

JOURNAL OF NORDREGIO

No. 2 June • Volume 11 - 2011

The Arctic goes urban



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Journal of Nordregio is owned and distributed by the Nordic Centre for Spatial Development (NORDREGIO). The journal appears quarterly and is distributed free of charge. All articles express the views of their authors. Subscription: www.nordregio.se

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**JOURNAL OF
NORDREGIO**

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Nordregio is a centre for research, education and documentation on spatial development, established by the Nordic Council of Ministers.

New virtual format

This is the last issue of the printed version of the *Journal of Nordregio*, but we will continue to share our knowledge with you in many different ways. We will energise our communication channels to the same proficiency level as our research. An interesting 'go to' place will definitely be our new website which will be launched in the autumn. We will make sure to guide you there through a new virtual newsletter.

The website will be frequently updated with a steady stream of new knowledge and analyses. Our researchers are currently involved in more than 50 projects, covering challenges like society and environment, territorial knowledge dynamics, territorial development and policy and planning. Our approach to making these research results available will continually advance. Policy Briefs is one of the eagerly awaited formats. We will also continue to develop our syntheses reports.

As a reader of our upcoming virtual newsletter you will be kept up to date on the interesting research results produced within Nordregio. We will also continue to share our experiences and views on current topics.

However, the trickiest question for us as a research institute is not to find the best way to disseminate information but rather how best to pick it up. In today's increasingly informed world reflection is a key part of communication. Reflection is also key to success in the field of applied research. This is where the ability to compete is best promoted by seeking to seamlessly connect our research to the spheres of policy and practice.

To remain accurate Nordregio's communication strategy is based on the principle of 'two-way communication'. This strategy is part of our mission from the Nordic Council of Ministers - to continually be active, involved and engaged. Regional development is a field we share with a lot of different actors. Our research is undertaken in close cooperation with ministries, boards, agencies and other authorities. Learning how to create shared value is the best way to validate our research.

Supporting interactive dialogue is essential to ensuring that we are doing the right things in the right way. It provides valuable insights and knowledge from relevant stakeholders and helps us to focus, refine and improve our research. Our approach here is to involve the relevant stakeholders while addressing the needs and realities of the beneficiaries in the research process.

Furthermore, sustaining an interactive dialogue with the academic world is essential to improving the state-of-the-art in our research field. We are continuously sharpening our leading edge skills in quantitative and qualitative analyses on the many different geographical scales with which we work.

Before we close the last chapter of the *Journal of Nordregio*, we would like to thank the editor, Odd Iglebaek, for his excellent and much appreciated work. Although a printed journal is now simply too costly to maintain, the exclusiveness of the articles will continue be the foundation of our upcoming virtual newsletter.

To our 3 800 subscribers we would like to wish you a nice summer before we see you again in a new format!



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Two questions to
Ole Damsgaard, Director at Nordregio.

Two-way communication, what is that about?
Basically it is about taking the views of users seriously. We need the user's input in the research process for outcomes to be more useful and relevant.

Don't we lose a lot by ending the printed Journal of Nordregio?
Yes, but we will also gain a lot in return. Our owners demand the better and more efficient capitalisation of our research. The journal can only cover a few aspects per issue. Our new channels of communication will be more dynamic and supportive.

Nordic Arctic strategies

The iron-mines of Swedish Lapland and the nickel deposits in today's Northwest-Russia, were of the utmost importance to the Germans during World War II. All this came to mind when I attended, in April, a seminar arranged in Stockholm by the Swedish section of the Nordic Council. Sweden will chair the Arctic Council during the period 2011-2013 and they will use the occasion to promote - for the first time ever - a national Swedish strategy for the Arctic.

Among the speakers at the seminar is Lars-Erik Aaro, the general director of LKAB, the large Swedish state-owned mining-company. This is the company that more than any other secured steel-supplies for the German war-industry in WW II. In a new era and in a rather different context, the question can nevertheless be posed; can the company once again attain such a strategic role? The answer seems to be yes. Mr. Aaro also strongly underlines the fact that 90% of Europe's production of iron-ore still takes place in the Arctic and to a large extent in "his" mines in Northern Sweden.

Another speaker, Professor Peter Sköld from the Centre of Sami Research at Umeå University, also focuses on the issue of natural deposits in the Arctic. Discussing EU policy, he promotes his view that for Great Britain, France and Germany the Arctic region is primarily of interest as a store of future natural resources.

Ingrid Inga, the chairperson of the Swedish Sami Parliament, however raises a 'thorny' issue in this context: - What about the interests of the indigenous people versus those of the large companies? Managing the interests of both groups will definitely be a challenge. We think that the indigenous people must have a leading role in all Arctic affairs, she says and asks all states to cooperate with the indigenous people in order for them to achieve such positions.

Ambassador Gustaf Lind represents the Swedish Government. He will be in charge of Sweden's chairmanship of the Arctic Council, in the period to come. Interestingly, he answers to a question from the floor, that he sees the debate on mineral resources in the North of Sweden more as an internal regional Swedish question than as an Arctic issue.

What does Sweden want to do with its chairmanship of the Arctic Council? Initially, at least, there does not seem here to be very specific ambitions. More research, more economic development, secure the human dimension and of course climate and environment - they are all included. The most concrete issue mentioned seems to be the desire to contribute to the improvement of security in relation to the expected increase in sea transport across the region.

This is an initiative that already has a long history and one that has, for example, featured consistently in the many 'Arctic Frontiers' conferences in Tromsø. One year, the presentation was given by a high-ranking Norwegian Military Officer - in uniform! In particular, he underlined the constructive cooperation between

Russian and Norwegian Naval Forces in planning for major accidents at sea. Indeed, in spring 2011 the two nations conducted joint military exercises to improve their readiness in respect of possible rescue and security scenarios.

Also in Denmark there is a new Arctic debate. One significant element here is increased military presence to maintain "sovereignty". This initiative is directly expressed in the new Government document "Strategi for Arktis 2011-2020". Upgrading the US military base at Thule for Danish navy is one suggestion here.

Sweden has no direct access to the sea or sea-bed in the Arctic Ocean. Denmark and Greenland, however, have ample access. In June this year Denmark will present her claims in respect of the UN International Law of the Sea and the UN Commission on the Limits of the Continental Shelf. Two Arctic States, Norway and Russia, have already done this and Denmark and Canada must make similar representations before 2014.

According to reports published by the Danish newspaper *Information* on the 16th of May, Denmark will, together with Greenland, claim rights to the seabed stretching to the North Pole itself. Whether this will be accepted however depends on how the UN Commission decides to address the issue of the status of the underwater connection between Greenland and the Pole, namely the geographical feature known as the Lomonosov Ridge.

The new Danish initiative has been likened in some circles to the Russian 'media event' which saw them plant their flag on the seabed of the Pole in 2007. It is also interesting to note that Mr. Kuupik Kleist, Head of Greenland's Government (*Naalakkersuisut*) has privately suggested that the Pole-region should be the property of all mankind. Mr. Kleist's proposal is not however referenced in the new Danish Arctic Strategy.

Finally, the Board of Directors of Nordregio has sadly decided to end the publication of the *Journal of Nordregio* in its present form. My job as the editor and the responsible person for the production of the *Journal's* content is over. I will therefore use this occasion to say goodbye and to say once again "thank you" to all of our readers and contributors for their support over the years.



Odd Iglebaek,
 Editor

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Front page

In the Arctic the younger generations are attracted by the more varied range of options open to them in the larger towns and cities. Consequently, most of the Arctic is now characterised by out-migration from smaller settlements which may, in future, jeopardise their very existence. The front page picture is from the town of Sisimiut in Greenland which has a population of just over 5 000 inhabitants. The town offers educational opportunities and good jobs and is therefore among the places in Greenland registering a population growth.

Photo: Rasmus Ole Rasmussen



Myggedalen in Nuuk provides a typical example of the rapid growth of the private housing market in the Arctic. Photo: Minna Riska

Move to town and get your own place

The settlement structure in the Arctic has, in recent decades, undergone a major process of transition. People are moving away from small villages in order to settle in larger towns. They are looking for better employment opportunities for themselves and better educational opportunities for their children. Here they inevitably face a number of novel challenges. While housing used to be a public responsibility – and in many places still is – the privatisation of dwellings has become an important issue across most of the Arctic.

Urbanisation is a global trend which will contribute significantly to the future shaping of human life. Half of the world's population now lives in urban areas, drawing most of their food and natural resources from the surrounding rural areas. By 2050 it is estimated that eight out of ten of the world's people will live in cities.

The trend is similar in the Arctic. Most of the population growth experienced in the Arctic occurs in urban centres, is tied to new economic activities, and contributes to a re-structuring of the settlement pattern that will continue for decades to come.

In parts of the Arctic a high birth rate has compensated for the general pattern of outmigration from the smaller settlements, for instance in parts of Arctic Canada and Alaska. It is however just a question of time until the patterns here will resemble those in the rest of the Arctic. Birth rates are declining, the level of outmigration remains high and the smaller settlements are becoming even smaller while the larger settlements are growing. While differences used to exist in the choice of settlements between the indigenous and non-

indigenous populations, the current trend of concentration in urban settings has now become common for both groups.

People move for many reasons, often attracted by the promise of work, higher salaries and a better social life, as urban areas usually offer better opportunities, a diversity of economic activities and more options for education and social networks. At the same time cities are often characterised by social stratification. While they can be viewed as hubs in the economic development of their regions they also potentially foster social inequality.

In most parts of the Arctic the public sector still tends to dominate in respect of responsibility for housing. The historical reasons for this vary and include geopolitical considerations, colonial characteristics, regional policies etc., but the consequences have been quite similar; a large public sector with the state and regional authorities involved in most regulation and planning measures.

In Iceland and the Faroe Islands private ownership has generally predominated, and only recently – as a consequence of the economic crises and the problem of ensuring that affordable housing is made available for the new generation – publically owned houses and dwellings for rent have become more common.

In other parts of the Arctic, the privatisation of the public sector housing market has been ongoing since the 1990s. The case of Greenland is illustrative here as indeed is that of Russia, where the shift from public to private housing has developed with unprecedented speed over the last decade or so.

One of the major rationales for this has been the possibility of using the housing sector as a way of establishing local wealth that enables both individuals and communities to be more independent in relation to the development of activities requiring investment. At the same time it adds to the place-based ties which may contribute to a more stable situation with regard to both job opportunities and demographics.

Most small settlements in both Fennoscandia and Russia continue to decline markedly in size while a substantial number of larger settlements have also suffered the same fate. Changes in the prevailing demographic parameters especially in terms of declining birth rates have been a major factor here though out-migration from smaller to larger settlements and continued migration out of the region as a whole have also been important.

The places which have experienced major growth in Fennoscandia and NW Russia are those where educational opportunities are available. Similar patterns are shown in the North Atlantic region where Nuuk, Sisimiut and Thorshavn have been the big receivers, while most of the smaller settlements have experienced a decline.

