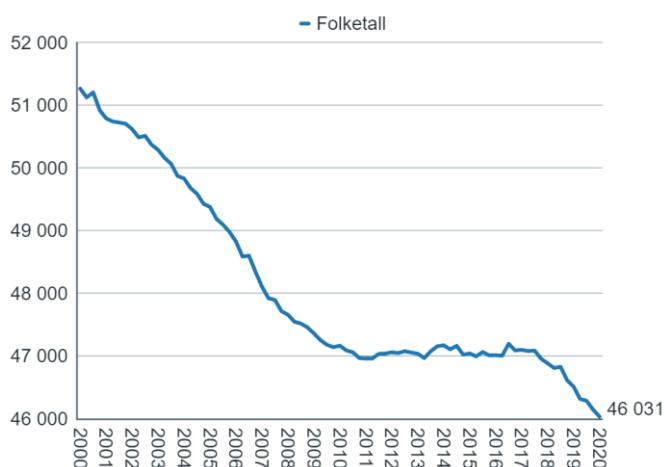


Figure 10: Demographic development, Source: Telemarksforskning 2019

Most of the people leaving the traditional Sámi settlement area, move to the cities in the North or other cities in Norway. Lack of statistical data makes it difficult to follow this development over

¹⁰ Snåsa, Røyrvik, Hamarøy, Tysfjord, Evenes, Skånland, Gratangen, Lavangen, Sørreisa, Lyngen, Storfjord, Kåfjord, Kvænangen, Kautokeino, Loppa, Kvalsund, Måsøy, Nordkapp, Porsanger, Karasjok, Lebesby, Gamvik, Tana and Nesseby.

time. A survey, published in 2011 (Sørliie and Broderstad) revealed that 36 % of the youth people growing up in Sami Areas, had moved to a city during the next 25 adult years. The same survey stated that young female move more frequent to settle and plan a family in the city, with consequences for the number of kids born in the Sami Area and the age structure in the different municipalities.

Another statistical indicator often used to map the proportion of Sámi people in the cities, is the Sami Parliament electoral register. The electoral register only contains a small part of the Sámi population, as the self-reporting purpose is to cast a vote to the Sámi Parliament, but the ones registered is considered to have a strong Sámi identity. The biggest increases in new numbers of registered voters are to be found in Alta, Tromsø, Bodø, Trondheim and Oslo.

Language

Three official Sámi languages are spoken in Northern Norway (Northern Sámi, Lule Sámi and South Sámi), but Norway has no official statistics about the total number of people speaking, reading or understanding the different Sámi languages. Sámi children have the right to be taught Sámi at school, as a first language or a second language, in all three Sámi languages. The number of children taught in Sámi language at school went down to around 2100 in 2011 and stayed stable for some time. From 2017 the numbers increased and was about 2400 in 2018 (see figure 11).

