

Chapter 1

Major trends, challenges and strengths of the NORA region

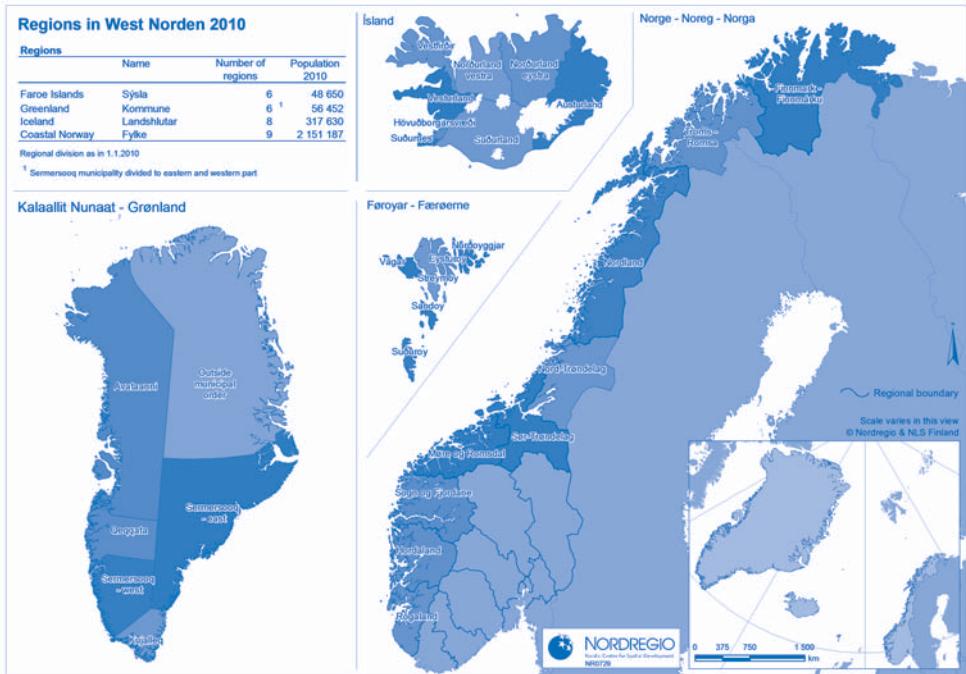
The NORA territories have a relatively high GDP per capita (only Greenland falls well below the OECD average) and economic performance before the crisis was solid. Yet these territories are highly dependent on a reduced number of primary commodities, mainly fisheries, but also oil and gas. The public sector is relatively large and a major employer in the region. At the same time, this region is characterised by its extreme peripherality, by the sparse settlement pattern and by significant difficulties in terms of communications and accessibility. These factors complicate the region's trade, economic diversification and provision of public services. This chapter starts with a definition of the unit of analysis of this review: the NORA region. It then assesses the major socio-economic and demographic trends in the region. Finally it underlines four main challenges for the region: geographic peripherality; ensuring sustainable development of the fisheries sector; economic diversification; and adaptation to climate change.

Introduction: defining the unit of analysis

This review examines the policy challenges and prospects of the North Atlantic region (NORA), which includes the Faroe Islands, Greenland, Iceland and the coastal counties of Norway. NORA was first defined as a distinct entity in 1996, when the Nordic Council of Ministers established a specific body to deal with the particular challenges facing this group of territories. This group is perceived as strongly linked by their shared characteristics, extreme peripherality, and historical, institutional and cultural links. The review looks at NORA not as an institution but as a trans-national region. At the same time, the review does not focus on individual national or territorial particularities (though they are mentioned, where relevant, in the analysis). The objective of this review will rather be to explore the region's shared challenges and strengths, and the opportunities that institutionalised co-operation offer to better address them.

The four territories are situated between the northern periphery of Europe and the northern periphery of North America, between the Arctic and the North Atlantic oceans. Overall, the NORA region covers an area of land and sea that is bigger than the continent of Europe, but it has a population of just under 2.5 million. It is far from the main world centres of trade and business, and much of the population lives in small and remote settlements where population ageing and outmigration of young adults are a common problem. Long distances, sparse populations and physical barriers between communities pose considerable challenges for developing and maintaining communication infrastructures and result in reduced accessibility and high transport costs. The provision of basic public services such as education, health care or long-term care for the elderly is a shared challenge for the remote locations of the four territories. The region's national economies are very dependent on fisheries and raw materials. Finally, these territories' environments are extreme and fragile and they are especially vulnerable and exposed to the effects of global warming.

Figure 1.1. Map of the NORA region



Source: Nordregio - Nordic Centre for Spatial Development, www.nordregio.se, (c) Nordregio, 2010.

The territories of the NORA region also have similar economic potential and one of the world's richest areas of marine resources. At the same time, its well-preserved and unique environment offers a range of opportunities linked not only to fisheries, but also to eco-tourism, energy and mineral production, as well as research on the Arctic environment and climate change. While climate change represents a major challenge for the region, it is also a gateway to new opportunities. For instance, a reduction in the ice cap opens up easier access to new sea routes, new resources (mineral extraction), and new economic opportunities, *e.g.* expansion of tourism and agriculture. The importance of the Arctic (shipping routes, potential energy reserves) is increasing, and the NORA region occupies a strategic position between Europe and North America, as an entry point to the Arctic.

As in other transnational regions, beyond the common characteristics, challenges and potential, the different territories also have particularities. Iceland and especially coastal Norway are much less dependent on fisheries and have more diversified economies than the Faroe Islands and Greenland.

Unlike the other three territories Greenland faces significant social and educational challenges, but it also has great potential in view of its key position as the entrance to the Arctic. In institutional terms, Greenland and the Faroe Islands are autonomous territories (self-governing under Danish sovereignty), coastal Norway consists of nine regions or counties belonging to a unitary state, and Iceland is an independent country.

Regional co-operation can engender direct and indirect benefits. The region's shared demographic, economic, and environmental characteristics raise questions that could be better addressed through regional co-operation. At the same time, the particularities of the different territories can be a source of mutual learning. The kinds of benefits that can be realised via greater interaction and co-operation range from: *i*) gaining an international profile and voice for the NORA territories (*e.g.* acting jointly gives the opportunity to better expose shared challenges, opportunities and interests of the region in international forums); *ii*) achieving critical mass and greater impact through joint actions (*e.g.* trade and tourism promotion, research, innovation and technology development); *iii*) creating synergies in fields of common activity (*e.g.* NORA territories have distinctive and complementary expertise in fisheries which could be a basis for productive exchanges); *iv*) generating mutual learning and better understanding of common challenges and opportunities (*e.g.* demographic challenges, economic development and climate change); *v*) contributing to sustainable and safe management of the regional resources and the environment (*e.g.* fisheries management, maritime safety and environmental control).

There is already high-level institutional co-operation in the NORA region and a strong tradition and basis for co-operation among territories which are strongly integrated into a wide Nordic network of intergovernmental co-operation on a broad range of issues. The Nordic Council and the Nordic Council of Ministers (NCM), the parent of the NORA institution, are well-established, wide-ranging regional partnerships.¹ In addition the Faroe Islands, Greenland and Iceland have formed a joint parliamentary organisation, the West Nordic Council, to promote west Nordic interests and institutional co-operation. NORA territories also participate in the Arctic Council. Finally, NORA territories participate in wider co-operation programmes, most notably the EU's Northern Periphery Programme and the Seventh Framework Programme for Research and Development. However, looking to the future, a number of issues could be better addressed through more effective and efficient regional co-operation.

This volume has three chapters. This chapter analyses the NORA region's main shared characteristics, trends and challenges. Chapter 2 focuses on policies to better address common challenges and to take advantage of the region's potential in four main areas: accessibility,

fisheries, innovation and the effects of climate change. Chapter 3 focuses on the institutional framework, the rationale for, and scope of, regional co-operation, and ways to maximise the impact of regional co-operation. The analysis and examples are mainly at the level of the four NORA territories,² although figures and information at a lower scale (regional and local) are presented whenever the availability of statistical data and their pertinence (within the trans-national approach of this review) make them relevant.

The current chapter is divided in two main sections. Section 1.1 describes the major socio-economic trends in the NORA region: demographics, economic structure and performance, and education. Section 1.2 identifies the main regional challenges which constitute the agenda for the rest of the review: geographic peripherality and the problems that stem from it; ensuring sustainable development and improved productivity in the fishing sector; broadening economic opportunities by consolidating emerging sectors (mining) and exploring new economic activities; and the challenge of climate change.

1.1. Major socio-economic trends

Demography and settlement patterns

The NORA region covers an enormous but very thinly populated area. The region's inhabitants are predominantly based in small coastal settlements and a few larger towns. There is a trend towards concentration of population in the larger towns. But even these sometimes lack the critical mass necessary for developing local economic and business potential.

A small number of bigger cities (mainly capitals) have a dominant position...

Population is unevenly distributed in the NORA region. The average population density is 3.6 inhabitants per square kilometre (km²), a figure that contrasts with an average density of 33 per km² in the OECD area. A small number of larger towns have a dominant presence. The larger towns are the capital cities of the Faroe Islands (Tórshavn), Greenland (Nuuk) and Iceland (Reykjavik), and a small number of cities in coastal Norway. They differ markedly in size. There are only four cities of more than 100 000 people in the region: Reykjavik and the Norwegian cities of Bergen, Trondheim and Stavanger. In the Faroe Islands and Greenland, the capital cities are small (close to 18 000 for Tórshavn³ and 15 000 for Nuuk),

but they dominate in economic and administrative terms. Private services, state service jobs and industry are normally over-represented in capitals and larger cities. In contrast, close to 90% of the settlements of the NORA region have fewer than 10 000 inhabitants, and close to 80% have fewer than 5 000. Two levels of settlements are generally identified:⁴ towns, often settlements with a population of 1 000 to 10 000 inhabitants, often acting as hubs connecting a number of villages; and villages, typically smaller settlements of up to 1 000 inhabitants, which were generally established in connection with the development of fisheries, hunting or agriculture. The primary sector (mainly fishing and hunting), and to a certain degree manufacturing industry and municipal services, are significantly over-represented in towns and localities. Public transfers are very important for the smaller settlements. Finally, the subsistence sector has been crucial for the resilience and continuous existence of many small settlements.

Table 1.1. **Basic demographic figures for the NORA region**

	Population			Population change (%)		Area		Population density	Main city (Inhabitants 2010)
	1990	2000	2010	1990- 2000	2000- 2010	Total	Ice free	Ice free area	
Faroe Islands	47 770	45 353	48 650	-5.1	7.3	1 399	-	34.8	Thorshavn ¹ (17 966)
Greenland	55 558	56 124	56 452	1.0	0.6	2 166 086	410 449	0.1	Nuuk (15 469)
Iceland	253 482	279 049	317 630	10.1	13.8	102 806	91 406	3.5	Greater Reykjavik ² (200 907)
Coastal Norway	1 927 239	2 013 464	2 151 187	4.5	6.8	201 400	-	10.7	Bergen (256 600)
Total NORA	2 284 049	2 393 990	2 573 919	4.8	6.5	2 471 691	704 654	3.6	

1. Including the population of: Tórshavn/Hoyvík/Argir.

2. Including the municipalities of Reykjavík, Álftanes, Garðabær, Hafnarfjörður, Kópavogur, Mosfellsbær.

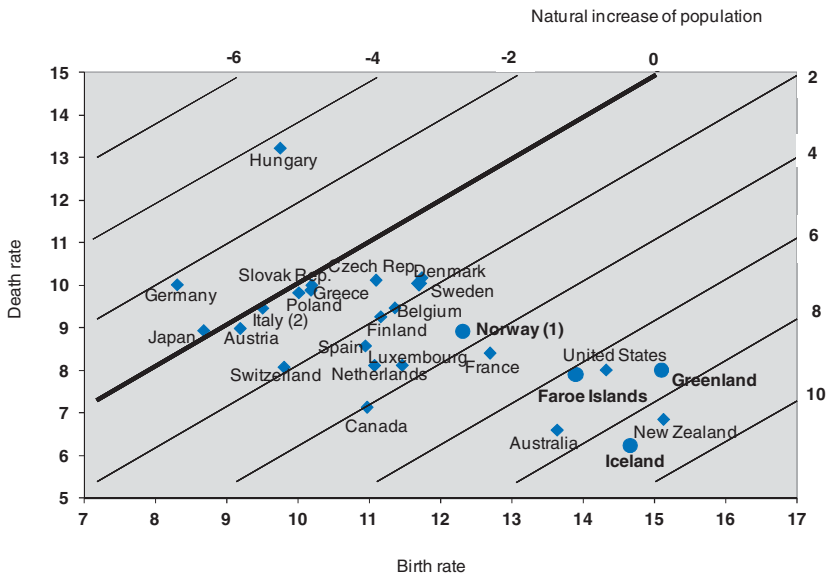
Source: National statistics offices.

The population of the NORA region has been growing as a result of population increases in Iceland and Norway. While the populations of the Faroe Islands and Greenland have remained roughly constant during the last 20 years, those of coastal Norway and especially Iceland have increased (see Table 1.1). In Greenland, the stagnation is due to negative net immigration. Greenland's high birth rate, one of the highest rates of natural increase when compared to the OECD area (see Figure 1.2), is offset by large-scale

emigration (see Table 1.2). The situation is similar in the Faroe Islands, but slightly positive migration flows, together with high birth rates and low death rates, have produced slight increases in the population during the last ten years. Nonetheless, from 2004 to 2007 net migration flows were negative. The case of Iceland is different: both natural increase and positive net immigration rates produced constant increases in population during 1998-2008. In this period Iceland had one of the highest average annual population increases among OECD countries. The increase in the population of coastal Norway reflects growth in the southern counties of Rogaland, Hordaland and Sør Trondelag, with a combination of natural growth and both internal and external migration. The other counties have had either limited growth in population, or, in the case of some northern counties (Finnmark, Nordland), a decrease due to outmigration to other regions.

Figure 1.2. **Birth rate, death rate and natural population increase, 2007**

NORA territories and OECD countries



1. Figures for total Norway.
2. Figures for Italy are for 2006.

Sources: OECD Population and Vital Statistics and Nordic Statistics.

Table 1.2. **Determinants of national population dynamics**1998-2008¹

	Increase in population	Average annual growth rate	Natural balance	Net international migration
Faroe Islands	4 543	0.9%	3 156	1 387
Greenland	386	0.1%	4 593	-4 207
Iceland	46 987	1.5%	26 784	20 203

1. Population figures are from 1 January 1998 to 1 January 2009, except Greenland to 1 January 2008.

2. Including corrections.

Source: OECD calculations based on data from national statistical institutes and Nordic Statistics.

The growth of population has been concentrated in few larger settlements, particularly in the capitals. There has been a trend towards geographical concentration, with an increase in the share of the population living in and around the capitals (Nuuk, Reykjavik, Tórshavn) and in and around the most populated cities of coastal Norway (Bergen, Trondheim, Stavanger, Tromsø). Meanwhile, population has declined in most of the smaller settlements, especially in those with fewer than 5 000 inhabitants, and in the sparsely populated areas of Norway (see Table 1.3).⁵ Some medium-sized regional centres have been an exception, with population increases during the last years linked to the development of service-sector activities such as tourism and sometimes (as in Iceland) to policies to improve living and businesses conditions. This is the case for both Akureyri in Iceland and Sisimiut in Greenland (the second largest cities of these territories). Besides coastal Norway, the capital cities of NORA territories are still the major magnets for attracting and concentrating jobs, industries, houses, services and population.

In the case of coastal Norway, geographical concentration has occurred in three directions: from rural to urban areas, from the north to the south, and from inland to the coast. At the regional scale, weak growth or decrease in population in the northern counties have been mainly caused by internal north-south migration. The negative population trends are not limited to the northern periphery, however, but affect many rural or remote localities throughout coastal Norway. In this regard, at local scale, around half of Norwegian municipalities experienced population decline in the decades following the mid-1980s, with population centralisation a significant trend at all territorial levels, mostly concentrated around the largest towns: Bergen, Trondheim, Stavanger and Tromsø (OECD, 2007).