In the Western part of the Arctic a few of the smaller settlements and most of the larger ones have experienced population growth while some smaller settlements have experienced either moderate growth or decline.

There are differences in the reasons for growth. In Alaska in-migration is an important factor, just as the still relatively high birth rates contribute to growth even in the smaller settlements despite the fact that out-migration plays an important role here also. A similar situation is experienced in the Canadian territories, although with a different weight on the various parameters involved; Yukon and NWT with in-migration contributing while high birth rates remain important for Nunavut, Nunavik and Labrador.

Just as public employment has been something of an Arctic trademark public housing has also made an important contribution to improving housing conditions in the Arctic. Rented dwellings –

apartments, terraced or semi-detached houses as well as individual houses – often in connection with employment and with favourable rental conditions as part of the employment contract also remain important in many regions. The current situation is shown on the map, and illustrates a divide between the regions – Greenland, Nunavik, Nunavut, NWT, Chukotka, Taimyr and Nenets – where most individual dwellings are rented, and the other regions where there is a dominance of owner-occupied dwellings.

In the Faroe Islands almost all dwellings are privately owned. Only a few apartments are rented out and these are typically basement apartments rented by students or single persons. Nunavik, Nunavut and Greenland are among those regions where the majority of dwellings are owned by public organisations, for instance in Greenland by the Government or the municipalities, or in a few cases by large companies.

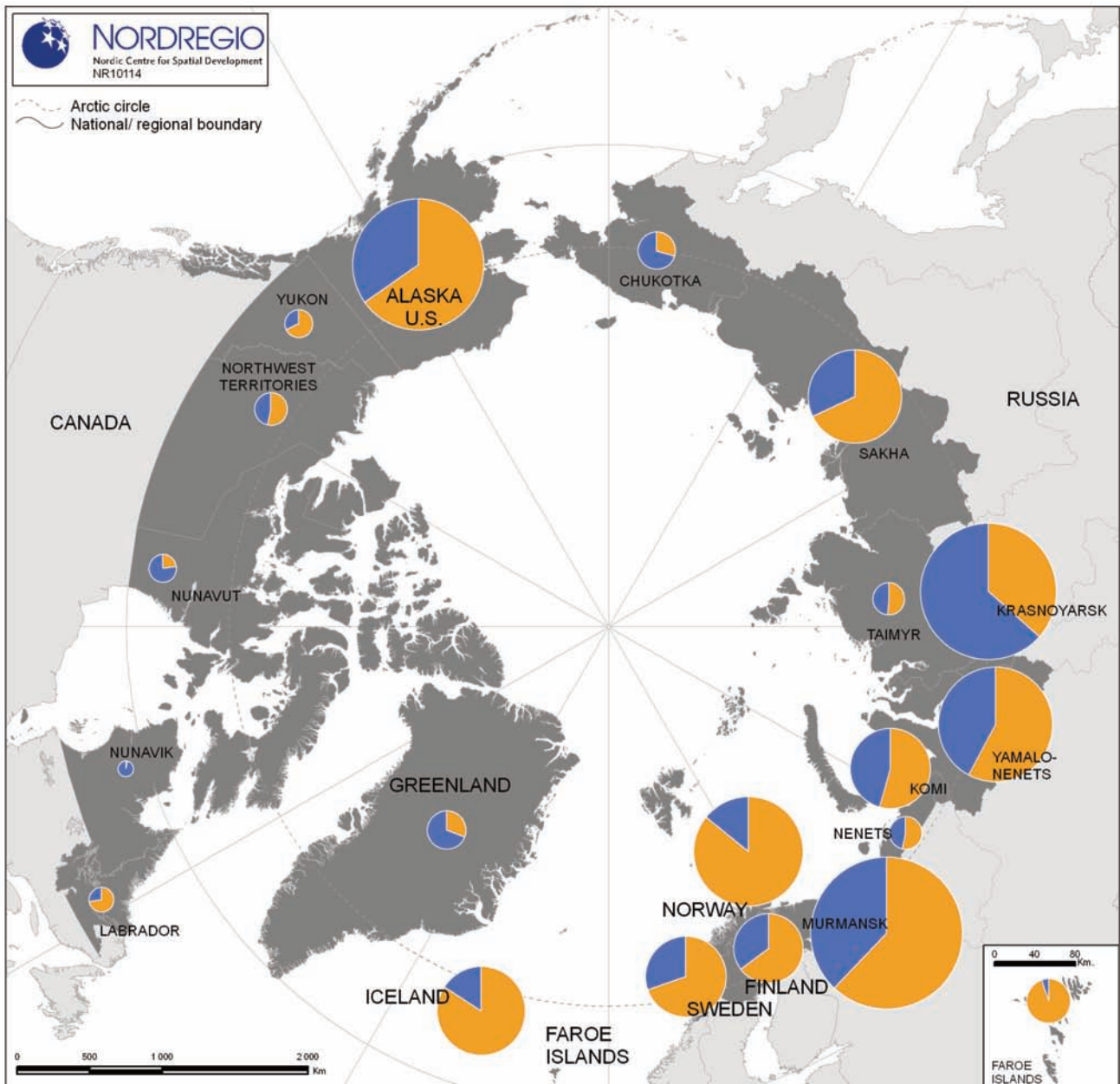
Looking back just 15 years the picture would have been very different. In Russia where the majority of dwellings today are privately owned, fifteen years ago most would have been either state owned or owned by cooperatives. And fewer dwellings in Greenland were also privately owned at that time. The processes of privatisation in Russia and Greenland have however been very different, in Russia the process occurred over a very short period of time, while in Greenland it has been much more evolutionary in nature. A similar process is only now taking place in the Western Arctic areas of Canada.



By Rasmus Ole Rasmussen
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Waiting for the bus in Revda, one of the Kola peninsula's old mining-towns now characterised by depopulation. Photo: Odd Iglebaek



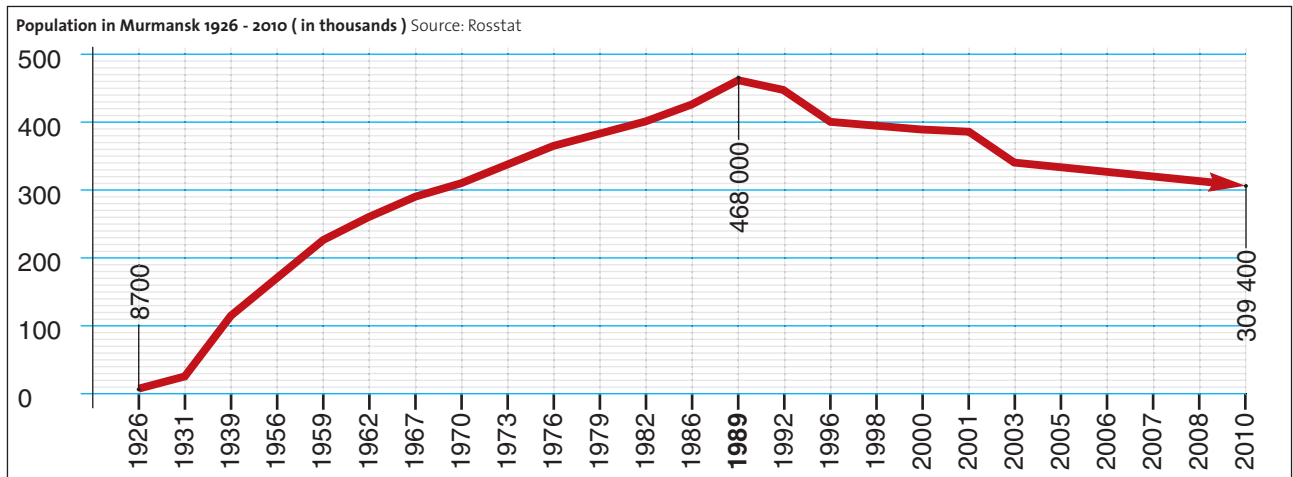
Housing in the Arctic*

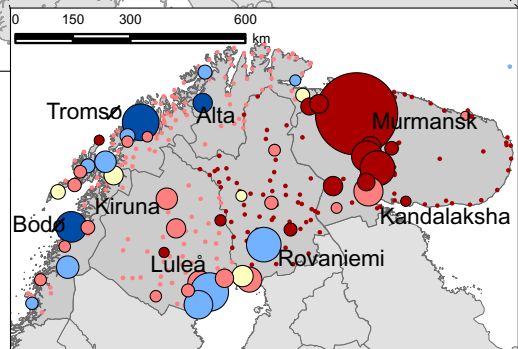
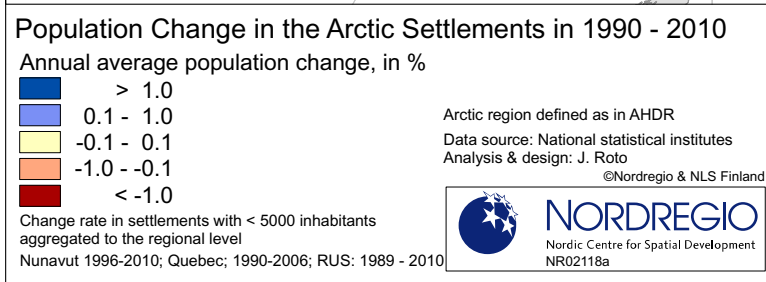
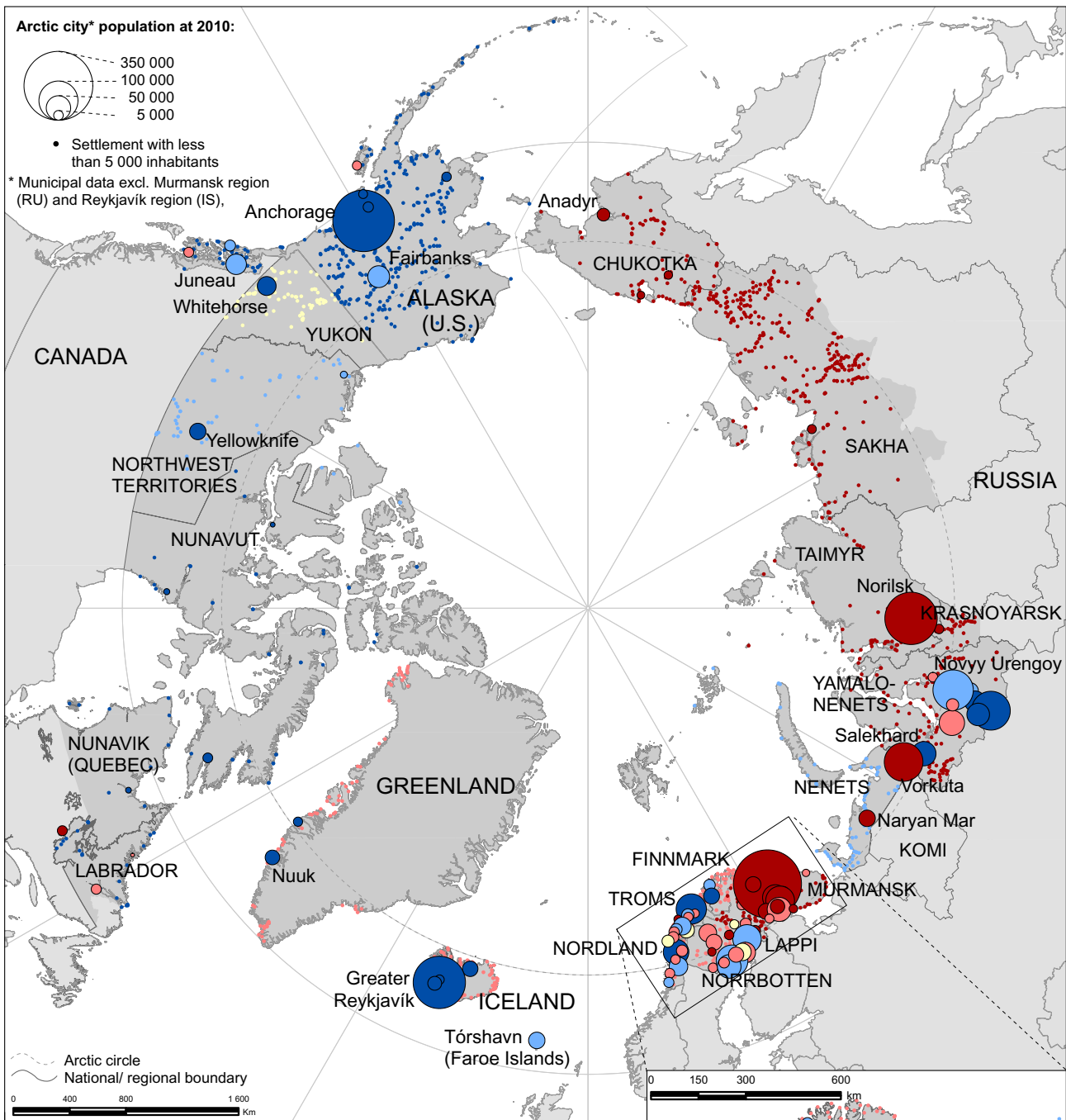
Size of circle correspond to total population in the regions **