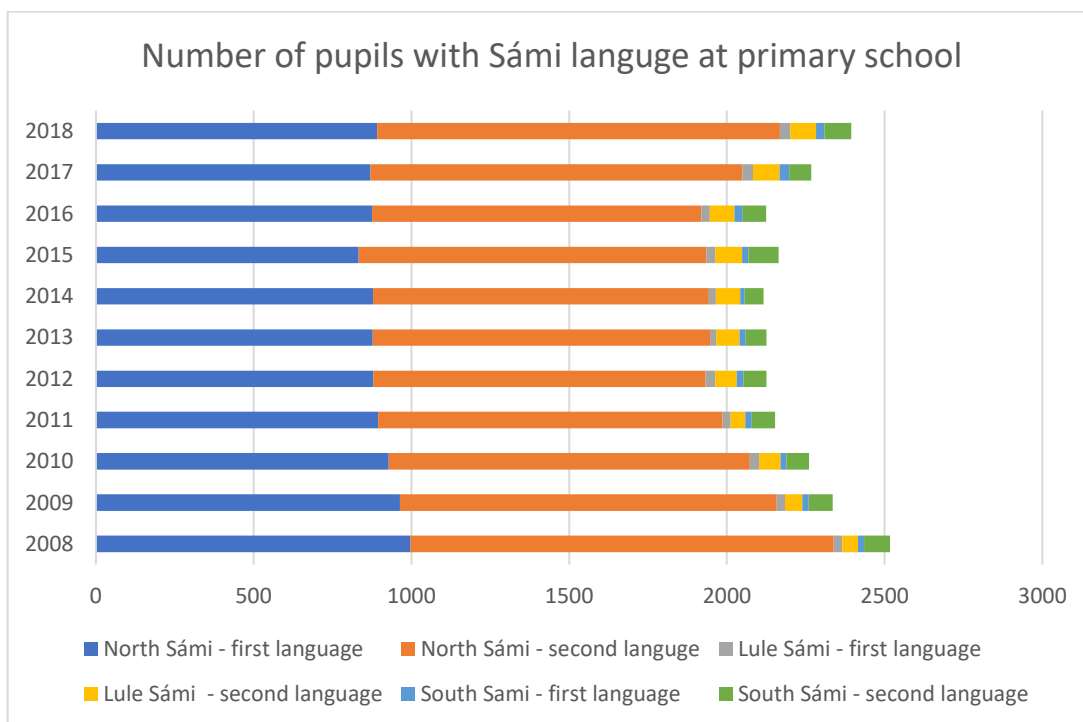


Figure 11: Pupils at primary school with Sámi language, Source: SSB and UDI

As Sámi families with children more often move to the cities, they tend to make use of their rights to education in Sámi language for their children in kindergartens and schools. Demand for public

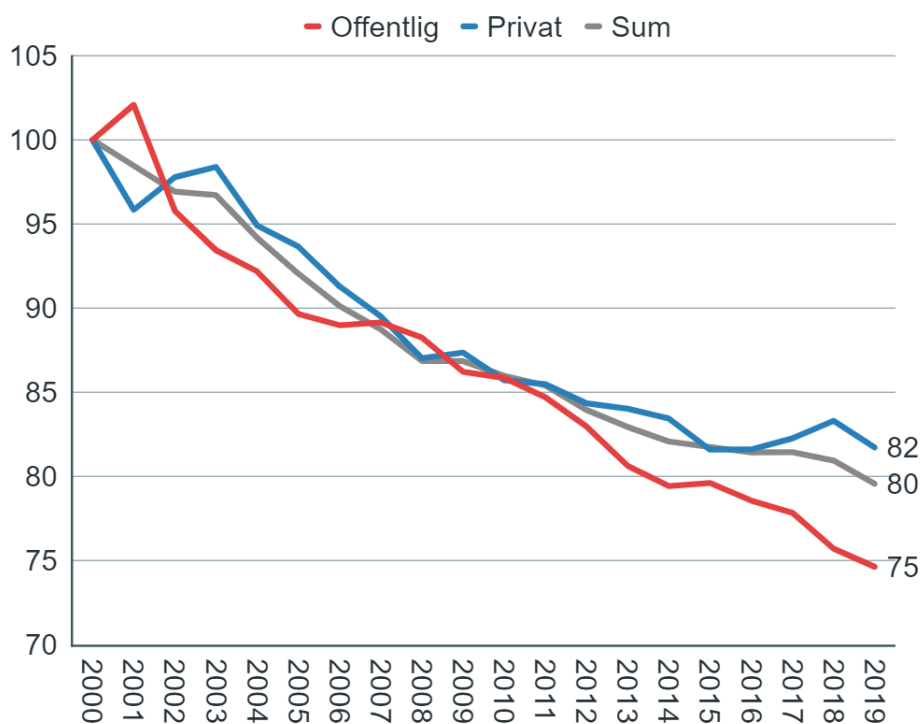
service in Sámi language in the cities generate a need for language and cultural skills, reinforcing a further brain drain from the traditional Sámi Areas to fill these sought-after positions in teaching. This affects the employment structure for higher pedagogic education at the sending and receiving end. Lack of qualified Sámi language teachers is one of the biggest challenges in sustaining the three official Sámi languages. Many Sámi children do not live in a community and in a family where Sámi language is domination.

Businesses in Sámi area

The number of workplaces in Norway has increased by 19 % from 2000 to 2019. The increase in public sector is 28 %, while the private sector increase is at 16 % (Telemarksforskning).

The development in the Sámi Area is quite different with considerable decrease in the number of workplaces. 20 % of the workplaces have disappeared within less than 20 years. Figure 11 illustrates that the Sámi Areas has lost a considerable number of public sector workplaces (25%) in the same period, and workplaces have also disappeared in the private sector (18%). These figures challenge the employment in the Sámi Area. Less working places contributes towards a push out of the Area in search for employment, particularly among the young ones.