Table 1.3. Concentration of population in the NORA region

	Faroe			Greenland			Iceland		
	Inhabitants		% change	Inhabitants		% change	Inhabitants		% change
	1990	2009		1991	2009		1990	2009	
Localities 10 000 and over	17 700	19 619	10.8	12 217	15 105	23.6	173 362	230 418	32.9
Localities 5 000-9 999	5 122	4 927	-3.8	0	0	0.0	5 239	13 183	151.6
Localities 1 000-5 000	18 817	18 745	-0.4	2 9661	29 240	-1.4	41 609	37 312	-10.3
Localities below 1 000	6 131	5 457	-11.0	12 187	10 572	-13.3	39 367	28 584	-27.4
Coastal Norway									
	Inhabitants		% change						
	1990	2009							
Urban settlement	1 262 961	1 572 942	24.5						
Sparsely populated area	625 493	546 988	-12.6						

1. Faroe Islands: data segregated by municipalities (2009); Greenland and Iceland: data segregated by locality.

Source: Nordregio and national statistics offices.

...and a self-reinforcing depopulation trend characterises much of the region

An important but decreasing share of the population lives in very small and often isolated settlements. Population decline in smaller settlements during the last 20 years (see Table 1.3) has increased the demographic challenge. Localities of fewer than 5 000 inhabitants, and especially those with fewer than 1 000 have suffered from both severe population declines and population ageing (people of working age are moving to larger places), so that settlement structures have become extremely fragile.

The trend towards concentration of population and workers in a few big towns can bring advantages to the larger cities but creates problems for small towns and settlements. It offers opportunities for higher per capita income levels, capacity to absorb a larger share of labour into the workforce, and greater diversification of economic activity. Agglomeration also facilitates the flow of workers' knowledge among organisations, and allows for better and cheaper provision of public services (health, education). The benefits however are neither linear⁶ nor boundless.⁷ At the same time, this imposes costs on sparsely populated regions where the loss of highly skilled labour aggravates the problem of an ageing population.

Internal migration is linked to economic opportunities and the dynamics of agglomeration...

Greater concentration of the population has been significantly influenced by increased international competition in product, capital and labour markets. Employment and population have developed in parallel: job seekers have migrated to areas in which jobs were available, and new job creation has been encouraged by population growth. Larger towns offer economies of scale, including better services and better infrastructure and connections, thicker labour markets, larger populations of firms and more investment opportunities in a self-reinforcing process. In smaller communities, the limited availability of services (*e.g.* access to education opportunities), the lack of jobs outside traditional activities, difficult living conditions, and limited accessibility create the preconditions for outmigration to larger towns.

International migration is linked to the cycles of the fishing industry...

Beyond migration from smaller to larger settlements, there is significant outmigration in the region. International migration patterns in the NORA region are closely linked to the situation of the local economy in relation to that of the other Nordic countries (mainly Denmark). Owing to the region's high economic dependence on fisheries, international migration has been closely related to the economic cycles of the fishing industry: resource scarcity due to overfishing or to natural changes in the environment, or to drops in fish prices, have often resulted in increased international migration. This was the case in the Faroe Islands during the crises of the late 1980s and early 1990s and of Iceland in the 1960s and early 1970s (Box 1.1). In times of low growth, the Faroese labour force usually migrates in search of work and returns to the islands in times of high growth.

Box 1.1. Migration and the fishing industry in the Faroe Islands and Iceland

Faroe Islands

During the 1970s successful skippers in the Faroe Islands managed to accumulate capital and invested in new filleting plants, and a very successful fisheries and fishing industry was established. Major investments in new trawlers and processing facilities resulted in a high level of efficiency and a boom in the economy. However, a combination of overfishing and environmental variation led to a drastic decline in fisheries during the late 1980s and early 1990s. One of the main results was that the sector was no longer able to support the same number of workers. Without alternatives, many saw outmigration as the only option. Attempts to find alternatives, for instance alternative fisheries or diversification to other species, did not succeed. The large fishery sector (fish account for around 85% of exports) collapsed, major Faroese banks went bankrupt, and foreign debt skyrocketed. During these years, the Faroese population declined from some 48 000 to some 42 000 because of net outmigration, mostly to Denmark, largely because they had relatives there or saw an opportunity to find similar jobs. The Faroe Islands meanwhile began to rebuild the fisheries. Several fishing plants were merged, several closed, and United Seafood became the principal Faroese company. As a part of the reconstruction process many trawlers were sold, some of them to private owners. A very slow recovery in parts of the fishing industry has resulted in the return of some emigrants. However, while in Denmark many young Faroese created new ties; it was predominantly the older age groups that returned. Consequently the long-term result has been a further contribution to the ageing of the population and further net outmigration of young people and especially women.

Iceland

The story is similar in Iceland. When herring fishing recovered as a result of warming conditions during the early part of the 20th century, the country experienced a remarkable climb from poverty to affluence. Larger vessels using the new purse-seine technology explored offshore feeding grounds and brought back unprecedented catches. Total catches reached peaks of above 200 000 tonnes several times in the 1930s and 1940s, and these good herring seasons are often mentioned as important contributions to Iceland's achievement of economic, then political independence in the 1940s. Total catches exceeded 1 million tonnes a year during the 1950s, but then collapsed to less than 100 000 tonnes in 1969 and 10 000 tonnes in 1973. The initially labour-intensive fishery industry made substantial cash wages available to many people for the first time, and resulted in a marked population increase. Young male workers from the farms went to the towns to become fishermen, and young Icelandic women, the herring girls, moved there as well. Some of the towns' year-round

Box 1.1. Migration and the fishing industry in the Faroe Islands and Iceland (*cont.*)

population increased as much as tenfold, and a seasonal workforce, arriving with the herring from May through October, doubled or even trebled it. With the collapse in stocks, however, most jobs were lost, and during a relatively short time massive migration, primarily to Reykjavik and other larger settlements, created the current situation in which more than 60% of the population is concentrated in the capital region. In addition there was substantial outmigration.

A new chapter of the outmigration story is being written today in the wake of the financial crisis. During the last years two trends have been apparent. First, younger people who have chosen to look for jobs outside Iceland seem to have been quite successful in doing so. Second, many immigrants (especially Polish workers) who had worked on contracts based on Icelandic salaries, for instance with Alcoa on the alumina smelter in east Iceland, have chosen to return to their home countries.

Sources: Baerenholdt, J.O. and N. Aarsaether (1999), “Wise Coastal Practices for Sustainable Human Development Forum, Local Coping Strategies/Faroe Islands-Denmark”, www.csiwisepractices.org/?read=20, accessed 23 March 2010; Hamilton, L., O. Otterstad, and H. Ögmundardóttir (2006), “Rise and Fall of the Herring Towns: Impacts of Climate and Human Teleconnections”, in *Climate Change and the Economic of the World Fisheries*, R. Hannesson, M. Barange and S.Herrick (eds.), Globec IPO, Edward Elgar Publishing, Northampton.

International mobility is facilitated by historical, institutional and cultural links with Denmark. The Faroe Islands and Greenland are autonomous territories of Denmark,⁸ while Iceland maintains strong historical and cultural links with it. In the Faroe Islands Faroese is the dominant language, while Danish –the other official language – is also spoken and understood by everybody. Greenlandic is the official language of Greenland, and Danish is spoken and widely used in business and the public administration. Danish is also widely understood in Iceland, and is the second foreign language. Faroese and Greenlanders have the same education and health facilities in Denmark as any Danish-born citizen. Finally, there has been a traditional influx of Danish workers to the Faroe Islands and Greenland. As a consequence of all these factors, most people leaving the Faroe Islands, Greenland and Iceland choose Denmark as their destination (see Table 1.4), as networks and facilities make it easier to look for a job. For example, the fisheries town of Esbjerg, in Southwest Jutland, has become, especially during economic crises, a place for immigration of Faroese and to some extent Greenlanders, while non-crisis immigration is more evenly distributed, with Copenhagen, Aarhus and Aalborg as major choices.

Table 1.4. Total number and main destination of emigration

2008

From/to	Total	Denmark	Faroe Islands	Greenland	Iceland	Norway	Sweden
Faroe Islands	1 477	77.9%		2.0%	3.6%	3.2%	0.8%
Greenland	3 174	89.6%	1.6%		0.9%	0.9%	1.0%
Iceland	9 144	18.6%	0.7%	0.0%		3.5%	6.3%
Norway ¹	23 615	12.2%	0.3%	0.0%	1.0%		21.1%
Denmark	43 469		2.5%	4.8%	3.5%	6.5%	12.6%

1. Information for total Norway.

Source: National statistics offices.

...but the lack of educational opportunities produces brain drain

Migration is especially strong among highly educated and younger people. The narrow offer of programmes in local universities as a result of small demand and facilities for studying in Denmark (public support, historical links, Danish language) produces an important exodus of students every year (Table 1.5) shows the loss of population in the student age range in the Faroe Islands and Greenland). A share of those who leave (especially among Greenlanders and Faroese) remain abroad after their studies: job opportunities are often better, especially for those working in fields unrelated to fisheries. There are no official figures about students' rate of return after completing their studies, but the impression of public officials (interviews conducted during missions to Greenland) is that at least one-third of the Greenlandic students going to Denmark remain there, thus representing a major brain drain. In the Faroe Islands, there is some evidence that brain drain is also a considerable challenge: a Nordic survey conducted in 2007 revealed that 56% of the students who graduated abroad between 2004 and 2006 were still living abroad in April 2007. However, the proportion was higher among graduates from 2006 than from 2004, suggesting that in a longer time frame, some graduates may still move back to the Faroe Islands (Saarikallio-Torp and Wiers-Jenssen, 2010).⁹ The proportion seems to be higher for women since the conditions for educated women are more difficult in a local economy dominated by the fishery sector. As a result, the communities of origin lose some of their more qualified people. Moreover, this situation creates disincentives for economic diversification. Offering special support programmes to encourage the return of those who temporarily leave for study/work abroad would be as important as broadening economic opportunities so as to offer emigrants a clear incentive to return (see Chapter 2.1).

Table 1.5. Changes in population in the typical student age range

NORA territories + Denmark

	Year/age range	10-14 years	20-24 years	% change 1999-2009
Denmark	1999	289 167		
	2009		315 695	9.2
Faroe Islands	1999	3 472		
	2009		2 984	-14.1
Greenland	1999	4 779		
	2009		4 238	-11.3
Iceland	1999	20 447		
	2009		23 347	14.2
Norway	1999	273 555		
	2009		294 736	7.7

1. The percentage of change is an estimate: factors and variables other than emigration may intervene.

Source: Nordic Statistics.

Women are over-represented among migrants, and high female migration from rural areas creates demographic, social and economic challenges. Women are more likely to migrate permanently away from their home communities, looking for job opportunities outside traditional activities. Many women also leave the country for tertiary education or, if they study in their home country, to pursue a career in which they can take advantage of their acquired skills. The absence of women in smaller towns and rural areas can affect birth rates. At the same time it creates social challenges, since women are the main providers of primary care for children and other dependent people. Finally, it affects the economic diversification of rural areas, since women often initiate the diversification of the rural economy by creating businesses, especially in the service sector (Rasmussen, 2010).¹⁰ However, recent surveys in Norway show that male mobility in peripheral municipalities has increased relative to female mobility, resulting in only minor differences for males and females born between 1965 and 1970 (Ministry of Local Government and Regional Development, Norway).

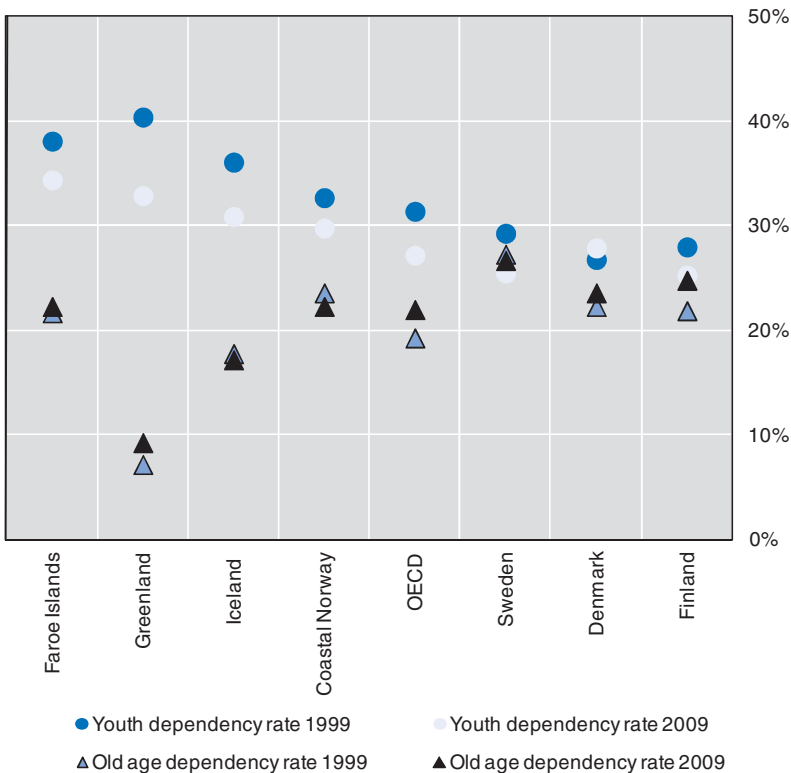
High youth and old-age dependency ratios coexist

Youth dependency ratios are high, but have tended to decrease, especially in smaller areas. Figure 1.3 shows youth dependency ratios well above 30% in 1998, a share higher than the OECD mean and that of other Nordic countries. This reflects the high birth rates of the different territories of the region. The large young population could be an important asset for

economic development. However, as discussed above, the constant depopulation of smaller settlements is a common trend, with an important segment of those of working age migrating to larger towns. Moreover the youth dependency ratio fell significantly during the decade to 2009 (Figure 1.3). One of the most important factors has been the fall in birth rates as result of a shift towards family structures similar to those in the other Nordic countries, with one or two children instead of three or more. Finally, high youth and old-age dependency ratios also coexist in many places, especially in smaller settlements. This is normally the case in stagnating or declining localities, where high birth rates go along with high outmigration of younger persons seeking job or education opportunities.

Figure 1.3. Youth and old-age dependency ratios, NORA territories, OECD and Nordic countries

1999-2009

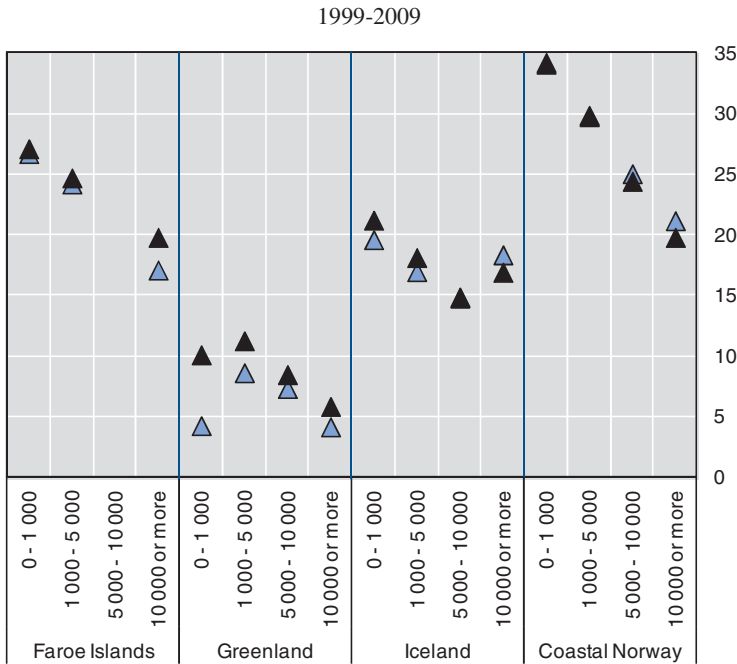


Sources: National statistics offices and OECD.