- 500 000 or more
- 250 000
- 100 000
- 25 000
- 10 000 or less

Legend:
 ■ Share of owned dwellings
 ■ Share of rented dwellings

The map above shows how the concentration of population to urban settings has developed as illustrated by the colours on the map. Blue shows where a population increase has taken place, yellow where a balance in the population has been maintained, while red shows places with a declining population over the last two decades.





Change in population 1990-2010, in %

	Urban*	Rural	Total	Tendency (in area on average)
Alaska	23.5	29.3	25.9	Overall growth
Arctic Canada	19.4	19.4	19.4	
Iceland	38.2	-5.5	25.3	Urban growth - rural decline
Faroe Islands	12.4	-4.7	1.7	
Greenland	24.0	-8.9	1.6	
North Norway	9.6	-15.6	1.2	
North Sweden	-4.4	-19.9	-5.3	Overall decline
North Finland	-2.2	-24.5	-8.1	
Arctic Russia	-24.1	-42.9	-27.5	

¹ Urban refers to settlements with more than 5 000 inhabitants or to regional centre (if less inhabitants than 5 000)

The map Population Change in Arctic Settlements in 1990-2010 provides an overview of all settlements in the Arctic, with a focus on population change during the period 1990-2010. All settlements with less 5000 inhabitants are shown as dots while settlements with 5000 or more inhabitants are shown as circles with an area equivalent to the population number. The colours indicate the changes, with yellow showing places where no changes have taken place, red indicating those places with a declining population, and blue those with a population increase. The insert shows a map of the northern part of Scandinavia (plus Finland and the Kola Peninsula) where the settlement density is highest. The map highlights the complex nature of the pattern of change while also focusing on the fact that there is a marked divide between regions.



Typical *Krutsjovky*-style housing in Northwest Russia, here from Apatity. Note the different standards of windows. Photo: Odd Iglebaek

Housing: Price-bonanzas and emptiness

More or less all of the settlements in the Murmansk region were planned. They were usually located in close proximity to the various heavy industry enterprises scattered across the region, functioning as dormitory-towns, or as barracks close to military installations.

Until the 1960s most housing was built onsite - in the so-called Stalin style. In the decades thereafter the typical units were five storey high prefabricated concrete panel constructions. The flats were generally small with small rooms. All were provided with electricity, central heating, access to water and sewage systems.

In architectural terms they are usually called "*Krutsjovky*". Many millions of such flats were built throughout the Soviet Union but also in neighbouring countries. Kabul, capital of Afghanistan, for example also has suburbs with such housing complexes built before the invasion in 1978.

Generally, housing-conditions in Northwest-Russia were better than in most other Soviet towns. In the 1980s, a new type of house, with more comfortable housing options, called the "advanced apartment" took over from the *Krutsjovky*. They were higher, 9-16 storeys, and had more spacious flats.

All flats were rented and in principle nobody could own their own home. Heating was based on hot water district systems and was provided for eight months a year. The boilers were usually fired by oil. Temperature regulation was usually achieved through opening windows to let excess heat out. It is an expensive and wasteful system that produces more energy than is required.

In the early 1990s however the construction of new housing ground to a halt. Public money was simply not available. Gradually a private market was established in particular aimed at those who had

grown richer in the preceding years. These privately built houses were also larger. While apartments built in the period 1990-1995 had an average area of 56m², the floor-space for new flats built in the period 2008-2009 had, on average, increased to 120m².

Since 2005, 152 villas generally between 200 and 250m² and some even larger have been constructed. Most are located in the vicinity of the regional capital – Murmansk. In absolute terms these new private-owned single-dwellings, as well as townhouses, made up less than 3% of the total of Kola's housing-stock in 2010.

Thus some 97% of currently existing flats were constructed during the Soviet era. Most are now between 30 and 50 years old. The average apartment size is 50m². 22% of these are one-room apartments, 50% have two-rooms, 26% three-rooms while only 2% have four-rooms or more.

For decades the Soviet-housing stock was badly maintained. Almost all of the available resources went into building more flats. In the Murmansk region the prevailing situation during the late 1990s was that some 60% of the housing stock suffered from severe deterioration. By 2008 an ongoing programme of improvements had reduced this figure to 25% measured against a 50% threshold. 13% had however suffered from physical deterioration calculated at more than 66%.

The level of spending for general repairs in respect of these apartment-blocks has remained stable for the last decade. In 2009 a partial general overhaul was undertaken for 192 blocks in the region, in 2010, another 156 were improved. The cost of this overhaul was more than 1 billion roubles. At this pace, by 2025, some 54% of the housing stock will suffer from a physical deterioration rate above 50%.

In 1991 the Privatisation Law was passed. This introduced a legal market for property. People were given the right to buy and sell flats. According to this legislation, a house was divided into individual flats and common property areas such as the roof, stairs, lifts, etc. These common property areas belong to all apartment owners in the building.

Any decision about common property (for example, the use of the basement, painting walls, general overhaul etc.,) should be adopted by the owners' assembly. More than 50% of owners should participate in the assembly meeting to make decisions. In some cases, two-thirds of all owners must agree.

The land under and around a house is also considered to be a part of the 'common property.' The land area of a house depends on the size of the building, the number of floors, planning standards and the current surrounding situation. Also, in accordance with the Russian Land Code, the land is the property of apartment owners but few of these property owners pay a land tax. Previously, when land was a municipal property, tenants paid a small land-rent to the municipality.

After the new legislation was adopted the new owners received documentation only on their right to the flat. They did not receive documentation on land property or common property. The rights over the land upon which the property was built were not *de jure* specified. This situation has now however been rectified. All municipalities must now plan land for houses and register this land with the Land Committee. The Committee conducts a cadastral valuation of the land from which it will be possible to levy and collect a land tax.

In Murmansk region the volume of property transactions is constantly on the rise. A small recession in 2009 did not affect this general trend. 2010 in fact saw a total of no less than 11 000 dwelling transactions, some 25% more than in 2009.

The amount borrowed through the mortgage market has also grown considerably. In 2010 more than 2 000 houses were financed by such loans, equivalent to 18% of all transactions in the real estate market. For 2009 the figure was 1 200.

Since the early 1990s the price of housing has risen considerably except for 2009 when it fell by 8%. The first major rise in housing-prices came in 2002-2003. On average the increase was 90% for the period while the period 2005-2006 saw an increase of 120%!

Many centrally located flats have had their status changed to shops or offices. This only adds to rising prices for attractive properties. The housing price dynamic in the region is in many respects defined by the real estate market in Murmansk city – the region's capital. About half of the regional population lives in Murmansk while almost half of the housing stock is situated in Murmansk.

The 120% rise during the period 2005-2006 was fuelled, primarily, by the optimistic expectations of both sellers and buyers. The potentials associated with the extraction of oil and gas from the Barents Sea shelf generated new optimism. Some companies began to open offices in Murmansk and to buy flats for their staff. When the development of the continental shelf became more uncertain housing prices fell by around 15%.

A population decline results in a theoretical increase in the housing supply. Many of the empty houses are however in areas characterised by depopulation, so nobody wants to buy them. They are simply left empty. Other areas are characterised by increased centralisation, like Murmansk city. Here there is rising demand particularly for larger and better quality housing.

Of course, sellers in general want to get as much as possible particularly as many of them are moving to the southern parts of Russia, where housing prices are higher than in Murmansk.

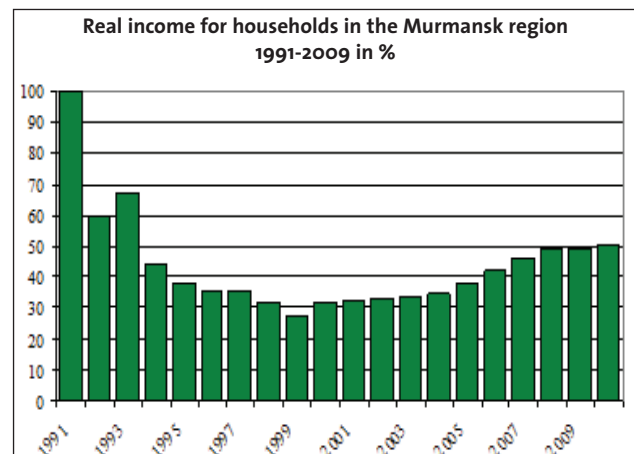
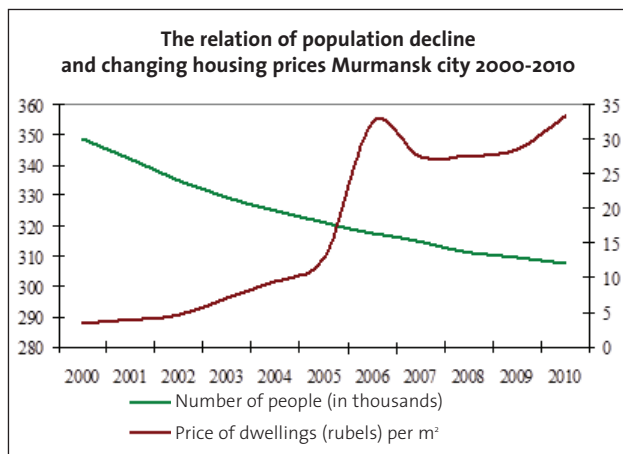
The income growth generated pushes many to invest in upgrading the quality of their properties – new kitchens, windows, bathrooms etc. This also adds to the value of the properties.