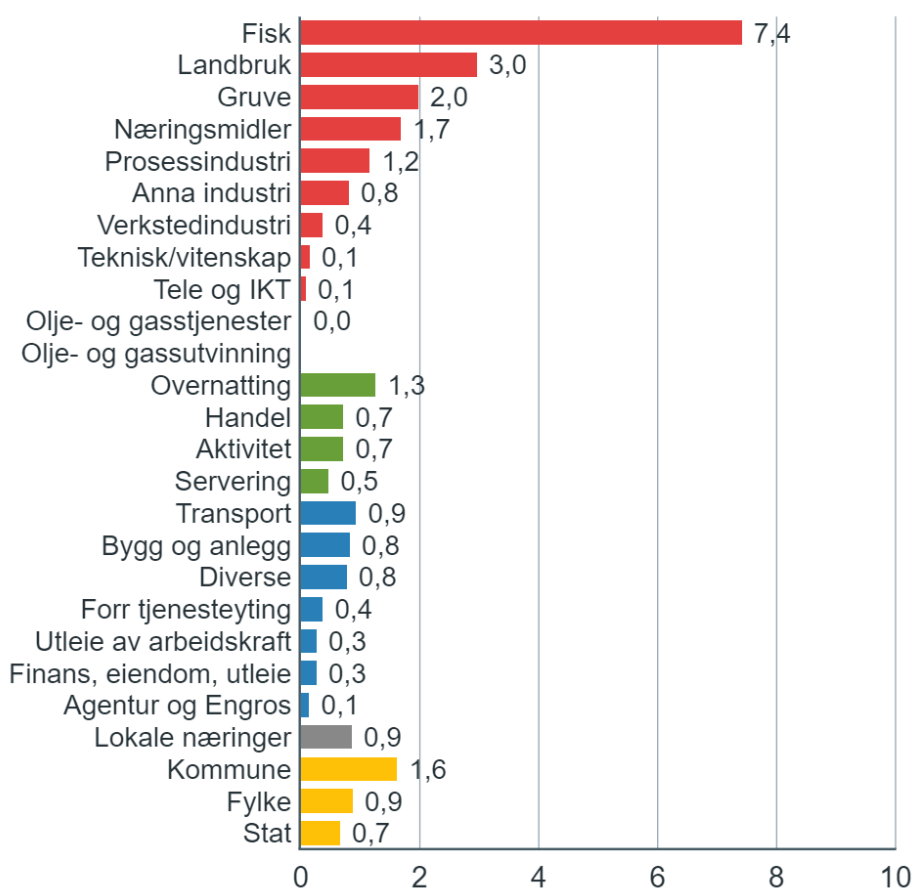
Figure 12: Development of workplaces in Public and Private sector + total in Sámi Area. Changes from 2000 (Telemarksforskning 2019)



The business structure of the Sámi Area differs from the Norwegian average with a much higher percentage of primary sector employment. The figure below uses the location quotient that compares the employment in each industry in the Sámi Area with the Norwegian average. If the location quotient is less than 1,0 it means that this industry employs less than the national average in the Sámi area.

A location quotient of 7,4 for fisheries means that fisheries employ more than seven times more people compared to the national average. Small scale coastal fisheries are an important part of the coastal Sámi livelihoods, and aquaculture further increases the employment. Agriculture is also three times as important in the Sámi Area compared to the national average. These figures also include reindeer herding.

Figure 13: Location quotient for different industries in Sámi Area in 2018 (Telemarksforskning2019)



Reindeer herding is one of the most important industries for sustaining Sámi culture, language, employment and livelihoods. About 2500 persons were directly employed in reindeer herding in 2019 (Landbruksdepartementet 2019), most of them in Finnmark.

Figure 13 fails to show a considerable increase in Sámi cultural and creative businesses. This innovation takes place both in the tradisitional Sámi Areas as well as in the cities, and is based on Sámi values and identities within music, theater, literature, art, design, tourism. Entrepreneurial

activities are high within these segments, and open up for the Sámi culture to a bigger audience. Sámi cultural based businesses are often of smaller scale and fail to gain support from the ordinary national support system (Nygaard 2018). The Norwegian Sámi Parliament is one of the most important financial supportert of small scale Sámi businesses. Sámi adventure and cultural based tourism has a potential to grow and meet the requirements of sustainable tourism.