The concentration of elderly population represents a challenge for smaller settlements

The elderly population is increasingly concentrated in smaller settlements. NORA territories show different old-age dependency ratios (see Figure 1.4). The Faroe Islands and coastal Norway have figures similar to the OECD mean. Iceland, with the highest birth rate among OECD countries, has lower elderly figures, especially compared to other Nordic countries. Finally, Greenland has particularly low old-age dependency ratios. The reasons are at least threefold: *i*) high birth rates; *ii*) hard living conditions for older persons (life expectancy in Greenland is 71 years for women and 66 for men); and *iii*) the fact that many retiring Greenlanders move to Denmark.¹¹ However, an analysis at local level shows important differences within the territories, with much higher figures in smaller towns. Over time, the gap has tended to increase, showing a marked ageing trend in smaller settlements (Figure 1.4).

Figure 1.4. Old-age dependency rate by size of settlement in NORA territories



▲ Old age dependency rate 1999 ▲ Old age dependency rate 2009

Source: National statistics offices.

Economic structure: main economic sectors

NORA territories are resource-based economies

The economies of the NORA region are very reliant on natural resources. The fishing industry is the most important sector in the Faroe Islands and Greenland, with important knock-on effects on the rest of the economy: trade and manufacturing are both extremely dependent on fisheries. Beyond fisheries, Greenland currently focuses on expanding the mining sector. Iceland and coastal Norway have more diversified economies, but both are largely resource-based. The development of the Norwegian economy as a whole, and especially that of its coastal counties, has been shaped by the exploitation of natural resources. Fish, wood and energy play key roles in the local economy: a long tradition in fishing has been complemented by a strong export-oriented aquaculture industry. Yet, the discovery and extraction of oil and gas has been the key factor in the economy of coastal Norway: mining, oil and gas accounted for 11.9% of the national gross value added (GVA) in 1998, rising to 29.5% in 2008 (Table 1.6). The importance of fisheries in the Icelandic economy has declined considerably, though it remains a key economic sector.

Table 1.6. GVA by economic sector, NORA territories¹

1998-2008, %

	Faroe Islands		Iceland		Total Norway	
	1998	2008	1998	2008	1998	2008
Agriculture	0.3	0.2	1.9	1.4	1.7	0.6
Fishing	21.3	11.7	8.2	5.0	1.0	0.4
Mining, oil and gas	0.1	0.2	0.2	0.1	11.9	29.5
Manufacturing of food products ²	8.2	6.2	7.0	4.4	1.8	1.4
Industry/manufacturing ³	4.0	4.4	9.1	8.1	11.1	7.7
Electricity	2.4	0.9	3.4	4.8	2.7	2.7
Construction	4.7	8.5	8.4	9.5	5.1	4.8
Trade	10.5	10.0	11.7	10.8	11.0	8.0
Hotels and restaurants	0.9	1.1	1.6	1.7	1.7	1.4
Transport and communications	8.0	9.9	8.8	6.7	10.0	6.3
Financial	3.4	3.8	3.9	7.0	3.8	3.7
Business services	13.4	15.5	12.7	18.0	14.4	13.9
Public administration	4.9	6.1	5.6	5.4	5.9	4.3
Education	5.4	6.3	4.5	4.3	5.1	4.0
Health	9.7	12.3	9.3	9.0	9.2	8.5
Other	2.7	2.9	3.7	3.7	3.5	2.7
Total	100	100	100	100	100	100

1. There are no segregated GVA figures for Greenland.
2. Including fish processing.
3. Excluding manufacture of food products.

Source: National statistics offices.

The public sector is a major employer, especially in peripheral municipalities

A striking feature of the economy of the Faroe Islands and Greenland is the presence of a large public sector, alongside an underdeveloped private sector that is heavily reliant on fisheries. The public sector is responsible for 35% of employment in the Faroes and 44% in Greenland (Annex 1.A1). It owns major companies in both territories (Box 1.2) but also plays a key role in maintaining the welfare system and providing other important services for remote locations (*e.g.* aviation, telecommunications). The annual block grant that Greenland and the Faroe Islands receive from Denmark enables them to maintain rather large non-tradable sectors and, in particular, large public administrations. The grant accounts for 57% of government revenue in Greenland (2009) and 12% of public revenue in the Faroe Islands. Norway also has one of the highest proportions of public-sector employment in the OECD. Peripheral municipalities of both coastal Norway and Iceland are heavily dependent on public-sector jobs (local government and municipal services). Moreover, in remote areas, the public sector provides employment opportunities for higher-skilled workers, who have few alternative local employment opportunities.

Box 1.2. Public sector companies in the Faroe Islands and Greenland

The public sector plays a central role in the economies of the Faroe Islands and Greenland. Many of the most important companies of Greenland are publicly owned by the self-rule government, such as Royal Greenland (fisheries and fish processing), Royal Arctic Line (freight company) or Air Greenland (of which the government owns 37%). The public sector also owns a large part of the housing stock (80% of the real estate market belongs to the government). In the Faroe Islands, the public sector also runs some public institutions and takes care of production and sales functions. (*e.g.* the Alcohol Monopoly of the Faroe Islands, the National Pharmacy Service, Faroese Energy and the Highway Authority) and also completely or jointly owns some limited companies (*e.g.* Faroese Telecom and Vágar Airport, Atlantic Airways, which is the Faroe Islands' airline, Faroese Telecom, the Post Office Authority).

There have been increases in employment in sectors such as construction, trade and business services (Annex 1.A1). In Greenland, the largest growth in employment outside fisheries since 2000 has been in wholesale and retail trade and construction, all non-tradable sectors. Most job creation outside the capital Nuuk and the larger towns has relied heavily

on the public sector. The mining sector employs only a small share of the workforce, but the increase in the number of licences issued and public support for the expansion of this sector suggest that it may play an important role in generating employment growth in the near future, not least via the impact of growth in mining – and recent indications of hydrocarbon findings – on non-tradable sectors. In the Faroe Islands, falling employment in fisheries and fish processing contrasts with the expansion of construction, real estate and businesses services, as well as trade and catering. Iceland's financial and banking sector grew dramatically during the past decade, but the collapse of the main Icelandic banks in the global financial crisis will reduce the size of the sector in the economy. Other activities that expanded were construction and business services linked to tourism. Finally, in coastal Norway the main increases in employment have been in the oil and gas sector and in business activities.

Fisheries remain a key sector and employer in the region...

The economy of the NORA region is closely linked to fisheries, though the sector's contribution to the economy has declined. In terms of employment, exports and value creation, fisheries play a vital role in NORA territories. In Greenland and the Faroes, fish processing accounts for most of the jobs in manufacturing (fish processing, shipyards), while fish exports account for around 72% of total exports in Greenland and 85% in the Faroe Islands. In the latter, the relative weight of fisheries and fish processing in the economy has decreased, as sectors such as construction have grown in importance. Employment in fisheries and fish processing has also fallen, but 15.4% of total employment is still directly linked to either fish or fish processing (Table 1.7, Figure 1.5), and the economy is still exceptionally dependent on fish exports. In Iceland, the importance of fisheries has declined considerably, though it remains a key economic activity: the share of fisheries in total employment (2.5%, plus 1.6% in fish processing) is the highest in the OECD, and the marine fishery landings are the fourth highest in the OECD (after the United States, Japan and Norway) accounting for around 5% of the value of OECD catches in 2007. In Norway as well, the role of fish and fish processing in the economy has declined. Yet Norway is the biggest fishing nation in Europe, and the third among OECD countries. Catches account for close to 8% of the OECD total and nearly 3% of the world total. Moreover, as sea fishing has declined, fish farming (aquaculture) has grown in importance.

Table 1.7. **Key fishery figures, 2008**

Key figures	Faroe Islands	Greenland	Iceland	Norway
Sea fishing (1 000 tonnes) ¹	521	109	1 283	2 437
Growth in sea fishing 1998-2008 (change in volume)	38%	63%	-24%	-15%
Aquaculture (1 000 tonnes) ²	37	0	5	839
Growth in aquaculture 1997-2007 (change in volume) ³	114%	-	29%	128%
Fishing + fish processing as a share of total employment	15.4%	-	4.1%	2.0% (coastal Norway)

1. Values are in live weight.
2. Figures for aquaculture in Iceland and Norway are for 2007.
3. For the Faroe Islands growth of aquaculture for 1998-2008.

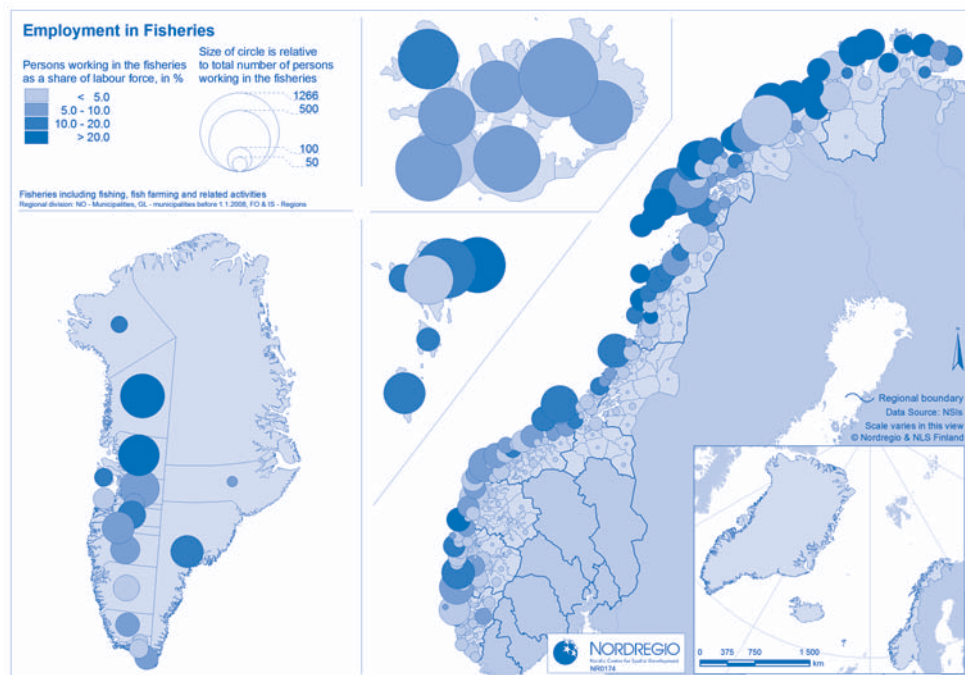
Source: National statistics offices.

The evolution of catches in the NORA territories in the last ten years has followed a dual pattern: between 1998 and 2008, marine landings increased substantially in volume terms in the Faroes and Greenland and decreased in Norway and Iceland. However, the total catch of the Norwegian and Icelandic fishing industries, measured by weight, remains relatively large by historical standards: the total decreased over the decade to 2008, but from exceptionally high levels (Figure 1.6); the profitability of the fishing fleet improved while the number of fishers and the economic weight of fisheries in the total economy declined.¹²

...but global competition, declining fish stocks and climate change raise serious challenges

The historical position of the NORA region has been severely affected by global competition from other parts of the world. This has occurred in a context of declining fish stocks and problems related to climate change. Total marine catches of NORA territories represented 13.1% of world catches in 1951. Since then, NORA catches have increased but the positions of competitors such as China, Indonesia, Peru, India and Chile have strengthened, and the relative weight of NORA catches fell in 2008 to 6.2% of total marine catches.¹³

Figure 1.5. Employment in fisheries, NORA region, 2005

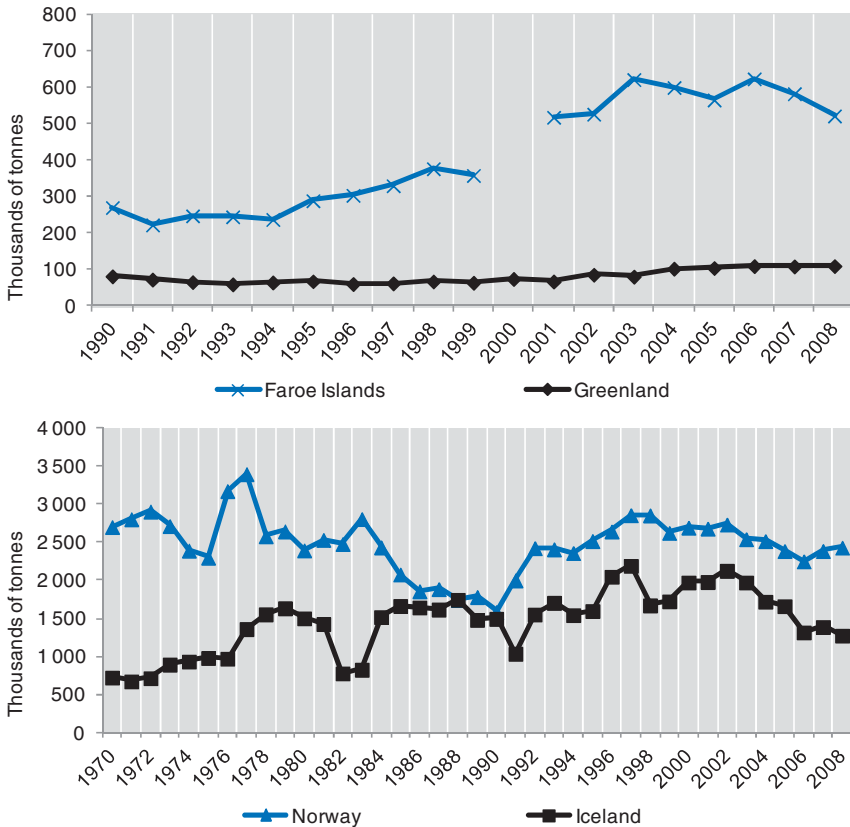


Source: Nordregio – Nordic Centre for Spatial Development, www.nordregio.se, (c) Nordregio, 2010.

Fish farming appeared as an important alternative

With the decline in marine fish stocks, fish farming was viewed as an important complement to traditional fishing in the NORA region. Large scale-production of fish in open-water cages led to global trade in high-quality, high-value species such as salmon. Norway and the Faroe Islands were early adopters of marine aquaculture and during the last ten years have more than doubled their fish farm production (Table 1.7). Environmental control and improvements in technology are central to the ongoing development of this sector (see Chapter 2.2). NORA producers also face growing competition. Although Norway has dominated global production of farmed salmon since the 1980s, it has faced competition over the last decade from an array of new entrants, most notably Chile, which have the same favourable natural conditions as Norway and where production costs are substantially lower.¹⁴

Figure 1.6. Historical sea-fish landings in NORA territories



1. Values are in live weight.

Source: National statistics offices.

Mining is an emerging sector, and oil exploration is being carried out in Greenland and the Faroes

Efforts to diversify in order to reduce dependence on fisheries have mainly focused on developing industries based on raw materials. Greenland has sought to expand the mining sector and create an aluminium industry. A nascent mining sector (gold, olivine and rubies) accounted for just over 10% of total exports in 2007. It is expected that new mines (*e.g.* lead, zinc, molybdenum, iron ore, diamonds, eudialyte, platinum) will open in the next years, offering new jobs on the local market. At the same time, there are

plans for developing an aluminium smelter, for which Greenland is well suited, given its hydroelectric potential. In addition, there has been a good deal of oil exploration in both Greenland and the Faroes. To date, there have been no major commercial finds, but the announcement of a potentially significant find in late August 2010 has refocused attention on Greenland's hydrocarbon potential. The UK-based Cairn Energy announced that it had found thermogenic gas, indicating the presence of oil, in one of four wells in the Baffin Bay Basin, off Greenland's west coast. Data from the US Geological Survey suggest the seabed between Greenland and Canada could hold 17 billion barrels. Blocs off Greenland's eastern coast, which also appear promising, will be opened for exploration in 2012.

In Iceland, the authorities have actively promoted development of an aluminium industry as a way to reduce the country's reliance on fisheries (Box 1.3). Norway's emergence as a major oil and gas producer in the mid-1970s also transformed the economy: in 1970, agriculture and fishing represented about 6% of total value added; in 2008 they accounted for only 1.1% (GVA figures are for total Norway). Meanwhile, the share of oil and gas extraction rose from 0% to 29.5%.