Thirdly, some places, again mostly in Murmansk city, have seen the introduction of a new rental market. Demand in this market is generated by people who come only to work and not to settle.

Fourthly and finally, banks and other lenders in the Murmansk region, as in the rest of the world, want prices to increase in order to bolster sales-volumes and profits while the growth of estate agents undoubtedly contributes to the rising cost of buying property.



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Larisa and Valery Vyatkina in front of their new house in Severyanin. Photo Odd Iglebaek

- Fulfilling our housing dreams

On the outskirts of the town of Apatity, in the Kola-peninsula, we find one of the first congregations of new villas, or “cottages” as the Russians call them, in Northwest-Russia. Since much of the work is done according to the individual house-owner’s capital supply most of the houses are built step by step. When they are all finished, there will be some 35 dwellings here in “*Severyanin*”, meaning “the Northern Peoples Settlement”. This is what the house owners call the area. However, people in general tend to call these types of developments “*Rublovka*”, meaning cottage village castles.

Severyanin began in 2003 when a group of friends went to the municipality with a plan to build individual family-houses on this area of land. Eventually the authorities said “yes” but they maintained that those involved had to pay for everything themselves; the infrastructure, removing the forest layer on the plot, roads, water-supply, electricity etc. The message was that if this was not done, the project would not be allowed to move forward explains Larisa Vyatkina, the project’s driving force.

Currently around half of the 35 plots are being developed. Some houses are finished and people have already moved in. The infrastructure is in place, but the roads remain unimproved with no all-weather surface. The architectural styles used vary significantly, some house are timber-structures while others are made using concrete and bricks. Floor-space per house spans a range from 150 up to 400 m². Generally speaking, the owners and their families participate in the construction process. In one house we visited the owners had spent five years making concrete blocks. It is a large house, so there has not been much time yet for ‘*dacha*-life’ in this family.

– Usually the building cost is 23 000 roubles (700 euros) per square-metre. The cost of the infrastructure is likely to be around 500 000 roubles for each plot, usually around 1000 m². However, so far we do not know how much we will pay for the actual land to the municipality. That is still being negotiated, says Larisa Vyatkina.

- Other groups of people in Apatity have also tried to launch similar schemes but have generally been unsuccessful lacking perhaps the drive of our chair-woman, explains Elena Vasilevja, a friend of Larisa Vyatkina.

Most people who build in Severyanin are involved in business. Some also work at the *Kombinat*, the large mine and factory for extracting and graining the apatite, used as fertilizer, upon which all development in the region was originally based. The first town to be built here was Kirovsk which was established in 1929. The town is surrounded by mountains and soon further expansion was required. Therefore the neighbouring settlement “New Town” was merged with other units and given town status as Apatity in 1966.

Today Apatity has some 31 000 flats, around 15 000 *dachas* (for growing vegetables) and 10 000 garages. Most of the later are relatively old structures and rarely see cars. They tend instead to function as storage areas and as ‘free-space’ for the male segment of the population.

In population terms Apatity reached its peak in 1989 with 88 000 inhabitants. Today this number is below 61 000. One major reason for this rapid decline is the closure of the large construction company that used to provide a significant number of jobs. In addition, the *Kombinat* or *Apatit* as it is now officially called has experienced a similar development. The number of employees has fallen in the same period from 20 000 to below 12 000. The company nevertheless remains the largest mining and concentrates enterprise in Europe (including Russia). Other large employers in Apatity are the Kola Science Centre of the Russian Academy of Science and Apatity Heating Power Station.

Larisa Vyatkina and her husband Valery are among those who are building very large houses in Severyanin. They hope to have three generations of their family living under the same roof. But this is not very realistic as the young leave to move south if they cannot find interesting jobs, which in reality few are able to do, she explains.

She also thinks that it will be difficult to sell these large houses, at least to make a profit. So why do they do it? – You know, to build is a lifestyle, concludes the eager spokeswoman.

By Odd Iglebaek



“Krutsovky” blocks in Murmansk. Note the new facades (light green) with extra insulation. Photo: Odd Iglebaek

Modernising Murmansk

Most of the buildings along “Prospekt Lenina” the main street in Murmansk, have recently received newly painted facades, repaired gutters and often new windows as well. One usually finds the same improved standards on the inside. Some streets and pavements have been repaired and the smoke from the chimneys of the central power-stations does look cleaner. In short, major infrastructure improvements are being undertaken.

The large concrete skeleton of the *Hotel Artika* has however remained empty for a number of years. Planned reconstruction was halted and the facades have in the meantime been covered with huge photos advertising new flats for sale. In addition, a number of new office buildings in the international style with glass-facades have been constructed.

Murmansk is the largest city in the Arctic. Recently, *Okei*, the large Russian supermarket-chain opened its second branch in city - with no less than 40 cashier-desks in a row. This is probably the largest supermarket in the whole of the Arctic. People travel from all over the Kola-peninsula to shop here.

The supermarket is situated at the very heart of the city; there is no trace here of the western-style out of town shopping outlet culture here. There are of course ample parking facilities around and below the centre of the city and a small playground for children. The citizens of Murmansk, who would generally have preferred that the space be used for a much needed urban park, did not however get their way. They had to accept that this time they were the losers in the struggle for the new Murmansk.

All the towns and cities of Northwest Russia are, in planning terms, characterised by a city centre with a history that goes back to just before or after World War II. This was the period when the wilderness was rapidly populated in order to extract minerals and secure the ice-free harbour. Outside these centres there are row upon row of grey concrete structures with flats, mostly in the five storey “Krutsovky” style. Sometimes, and particularly in Murmansk, there are also more recent tenements reaching nine storeys.

There are however major changes occurring here. Studying the windows one quickly sees that they have been changed. Modern

double glazing and plastic frames have replaced the frames with double layers of single glazing. However, in most cases the exterior walls have not been improved, but there are a few buildings where extra insulation has been attached to the outside of the concrete-slabs and covered with tight protection-layers - often in bright colours.

For many people however wages remain low. A teacher in Murmansk will, on average, make only the equivalent of around 400 euros a month after tax. That means that there is very little money available for home improvement. However many people make more, the average net wage in the city is closer to 700 euros while some 20% of inhabitants earning 1000 euros or more (*Morgenbladet* 29. april-5.mai 2011).

As in the west, many of these people also spend a good proportion of their income on improving their homes, particularly on new kitchens and bathrooms. – This we are also very happy about, notes Evgeniy V. Nikora, speaker of the Murmansk Regional *Duma*. – The fact that people here can materially improve their standard of living is very important for us in generating interest in, and a willingness to, live here he says.

By Odd Iglebaek



The new playground outside the *Okei* supermarket. Photo: Odd Iglebaek



Nuuk panorama Photo: Rasmus Ole Rasmussen

Greenland's changing housing market

It is not so long ago that I was asked if, in Greenland, we were still living in igloos. My answer was no doubt rather disappointing to the questioner as I pointed out that igloos were historically known only in the most northerly latitudes of Greenland and were used only by hunters on long hunting expeditions.

For centuries, the normal dwelling in Greenland was a skin tent during summer and a peat house during winter. The peat houses were in principle "throwaway houses", as they would normally only be used for one winter due to the nomadic lifestyle of the Inuit.

This pattern changed quite quickly after the first permanent colonial settlement in the 18th century. Drawings from the early 19th century indicate that the traditional one-winter-only peat houses had been turned into more permanent dwellings, always in close proximity to the colonies of the missionaries and the trading company.

Throughout the 19th century and during the first half of the 20th century the traditional peat houses were gradually transformed into small wooden houses. A standard house for the Inuit family at the beginning of the 20th century was a single-roomed, single-storey house with a layer of wooden boards, which acted as walls and an inclined roof, which created room for storage. For insulation, these houses had a thick outer wall made in the traditional way with layers of peat and flat stones.

Until the start of Greenland's intensive modernisation period in the 1950s, Inuit housing was almost exclusively a 'do-it-yourself' initiative, but this was soon to change dramatically. The age of modernisation emerged after 1950 with the Danish Government's formation of the public authority *Grønlands Tekniske Organisation (GTO)*. At that time Greenland was still almost 100% administrated from Copenhagen. The *GTO* was in charge of orchestrating the transformation of Greenland's infrastructure from that of an archaic, colonial museum into a modern, streamlined society. Very important here was the decision to create up-to-date housing. This was to be developed in two parts. For the

approximately 75 smaller settlements, the *GTO* constructed a set of new houses with proper insulation, wooden floors and windows.

This was a huge step forward. The people for whom these houses were meant were unable however to provide any financing of their own. Therefore, loans, which did not need to be repaid for thirty years were introduced. Although the system had seemed to work well for decades, it was ultimately concluded that those who were unable to pay the loan at establishment, were unlikely to be able to pay it thirty years later. Subsequently most of these loans were simply written off.

For most of the 19 towns, the strategy used was somewhat different. A town was defined as the major inhabited area in each municipality. All other inhabited places within the municipalities were defined as settlements. The number of municipalities changed little in these years. In the towns, blocks of flats with running water and modern toilets were built during the 1950s and the 1960s. Through this, the majority of the inhabitants in the towns became tenants in the state-owned modern housing developments. Rents were kept artificially low, as a majority of tenants would simply not be able to pay market rent.

During this period and through the 1980s, emerged a small group, mostly Danes and members of some of Greenland's upper class clan families, gaining huge wealth. Some of this wealth was put into large, private houses of some 200 square metres, which constitutes a luxury house in Greenland. In all of Greenland's towns, specific areas are dominated by a few such houses in the smaller towns and up to fifty plus in Nuuk. Ever since the 1950s there has been and indeed there remains a small and highly lucrative market for these houses. Supply and demand for these luxury houses has more or less been in balance since the early 2000s.