Summary: Sámi area

- ***The Sámi Area experiences a massive outmigration to cities***
- ***The Sámi Area needs new working places to strengthen the culture, language and employment.***
- ***Culturally based industries open new possibilities for value creation***
- ***Shared language and culture in Sápmi make smoother cross-border cooperation***
- ***Sámi languages is in danger of extinction, particularly Pite Sámi, Lule Sámi and South Sámi, and need to be protected and developed.***

3.7 Functional area

The document *“Border Orientation Paper Sweden-Finland-Norway – Nord (2019)”* sets out key characteristics of the cross-border region between Sweden, Finland and Norway and outlines options and orientations for the programming of the next Interreg programme along that border. It is part of a series of similar papers prepared by DG REGIO for all EU land borders (and borders with Norway and Switzerland). The objective of the Border Orientation Paper is to serve as a basis for a constructive dialogue both within each cross-border region and with the European Commission for the 2021-2027 Nord Interreg cross-border cooperation programme. The paper tries to go beyond the traditional activities of Interreg programmes (funding projects) to also cover governance issues (reducing cross-border obstacles). The paper defines functional area as follows: *“The cross-border region is not strictly limited to the administrative borders of the Interreg programme but has a flexible geography depending on the topic concerned. This is a functional area.”* The functional area, according to the document, is a new approach in the post-2020 regulations with three main benefits: *“(1) It enables the projects to be more effective as they can build on the experience of a wider range of relevant partners and as they can be located where the impact is bigger; (2) It clearly shows that Interreg is a policy tool supporting projects to improve the situation and not a mere funding tool for the benefit of local authorities sharing a budget; and (3) It avoids that programmes re-create new borders outside the programme geography.”* The twin city of Tornio-Haparanda and its surroundings is mentioned as an example of functional area.

The Border Orientation Paper provides theme-specific orientation in Growth, competitiveness and connectivity; Greener, low-carbon economy; Employment, education, health, inclusion; and Governance.

3.8 Smart specialisation

The smart specialisation concept is rapidly diffusing across Europe, as an increasing number of regions adopt it and design strategies departing from their own preconditions. There are studies and analyses on smart specialisation in the Nordic Arctic, too (see e.g. Teräs *et al.* 2018).

Nordland was one of the first counties in Norway to apply smart specialisation as an instrument for innovation and regional development. The smart specialisation strategy in Nordland is based on three major export-oriented businesses: Industry processes, services and products; Suppliers to seafood industry; Experience economy: creative, culture and tourism industries. Important synergies and transactions to be identified between these key businesses, too. The regional smart specialisation process in Nordland is constantly been evaluated and developed, see e.g. the mid-term evaluation report (SINTEF 2018). Nordland is actively participating in international cooperation on smart specialisation. Nordland is a member of the EU JRC S3 Platform. As an example of international projects related smart specialisation, Nordlandsforskning coordinates the SeeRRI project in 2019-2021, a joint project of 12 partner organizations from five countries, financed by the European Union under the Horizon 2020 programme (Cordis 2019). SeeRRI develops a framework for integrating the principles of Responsible Research and Innovation RRI into regional Smart Specialisation policy. Nordland participates also the Interreg Europe project Monitoris3, which aims to address the challenges of monitoring of the Regional Specialization Strategies (Interreg Europe 2020).

Finnmark County prepared in 2018-2019 the Regional Innovation Strategy for Finnmark County, based on smart specialisation principles (Finnmark County Council 2019). Moreover, Finnmark registered for the EU JRC S3 Platform membership. The following vision for the Finnmark' smart specialisation was developed at the strategy process: The overarching vision is to create smarter, more sustainable, more inclusive and more attractive businesses and industries in Finnmark by using SMART specialisation principles. The smart specialisation strategy of Finnmark combines the strong industries/sectors with potential for value creation and higher employment (energy and petroleum, construction industry, extraction and minerals, Arctic bioeconomy, Experience-based tourism) with overarching topics that touch all five sectors (Arctic knowledge, digitalization, sustainability). Moreover, the strategy identifies the areas for synergy and cooperation across regional and international boundaries, see Table 8.