Box 1.3. The aluminium industry in Greenland and Iceland

Attempts to further diversify the economy in Greenland and Iceland reflect the authorities' wish to diminish dependence on fisheries and also to take advantage of the territories' wealth of renewable energy resources. Given its tremendous hydroelectric potential and the availability of cheap electricity, both territories are well suited to exploit this sector.

In Iceland, large-scale aluminium-related investment projects have expanded from cycle to cycle. The main arguments for developing an aluminium industry have focused on taking advantage of the enormous amount of untapped renewable energy available and diversifying the economic structure away from fisheries. However, as pointed out by the *OECD Economic Review of Iceland 2006*, regional policy considerations should also be considered. The development of power-intensive industries has involved foreign companies which build and operate aluminium plants, with public utilities providing the necessary electricity under bilateral long-term contracts, and the effect on domestic employment has been limited. Foreigners have accounted for three-quarters of the work force involved in the construction of the current projects. In the operational phase, the power stations have a limited number of employees, but the aluminium plants are more labour-intensive, with each employing directly up to 500 persons. Moreover, it is unclear whether the public utilities earn appropriate returns for the use of natural resources, the environmental costs

Box 1.3. The aluminium industry in Greenland and Iceland (*cont.*)

and the risks they assume. In this regard, the authorities should set reserve prices for the use of natural resources and negative environmental externalities. If well managed, the development of the aluminium industry can be an important source of national income, but economic success and a continuously rising standard of living ultimately depend on the country's skills base and the ability of its workforce to respond to changing market needs.

In Greenland, one of the main economic initiatives currently being considered by the government is an aluminium industry (aluminium smelter) in the city of Maniitsoq. The final decision on the project (including its ownership) will be made in 2011 or 2012. If the project goes ahead, it is calculated that it could involve an investment of DKK 15- 20 billion, the equivalent of between one and a half and twice Greenland's gross national product (GNP). When operational, this project will result in close to 500 permanent jobs at the melting plant and in the hydroelectric plants. To this should be added the expected derived permanent employment of 400-600 persons (servicing of the melting plant and increased public and private services in Maniitsoq). The project would require upgrading the skills of the existing labour force and attracting labour from other locations. The construction of the plant would require a major labour demand, but it would be probably met by foreigners. Experience with large-scale aluminium and power sector investments in Iceland shows the need to evaluate these projects on the basis of a broad, transparent cost-benefit framework, taking into consideration factors such as the appropriate rent for the use of natural resources, the environmental impact, the allocation of risks and the implications for macroeconomic performance.

Sources: OECD (2006), *OECD Economic Surveys: Iceland*, OECD Publishing, Paris; Ministry of Finance and Foreign Affairs of Greenland (2009), *Political Economic Report 2009*, Nuuk; Bank of Greenland (2009), *The Bank of Greenland Annual Report 2009*; ADE (*Aide à la Decision économique*) (2008), "Macro Economy, Public Finances and Regulatory Aspects; Greenland – Public Financial Management Assessment", study co-ordinated by ADE for the European Commission, 8 June; Greenland Development A/S (2007), *Økonomiske konsekvenser af etablering af aluminiumsindustri i Grønland – Analyser af kapaciteten*, NIRAS Greenland A/S, November.

The production of hydrocarbons and metals has been important for economic growth, especially in Norway and Iceland, and it is expected to have an important role in the development and diversification of Greenland's economy. The economic risks associated with reliance on primary commodities are discussed below. Managing those risks is only one of the challenges facing the NORA economies. Ensuring that such developments are economically and environmentally sustainable is another. Since hydrocarbons and minerals are depletable, their exploitation may be only a temporary phenomenon requiring judicious macroeconomic policies to ensure the sector's future economic sustainability (see Chapter 2.3).

NORA territories are highly sensitive to environmental degradation

Ensuring that the development of resource sectors does not damage the fragile ecosystems of the NORA region constitutes another challenge. The NORA region's unique ecosystems constitute an asset as well as a challenge. The region's rich ecosystems are the source for important parts of its economies, rendering the region highly sensitive to environmental degradation. At the same time, the high dependence on activities such as trade, transport, mining and oil extraction render the region highly exposed to environmental degradation. Coherent strategies will be needed to address the growing environmental pressures. For the NORA region, the recent tragedy of the Deepwater Horizon oil spill in the Gulf of Mexico and its devastating effects on the regional ecosystem in general and the fishery sector in particular demonstrate the importance of strict environmental regulation and control in current and future oil extraction activities. The challenging geographical, weather and accessibility conditions of the region render such precautions all the more important.

There is potential to expand tourism linked to the region's unique environment

An exceptional natural environment is an important asset for the tourism sector. NORA territories have tourist attractions found in very few places, such as fjords and icebergs, the northern lights and the midnight sun, the opportunity to visit the ice cap, active volcanoes, dog sledges and marine mammals, among others. Tourists can enjoy direct contact with nature or with the last indigenous population of Europe (the Sami in Norway) or Greenland (the Inuit) in unique and unspoiled environments. In 2007, the *National Geographic* declared the Faroe Islands the most appealing and unspoiled islands in the world. Given the region's fragile environment, tourism development must be carried out under sustainable conditions.

Greenland and the Faroe Islands have made efforts to develop the tourism industry, as a way to diversify the economy, but it still represents a small share of economic activity. There is scope to develop tourism further, based largely on local resources, and to create new job opportunities and supplement tourism-related activities. Norway and Iceland have promoted tourism for some time. In coastal Norway, tourism has become an important contributor to local economies, but offers further potential. Norway ranks third among the Nordic countries in terms of foreign tourism flows (measured in foreign overnights at accommodation facilities), behind Denmark and Sweden but ahead of Finland (Finnish Tourist Board, 2006). The distribution of overnight stays in the different counties of Norway shows potential for further exploitation of the sector, especially in the north

(OECD, 2007). Iceland is far more reliant on tourism than the other NORA territories; tourism represented 5.1% of GDP in 2006, the highest share among the Nordic countries. The number of visitors and the contribution of tourism to the economy have increased considerably during the last years: the number of visitors from overseas grew by 37.2% over 2004–09, and the number of bed-nights of overseas guests grew to over 2 million or by 39.7% (Iceland Tourist Board and Statistics Iceland).¹⁵

The development of tourism is constrained by factors linked to the NORA region's peripheral location (especially Greenland and the Faroe Islands):

- **Cost.** Long distances to destination and high fuel prices make international flights expensive. Tourist facilities – hotels, restaurants or specialised tours – are also expensive compared with other destinations and are not yet sufficiently developed in many parts.
- **Lack of connectivity.** Most international flights connecting the Faroes and Greenland leave from Denmark, with few connections to the other NORA territories or neighbouring countries (Canada, the United Kingdom), especially in winter. At the same time, the lack of critical mass makes it difficult to extend the number of destinations or increase the frequency of flights.
- **Lack of interaction and co-operation by local entrepreneurs.** Sales and marketing are often ensured by small units with limited resources. At the same time, entrepreneurs providing similar services in the same area appear unwilling to co-operate with each other and with other service providers in neighbouring countries. The result is poor and inefficient national and international tourism networks.
- **Short seasons.** Tourist flows are concentrated in a few weeks in summer and winter, which creates a challenge for service provision.
- **Lack of brand recognition.** Greenland and the Faroes are not well-known destinations on the international tourism market and are promoted relatively little abroad.
- **Little refinement of the offer.** All the above factors result in a narrow offer of tourist products and services.

However, efforts are being made to expand the sector. In recent years cruise tourism has increased significantly, in terms both of the number of ships and the number of passengers visiting the region. This is the only way for a single visitor to experience large parts or all of the North Atlantic on the same journey (see Box 1.4). In addition climate change is making some

sea routes and locations, especially in Greenland, more accessible. In the Faroe Islands, efforts to develop the tourism sector include the provision of structures and incentives for education and training; developing new infrastructure and facilities (such as information offices, restaurants and improved internal transport). From 2005 to 2006, the number of overnight visitors from foreign countries increased by about 19% (Faroese Governmental Bank, 2009a, 2009b). In Greenland the government launched in 2008 a three-year national tourism strategy to support the development of the tourism sector. The focus areas of this strategy include infrastructure, competency development and labour market considerations, product development, marketing, among others (Ministry of Finance and Foreign Affairs of Greenland, 2009). Norway is developing a national strategy for tourism (to be launched in 2011) with the aim of promoting a competitive and sustainable tourism industry. Finally, there has been an increase in eco-tourism and adventure tourism offers and options, linked to the region's rich and unusual ecosystems.

But higher tourist inflows will pose environmental and infrastructure challenges

The rich biological diversity and the unique natural and cultural environments of the NORA region form the basis for expanding tourism and recreational services but also raise the challenge of sustainability. Therefore, it is crucial to preserve landscape values and to provide high-quality tourist services appropriate to the carrying capacity of the environment. As the tourist sector develops, the challenges for preserving the biological diversity and valuable landscapes will also increase. The seasonal aspect of tourism, coupled with the concentration of tourists in certain locations, adds environmental and infrastructure challenges related to energy and water supply, safety measures, waste generation and treatment, and air emissions. Similarities in exposure and effects, the particularities of trans-border tourism (*e.g.* cruise tourism) and the international effects of environmental degradation make this a particularly interesting area for co-operation (Northern Periphery Programme, 2007a, 2007b).

Box 1.4. Cruise tourism in the NORA region

Accessibility to the NORA region from the sea creates a clear opportunity for cruise tourism. Cruise tourism in the Arctic has been limited owing to problems of accessibility for some sea routes. Climate change and the consequent reduction of sea ice, however, have opened up new possibilities. While other regions in the North, such as Alaska, have known cruise tourism for decades, the NORA region has been rather slow to promote this sector. The reasons are mainly related to the high cost of transport and maintaining an infrastructure, combined with a short tourist season that is dependent on favourable weather conditions. Cruise tourism in the North Atlantic is also vulnerable to the harsh local climate conditions, as sea ice can affect sea routes.

The situation has been changing. In 2009 a total of 20 new cruise ships were added to the North Atlantic routes and 8 expedition cruise companies are planning to expand offerings in the North Atlantic. The region has 68 ports in total: Norway 37, Greenland 16, Iceland 12, and the Faroe Islands 3. The most popular cruise ship harbour in Iceland is Reykjavik. The number of calls usually ranges between 50 and 100, with more than 50 000 guests and thousands of crew members. Many cruise tourists take part in shore excursions in a bus with a tour guide. Additionally, during the last ten years Akureyri, the capital of the north, has seen increases of more than 160% in the number of cruise ship guests: on average between 50 and 60 cruise ships a year bring 45 000 to 50 000 guests. Other destinations in Iceland are Grundarfjörður in the west and Isafjörður in the north-west. Cruise tourism is a relatively recent activity in Greenland. But the situation is changing, and the frequency of cruise tourism visits is increasing, raising some challenges for managing this expanding activity. The American cruise ship Crown Princess with almost 3 000 passengers and a crew of around 1 500 visited Nuuk in 2009. This is the largest ship ever to come to the town, and a stopover in a town of around 15 000 inhabitants is a major event requiring infrastructure and organisation. Many of the tourists coming to Greenland, however, aim to visit the smaller places of the territory. As an example, a 2009 visit to the town of Ittoqqortoormiit in east Greenland (around 500 inhabitants) by the German MS Europa with 408 passengers and a staff of 280 was extremely demanding. For a single day the town was occupied by a number of tourists that exceeded the total population. Many smaller settlements have limited human and infrastructure resources to meet these challenges, and it is difficult to cover the costs of maintaining services and amenities for these rather infrequent visits.

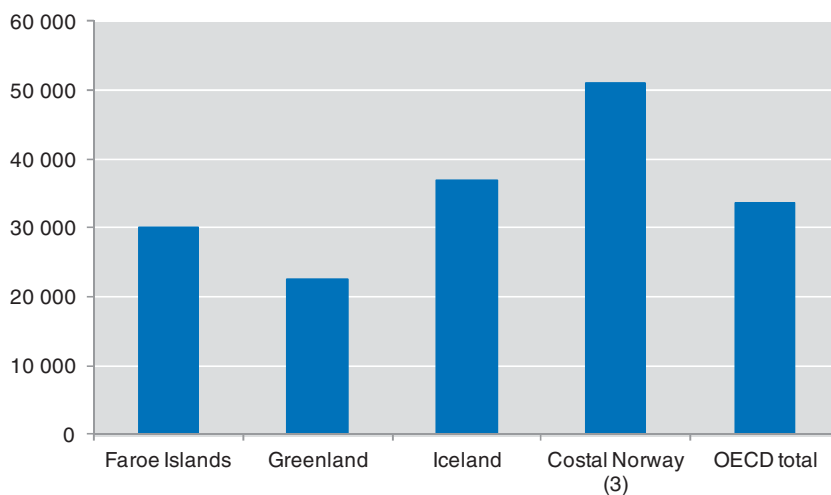
When a big cruise ship arrives in one of the small North Atlantic ports, the call can – if carefully planned for – provide new revenue opportunities for the local community. However, the arrival of such a cruise ship also raises a number of issues in terms of infrastructure, safety and rescue equipment, as well as the impact on the environment. Co-operative efforts by these destinations to address these challenges would be beneficial.

Source: NORA (2009), *Climate Change and the North Atlantic*, L. Thostrup and R.O. Rasmussen (eds.), Tórshavn, November.

Economic performance

While the territories of the NORA region share economic characteristics and challenges, their economic performance varies considerably. Iceland and coastal Norway have GDP figures well above the OECD average. Norway has enjoyed steady growth since the beginning of the 1990s, and in terms of GDP per capita (converted to purchasing power parity, PPP), it ranks second in the OECD behind Luxembourg. Yet Norway's economy and its GDP per capita are more regionally concentrated than the OECD average, with an index of geographic concentration among TL3 regions about 30% above the OECD average (OECD, 2009a). GDP is especially concentrated in the most populous regions (primarily Oslo, followed by Rogaland and Hordaland counties in coastal Norway).¹⁶ Until the financial crisis, Iceland had been among the top performers in GDP terms during the last years. Following significant structural reforms and foreign direct investment, the Icelandic economy enjoyed a long period of comparatively rapid expansion, which led to the build-up of major internal and external imbalances. In 2008, Iceland was struck by a banking crisis of unprecedented proportions and the economy plunged into a deep recession (OECD, 2009b). The Faroe Islands have a GDP per capita close to the OECD average, but with considerable fluctuations in performance over time. They had high GDP growth rates in 2000 and 2001 and in 2005-06. Growth rates declined during 2002-05, and, as a consequence of the financial crisis, in 2008. Finally, Greenland has lower GDP per capita figures than the rest of NORA territories. Per capita GDP in 2006 was close to the levels of OECD countries such as the Czech Republic. The gap has increased since 2002 owing to slower growth (see Figures 1.7 and 1.8).

Strong GDP fluctuations in the Faroe Islands and Greenland are linked to fluctuations in the fish industry. Fishery and related industries, such as fish processing, are important in all NORA territories; in the Faroe Islands and Greenland fish products account for about 85% of the exports of the Faroe Islands and above 70% for Greenland and thus determine the overall performance of the economy. Export income can fluctuate notably from year to year, and these variations spread throughout the economy. An economy that is highly dependent on fish products is bound to be vulnerable to changes in fish stocks, fish prices, oil prices and exchange rates, all of which are often cyclical and unforeseen. Fish cycles have left their mark on the economic history of these territories.

Figure 1.7. **GDP per capita at current prices in PPP¹**2008 or latest available data²

1. PPP figures for the Faroe Islands and Greenland are estimated using the PPP deflator for Denmark. In addition, both receive a block grant from Denmark which accounts for 57% of government revenue in Greenland (2009) and 12% of public revenue in the Faroe Islands. Information on national accounts data should consequently be interpreted with care.