People living in these houses include successful entrepreneurs, shrimp trawler owners, directors in the state owned organisations, top civil servants, and politicians. Thus, their wealth comes from

The dilemma of *Blok P*

One of the most important housing policy issues in Greenland is the future of 'Block P' in the centre of Nuuk. The building is five storeys high and 64 apartments long, stretching more than 200 metres, right across Nuuk in an east-west direction. According to Wikipedia, Block P is "generally viewed very unfavourably by the local population and it is even presented to tourists as so depressing that it's almost an attraction in itself." Even though Nuuk is a small city central plots are attractive for shopping, offices and middle-class housing. In such a context 'Block P' inhabits an almost ideal location.

The national authorities have already decided to tear down 'Block P' while the municipality has also decided to tear down a number of similar structures, the so-called Blocks A,B,C,D,E,E,G,H,I,J,K and L, which also have a central location. 'Block P' will be demolished in its

entirety while blocks A to L will be dismantled more gradually. The people living in Block P will be offered alternative accommodation either in similar styled dwellings in central Nuuk or in new blocks at Qingorput, which is near the airport and some 5 km from the city centre. Parallel to this, both the national and the local authorities have started to develop new plans for the area. The local architect-company TNTnuuk has, together with the Norwegian Tromsø-based Dahl&Uhre architects, been engaged to participate in this project.

One of the main elements of the process thus far has been a major proposal-exhibition and guaranteed public involvement. Interestingly enough, the Norwegian Ministry of Foreign Affairs contributed 300 000 NOK to this part of the project. Knut Erik Dahl from Dahl&Uhre architects explains that this support relates to the 'indigenous people'



Niels Hammekens Vej is one of Nuuk's more exclusive addresses. Photo: Klaus Georg Hansen

very different sources, and this group of citizens with high incomes does not share much except their taste for more luxurious surroundings in their everyday lives. At the end of the 1980s, a new economic reality began to emerge. Previously the state had owned almost 90% of all houses on the transferable housing market aimed at the middle-income groups. The system was however proving to be simply too expensive to maintain and had to be changed.

The new system focused on the housing co-operative. Here the middle-income group could become house owners – with a little help from Home Rule. Of paramount importance here was the fact that building maintenance was no longer the responsibility of the public administration. The Home Rule government supported the establishment of cooperative ownership with up to 50% of the costs financed through special loans.

At the beginning of the new millennium, a new and financially stronger middle-income group began to dominate the housing market in a number of towns, and most visibly in the capital, Nuuk. Here for the first time a whole area was established with only privately owned houses and flats operating more or less on market terms.



Privately owned new dwellings for middle-income groups in Qinggorput in Nuuk. Photo: Klaus Georg Hansen

The process of developing a growing housing market operating, more or less, on market terms is expected to be replicated in the four new 'administrative' towns, one in each of the four municipalities created in 2009, and perhaps in a few other villages.

It is impossible to say whether the housing bubble in Greenland will burst. If it does, it will impact a large group of middle-income citizens, but it will probably not really affect the exclusive little group of housing matadors, who have benefited enormously from the housing boom aided by the Home Rule system.

Looking beyond Greenland, it is striking to observe the current state of the housing market in, for example, the high north of Canada. In Nunavut and in Nunavik the housing market structure shows remarkable similarities to that of Greenland some 40 or 50 years ago. It will therefore be interesting to see how the housing market in these parts of the Arctic will develop in the years to come.

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dimension of this project and to the exchange of competences and knowledge on the topic of 'the Arctic City' while Norwegian efforts to develop policies for the High North are also relevant, he notes.

In total, Greenland has almost 27 000 housing-units including one- and two-room apartments. Nuuk itself has, in total, almost 7 200 dwellings. 2009 saw the construction of a total of 274 new homes in Greenland. Of these, 136 were built in Nuuk. Of the new dwellings, 179 are publicly owned. The Greenland Housing Association Ltd (A/S Inissiatileqatigiiffik INI) manages and maintains about 12 000 public rental dwellings on behalf of the Government of Greenland and many of the municipalities. Just over 16 000 of Greenland's approximately 57 000 inhabitants live in Nuuk.

By Odd Iglebaek



Blok P Photo: Klaus Georg Hansen



Partly finished buildings in Leirvogstunga, Mosfellsbær on the outskirts of Reykjavík Photo: Anna Karlsdóttir

Glory and blighted landscapes in Reykjavík

Two and a half years after the collapse of the Icelandic economy a new Music Hall *Harpa* is at last ready for its opening concert. *Harpa* is named after the oldest known string instrument and it was until recently blowing in the wind of the North Atlantic, a reminder of the broken economic dreams of the boom years. However, the Icelandic government along with the municipality of Reykjavík decided that this centrally placed new landmark, that looked like a Nordic version of 'ground zero' in October 2008, should be completed with public money to avoid a blight in the city centre and fuel the hope of better times for the future - after the crisis.

The link between territory, the economy and politics is more bluntly visual on the outskirts of the city where the development of whole neighbourhoods has been put on hold after being planned during the housing boom in the middle of the last decade. The insatiable enthusiasm for construction affected the political behaviour of the municipalities in the capital region significantly, politicians and people alike, and generated heated internal competition over land bids thus significantly affecting prices. In the intersection between rural and urban here there exists a litany of failed projects.

One neighbourhood has already laid down streets but no more than one house has been built with only one family residing, in total, five inhabitants. Another neighbourhood has half of its population under 16 and no school, an apartment block only inhabited to 1/5 of its capacity. Unused building materials, a desert of gravel planned for something that was never to be. The examples of dashed dreams here are legion. Material possessions represent a trap rather than liberty because for many Icelanders who borrowed money during the housing boom devaluation meant that the real cost of these loans have skyrocketed.

The desire to have a place of your own can easily seduce the unwitting. Behind this are the geographies of despair and potential social

problems. In many cases though, dilapidation is evident. For many of the entrepreneurs who took part in creating these new urban landscapes of speculation through construction difficulties have presented themselves in financing loans to complete what was started. Therefore many houses remain incomplete, neither weather, wind nor rain proof. They suffer in the meantime from the vandalism wrought both by the harsh elements and disillusioned people. Wasted opportunities, wasted values and materials, wasted landscapes and wasted lives.

The new millennium in Iceland was marked by the privatisation of the banks (*Alþingi*, 2010). As in other market economies a whole new array of financial instruments (product innovation) appeared on the scene with increasing frequency, notably those providing new methods of lending and borrowing and those facilitating the greater spread of risk with the phenomenal growth of derivatives (Dickens, 2011). At the same time the regulatory walls crumbled – even collapsed altogether in some cases. This was a consequence of major deregulation as had occurred in all the major developed economies since the 1980s allowing banks to become involved in a whole new variety of financial services.

In Iceland as a result of deregulation the newly privatised banks were, from June 2004, able to enter the mortgage market where the housing financing fund (HFF) and pension funds had previously on the basis of existing legislation been the sole lenders for housing purposes. Not only did this change bring about easier access to loans and financial capital for house building but also raised the proportion of loans available in several currencies. Banks have now taken over some 2 200 pieces of real estate. However, according to well-informed sources the number in reality is closer to 16000. At the same time the planning authorities have admitted that over 7 000 apartments have been built above and beyond current needs.

The result is that many neighbourhoods currently in the midst of construction or newly constructed are half empty and are likely to remain so. Some buildings have been left empty; others are simply not for sale. Some are partly finished with families living in one corner of the building while the time perspective in terms of completion remains 'open-ended'. As both 'down at heel' entrepreneurs and private families have trouble refinancing loans in order to finish building work, properties are repossessed by the banks who are then accused of holding them hostage (what Americans term shadow inventory ownership). The market value has thus not decreased significantly as initially expected and thus rental apartments remain very expensive.

As with the Irish, the Icelandic population has always favoured privately owned properties. As an example, already in 1979 around 85% of the housing mass in Reykjavik was privately owned, a figure that rose to around 91% in neighbouring municipalities in the Capital region, making rental housing a fringe phenomenon (Icelandic property registry, 2005).

Social housing has never been the hallmark of Reykjavik. In some condominiums in Reykjavik there are however some social apartments (see picture below). The displaced population continues to look for temporary rental accommodation, but all such options are extremely expensive.

Though the Icelandic government has, since early 2009, outlined several plans to rescue hard hit property owners, the practice of the financial institutions has at times seemed to counteract what was intended, namely, to raise a security wall for indebted Icelandic families. At the current time of writing the future for home owners remains somewhat uncertain.

While the policy on privately-owned properties worked well during times of prosperity it does not function as well during economically difficult periods. The capital area of Reykjavik is faced with a

situation where many former house and apartment owners will become tenants because their economic situation does not allow them anything else. It remains to be seen how the government and municipal authorities will deal with that situation.

Meanwhile a significant percentage of the new housing stock is facing vacancy and/or destruction. There is an ever larger contrast in Reykjavik, of glittering shopping centres and areas of despair. While the echo of the music from *Harpa* fuels hopes for a reformation the outskirts of the city are still evident monuments to blighted landscapes.



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Wasted material and wasted effort? Photo from the Úlfarsfell area on the outskirts of Reykjavik Photo: Anna Karlsdóttir



Alcoa Fjarðaál plant in Reyðarfjörður East Iceland. Photo: Emil Þór Sigurðsson

Lessons from Alcoa in East Iceland

Contracts were signed in March 2003 on the single largest construction project in Iceland's history. The project consisted of the Kárahnjúkar hydro power plant and the *Alcoa* Fjarðaál aluminium plant in East Iceland.

This project was completed in 2008 when the aluminium plant *Alcoa* Fjarðaál had reached full capacity or 350 000 tonnes annual production and the Kárahnjúkar power station delivered 690 MW or 4600 Gwh. The *Alcoa* Fjarðaál workforce is roughly 480 in number while a total of around 800 people work on the site. The power plant itself is highly automated and has a staff of only 13 people.

The University of Akureyri Research Centre monitored the social impacts of the project during the period 2004-2010. This research was financed by the government and carried out in accordance with a parliamentary resolution. The research findings were published in 9 separate reports (see: www.rha.is).

In cooperation with local actors the impact area was defined as the eastern part of Iceland divided into three sub-regions. These included a *central impact area* within two hours average driving distance from the main building sites and two more remote areas; the *northern and southern impact areas*.

For several decades, plans have existed to use the potential energy supplies held in the glacial rivers in East Iceland to build a large industrial base and create jobs. Very high hopes of prosperity and employment thus existed among the local inhabitants of the area. The region's population and economy had been in relative decline for decades with only a limited diversity of jobs available and a continuing

dependence on the primary sector which had been rationalised and thus required a declining amount of manpower. The age and sex distribution showed signs of lengthy out-migration, primarily to the Reykjavík area, with relatively few young adults and women remaining.

During the construction period the region in central East Iceland witnessed huge changes with significant activity and investment in the projects as well as in the housing sector and in other infrastructure construction projects.