Table 8: Areas of synergy and regional & international cooperation (Finnmark County Council 2019)

Strong industries/sectors	Areas of synergy
Energy and petroleum	Seafood - provide maintenance and fabrication (spare parts)
Construction business	Digitalization - visualize activities, work processes, planning tools Petroleum – inspection and maintenance Tourism - digital tools

Extraction and minerals	Construction business – build-up phase, road and tunnel work, use of mass/waste Petroleum – automation, control systems Energy – electrification, battery-driven construction, machinery
Arctic bioeconomy	Tourism - tour packages with fishery, fish farming and fish-processing industry Digitalization – automation of processing of fish, use of big data Energy – electrification of fishery fleet, transport
Experience-based tourism	Local food production: reindeer meat, fish, agriculture Digitalization: Reaching new markets with smart digital solutions, communication with clients

Troms County with the business development strategy SNU Strategisk næringsutvikling 2018-2025 highlighted four major focus areas: Experience economy, Circular economy, Industrial and innovation sectors, and Local value creation. By the end of 2019, Troms County had not prepared a regional smart specialisation strategy which follows the EU JRC S3 strategy process, but the essence of smart specialisation thinking with much of the key content of Smart Specialisation can be identified from the Troms business development plans. The merger of Troms County and Finnmark County in 2020 started a process towards joint smart specialisation structure in Troms & Finnmark County. At the Arctic Frontiers Conference in January 2020 in Tromsø, discussions on the future possibilities of Arctic smart specialisation were held, including possible synergies between areas of strength in Troms and in Finnmark. The Troms & Finnmark County Council is committed to smart specialisation: *«Troms og Finnmark fylkeskommune vil benytte smart spesialisering som metode for regional næringsutvikling i utarbeidelsen av sine planer og strategier fremover.»* (Troms & Finnmark County Council 2020). The merger of Troms and Finnmark counties opens up new possibilities not only to prepare a joint smart specialisation strategy to Troms & Finnmark but also to identify synergies and promote interregional cooperation.

In North Norway, interregional cooperation in smart specialisation in the North should be further developed to unlock the full potential of smart specialisation concept. The recent cross-border initiatives including the special session at the Arctic Frontier event in Tromsø on smart specialisation in January, 2020, with the contribution of EU JRC and regions in North Norway, North Sweden, and North Finland, including discussions of cross-border possibilities on smart specialisation in the Nordic Arctic, are promising signs. The challenge remains to engage key clusters in the North Norway, and their companies and entrepreneurs to fully utilise the smart specialisation concept. More work is needed to open up the key concepts and to communicate the possibilities created by smart specialisation.

Summary: Smart specialisation

- **North Norway is increasingly involving smart specialisation as an instrument of R&D and innovation policy**
- **Nordland has a tradition of international cooperation in the field of smart specialisation**

- ***Interregional cooperation in smart specialisation in the Nordic Arctic has not yet been at the core of activities in North Norway***

3.9 Nordic comparison

North Norway is in close relation and cooperation with Northern parts of its two neighbouring Nordic countries: Finland and Sweden. In relation to EU Programme planning for the period 2021-2027, it is natural to compare the regional development trends of North Norway with trends in North Finland and North Sweden. The analysis is based on the KMD (2019) report.

Firstly, the structure of the economies and the key sectors in North Norway have many similarities - but also some differences compared to North Finland and North Sweden. All the northern regions of Norway, Finland, and Sweden possess an abundance of natural resources. The key shared challenge is to find ways of sustainable utilization of the Arctic natural resources. The blue economy dominates in North Norway, whereas in Finland and Sweden, e.g. mining and process industry play considerable role. Arctic Tourism a focus area in all three northern regions. All three Nordic areas strive to reach higher in the value chain: How to develop new products e.g. out of Arctic berries? How to sell the fish in other forms than pure fish only?

Secondly, innovation performance is high in all the Nordic Arctic regions. North Finland and North Sweden rank slightly higher compared to North Norway when it comes to innovation performance. Innovation and R&D is, however, highly concentrated in the bigger cities in the northern parts of Nordic countries. The sustainability issues are currently high in the agenda in the innovation and R&D Nordic Arctic with some important best practices such as e.g. industrial circular economy activities with utilization of side streams in the Kemi-Tornio region. The green transition with innovative green solutions is taking considerable progress steps in the Nordic Arctic.

Thirdly, the Nordic Arctic regions share the challenges of demography and attracting competent work force. The worries of demographic development are well known in Nordic Arctic. The talented youth often seeks to bigger cities. All regions share the dilemma of simultaneous structural unemployment and lack of competent labour force. All the Nordic Arctic regions have a network of universities, research institutes, and learning institutes, which play a significant role in attracting and keeping the talent.