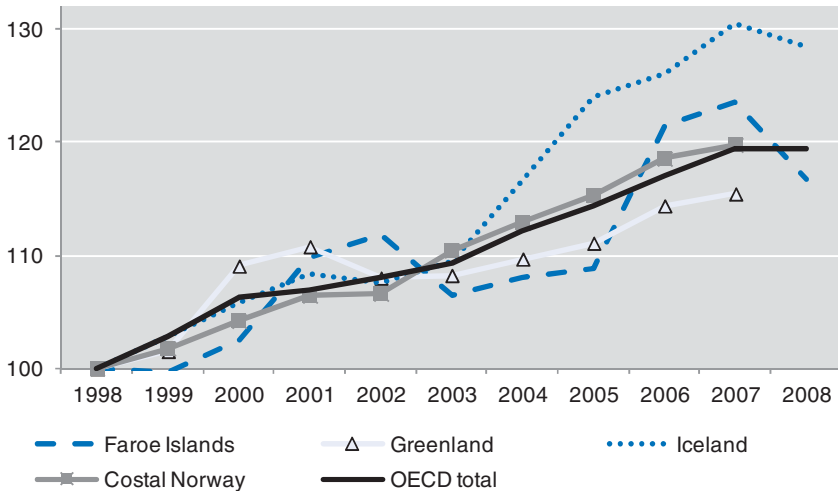
2. Data for Greenland and coastal Norway for 2007.

3. Figures for coastal Norway are based on GDP figures of the nine counties of coastal Norway using information from the *OECD Regional Database* (Based on Eurostat).

Sources: Faroe Islands and Greenland: Nordregio based on figures of the national statistics offices; Iceland: OECD STAT National Accounts; coastal Norway: *OECD Regional Database*.

Trade

The NORA economies are very dependent on exports of a narrow range of products. As measured by the Herfindahl-Hirschman index (HHI) based on three-digit classifications, they all record levels of export concentration far above the OECD average: Iceland and Norway have the highest concentrations of any OECD members, at around 0.37 and 0.40 in 2007, as compared with an OECD average of 0.14. The corresponding figure for the Faroe Islands was higher still, at around 0.61. A look at the revealed

Figure 1.8. Real GDP per capita growth in the NORA territories¹

1. In constant PPP prices of 2000. PPP figures for the Faroe Islands and Greenland are estimated using the PPP deflator for Denmark. In addition, both territories receive a block grant from Denmark which accounts for an important share of public income. Information on national accounts data should consequently be interpreted with care.

Sources: Faroe Islands and Greenland: Nordregio based on figures of national statistics offices; Iceland: OECD STAT National Accounts; coastal Norway: *OECD Regional Database*.

comparative advantages (RCAs) of these three territories over the period 1990-2007 highlights elements of continuity and change: the Faroe Islands' very high dependency on fisheries remains unchanged throughout the period, but there is clear evidence of diversification in Iceland and Norway.

The most dramatic development in Iceland has been the rise of aluminium exports. Iceland has in recent decades developed a substantial aluminium ferro-silicon sector using its abundant hydroelectric and geothermal electric capacity to process imported alumina. In 2008, non-ferrous metals overtook fisheries as the number one item in the export bill; the former accounted for 39% of exports and the latter for 32.5%, down from over 90% in the mid-20th century. Exports of aircraft and associated equipment have also taken off, though these were hit hard by the global recession – in 2009 they fell to roughly half the levels of 2007.

In Norway, the major change has been the diversification of hydrocarbon output: the rapid growth of gas exports has brought about a

significant decline in the three-digit HHI index for exports since 2000. While this leaves the country reliant on hydrocarbons for roughly 64-65% of exports, the change is not insignificant, especially in view of ongoing rapid changes in international gas markets and the different outlooks for oil and gas from a climate-change perspective.

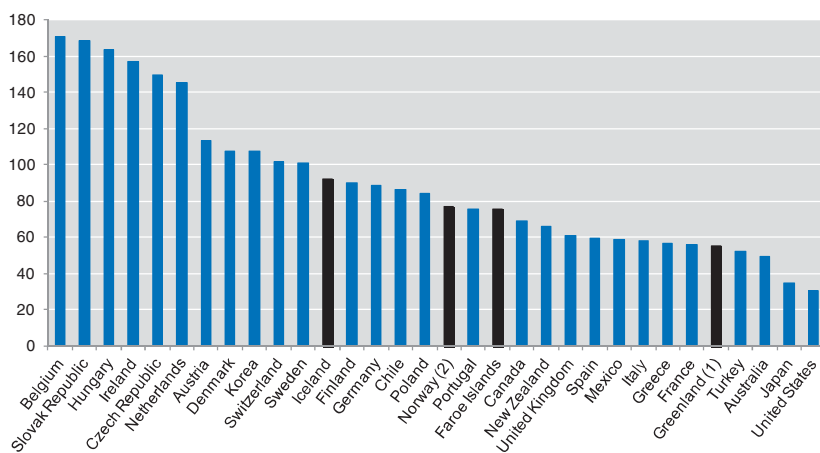
Greenland presents something of a puzzle: export concentration appears to have fallen sharply since the mid-2000s, from around 0.53 at the start of the decade to just 0.37 in 2007. The share of fisheries in total exports fell from 95% to just about 72% over the period. This change primarily reflects a sharp rise in scrap metal exports (10% of exports in 2006) and a rather large share of net exports under the heading “special transactions not classified”. It is unclear what lies behind this category.

Despite their small size and export concentration, the NORA territories exhibit surprisingly low ratios of trade turnover to GDP. The ratio of exports plus imports to GDP amounts to roughly 80% in the four territories (Figure 1.9). This is close to the OECD median, in a situation in which one would expect it to be relatively high, especially since the NORA territories must import practically all household consumer and investment goods. Partly for this reason, all NORA territories except Norway have negative trade balances (Table 1.8). To a great extent, the relatively low trade-to-GDP ratios reflect the relative weight of the public sector in these economies, especially in the Faroe Islands and Greenland, where close to 40% of employment is in the public sector and the large non-tradable sector is substantially supported by annual block grants from Denmark. Other factors limiting the degree of trade openness include geographical peripherality and the underdevelopment of the secondary tradable sector (manufacturing); there is thus not as much intra-industry trade as in a small open economy that is deeply integrated in global production chains (*e.g.* the Czech Republic).

Their high levels of export concentration make the NORA economies very vulnerable to external shocks, especially since their exports consist overwhelmingly of primary commodities; this vulnerability is all the greater in view of their reliance on energy imports: petroleum and petroleum products typically constitute the largest item on the import bills of Greenland and the Faroes; in Iceland, they are second only to metalliferous ores and scrap (the raw material imports for the smelters that generate Iceland’s non-ferrous metals exports). The volatility of international commodity prices means that trade balances can vary greatly from year to year. It is somewhat surprising, therefore, to observe that the NORA economies have not, with the exception of Greenland, suffered particularly sharp terms-of-trade declines over the last decade (Figure 1.10). Norway’s terms of trade rose dramatically as oil and gas prices surged from 2003,

while Greenland's fell steadily, but Iceland and the Faroes saw their hovering around the levels of 2000. The dramatic rise in oil prices was offset by increases in other commodity prices. These increases were less dramatic than the oil-price surge but the commodities in question loomed far larger than oil in the trade bills of Iceland and the Faroe Islands.

Figure 1.9. Trade turnover to GDP ratios, OECD and the NORA region
2008¹



1. 2007 for Greenland.
2. Figure for all Norway.

Sources: OECD Macro Trade Indicators; Faroe Islands and Greenland: national statistics offices.

Table 1.8. Trade balance, NORA territories

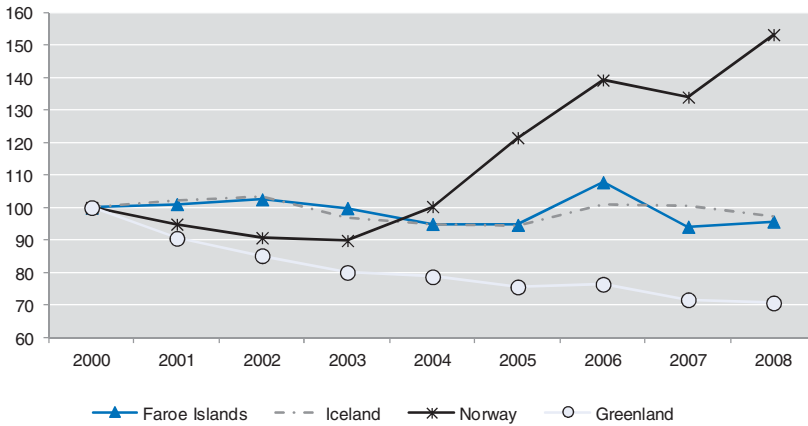
Millions of EUR

1998	Faroe Islands	Greenland	Iceland	Norway
Exports	388.9	226.5	1 709.8	36 053.6
Imports	342.7	364.7	2 203.9	33 448.3
Net balance	46.2	-138.2	-494.2	2 605.2
2008				
Exports	578.3	332.6	3 662.9	113 570.8
Imports	668.9	593.0	4 038.6	60 446.5
Net balance	-90.6	-260.3	-375.7	53 124.2

Source: Nordic Statistics.

Figure 1.10. **Terms of trade**

2000 = 100



Source: UNCTAD Handbook of Statistics 2009.

Intraregional trade in goods is limited. Given the similarities in the NORA territories' productive profiles and factor endowments, this is hardly surprising. To be sure, many countries with similar endowments trade with each other. Such two-way or intra-industry trade is typically much higher for manufactured goods than non-manufactures, and is highest for more sophisticated products, such as chemicals, machinery and transport equipment, electrical equipment and electronics, where product differentiation is considerable. Transport costs or seasonal effects may also contribute to such trade. However, the NORA territories are specialised in primary products, they share common seasons¹⁷ and they are physically distant from one another. Intra-industry trade between the NORA economies would nonetheless become more attractive as they produce more differentiated, high-value-added goods. The availability of skilled human capital, innovation and research will be crucial to facilitate the production of highly specialised products in the NORA region.

Box 1.5. Command GDP

In order to appreciate fully the impact of terms-of-trade shifts on purchasing power, it is helpful to look beyond the conventional measure of real GDP. Volume GDP underestimates the increase in real incomes and purchasing power that may be induced, for example, by a fall in import prices (Kohli, 2003). One way to correct this potential bias is provided by the so-called command GDP (GDP) indicator. CGDP is defined as follows:

$$\text{CGDP} = \text{GDP} + (\text{TT}-1) * \text{XGSV}$$

where TT is the terms of trade and XGSV is export volumes. Since the terms of trade are defined as the price of a country's exports divided by the price of its imports, this adjustment to GDP is equivalent to deflating both exports and imports by the *import* price deflator, rather than using different deflators for imports and exports, as is done when computing conventional measures of GDP. This yields a summary measure of the impact of terms-of-trade shifts on an economy's purchasing power – *i.e.* on its ability to *command* goods and services. If the terms of trade improve, CGDP will be higher than GDP; if they deteriorate, TT-1 will be negative and CGDP will be lower.

Calculation of CGDP for Iceland, Norway and the Faroes over the period 2000-08 reveals the extent to which Norway benefited from rising terms of trade: CGDP in Norway over the period was roughly two percentage points higher than GDP on average, and in some years it was as much as 7.9% higher than conventional GDP. By contrast, CGDP and GDP were almost exactly equal on average over the period in question in the Faroes. Although CGDP deviated from conventional GDP by as much as 4.5 percentage points in some years, the lack of a sustained trend in the terms of trade meant that the good and bad years more or less cancelled each other out. For Iceland, a slight decline in the average terms of trade over the period meant that CGDP was marginally (0.5% on average) lower than GDP, but the differential never exceeded 2%.

Most NORA trade is with EU members (Table 1.9). The NORA territories are not EU members but maintain special trade agreements with it. Owing to their links with Denmark, the Faroe Islands and Greenland concentrate a high share of their trade with this country. Almost 90% of Greenland's exports go to Denmark. There is limited trade with neighbouring countries such as Canada or the United States. The shorter distances to these countries and the size of the North American market suggest that it would be desirable to strengthen these trade links. This will likely require further development of transport links with North America (see Chapter 2.1). The Faroe Islands' exports are geographically more diversified, but more than 30% of imports come from Denmark, raising the question of whether and to what extent the development of new transport links would help to diversify their imports.

Table 1.9. Share of exports and imports by country of origin/destination

NORA and selected OECD countries, 2008¹

	Exports				Imports			
	Faroe Islands	Greenland	Iceland	Norway	Faroe Islands	Greenland	Iceland	Norway
Faroe Islands		0.1	0.7	0.1		0.0	0.4	0.1
Greenland	0.8		0.2	0.0	0.0		0.1	0.0
Iceland	2.4	1.6		0.4	3.1	0.3		0.3
Norway	15.6	0.3	4.4		20.8	1.6	11.2	
European Union	65.8	96.7	76.2	83.4	63.1	84.0	53.6	68.2
Denmark	12.1	86.5	3.1	3.4	31.9	52.7	7.3	6.9
Sweden	0.6	0.0	0.8	6.5	5.2	21.5	9.0	14.3
Finland	0.8	0.0	0.2	1.5	1.2	0.4	1.1	3.4
United Kingdom	20.3	1.9	11.6	27.0	4.0	0.6	4.4	5.9
France	8.0	0.0	3.1	9.4	2.2	0.8	2.4	3.7
Germany	6.2	1.0	11.3	12.8	7.7	3.0	10.3	13.4
Netherlands	1.0	0.1	34.4	10.3	1.6	0.9	6.1	4.1
Spain	7.5	7.1	3.8	1.8	0.8	0.4	1.2	2.0
United States of America	1.5	0.3	5.6	4.4	1.3	1.5	8.0	5.4
Canada	0.7	0.0	0.5	2.3	0.2	0.4	1.0	2.9
China	0.0	0.5	2.2	1.1	3.9	1.6	6.6	6.4
Russia	2.5	0.0	1.3	0.6	0.2	0.1	0.6	2.2
Others	10.7	0.6	9.7	7.8	7.3	10.5	18.8	14.6

1. 2006 for Greenland.

Source: Nordic Statistics.

Employment

Unemployment is relatively low, but concentrated in sparsely populated areas

Overall, the NORA territories are characterised by high employment rates and low unemployment (Table 1.10). A very large proportion of the adult population is economically active, and employment rates are substantially higher than the OECD average of 67% in 2007. Unemployment has generally been significantly lower than the OECD average (5.6% in 2007) in all NORA territories except Greenland (6.8% in 2007). Unemployment in Greenland is concentrated among unskilled workers, who accounted for 84% of registered unemployment in 2007 (Ministry of Finance and Foreign Affairs of Greenland, 2009). Yet unemployment in Greenland fell steadily in the years leading up to the crisis.

In principle the contraction of job opportunities in traditional sectors such as fishing should have led to high levels of unemployment, as it did in OECD regions such as Newfoundland in Canada. Yet, several factors contribute to relatively low unemployment in the NORA region. The first is rapid growth of the public sector which has mopped up labour, especially in urban areas. A second is demographic decline. The ageing of the work force means that the number of new retirees exceeds the number of new labour-market entrants. Finally, higher rates of youth outmigration, either for further education or jobs in other countries, also reduce the number of people seeking jobs.

Not surprisingly, there were marked increases in unemployment from the latter half of 2008 as a result of the global downturn. The consequences of the crisis and of the collapse of the banking system were especially severe in Iceland, where unemployment rose from 3% in 2008 to 7.2% in 2009. In the Faroe Islands, the average annual unemployment rate jumped from 1.2% in 2008 to 3.8% in 2009 and rose further in early 2010 before beginning to fall. In Greenland, the recession contributed to an increase in unemployment from 5.5% in 2007 to 7.1% in 2009. In Norway, the effects of the crisis seem to have been less severe and were expressed chiefly in terms of labour-force withdrawal rather than unemployment. The unemployment rate rose only slightly, remaining below 4%, but the drop in employment was far larger, as the proportion of the inactive rose. The seasonally adjusted unemployment rate was 3.3% of the labour force in January 2010 (Statistics Norway).