The increasing impact of globalisation, as compared to previous large scale projects in Iceland, was also apparent. In the Economic Impact Analysis (EIA) of the Kárahnjúkar project (2001) it was expected that some 20-25% of the workers would come from East Iceland. Instead 9 out of 10 workers were foreign in the summer of 2007 at the peak of the project. Similarly, Icelanders provided 17% of the workers building the aluminium plant but Poles were most numerous at 70%. Environmental demonstrators protested against the projects more vociferously than had previously been the case in Iceland and this also received an elevated level of international attention.

As was to be expected, project participation was highest in the central impact area, where, according to a 2007 survey, approximately 30% of respondents aged 18-65 could be directly connected to the construction project. Next in line was the capital area with 11% reflecting things such as its service capacity and transportation links.

Temporary population growth in the central area was to a large extent caused by the influx of foreign workers. In 2007 the maximum number was reached and around 11 800 persons were registered. The

population then declined again. By the end of 2010 the net population increase in the impact area as a whole was merely 200 persons. However there was an increase of 1 100 in the central area while a decline in numbers continued in the more peripheral areas.

Among the most important findings of the study is how confined the impacts of the projects were within the two municipalities closest to the *Alcoa* Fjarðaál facility and the Kárahnjúkar power station. Surveys indicated that many positive impacts were felt here. This had to do with rising personal incomes and an increase in the diversity of jobs and services. A survey in 2007 showed that satisfaction with job diversity was highest in the central area of East Iceland, second only to the capital region. Interviews indicated that individuals experienced more optimism and belief in the future of the region. However, data from the municipalities showed that the financial impacts of these new industries only benefited the three central municipalities.

In 2008, after the Fjarðaál facility was opened, it was observed that a significant level of commuting took place to the town of Reyðarfjörður, where the plant is located. It has thus become something of a magnet in this respect. In 2008 54% of the aluminium plant employees originated from East Iceland, and 70% of them were living in the municipality where the plant is located (Fjarðabyggð) The remainder were mostly living in the town of Egilsstaðir some 35 km away.

Production is organised on the basis of a 12 hour shift. It was clear that in such a setting the place of employment has a decisive influence on the social rhythm of life. This was something that was brought out in the interviews conducted with a number of individuals and experts; situations may arise where the 12 hour shift schedules, originally chosen by the *Alcoa* Fjarðaál staff, may be ill-suited to the needs of the family.

Housing is the policy area where the most obvious mistakes were made, the most striking of which being the excessive level of residential housing construction. Two specialist reports presented the assessment that 70-80 thousand m² of residential housing needed to be added in the central area in the wake of the aluminium plant's construction.

When the municipalities allocated building permits, however, little regard was apparently paid to those forecasts. In 2008, residential housing had in fact expanded by 135 000 m², or some 60 000 m² in excess of research estimates.

Population growth in the central impact area of 11 700 during the period 2002-2008 turned out to be similar to that which had been forecast in the two specialist reports. There appears also to have been significant competition between municipalities with regard to the various building programmes in an attempt to attract new inhabitants.

New infrastructure endowments created in relation to the construction of an aluminium plant and power station in East Iceland have, moreover, been of use to the local communities in various ways and to differing degrees. These include new roads and port installations along with regular import and export flows from that area. This is a mountainous area and many people, both experts and individuals, suggested that to reap the best and most positive benefits from the plants, new road tunnels in the region will have to be constructed. Such projects are however very expensive.

The strength of the 'crowding-out' effect produced by the aluminium plant as yet remains unclear, i.e. how many jobs were cut because of its construction and operation within its labour market.



Reyðarfjörður summer 2007. Photo: Hjalti Johannesson

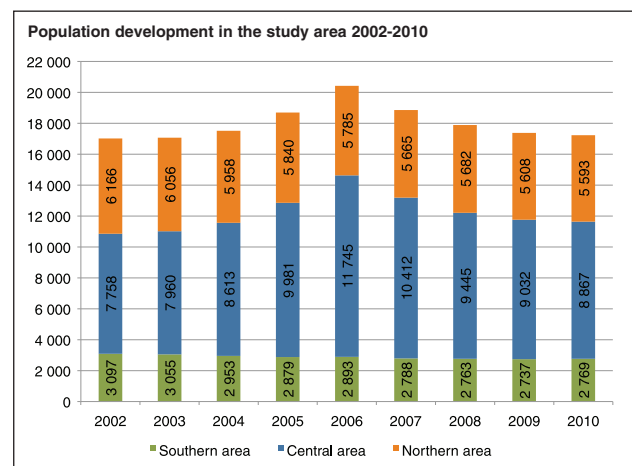
Jobs in fish processing fell sharply in number during the construction period, more than in the previous years. It is interesting however to note that the fishing industry was very supportive of the project, indicating that they felt that they were not in direct competition for labour.

In addition, the significant decline in fish processing jobs leads one to consider how the economy of East Iceland would have developed had there been no heavy industry on the scene. The declining population of the north and south areas of East Iceland most likely provides a good indication of this.

For further information see also the Journal of Nordregio no 2 2007



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Aluminium overtakes fish in Iceland

Iceland's industrial megaprojects include three aluminium plants, one ferro-silicon factory and the power stations and transmission lines required to facilitate them. The *Alcoa Fjarðaál* plant in Reyðarfjörður, East Iceland which reached its full capacity of 350 000 tonnes annually in 2008 is both the newest aluminium plant in the country and also *Alcoa's* newest. With the output from this plant aluminium has just surpassed fish products as Iceland's most valuable export product.

The 185 000 tonne *Rio Tinto Alcan* plant in Straumsvík just south of Reykjavík saw the beginning of aluminium production in Iceland. The plant was originally owned by *Alusuisse* and began production in 1970 with a 33 000 tonne capacity which was gradually increased to 100 000 tonnes (www.riotintoalcan.is). The 210 MW power-plant at Búrfellsvirkjun in South Iceland was built to provide the necessary energy (now 270 MW). In relative terms this was a megaproject of similar importance to the national economy as the Kárahnjúkar power plant (690 MW) and *Alcoa Fjarðaál* in East Iceland (www.sedlabanki.is).

In 1998 *Columbia Ventures* opened the now *Norðural*-owned plant in Hvalfjörður 49 km north of Reykjavík. Its original annual production was 60 000 tonnes but this was gradually increased to 260 000 tonnes in 2007. *Century aluminium* has owned the plant since 2004 (www.nordural.is).

There are plans to build one more aluminium plant in Iceland and to enlarge one of the existing plants. Construction work on the Helguvík aluminium plant (owned by *Norðural*) started in 2008 in the Sudurnes peninsula some 50 km west of Reykjavík. The credit crisis which hit Iceland in 2008 and problems with delivering the necessary energy have however delayed completion of the project which is planned to have a production capacity of 360 000 tonnes.

Furthermore, *Rio Tinto Alcan* have decided to enlarge their plant to a capacity of around 230 000 tonnes and, in 2010, made contracts with *Landsvirkjun*, the national power company, to deliver an additional 75 MW of energy. This energy will come primarily from a new hydro power station in South Iceland.

Finally, *Alcoa* also has plans to build a new aluminium plant in Húsavík in North Iceland. The capacity here is planned to be up to 346 000 tonnes or similar to that of Reyðarfjörður. This new plant should receive energy from geothermal fields in the vicinity of Húsavík (steam turbines) as it is located in the active volcanic zone which crosses Iceland diagonally SW-NE. This would be the first aluminium plant in the world to receive energy entirely of this type.

Today aluminium companies in Iceland produce in total around 800 000 tonnes annually and if all these projects materialise annual production would almost double!

In 2010, the association of aluminium companies in Iceland was founded to represent *Alcoa Fjarðaál*, *Rio Tinto Alcan* and *Norðural*. The objective here is to work together for the common interest of the Icelandic aluminium industry (see: www.samal.is).

The companies are also quick to stress here their important position in the Icelandic labour market. At present, the number of workers is around 1 800 and with a multiplier effect of 1.4 some 4 300 persons earn their income, either directly or indirectly, from aluminium production. That is approximately 2.5% of the total Icelandic labour market (www.statice.is). It is estimated that these companies buy goods and services from 700 Icelandic businesses.

Traditionally Iceland has been very dependent on fish exports. Aluminium production which makes use of renewable energy sources, primarily hydro power, though in recent years also power from geothermal energy, has however increasingly been seen as a good way to diversify the economy.

Doubts have however recently emerged in respect of whether a continuing emphasis on megaprojects in the aluminium industry is a good strategy or whether Icelanders should instead aim at further diversifying their economy by using their energy sources for other purposes. In 2010, fish products and aluminium were almost equally important export products with 39.3% and 39.6% respectively of the total export value (www.statice.is).

Aluminium plants have become by far the largest of *Landsvirkjun's* clients and the company wants to diversify by selling energy to other types of industries. Interest from other industries has indeed increased and in 2009 a plant owned by *Becromal* opened in Akureyri in North Iceland making aluminium foils for electrolytic capacitors using around 80 MW of energy (www.becromal.is). Furthermore a ferro-silicon factory which will use 65 MW of energy will be built in the Sudurnes peninsula. In respect of future energy use potentials the export of electricity, via sub-sea cable, to the European continent has even been discussed.

See also the Journal of Nordregio no 2-2007

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The Political Economy of Northern Regional Development

"...Taking the structure and functioning of the Arctic regional economies and the degree of economic dependence as a point of departure, these region's self-reliance and comparative socio-economic performance is analysed. The fundamental problem is still the dependency Arctic regions have on their mother economies in the south"

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Date of publication: Mar 17, 2010
ISBN: 978-92-893-2016-0
Language: English
Number of pages: 349
Publication number: TemaNord 2010:521





Polish workers at the hydropower plant outside Sisimiut in Greenland. Many of them previously worked in Iceland. Photo: Ístak.

More migrant workers in the Arctic

Working on isolated mining sites has been part of the Arctic reality for the last century or more. The access-related problems often relating to an inadequate infrastructure endowment continue however to have a significant impact here. Similarly the 'fly-in/fly-out' nature of the workforce in the North Sea oil production sector is long and well established. Indeed, it is increasingly likely that this model will now be expanded to other areas of economic activity in the far North.

In the resources sector many national and international companies operate with demands that the workforce work on shifts for roster periods of various times. Due to the temporary character of the resource extraction business – typically the duration of mining and oil extraction activities is around 30 years – it is too expensive for the company to establish a "real" town. The alternative is usually the construction of some temporary lodging establishment for the workers while at the same time ensuring that the necessary 'fly-in/fly-out' facilities are in place.

The involvement of local communities' in large scale industrial projects across the Arctic also differs greatly. In relation to the recent establishment of the *Alcoa* aluminium smelter in Fjarðaál in Eastern Iceland only 20-25% of the labour force originated from Iceland. Two thirds of these people were from the adjacent communities. Many of the other workers – mostly the Poles – went on to Greenland, participating in the construction of the hydropower plant north of Sisimiut. Before coming to Iceland many of them had also been part of the team constructing the Norwegian Snøhvit gas production facilities in the Barents Sea. Another example is the Prudhoe Bay oil field in northern Alaska. Here the majority of workers came from other parts of the state, mostly from the larger towns in Alaska. However around one third were from outside Alaska.