Finally, it is worth looking back to the analysis by OECD on Northern Sparsely Populated Areas (NSPA) which was released in 2017. The frequently cited analysis highlighted the following recommendations at a national level to support growth in North Norway (see also recent discussion on OECD, NSPA, and the European Arctic (North Sweden European Office 2020)):

1. Support entrepreneurship and innovation in the northern regions of Norway
2. Improve transport and accessibility for northern Norway

3. Strengthen the role of county councils to co-ordinate skills and education in partnership with relevant stakeholders
4. Ensure that national sectoral policies can be better adapted to support enabling factors for productivity growth in northern Norway (e.g. skills, employment, higher education and research, and transport).
5. Improve the governance of regional development in the northern regions.

4. Conclusions / SWOT analysis, North Norway

Strengths

Economy

Strong industry sectors with access to valuable natural resources

Advanced regional innovation system including established R&D institutions in larger cities

Advanced expertise in Arctic businesses

Strong public sector balancing fluctuations in private sector

Good digital connectivity especially in larger communities

Social

Relatively low unemployment (compared internationally)

Relatively high level of education and cultural hubs in larger cities to attract talent

Equality and inclusion at high level

Identity to develop the North Norway area

Environment

Clean natural resources

Strong community and cultural links and heritage

Promising good practice cases of green transition

Unique with Sapmi

Connectivity to Sami in Sv/Fi/Ru

Shared history, common cultural heritage, traditional knowledge and common traditions

Specific Sami industries in interaction with nature and with ecological sustainability

Sustainable industries and extensive experience in combination industries

Potential for developing new livelihoods

Weaknesses

Economy

Low level of diversification of the economy

Peripherality and low accessibility across the area

Is there economic resilience in certain industries (e.g. tourism) to meet external risks e.g. Covid-19?

High exposure to shifts in international market

Slow pace of green transition of businesses (so far)

International & cross-border business cooperation possibilities not fully utilized

Low level of local/regional investors & KIBS companies

Social

Lack of inclusion of vulnerable groups in working life

Aging population & depopulation in smaller communities

Outmigration (young people) to the cities

Environment

Possible negative consequences of climate change to nature

High transport costs with high ecological footprint

Green transition coming only with slow pace

Unique with Sapmi

Small scale businesses, lack of investment capital

More branch organisations & business structures needed

Strong dependence on public sector

Low level of innovation/ and commercialisation

Long distances to attractive markets

Unbalanced distributed allocation of institutional resources (by area, personnel and financial)

Formal and informal cross-border barriers (different laws and regulations, different approaches and traditions)

Few people speaking Lule and South Sámi language

SWOT North Norway (page 2/2)

Opportunities

Economy

Successful response to Green transition with new cleantech businesses e.g. in marine sector

New innovative companies, with support of applied research and smart specialisation

Successful Arctic branding of businesses

Business models to recover from covid-19 with sustainable solutions (e.g. tourism)

Skills & competence upgrade to meet the needs of North Norway businesses

Digital leap “the Arctic way” to support businesses across North Norway

Social

Digital leap “the Arctic way” enabling e.g. more remote working – as a possibility for smaller communities

Integration of immigrants in local communities

Environment

*Successful local adaptation to climate change
Sustainable use of natural resources*

Unique with Sapmi

*Develop cultural and tourism entrepreneurship
Better/more cross-border cooperation in Sapmi*

Focus on the unique aspects of Sami businesses – Sami knowledge based on sustainable use of resources

Increased small businesses in new areas such as service, year-round tourism and distance work

Increased cooperation between traditional and new livelihoods, clustering

Attractive and unique natural environment

Threats

Economy

Slow pace of green transition affecting businesses negatively

Insufficient number of new innovative companies

Covid-19 causing permanent negative changes (e.g. transport, tourism)

Too few international/cross-border business initiatives

Land areas under pressure – (possible conflicts mining, tourism, herding)

Contract regimes

Social

Depopulation and outmigration continue- lack of critical mass

Urban/rural disparity

Loss of traditional livelihoods

Pressure on services- negative spiral

Environment

Negative consequences of climate change to nature; Industry pollution and unsustainable use of natural resources

Unique with Sapmi

Knowledge and competence out of the Sámi area & exploitation of Sapmi businesses

Migration/draining of Sami human resources and competence

Competition and restriction on the use of natural and pasture resources

Loss area for sustainable reindeer herding

Climate change challenges

Different approaches to regulate the number of predators in the different countries

Sami languages and culture are threatened and loss of traditional knowledge

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