Unemployment and the scarcity of highly skilled workers is an important challenge for the peripheral areas of the NORA region

Unemployment is far higher in sparsely populated areas. In Greenland, unemployment is highly biased geographically; large towns have lower average unemployment than smaller towns and outlying districts.¹⁸ Moreover, unemployment varies considerably throughout the year, with lower figures in the summer season and a peak in January. This is mainly due to the construction sector, but it is also influenced by the fishing industry (Ministry of Finance and Foreign Affairs of Greenland, 2009). In the Faroe Islands, the unemployment rate is higher in the peripheral islands, where the job market is particularly concentrated on the fish industry. Falling employment in fish and fish processing and the effects of infectious salmon anaemia (ISA) on local fish farming led to considerably higher unemployment rates. Finally, compared to other OECD countries, Norway shows the lowest regional disparities in unemployment; however registered unemployment is higher in the counties of the north, especially in Finnmark.

Table 1.10. **Socio-economic indicators, NORA region**

2009 or latest available data

		Faroe Islands	Greenland	Iceland	Coastal Norway	Total OECD
Economic (1)	GDP per capita PPP	29 997	22 612	38 772	49 968	34 332
	GDP per worker PPP	56 784	42 307	69 329	98 014	
Population (2)	Population	48 650	56 452	317 630	2 151 187	
Life Expectancy (3)	Men	77	66.6	79.7	78.6	76.4
	Women	82	71.6	83.3	83	81.9
Labour market	Employment/population ratio (4)	55.4	64.3	52.5	52.3	
	Employment rate (5)	86.1	92.9	77.8	79.5	66.7
	Unemployment rate (%) (6)	3.8	7.1	7.2	2.5	8.3
Employment by sector (7)	Agriculture, fishing	9.9	4.9	4.0	4.3	6.1
	Mining	0.3	0.6	0.1	3.0	0.4
	Manufacturing (including fish processing)	12.1	3.1	9.8	11.9	17.4
	Construction	8.2	9.9	10.0	7.6	8.1
	Wholesale trade	12.8	17.0	13.3	13.5	16.5
	Public administration, education and health	34.6	46.5	27.1	33.8	20.0
	Others	22.1	18.1	35.7	25.9	51.5

1. Data expressed in current prices, USD, constant PPP. Faroe Islands, Iceland and total OECD, value for 2008. Greenland and coastal Norway, data for 2007. GDP per worker in Greenland, data for 2006. PPP figures for Faroe Islands and Greenland are estimated based on the PPP deflator for Denmark. In addition, Faroe Islands and Greenland receive a block grant from Denmark which accounts for 57% of government revenue in Greenland (2009) and 12% of public revenue in the Faroe Islands. Information on national accounts data should consequently be interpreted with care. Faroe Islands' workers include all persons aged 16-74 with at least 7 hours of paid work a month. Greenland, employment includes all persons aged 15-62 living in towns; it excludes population living in settlements. Figures for coastal Norway are based on GDP figures of the nine counties of Coastal Norway using information from *OECD Regional Database* (Based on Eurostat).

2. Data for 1 January 2010.

3. Faroe Islands and Greenland, data for 2008. Data for total Norway. OECD, estimated value for 2007.

4. Greenland: as a share of population living in towns.

5. Iceland and coastal Norway expressed as share of persons of working age (15 to 64 years) in employment. Faroe Islands based on estimated labour force surveys for population 16-66 years old. Greenland, persons aged 15-62 living in towns in 2006. OECD, data for 2008.

6. Faroe Islands based on estimated labour force surveys for population 16-66 years old. Greenland, figures only measure unemployment in towns.

7. Data for 2008. Greenland, employment figures exclude population living in settlements.

Sources: Faroe Islands and Greenland: national statistics offices; Statistics Greenland (2010), *Greenland in Figures 2010*; Iceland: OECD STAT National Accounts and national statistics office; coastal Norway: *OECD Regional Database*.

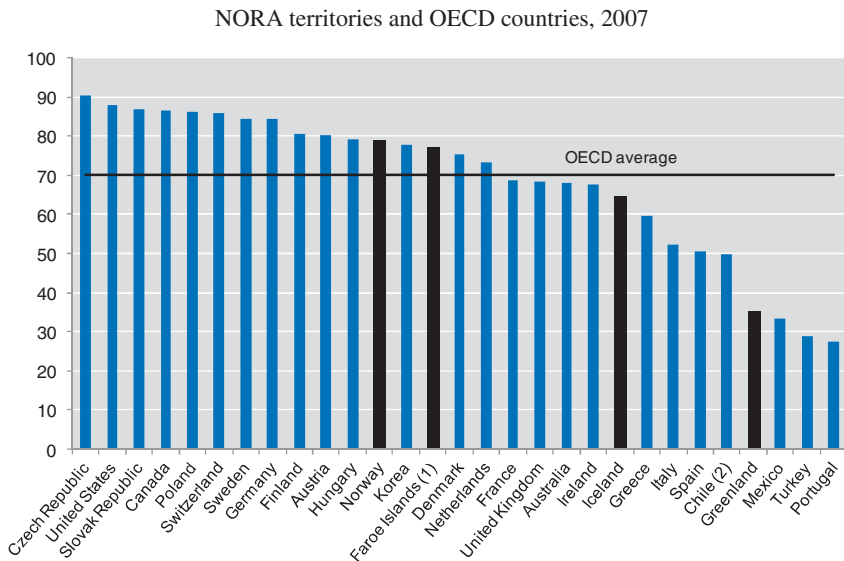
The scarcity of highly skilled workers is a general problem in peripheral areas of the NORA region. The self-reinforcing concentration of population, economic and job opportunities in a few larger towns, a common phenomenon throughout the region, makes it more and more difficult to find highly skilled labour in medium and small towns. Their peripherality and lack of connections make movement of internal workers or attraction of immigrants even more difficult. At the same time, because of the lack of education and job opportunities, many of the most qualified people leave to look for opportunities abroad. In Greenland, the presence of a large proportion of Danish workers underscores the fact that there are not enough local qualified workers to meet the demand of enterprises and government services. The available workforce reserve is mainly unskilled workers (Ministry of Industry, Labour, and Mineral Resources of Greenland, 2010). Newly created jobs (especially in mining) generally require skills and thus attract workers who are already employed. Efforts to upgrade education and skills and to generate new opportunities for low-skilled workers are thus particularly important. In the Faroe Islands as well it is still a major issue to find ways to recruit young Faroese with good education or to persuade those who left to study abroad to return. Paradoxically, Greenland and the Faroe Islands have stiff regulations on migration. In Greenland, to fill a vacancy with a non-Nordic citizen, the employer must ask for special permission which will only be given if no Greenlander with the required skills is available. Similarly, in the Faroe Islands, whenever the unemployment rate is above 3.5% the authorities block the concession of work permits to foreigners. As unemployment mostly involves unskilled workers, most of whom are from the fish industry, a company looking to hire skilled workers is unlikely to find a candidate domestically but is blocked, or at least faces administrative disincentives, from hiring a foreigner.

Education

Educational attainments are relatively high on average, except in Greenland (Figure 1.11), but there are questions about the quality of provision in many places. Both Norway and the Faroe Islands are above the OECD average in terms of upper secondary education attainment and Iceland ranks only slightly below. The Faroe Islands have a few higher education and research institutions and a number of institutions offering vocational training, in fields such as fisheries and the maritime professions. Many students migrate to Denmark where education opportunities are broader (see below). In Iceland, upper secondary education rates have risen in the last ten years (due to an increase in tertiary education attainments), but the country still ranks below the OECD average. Moreover, educational performance (as measured by PISA scores) has generally deteriorated

relative to the OECD average since 2000. Norway's PISA scores are close to the OECD average; however expenditure per student at primary and secondary levels is about 40% higher than the OECD average (OECD, 2010c). In the Faroe Islands two PISA studies have been conducted; in 2006 the score was significantly below OECD average, while figures from 2009 are not yet available.¹⁹ In Greenland, improving education and vocational training is high on the political agenda, and the average educational level has increased in the last ten years. However, the figures are still very low relative to OECD countries: only 35% of the population has at least upper secondary education. In addition, the general level of education among people born in Greenland is on average lower than that of people born in Denmark. Finally, a lack of foreign language skills is a substantial barrier in Greenland, both for young people in the educational system and for the workforce's in-service training opportunities. Its situation differs from that of the other NORA territories where knowledge of English is widespread.

Figure 1.11. **Population aged 25-64 with at least upper secondary education attainment**



Note: OECD figures exclude ISCED 3C short programmes.

1. Year of reference 2006.
2. Year of reference 2004.

Sources: OECD Education Database; Faroe Islands Statistics; Greenland Statistics.

A general challenge for the region is to improve primary and secondary education in rural areas and small settlements. The high cost of schooling in rural areas and recruitment problems have prompted most of the NORA territories to expand the use of information and communication technology (ICT) for tele-education schemes, but the challenge of providing quality basic education in smaller locations remains. Iceland needs to improve outcomes in rural areas, where the proportion of licensed teachers is sometimes exceptionally low and where children (especially boys) have performed poorly on PISA tests. Smaller settlements in Greenland lack skilled teachers, and better prepared people tend to migrate to larger towns. Norway is the exception: it has had for decades a strongly redistributive regional policy which has made it possible not only to make primary and secondary but also tertiary education widely accessible. However, challenges remain. On the one hand, as mentioned, above-average expenditure has not yet led to above-average performance. On the other hand, small and sparsely populated localities still suffer from brain drain²⁰ and school closures due to declining population (OECD, 2007).

Education interchange within the NORA region is underutilised

In the Faroe Islands and Greenland, low demand makes it difficult to broaden tertiary education options even in the capitals, so that many students look for opportunities abroad, mainly in Denmark. Around 130 students are enrolled in the University of the Faroe Islands, and close to 150 in the University of Greenland. In Greenland around one-third of the school leavers who enter higher education remain at the local university, while two-thirds go to Denmark. Numbers in vocational training schools are also low. However, few students from Greenland and the Faroe Islands enter non-Danish universities and programmes abroad.²¹

Universities in Iceland and coastal Norway offer a full range of high-quality tertiary education programmes, some of them in English and with a special focus on the economic potential and challenges of the North. The University of Iceland, for example, offers programmes in English on the environment and natural resources, renewable energy or Earth sciences, among others. The University of Bergen offers excellent research in marine science and fisheries biology. The University of Tromsø – the world's northernmost university – has a special focus on the needs and problems of the North, including research programmes on climate change, exploitation of Arctic resources and environmental challenges (Box 1.6). These universities are open to all Nordic students. However, in spring 2010, there were only two students from the Faroe Islands and two from Greenland registered at the University of Tromsø, which was then host to almost 700 foreign students, mostly from Russia. In the same period, the University

of Bergen had only two students from the Faroe Islands, and none from Greenland, among more than 1 300 foreign students. There are also a number of joint Nordic master's programmes sponsored by the Nordic Council of Ministers, with programmes jointly offered by several higher education institutions from Nordic countries (e.g. Nordic Master in Marine Ecosystems and Climate; Nordic Master in Innovative Sustainable Energy Engineering). The programmes include a mobility component: students must study in at least two of the participating institutions. Yet, the participation of Faroese and particularly Greenlandic students in these programmes is also limited.

Box 1.6. The University of Tromsø

The University of Tromsø plays a leading development role as a provider of higher education services for the whole of northern Norway. The creation of the university in 1968 was a policy step designed to train young people so as to retain them more easily in the area. Lines of study include medicine, pharmacy, psychology, law, social sciences, humanities, science and mathematics as well as fisheries. The creation of the faculty of medicine in particular aimed to deal with the shortage of practitioners in that part of the country. The university succeeded quite well in this respect as a high proportion of the medical students studying in Tromsø remain in the area. The university has around 9 000 students (close to 70% are from the region) and 2 400 staff. Foreign students, attracted by teaching standards equivalent to those in other parts of Norway and the many master's programmes taught in English, represent nearly 10% of enrolment. The university engages in basic and applied research with a special commitment to interdisciplinary research on the needs and problems of the north. Climate change, the exploitation of Arctic resources and environmental threats are topics of great concern in the university, which gives priority to research in the fields of biomarine studies, biomedicine and biotechnology; health and telemedicine; indigenous studies (Sami language and identity).

As a higher education institution, the university contributes to regional development through knowledge dissemination in the region and promotion of partnerships with the private sector. It set up in 1992 the Norut Group of which it is the main owner, jointly with the Ministry of Fisheries and Coastal Affairs, to promote R&D and develop networking with firms and other educational and research institutions such as university colleges and technical institutes located in other parts of the region, such as Bodø and Kirkenes. Finally, the university is a founding member of the University of the Arctic, an international network of study and research institutions of the circumpolar region.

Sources: OECD (2007), *OECD Territorial Reviews: Norway*, OECD Publishing, Paris; University of Tromsø official webpage, www2.uit.no/www/inenglish.

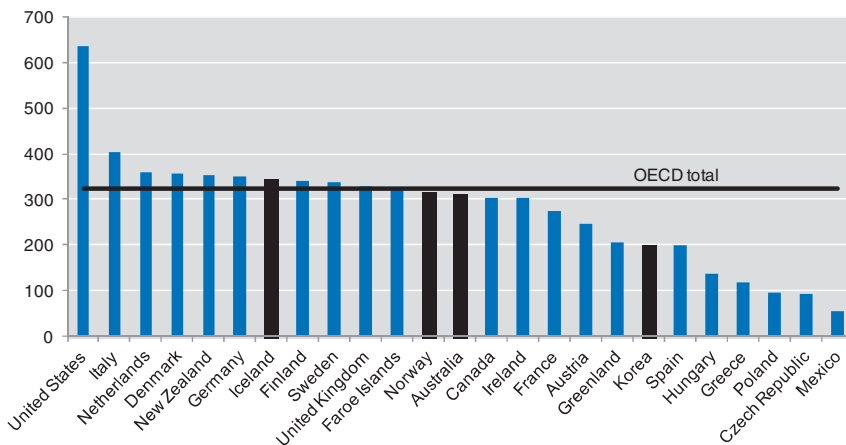
Internet

Internet coverage becomes crucial for public service delivery

ICT may help to overcome certain disadvantages springing from long distances and peripherality and to improve the delivery of key public services such as education and health. In general the NORA region has good Internet connections, but there is room for improvement in peripheral areas. In 2007, 87% of households in Iceland and 84% in Norway had Internet access, most of them by broadband. However, full broadband access encounters limits in remote areas. Further, elderly people, who are over-represented in remote areas, have the lowest access rate. As Internet connection is especially important for the connectivity of remote and peripheral areas, and among the elderly for e-health services, there is room for improvement. In the Faroe Islands the telecommunication infrastructure has improved markedly during the last years. Currently the number of subscribers is similar to the OECD average, and 99% of the connections are broadband. In contrast, Greenland has significant room for improvement. The number of subscribers per 1 000 inhabitants is below the OECD average and similar to those of Spain or Korea (Figure 1.12). However, with Greenland's degree of peripherality and its sparse settlement pattern, excellent Internet coverage is crucial. Moreover, high prices for use of the Internet and low connection speeds show the need for improvements.

Figure 1.12. **Internet subscribers in the NORA region and selected OECD countries**

Number of subscribers per 1 000 inhabitants, 2007¹



1. 2009 data for the Faroe Islands; 2008 for Greenland.

Sources: OECD Dataset Telecom; Faroe Islands and Greenland: national statistics offices.

1.2. Main challenges for the region

Geographic peripherality

The remoteness of the NORA region creates bottlenecks for expanding its economic potential. The NORA region covers a large area and faces various challenges relating to its internal and international connectivity and the provision of basic public services. Beyond the particularities of each territory, common challenges arising from its peripheral location include:

- **Geographical challenges:** Long distances, both internally, between towns and settlements, and internationally, from neighbouring countries. “Scrappy” geography (sea ice, fjords, islands) and harsh weather also make connections more difficult.
- **Demographic challenges:** The dispersed settlement pattern described above, low population density, increasing outmigration and ageing of the population.
- **Economic isolation:** Peripheral locations lack visibility as potential areas for businesses development owing to long distances to major markets and small potential demand. The lack of critical mass creates additional challenges for economic development and diversification.
- **Weaknesses in the transport infrastructure:** As a result of the factors noted above and the reduced size of the population, diversified and reliable year-round internal and external connections are lacking.
- **Difficulties with the provision of services:** These include public services (education, health) and business services (training, banking and insurance, among others).