Until recently, in connection with the exploitation of natural resources in Russia's high north the policy was to plan and develop full-scale cities in the region. Indeed, most of the Arctic's larger settlements were established as cities for workers during the last century, expanding at a particularly fast rate during the 1960s and 1970s. As such, the vast majority of the population in the Russian Arctic has historically lived in large urban centres.

The situation has however changed markedly in recent decades. When the resources which were the original magnet for the settlement were

depleted or found to be too unprofitable to continue to extract, the communities based on them found it increasingly difficult to survive. Newer arenas for exploitation like hydrocarbons and strategic minerals, usually take place far from these established communities. Ensuring the availability of a qualified workforce in such places is however not only a major economic issue but also a significant social one also.

Vakhtoviki in North-western Siberia: One solution to this problem is the so-called 'Vakhtoviki arrangement' which involves long-distance commute workers. It is not unusual to travel several thousand kilometres by train or by airplane to and from work. Typically it involves a one day-trip by airplane or up to seven days by train.

Often these long distance commuters will have to stay one or several days in base towns, and eventually go to the work site for shift roster such as 60/30, i.e. sixty days work followed by thirty days on leave. The base camps often offer shops, recreational facilities etc., while the field camps are only meant for working and sleeping. One well known example of such an arrangement is the Novy Urengoy gas fields, but many similar arrangements are now being put in place.

In recent years, such activities have increased to such a degree that a special homepage <http://www.flyinflyout.com/> has been developed. Such arrangements are usually advantageous for the companies involved because they can quickly and cheaply construct temporary camps which then give them access to a stable workforce. For many workers it is also a good choice as it provides the possibility of remaining among family and friends in urban centres and of securing the family a stable income.

This model does however have a number of potentially undesirable consequences. In the case of the Red Dog mine, near Kotzebue in Alaska, the Regional Development Corporation quickly saw the possibility of ensuring stable incomes in the smaller North Slope communities. The knock on effect of this was however that with stable incomes the local inhabitants saw the opportunity to ensure that their children received a better education, an education which was only available in the larger towns. This eventually led to rural depopulation as the workers moved, primarily to the Alaskan capital, Anchorage.

By Rasmus Ole Rasmussen

Alcoa aluminium coming to Greenland

Since the establishment of the *Greenland Technical Organisation (GTO)* in 1950 Greenland has been moving inexorably towards the creation of a modern society. This process has clearly however been more visible in some periods than in others.

The realisation, since 2006, that Greenland was about to get its first aluminium smelter has, for instance, created an additional boost to the ongoing modernisation process. With the aluminium smelter project, Greenland has been exposed like never before to the institutional dimensions of modernity and globalisation as defined by Anthony Giddens (1990).

A quick look at these four dimensions (see box inserts) as they relate to Greenland and the aluminium smelter project shows the deep impact the project has already had on Greenlandic society.

Infrastructure development in the 1950s and 1960s did not expose Greenland to the full consequences of capitalism nor have the growing mining activities of the 1990s and 2000s done so. In reality, it is not until now - with the aluminium smelter - that Greenland is really getting a taste of the capitalist economy with a huge multinational company like *Alcoa* as the major external player. Here discussions are primarily concerned with what such a multinational giant can do both for and to a small society like Greenland.

The fishing industry has effectively been industrialised since the 1960s, but due to the protected nature of the labour market, the full consequences were not really appreciated. For the construction industry, the *de facto* division of labour was only an internal division between Denmark and Greenland. Mining activities have attracted workers from across the global labour market but the consequences of this have not really been visible locally. It is not until now with the planned construction of the aluminium smelter that Greenland is really experiencing being part of a global labour market. One of the major concerns here is, for some, the prospect of having up to 3 000 Chinese workers constructing the aluminium smelter on 'international wages'.

The Danish state initiated an intensive process of socio-economic research from the 1950s onwards in order to develop a better understanding of the mechanisms supporting Greenland's culture and society. The purpose here was to create a better basis for the Danish governance of Greenland. From the beginning of the 1970s, administrative responsibility has increasingly been transferred from Denmark to Greenland with Home Rule in 1979 and Self Rule in 2009 as the two most significant milestones.

Most of the socio-economic knowledge produced about Greenlandic society has been generated for administrative reasons. Indeed, it is not until now - with the debate over the aluminium smelter etc., - that Greenland has really experienced how different groups of stakeholders can question the information provided by the

authorities for public debate. Both national and international environmentalists are sceptical about the results of official environmental studies, cultural protectionists are alarmed by the potential destruction of archaeological sites, labour organisations are concerned about the economic calculations provided by the authorities, while democracy advocates point to the lack of democratic influence on the political decision process.

Only the military power dimension does not seem to have been explicitly activated. It is worth noting however, what the political calculations may have been when the choice was made in spring 2008 to accept the bid made by American-based *Alcoa* rather than that of the competing Norwegian-based *Norsk Hydro*. Could geopolitical factors relating primarily to the existence of US military bases in Greenland have played a role here, either implicitly or explicitly, in the final choice?

<i>Advantages of globalisation</i>	<i>Disadvantages of globalisation</i>
Increased economic wealth	Increased inequality Increased pressure on nature
Increased mobility	Increased competition Increased insecurity
Increased communication and access to information	Increased control of information
Increased cultural tolerance	Increased nationalism Increased pressure on culture

During the process of public debate, the dominant opinion has varied according to the locality and the stakeholder concerned. The authorities and the town of Maniitsoq where the aluminium smelter will be located focus, in the main, on the prospect of rising incomes and increased economic wealth.

The supposed economic advantages of the aluminium smelter have however been challenged by many stakeholders. The peripheral municipalities point to its likely generation of increasing inequality. The environmentalists and cultural protectionists draw attention to the increasing pressure on nature and on the cultural heritage the smelter will undoubtedly bring. Both the worker's and the employer's associations are, moreover, worried about the increasing external economic competition it will likely generate while the cultural NGO ICC is concerned about the pressure on Inuit rights.

The final political decision on whether or not to give the go ahead for the first aluminium smelter in Greenland will be taken before the summer 2012. No matter what decision is made the process used to reach it has clearly changed Greenland forever. The process has created a more mature Greenland. Indeed Greenland is now seen

Elements of globalisation – Based on Giddens (1990)

Modernity

Capitalism
Industrialism
Surveillance
Military power

Globalisation

Capitalist economy
Division of labour
National-state system
World military order

Activists

Environmentalists and protectionists
Labour organisations
Democracy advocates
Peace movement



Inhabitants at Maniitsoq discussing the future of the possible *Alcoa* aluminium smelter. Photo: Rasmus Ole Rasmussen

as 'a player' in the global economy rather than merely a target for decisions made by others. Greenland has, economically and politically, come of age.

It is not however for Greenland to decide whether to be part of the global market; it will be the global market that will decide whether to include Greenland. The aluminium smelter project is likely to be the first of many doors through which Greenland must pass in order to fully embrace the global marketplace and for the global marketplace to fully embrace it.



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The Alcoa impact so far...

Alcoa is not willing to build the new aluminium smelter in Greenland unless it is allowed to import cheap Chinese labour for the construction of the production plant as well as the two hydro-electric power-stations planned to supply the smelter (*business.dk* 11.03.11). The American multinational company thus made it clear that it wants to follow the same procedures as were used previously when building similar structures in Eastern Iceland (see pp 18-19).

Greenland's parliament the *Inatsisartut* has not yet however taken the final vote on whether to give the 'go ahead' for the construction of this first large industrial development in Greenland. They have however decided that the location of the smelter should be at Maniitsoq. A decision on possible

Greenlandic co-ownership of the smelter and power-stations, as well as one on building-procedures, is expected in spring 2012.

Construction can begin at the earliest in 2013. It will last for five years and it is estimated that some 2 600 workers will be needed during the peak construction period. The total cost is likely to be between 15 and 20 billion DKK. At operation, around 625 employees will be needed for the smelter and another 25 for the two power-plants. It is estimated that there will probably be an additional 300 jobs for suppliers etc., when the production process is up and running (Source: Greenland Development).

By Odd Iglebaek

The “greening” of the economy

Any definition of the ‘green economy’ is invariably based on the understanding that our prevailing economic paradigm is antiquated. A common understanding of the concept is the transformation of production and consumption processes and patterns, including economic, environmental and social values, in order to ensure a more sustainable use of natural resources with lower carbon emissions while at the same time stimulating growth based on the natural, human and economic investments.

Three major concerns are reflected: the need to tackle climate change, the desire to strengthen energy security, and the need to stimulate job-creation in many rural areas. Energy is a key component for development. One of the most pressing transitions that need to be made in order to move to a green economy is an end to fossil fuel usage throughout the economy and its replacement with a green alternative. Both sources and sinks are reaching their limits while demand continues to rise. One clear outcome of this is the rising price of oil and thus of other combustible fuels. The 20th century was “the era of cheap oil” but that is well and truly over with fossil fuel prices now several times higher than experienced at the turn of the century.

Another issue here is the need to create new jobs. Several OECD countries have identified ‘green power’ as a major rural development opportunity. Examples here include: Spain (solar and wind); England (off-shore wind and wave); Finland (forest-based cellulosic ethanol and wood co-generation). The impact that the transition towards a ‘green economy’ will have on labour markets should not however be underestimated, especially in rural areas.

The OECD regional focus

The OECD is gradually recognising that rural areas are potential producers of key services and products supporting national competitiveness. This is happening because rural areas are home to a large percentage of the OECD population. Issues such as globalisation, ageing, depopulation and climate change are all factors affecting the sustainability of rural communities.

The production of renewable energy in particular has become a key element in rural development while at the same time making an important potential contribution to the mitigation of climate change. The limited capacity to store and transport energy and the existence of nationwide electric grids in a number of OECD countries have resulted in the evolution of a decentralised system in which relatively small power plants produce energy for their surroundings. Improving technology has added to this so that some rural regions today are in addition able to produce renewable energy for export.

This process has been supported over the last decade through a number of successful examples of regional and local governments that have employed specific policies to encourage, enhance and increase the levels of energy supply arising from renewable resources, thus giving substance to the slogan ‘green growth’.

During 2011 the OECD, in cooperation with a number of regional authorities, will conduct an analysis of different regional approaches to rural energy development. Nordregio charged with monitoring the involvement of four Nordic regions, Jämtland and Vester Norrland in Sweden, Region Sjælland in Denmark, North Karelia in Finland, and Troms Fylke in Norway.