Addressing these challenges is crucial for increasing the region’s economic and social potential.

The territory of the NORA region is large and geographically challenging

Large distances are a key issue in the NORA region: distances between population centres internally; between the territories in the region; and between the NORA territories and the main international markets. The most extreme example is Greenland. Its capital, Nuuk, is located 3 250 km from London and 2 700 km from New York. The northernmost location, Cape Morris Jesup, is the world’s northernmost land area, just 740 km from the North Pole, while Cape Farewell, Greenland’s southernmost point, is

situated some 2 670 km to the south. Measured west-east, Greenland is 1 050 km wide at its broadest point (Statistics Greenland, 2010). In Norway, the North Cape (in the Far North) is located more than 2 000 km from Stavanger (in the south of coastal Norway). In addition, the Faroe Islands, Greenland and Iceland face the specific challenges of island economies, with long sea distances separating them from their neighbouring countries.

Long distances and settlement patterns affect the functioning of internal markets. In the NORA region, the problems are compounded by various challenges related to the settlement patterns and to the transport infrastructure (Box 1.7). In Greenland, each of the towns and settlements is itself like an island; since most of the land is covered by the ice cap, there are no internal roads linking them. Very small settlements are spread along the coast, especially the west coast, separated by extremely long distances. Passenger traffic is only by air, and freight travels by air and boat. This naturally limits, and makes very expensive, movement of people and trade in goods. Such remoteness also affects the southern Faroese islands and the rural settlements of Iceland, especially the western fjords, the northeast and southeast: a combination of infrastructure and distances make mobility difficult in some locations, limiting options for commuting and creating relatively separate labour and housing markets. Such settlements are to a certain degree dependent on their own economic potential. Coastal Norway's rural areas, especially in the three northernmost counties,²² also feel the effects of their peripherality. Great efforts have been made to improve the networks of roads, including secondary roads connecting the rural areas, and modern subsea tunnels and bridges connecting the islands with the mainland. Yet, the mountainous and broken (fjords, islands, scattered settlement pattern), landscape renders communication problematic and reduces accessibility to services, economic activities and jobs in some parts of the territory. In this regard, 40% of labour-market regions in Norway consist of only one municipality (OECD, 2007).

Box 1.7. Transport infrastructure in NORA territories

Faroe Islands

The Faroe Islands consist of 18 mountainous islands, 17 of which are inhabited, and internal connections are difficult. However, in recent decades efforts have been made to build a dense modern network of roads, bridges and subsea tunnels. Ferry and road are the two main means of internal connection and a helicopter service links the more remote smaller islands. The four largest islands of the north (Vágur, Streymoy, Eysturoy and Borðoy) are linked by a bridge and two subsea tunnels; more than 85% of the population of the territory

Box 1.7. Transport infrastructure in NORA territories (*cont.*)

is connected by roads. Kunoy and Viðoy in the far north are also connected with Borðoy, while other minor islands of the north and the south are connected by ferry. The trip from Tórshavn to the southernmost island, Suðuroy (close to 5 000 inhabitants) takes two hours. International connections are somewhat more limited. The air carrier Atlantic Airways is the only provider of transport for passenger and goods, with several daily connections to Copenhagen, but only weekly or seasonal connections with Iceland, Norway and the United Kingdom (Table 1.11). The harsh and variable weather conditions in the Faroe Islands cause frequent flight delays and cancellations. By boat Smyril Line maintains ferry connections between Denmark and the Faroe Islands and also has connections to Iceland in summer. The large ferries transport goods, cars and passengers. Three companies serve the Faroe Islands for the transport of goods. The Icelandic Samskip, Faroe Ship (owned by the Icelandic company Eimskip) and the Faroese company Freshlink (which only serves the Faroes-Scotland route). Between them they operate several vessels on routes between Iceland, the Faroe Islands, the United Kingdom, the European mainland and Scandinavia. Nevertheless, the bulk of passengers and freight go through Denmark.

Greenland

The territory's geography means that air transport is the main, and almost only, means of passenger transport. Neither roads nor railways link the different cities. There is no regular international transport by boat, and most regional ferries have been replaced by air connections. Larger planes connect the major hubs, while helicopters connect smaller municipalities and villages. Efforts have been made to build runways in all major towns in Greenland. Currently there are 13 airports, 6 heliports and 40 helistops. However, the limited availability of plains and the harsh weather conditions create frequent delays. Air connections are served by Air Greenland, which essentially has a monopoly on air transport. Most flights from/to Copenhagen (the only year-round international connection) arrive at the international airport of Kangerlussuaq (a former American military base), and from there connect to further destinations, including the capital, Nuuk. The capital's runway is not big enough to receive large planes arriving from Copenhagen, but the surrounding craggy coastal geography makes it difficult to build a larger one. However, smaller planes arriving from Reykjavik land – for the moment only in summer – in the capital Nuuk, Narsarsuaq and Ilulissat, and serve Kulusuk on the east coast year-round. Transport of goods is handled by the Royal Arctic Line, a publicly owned freight company, with Aalborg in Denmark as the corresponding harbour outside Greenland. The company has a monopoly on transport of goods.

Iceland

There is an efficient ship transport system between Iceland and neighbouring countries. More than 99% of all imports and exports of goods and materials to and from Iceland are carried by ship. Iceland has efficient transport systems with

Box 1.7. Transport infrastructure in NORA territories (*cont.*)

forwarding networks overseas. It has 57 ports, the majority built for fishing vessels, with around 15 with appreciable cargo activity. The Port of Reykjavik is the principal port and receives more than 70% of all imports. Direct scheduled sailings to Europe also operate from three main ports in the western, northern and eastern regions. Average sailing times from Reykjavik to major ports are 4-5 days to Europe and 8-10 to North America. There is no domestic shipping transport system or direct scheduled sailings from areas outside the capital. As a result, industries located far from Reykjavik have to transport all goods by truck to or from Reykjavik. A well-developed network of roads for transport of both people and goods covers the island. However, conditions are difficult, especially in the mountainous areas where the roads lack an asphalt surface; the roads are often narrow and make access to remote areas problematic. From time to time, volcanic activity also damages the road network, especially on the southern coast; expensive reparations are necessary to re-establish the road connection to all settlements. Finally, Iceland has four airports of international standard, two in the southwest, one in the east and one in the north, with Keflavik international airport (50 km west of the capital, Reykjavik) the main one, offering daily connections to the main capitals of Europe and North America. Iceland is strategically located for air communications with both sides of the Atlantic. Flight times are 2-3 hours to major gateways in Europe and 5-6 hours to the east coast of North America. The strategic location and the good network of international connections make Iceland a potential international hub for the NORA region. However, at present there are only limited connections with Greenland and the Faroe Islands, and with Trondheim, Bergen and Stavanger in coastal Norway.

Coastal Norway

Coastal Norway has a well developed air, maritime and road transport network. Norway has a coastline of around 2 700 km and close to 300 communities settled along the coast. Consequently sea transport has traditionally been of great importance for a country which currently has around 60 public ports. Yet, the significance of sea transport has been declining over the last decades. This is mostly due to the extensive use of road transport. In this regard, one of the main objectives of the government (developed through the National Transport Plan) has been to improve traffic flows within and between regions, including secondary state roads, so as to promote the development of viable rural areas and growth-oriented housing and labour markets while meeting the transport needs of business and industry. This involves improving the road system, facilitating the provision of ferry services, building new bridges and tunnels, removing infrastructure bottlenecks and ensuring the operation of the system of 28 regional airports (over half in the north and the remainder mainly along the western coast).

Sources: Nordregio; OECD (2007), *OECD Territorial Reviews: Norway*, OECD Publishing, Paris; Norwegian Ports official webpage, www.havn.no/englishpage.asp; www.samskip.com.

The demographic and geographic characteristics of the NORA region affect the provision of public services

Low population density, long distances and the ageing of the population make it difficult to provide basic services in the smaller settlements of the NORA region. Finding qualified teachers to provide basic education services in the most remote locations is not an easy task. At the same time providing health services to small settlements with increasingly elderly populations is both challenging and expensive. Some education and health services are only offered in the larger towns, thus requiring remote patients to travel. Finally, Faroese and Greenlandic hospitals do not provide some specialised health-care services; patients are currently sent to Denmark. The Faroe Islands and Iceland have signed an agreement so that Faroese patients can go to Iceland rather than Denmark. For some time a limited number of patients from eastern Greenland have been transported by air to Iceland for acute treatment, and Greenlandic and Icelandic authorities are currently discussing an agreement for using Icelandic hospitals for certain treatments. The use of Icelandic rather than Danish hospitals would mean shorter transport time and cheaper treatment costs and would demonstrate the potential of regional co-operation (see Chapter 3).

The provision of business services is also problematic in peripheral and sparsely populated locations. Business services (such as banking and insurance, training, or research and development) are important for the development of firms, especially small and medium-sized enterprises (SMEs). These services are made available when the combination of price, volume of business and cost of provision allows the service provider to operate at a profit. This means that demand must be sufficient to cover the cost of providing the service. In peripheral areas and small countries where demand is small, the private sector is less able to provide these services. The resulting costs have to be borne either by customers, which reduces demand, or by the firm, which reduces profits.

Lack of connectivity reduces market access

Long internal and external distances and lack of competition in the provision of transport services lead to high transport costs for people, goods and services and reduce market access for local businesses. In addition, in the Faroe Islands and Greenland, external transport connections are extremely limited. International connections are mostly to Denmark, with some irregular or seasonal connections, mainly to Iceland (Table 1.11), while the lack of critical mass hinders transport diversification. This clearly affects the traffic of passengers and the development of businesses between the Faroes and Greenland and its North Atlantic neighbours.

Table 1.11. **International air connections in the Faroe Islands and Greenland**

From/to	Denmark			Iceland	Norway	Other countries	
	Copenhagen	Billund	Aalborg	Reykjavik/ Keflavik	Stavanger ¹		
Faroe Islands	Up to 4 flights per day to Copenhagen.	Up to 2 flights per week	3 per week (only summer)	Up to 4 flights per week	2 per week (only summer)	Up to 2 flights per week to London (only summer and special vacations)	
Greenland	Kangerlussuaq	Up to 1 per day (summer) and 4 per week (winter).				No	Only special charters in summer season
	Nuuk				Up to 2 per week		
	Narsarsuaq	1 per week (only summer)			Up to 2 per week (only summer)		
	Kulusuk				Up to 3 per day (summer); and up to 2 per week (winter)		
	Constable Point Ilulissiat				Up to 2 per week Up to 3 per week (only summer)		

1. From 2011 Atlantic Airways will fly to Bergen instead of Stavanger.

Source: Nordregio; official airlines' webpages.

Ensuring sustainable development of the fisheries sector

As noted above, the fishing industry remains a core sector in the economies of the NORA territories in terms of employment, exports and value creation. In many municipalities and local communities of the region, fisheries still account for more than 20% of total employment (Figure 1.5). The long-term sustainability and prosperity of the fishing industry and, more generally, the marine sector are thus a key concern for the overall evolution of the NORA economies. In this respect, a number of issues have emerged during the last years:

- **Overfishing:** the overfishing of stocks worldwide has had significant consequences for both the biological sustainability and the economic viability of commercial fisheries. It has led to falling

productivity and stagnant incomes for fishers worldwide (OECD, 2009c).

- Collapse of some high-value species: in a context of constant pressure on the resource base, high-value fish stocks (especially cod) have collapsed, with strong impacts on the sector.
- Increasing global competition: as mentioned, the historical position of NORA in the fishing industry has been severely affected by international competition.
- Falling employment: the above-mentioned factors have had significant consequences in terms of reductions in the size of fishing fleets and some catches and consequently of employment. Modernisation in the processing sector to improve efficiency has also contributed to a fall in employment.
- Climate change: although there is still some uncertainty about the precise effects of climate change on the sector, international research indicates that global warming will affect primary production, fish growth and fish migration, with potential impacts on fish stocks in the North Atlantic.
- Price volatility: the fishing industry is extremely dependent on international market prices of fish and oil. For this reason, income levels in the fish industry are exceptionally variable. Owing to stagnating market prices and escalating oil prices during the last years, the revenue base of the fish industry has decreased markedly.

The growing fish farming sector faces its own challenges. The production of farmed fish has risen sharply since the industry was established at the beginning of the 1970s. It has represented a crucial addition to traditional fishing in places such as Norway or the Faroe Islands (see above). However, the industry is very vulnerable to sudden collapse because of fish diseases. It would appear that fish density, in terms both of fish in cages and high concentration of fish farms, makes stocks particularly susceptible to infectious diseases. Related issues include the prevalence of salmon lice and the genetic contamination of wild salmon. These environmental challenges can all lead to important losses of farm output. In addition, development of the sector requires firm environmental control in order to reduce environmental impacts.

Innovation, sustainability and co-operation are crucial for the future of the sector

Sustainable management of the fishing sector requires co-operation. Internationally co-ordinated management of fish stocks is essential to avoid overexploitation. At the same time, shared fish stocks, increasingly uncertain and changing fish migration patterns, and other issues related to climate change call for regional co-operation and the establishment of bilateral and multilateral agreements. But co-operation on fishery management is not easy, as the NORA territories, like other territories that share fish stocks, compete directly with each other for resources and markets (see Chapter 2.1).

Innovation in fisheries has become crucial. Fisheries are expected to continue to be a key economic sector in the region. NORA territories are therefore concerned with the sector's continued development and innovation. Innovation and the application and marketing of new technology (e.g. in the management of fish stocks, aquaculture, maritime safety and research) are essential, and co-ordination and co-operation play a crucial part in the sector's evolution and development. Effective and efficient co-operation and co-ordination of resources, know-how, techniques and technology will be a key to the long-term future of the sector in the NORA region. Beyond this, encouraging alternative economic sectors helps the region to become less dependent on external factors such as international prices or availability of fish stocks.

Economic diversification and specialisation through innovation

NORA's export base mainly specialises in commodities, especially fish, minerals, oil and gas. This renders the economy vulnerable to changes in international commodity prices and sudden shifts in the demand for commodities or in the availability of stocks (in the case of fish).²³ In addition, natural resources are depletable. Therefore, income levels can be exceptionally variable and unstable. OECD countries are generally less dependent than NORA territories on natural resources.

Innovation could support the development of added value products in traditional sectors

The potential of traditional sectors could be further expanded. Raw material sectors such as fishing and mining are key sectors for the region. However, NORA territories could take better advantage of their sectors of specialisation by producing goods with higher value added. Adding value to existing sectors calls for higher skills, education and innovative activity.

Science, technology and innovation play a key role, first by exploring new products in emerging sectors (for instance bio-medicine or pharmaceuticals) and second by making existing ones more productive and efficient (see Chapter 2.3). In the case of fisheries, the role of research and innovation is all the more important in light of pressures linked to increased fuel costs, pressures on fish stocks and the marine environment, and the potential impacts of climate change. Finally, as NORA territories develop higher skills and technology in resource-based sectors they can transfer the knowledge and productivity gains to other sectors.

A number of sectors could be developed to promote further diversification...

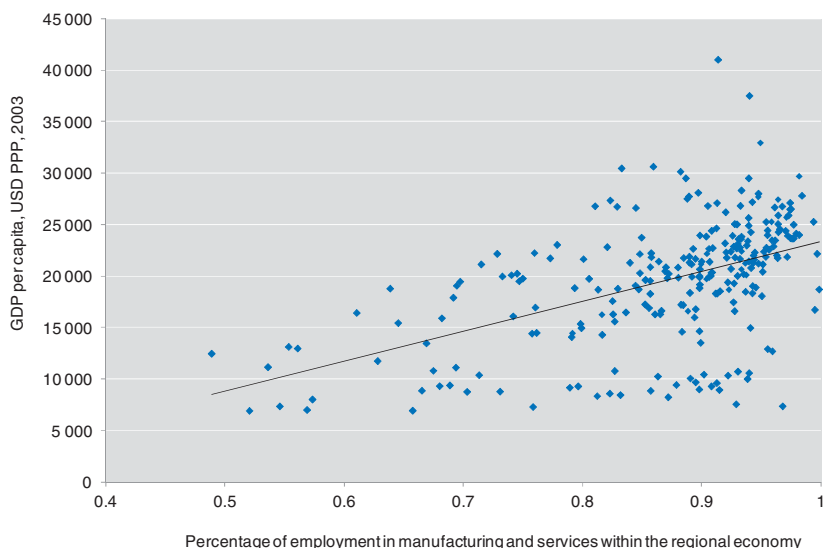
Alongside the further development of traditional areas, a number of sectors could be developed to further diversify the region's economic base. This would help to alleviate risks due to strong dependency on a few commodity-based businesses. It is also a way, albeit in the long term, to address the outmigration of qualified and young people from the NORA territories. The development of new products and new activities is particularly important for economies such as the Faroe Islands and Greenland which are heavily dependent on fisheries and where structural adjustments in fishing fleets (concentration of vessels, increased efficiency of fishing techniques) imply a continuous reduction of jobs. New occupations need to be found for workers released from the fishing industry. A number of niches that might be associated with the branding of "Green" could take advantage of the rich and diverse environment of the NORA region: ecological tourism, research related to climate change, and ice and water resources (see Chapter 2.3).

The lack of critical mass and long distances to the main centres of economic activity render diversification and the attraction of foreign investment or service sector activities difficult. However, in rural areas of OECD countries that face similar challenges, economic diversification is an ongoing reality. Far from being viewed as a threat to the traditional primary activities carried out for centuries, economic diversification is increasingly seen as an opportunity to complement and provide value added to primary activities and become new sources of employment and income for rural residents. Diversification offers an alternative to migration to urban areas. For instance, rural OECD regions with a higher share of employment in manufacturing and service activities have higher GDP per capita (see Figure 1.13) and higher employment growth. The objective seems to be to maintain and broaden the economic base of rural areas through the preservation of competitive and multifunctional primary activities and to

diversify the economy through the incorporation of new activities compatible with a sustainable development (OECD, 2009d).

Figure 1.13. **Diversification of rural economies and GDP per capita**

OECD predominantly rural regions, TL3¹ 2003



1. Predominantly rural regions in selected OECD countries: Austria, Belgium, Czech Republic, Denmark, Finland, France, Greece, Hungary, Ireland, Italy, Japan, Korea, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden and United Kingdom.

Source: OECD Regional Database.

Specialisation and diversification are not mutually exclusive. Regions can specialise in economic activities for which they enjoy comparative advantages, as determined by the complex interaction of natural endowments (*e.g.* oil, mining, etc.) and endogenous assets (*e.g.* infrastructure, technology, skills). But regions may also gain from diversifying their productive base. Specialisation favours knowledge spillovers and forward and backward linkages between firms from the same industry and therefore leads to efficiency gains. Yet, these benefits also

occur when firms from different industries locate in a common space (diversification), as this facilitates the transfer of ideas among sectors through formal and informal interaction. This also leads to efficiency gains and to a larger portfolio of goods and services.

...but will require a highly educated workforce

As the economy of the NORA territories become less dependent on fisheries, demand for a highly educated workforce will increase. If well managed, strategies for diversification beyond fisheries of the economy of NORA territories like the Faroe Islands and Greenland will make the economy less vulnerable. However, the capacity to develop new sectors or to add value to existing ones will depend on the economy's skills base and on the ability of its workforce to respond to changing market needs. Investment in, and improvement of, human capital is crucial to develop fast-growing activities, such as technology and knowledge-intensive industries. At the same time, the development of sectors like mining or tourism will require training and an upgrading of the skills of the local population. In tourism, linguistic and specialised training will be needed. Increasing employment in the construction sector will also require an intensified training effort.

Adaptation to climate change

NORA territories, and the Arctic regions in particular, are expected to see their climate change more and earlier than in most other parts of the world. Projections of the increases in temperature differ according to the emissions scenario applied. At the same time, the impacts of climate change will be felt very differently across the region (given that it covers a large and diverse geographical area). However, on average, temperature increases along the North Atlantic are expected to be greater than the global mean (especially in the Arctic regions), with the largest temperature increases in winter (see Chapter 2.4). Higher temperatures are expected to have various derived effects: increased precipitation levels, increased melt rates of Greenland's ice sheet, reduced sea ice and glacier coverage, changes in sea temperatures and rise in sea levels, and potentially an increase in regional storm events, among others. Some of the impacts of change are negative and create considerable uncertainties and challenges. Yet, there are developments that can be viewed as opportunities and areas in which the NORA territories can benefit. All of this points to the need for substantial adaptation efforts.

The main economic sectors of the region will be affected, in different ways

An increase in sea temperatures will imply a change in the migratory trends and stocks of fisheries and probably the loss of habitats for key fish species, and more difficult conditions for fish farming. On the other hand, climate change is expected to generate new opportunities by facilitating the extraction and transport of mineral and land resources as a result of shrinking ice sheets (especially in Greenland). But, it will also amplify and extend pressures on the environment and natural resources. Climate change will probably allow longer crop seasons and the harvesting of new vegetables. But agriculture may also face an increase in the risk of diseases, fungus and insect attacks, which may cause much damage. Transport and infrastructure will be other key activities for the region that will be affected either positively (increasing the length of the navigation season in the Arctic; opening up Arctic shipping lanes) or negatively (increasing the risk of flooding, landslides or avalanches). Finally, inhabitants of smaller settlements and indigenous populations (Inuits in Greenland and the Sami in Norway) may be particularly affected, owing to their dependence on traditional hunting and fishing and reindeer herding.

Climate change will affect a broad range of human activities and welfare in different ways and to different extents. Some of the most direct impacts on the NORA economies will be felt in sectors based on natural resources, such as fisheries, aquaculture, agriculture, traditional hunting and herding activities, and energy production. Climate change also affects opportunities and resources for tourism, most notably tourism based on winter activities. There is also a wide range of associated impacts, for example on accessibility and infrastructure provision. These issues, and potential responses, are considered in more detail in Chapter 2.4.

Adaptation is crucial to deal with the effects of climate change

The severity of the impacts will depend on the extent to which mankind is able to adopt, in advance, comprehensive adaptation plans to reduce vulnerability to climate change. At the same time, the scope of the benefits in some sectors (*e.g.* transport, mining, agriculture) will also depend on how the different territories and the region as a whole adapt to the potential changes (*e.g.* by developing skills to work in emerging sectors). However, the vulnerability of regional ecosystems, and the strong links between the local economy and the environment, point to the need to follow sustainable development strategies that do not compromise the region's future development.

Conclusions

Chapter 1 has focused on presenting the NORA region's major socio-economic trends and on identifying its shared characteristics and challenges. The NORA region covers a vast but scarcely populated area. The territory is characterised by remoteness, a dispersed settlement pattern, dependence on the sea, and rich natural resources and unique landscapes that are highly sensitive to climate alterations. This chapter recognises four main challenges for the region:

- i.* Improving accessibility: the remote location of the NORA region and its settlement pattern create diverse challenges for the sustainability of smaller settlements and the region's overall economic development. Improving accessibility is crucial. But better connectivity requires a parallel process of enhancing the region's economic potential.
- ii.* Ensuring sustainable development of the fisheries sector: the economy of the NORA region is closely linked to fisheries, although its size in the economy has shrunk and it faces a number of challenges. Sustainable development of the sector and effective co-operation on shared resources, know-how and technology will be essential for the region's long-term competitiveness.
- iii.* Economic diversification and specialisation through innovation: NORA's lack of economic diversification and high dependence on natural resources entails risks. Innovation could support the development of added value products in traditional sectors while developing new products to promote further diversification of the economy.
- iv.* Meeting the climate change challenge: the effects of global warming will be especially felt in the NORA region, especially in the Arctic. The main economic sectors will be affected, either positively or negatively, by climate change. Adaptation will be crucial to control the effects and to ensure the region's future development.

The public policy implications of these four challenges are the subject of Chapter 2.

Notes

1. Also involved are Denmark, Finland, Sweden and Åland.
2. Because of the size of the population of the NORA territories (especially in the case of Faroe Islands and Greenland) and the lack of statistical information, analysis at a lower administrative scale is generally not feasible.
3. The municipality of Tórshavn consists of the main area/city of Tórshavn (Tórshavn with 12 375 inhabitants), two bigger suburbs (Hoyvík with 3 613 and Argir with 1 978 inhabitants) which have merged with Tórshavn and 14 other villages/islands (1 907 inhabitants) which are not in close contact with Tórshavn/Hoyvík/Argir.
4. There are of course some differences both between and within territories.
5. The comparable available statistical information for coastal Norway is expressed in terms of urban settlements and sparsely populated areas.
6. Simple concentration of resources and investment in a place does not necessarily translate into economies of agglomeration and new growth. The key appears to be how assets are used, how different stakeholders interact and how synergies are exploited in different types of regions. The market does not always appear to maximise this potential alone and thus public policy has a role to play (see OECD, 2009a).
7. Associated costs include higher housing and land costs, greater contamination and an impact on global warming (OECD, 2010a). Other kinds of “congestion costs” or diseconomies of scale are unlikely to occur in the NORA region: all cities are far below the population threshold level at which metro-regions suffer from congestion costs.
8. Both territories have their own government and parliament with competences transferred in almost all domestic areas.
9. Asked about their plans for the future 58% of those who graduated abroad between 2004 and 2006 expected to live on the Faroe Islands in 2012 (Saarikallio-Torp and Wiers-Jenssen, 2010).
10. Women tend to be socialised into situations that require adjustment and change. This enables them to move to new job categories and job options and to adjust better to change through the educational system (Rasmussen, 2010).
11. In Greenland it is possible to retire at the age of 60, and special arrangements for women make it possible to retire at 55.

12. The number of fishing vessels has fallen, while the average size of vessels has increased and changes in technology mean that fewer people are required for any given size of vessel.
13. FAO Global Capture Production Statistics, considering only marine fishes and crustaceans.
14. The Faroese salmon industry has recently experienced a considerable rise in sales value, mainly due to disease problems in Chilean aquaculture.
15. The tourism industry has recently grown considerably in terms of foreign currency revenues and is estimated to have represented ISK 155 billion in 2009. Taking into account exchange rate and pricing effects, an approximately 21% real increase in foreign currency revenue for 2008-09 may be assumed (Tourism Satellite Account, Iceland Tourist Board and Statistics Iceland).
16. To a significant extent, this concentration reflects the regional distribution of population, but GDP appears to be much more concentrated than population, meaning that densely populated regions tend to have higher GDP per capita than scarcely populated ones. The GDP per capita of Oslo was 86% higher than the national average. Meanwhile, Rogaland and Hordaland recorded respectively the second and third highest GDP per capita in Norway, 6% and 3% higher than the national average. Nord-Trøndelag is at the bottom of the list (followed in coastal Norway by Finnmark) with GDP per capita well below the national average (OECD, 2007; OECD Regional Statistics).
17. In contrast to countries in different hemispheres, such as the United States and Chile, which may have seasonal flows of fruits and vegetables first in one direction and then in the other.
18. In the third quarter of 2008, the lowest unemployment figures were in the biggest cities, Nuuk, Ilulissat and Sisimiut, where unemployment averaged approximately 2% of the potential workforce. Instead, the average unemployment rate in Tasiilaq, Nanortalik and Kangaatsiq was 9.1%, 8.2% and 7.9%, respectively.
19. The Faroe Islands are not an assigned region in the PISA survey. Figures should therefore be interpreted with care.
20. Young people move from mostly rural areas to regional hubs and then often to bigger cities in other counties, particularly the Oslo area, the adjacent Akershus region and Trondheim, where job creation is strongest (OECD, 2007).
21. Figures from the Faroese Grant Fund on the number of students receiving a scholarship show that the number of Faroese students at international universities (mainly England and Scotland) has more than doubled

since 2003 as a result of an effort to increase the international presence of Faroese students. However, the distribution of tertiary education is still very tied to Denmark: close to 50% of tertiary education students go to Denmark, 40% remain in universities in the Faroe Islands, and only 10% go to international universities.

22. In these areas, the average population density is just 4.1 per km² (against 10.6 in coastal Norway overall).
23. Moreover, since natural resources are typically bulk commodities that are sold to oligopolistic multi-national firms, producers in normal times have less pricing power than processors, so profits are squeezed at the level of the resource producer (Clark and Munro, 1980; Love and Burton, 1999; Young and Hobbs, 2010). Occasionally, when there are supply shortfalls, producers can extract large economic rents, but over the long run the profitability of natural resource producers has been limited (Fattouh, 2007; Gelb and Grassman, 2009; Gunton, 2010).

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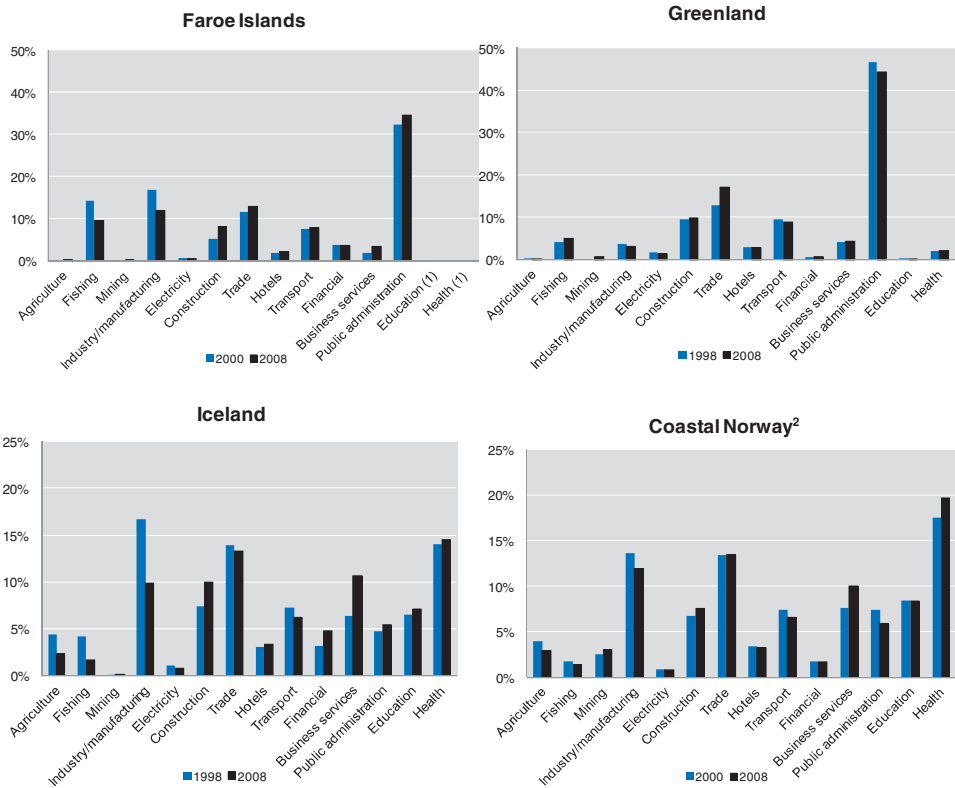
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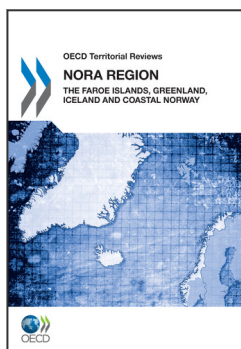
Annex 1.A1

Figure 1.A1. Employment by major industries in the NORA territories



1. In the Faroe Islands “education” and “health” are integrated in public administration figures.
2. Based on employment figures of the nine counties of coastal Norway. Information for 2000 and 2008.

Source: Faroe Islands, Greenland and coastal Norway: National statistics offices; Iceland: OECD employment statistics.



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