In addition to providing general information on each of the regions in order to better understand the context of the various energy approaches used, an important element in the project is to highlight ‘best practices’ and inspiring new approaches in respect of green initiatives

in relation to local energy production. Puglia, Extremadura, Quebec, Prince Edward Island, Scotland, Pentecôte, Frysland, the Netherlands, and Maine will also be studied. The first OECD mission, including participation from several of the involved regions, headed to the region of Puglia in southern Italy during spring 2011. Puglia is, traditionally, among the least wealthy regions in Italy. It is also however a region where the opportunity to contribute to ‘green development’ through the production of renewable energy sources has already been widely recognised.

Arctic perspectives

The concept of ‘green development’ is for many considered to be synonymous with development in the Arctic. Living in the Arctic once meant relying on local resources or simply perishing. The extent to which the Arctic is now ready to move further ahead along this path presents both a political and a practical challenge.?? The Arctic is also, like the rest of the world, increasingly dependent on imports, where distances and transport costs – primarily due to the amount of hydrocarbons used – are critical issues. The ‘green economy’ concept has therefore been introduced as a new focus for economic development in the Arctic.

A major problem here is the fact that the Arctic is among the most sparsely populated areas in the world, with significant problems in establishing energy-related infrastructures. Many of the energy systems used are therefore ‘energy islands’, which adds to the level of complexity in term of the introduction of several of the renewable resource options. Photovoltaic electricity may be an option during the summer months but in reality needs to be supplemented throughout most of the year. Access to wind-based energy may be abundant in some regions, but cannot act as a stand-alone system when the backbone of a continuous and uninterrupted energy supply is absent.

At the macro level the issue is one of net new jobs, as evidenced in a rise in the participation rate or a fall in the structural unemployment rate. To what extent will green power displace other jobs? Will green energy jobs displace jobs in the traditional power supply sector? If green power is more expensive how many jobs will be lost in the wider economy due to lower GDP? At the local level, the key question is to understand how many jobs are associated with each specific project. Certain jobs will be in Operation and Maintenance (O&M), while others will be in the construction of the required facilities. As a consequence, both temporary and long-term jobs will be created in the regions.

If employment creation is the overriding aim of the policy, a thorough assessment of employment effects should thus focus on (1) job multipliers, the backward and forward linkages green power can generate at the regional level, and (2) income effects. Power generation typically creates relatively few local jobs and has small local job multipliers. It is a capital-intensive activity and has few linkages to the local economy. This is especially true for those forms of renewable generation that rely on free energy inputs, like wind and sun.

Conversely, indirect job creation at the provincial/state or national level can be significant. For instance, a region can specialise in the production of component manufacturing for renewables. Finally, displacement effects at the national level can offset many of the green-power effect jobs.

These questions, however, do not detract from the fact that the Arctic and its wealth of renewable energy resources *could* provide important potentials for a green growth development.

By Rasmus Ole Rasmussen

Resource banks or perennial recipients?

The development debate in the northernmost areas of Norway, Sweden and Finland is of course far from new but since regionalisation reforms were launched and to some extent also realised in the Nordic countries it has received further impetus.

Should the northernmost areas be seen as hosting indispensable banks of resources for their national economies or rather are they perpetually in need of significant support through fiscal transfers? Can and should these regions be agents of their own development or must forever they depend on state initiatives?

Ultimately, these are political questions but insights from studies on how regional actors in the northern parts of Norway, Sweden and Finland perceive their own regions can contribute to the debate.

The northernmost parts of Norway, Sweden and Finland constantly find themselves to be the target of various national strategies and initiatives as well as of the redistribution of resources designed to create and secure economic and social development in these areas. More recently, EU structural funds have also become an important source of income for development projects in these northernmost areas.

Debate on regional policy in all three countries has to a large extent become a question of how to ensure that people have the ability to continue to inhabit all parts of the national territory with much of the focus here on the northernmost areas. The general shift in regional policy in the Nordic countries towards a greater focus on the potentials of each region and on regions as the agents of their own development has made actors in the northernmost regions more self-confident in formulating their own strategies for development.

The northernmost areas of Norway, Finland and Sweden are of course embedded in different national systems but they share many similar characteristics; economies based on natural resources; long distances between settlements and low population density, and thus they clearly exhibit common challenges and opportunities. Frequent

cooperation across national borders on culture, health care, business development etc., also helps to strengthen the links between actors in these areas.

Stakeholders in the northernmost areas often express a genuine desire to handle things in their own way within their own regions. They have a positive perception of the potential associated with the continuing use of natural resources notably mining, fisheries and in North Norway, oil and gas as well as the prospects for new branches like those of the car testing industry, ICT and the development of new ways of making use of sea-based resources (bio-prospecting). Regional and local stakeholders wish to steer this development themselves as they argue that the best knowledge and skills base to do this is often located *within* the region.

At the same time, doubts exist over whether the capability exists within the region to deal with emerging challenges and opportunities. The main argument here is that the state is often seen as being reluctant to devolve enough decision-making power to these regions to enable them to effectively steer their own path towards development.

Questions also arise over the particular characteristics of these areas; low population densities and long travel distances etc., create doubts about whether such regions can really be the agents of their own development. There is however a conviction, although somewhat hesitant, that increased decision-making power will in and of itself create the self-confidence necessary for them to be able to effectively drive their own development processes.



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Megatrends

The current pace of global change has already had a decisive impact on the Arctic. To understand the current and likely future situation in the Arctic it is important to acknowledge the pre-conditions, challenges and tendencies at work here.

Some of these developments should be characterised as megatrends because they overarch and impact on everything else. They are trends deemed so powerful that they have the potential to transform society across social categories and at all levels, from individuals and local-level players to global structures, and eventually to change our ways of living and thinking.

Recommended price: 150.00 DKK .

Free PDF can be downloaded from www.norden.org

Date of publication: 06.05.2011

ISBN: 978-92-893-2223-2

Language: English

Number of pages: 207

Publication number: TemaNord 2011:527



Joint Nordic climate change adaptation ?

The effects of climate change have a strong transnational dimension as they do not respect political or administrative boundaries. This makes climate change collaboration networks between countries imperative. A strategic document coordinating climate change adaptation efforts in the Nordic Region would thus be welcomed by national actors. Despite the differences in territorial circumstances between the North Atlantic Islands and the Nordic countries on the European mainland, such a strategy, facilitated by the Nordic Council of Ministers (NCM), could nevertheless still be expected to foster mutual learning and the exchange of experiences.

Climate change is the main topic of the Finnish Presidency of the Nordic Council of Ministers in 2011 and is thus prioritised on the political agenda in the Nordic Region. In this programme, the leading position of the Nordic countries and the importance of cooperation in this respect are emphasised: "We must, *as a region*, face up to the challenges of climate change in a pragmatic and result-oriented way. By working together, we will achieve better results and generate significant synergies" (NCM 2010, p. 9).

The potential impacts of climate change and how they are to be tackled differ between the Nordic countries due to their different geographies and economic structures. Sea level rise, changing precipitation patterns and increasing storm surges (and the resulting flooding) and their consequences for the built environment (e.g. infrastructure) are the most pressing issues in Denmark, Sweden, Norway and Finland as well as in Iceland.

Adaptation work today in the North Atlantic Islands however concentrates on those economic sectors that are most dependent on natural resources such as fisheries (Greenland and the Faroe Islands) and hydropower production (Iceland) which might be affected by a changing climate.

Climate change adaptation in the Nordic Countries

As members of the European Union, the work on climate change adaptation in Sweden, Finland (including Åland) and Denmark is influenced by EU strategic documents such as the EU White Paper 'Adapting to climate change: Towards a European framework for action' and the EU Baltic Sea Region Strategy in which the 'Establishment of a regional adaptation strategy at the level of the Baltic Sea Region' is a strategic action (COM 2009). Norway, Greenland, Iceland and the Faroe Islands follow EU policies only on a voluntary basis.

Nevertheless, adaptation to climate change has become a national level priority in all Nordic countries (see map) and numerous adaptation activities are currently ongoing at both the regional and local levels. Local initiatives are often however taken up by engaged individuals who lack policy signals and guidance from above while the experiences gained in such local processes are often not particularly well linked to long-term adaptation processes (Nilsson 2010).

Transnational cooperation on climate change adaptation

Transnational and cross-border cooperation between the Nordic countries is being fostered under the European Regional Development Fund (ERDF) for instance within the Baltic Sea Region Programme. So far, three projects dealing specifically with climate change adaptation have been set up and involve local, regional and national partners from Finland, Sweden, Denmark and Norway - among others - in climate adaptation work: BaltCICA, BALTADAPT and BalticClimate.

In addition, various institutions from across the Nordic countries are involved in nationally funded research projects and programmes in which respective actors cooperate and exchange knowledge. These networks are seen as both important and fruitful. The West Norden countries also meet within the Arctic Council where adaptation to climate change is being addressed in the Working Group on Protection of the Arctic Marine Environment (PAME).

Apart from the above-mentioned projects and networks however, very little additional cooperation is currently occurring between national authorities due to the lack of an identifiable focal point for climate change adaptation work in the Nordic countries.

Climate change adaptation at the Nordic level

Climate change adaptation as a cross cutting theme is often considered to be within the purview of the Ministry for Environment or its equivalent, but it is also of particular interest to e.g. the Council of Ministers for Fisheries and Aquaculture, Agriculture, Food and Forestry (MR-FJLS), Environment (MR-M), Education and Research (MR-U) and Business, Energy & Regional Policy (MR-NER).

The Committees of Senior Officials (CSO) - under the different themes of the Minister Councils (MR) - is the operational level of the NCM and forms a decisive platform for cooperation on specific policy areas. For example, an informal meeting was held in November 2010 where the Nordic ministers responsible for national and regional planning adopted an action plan 2011-2014 in which sustainable urban development and adaptation to climate change was a prioritised theme.

As a part of the CSO, permanent or temporary Nordic Working Groups for e.g. energy efficiency, renewable energy or global climate negotiations play an important role in ongoing discussions and climate work. The Working Group for the exchange of experience and knowledge development (Urban Policies) under the Committee of Senior Officials for Regional Policy (EK-R) addresses climate change adaptation in Nordic urban areas.

On the research side, a joint approach to climate change adaptation exists. Established by the NCM, the NordForsk organisation provides funding for cooperative research on adaptation through two programmes: (1) the Top-level Research Initiative with its sub-programme: Effect studies and adaptation to climate change and (2) Climate Change Impacts, Adaptation and Mitigation in Nordic Primary Industries. Here, a number of research projects are ongoing to support the Nordic countries in addressing climate change and potential challenges.

A joint Nordic approach to climate change adaptation?

In a series of interviews with national officials and researchers, both the need for strategic cooperation on climate change adaptation research and the importance of the exchange of experiences regarding the implementation of adaptation measures among the Nordic countries has been emphasised. Despite differences in the impact of climate change, population size, economic structure and challenges, several points were put forward as representing essential issues and opportunities:

General arguments for a joint approach to climate change adaptation centre not only on the opportunity for mutual research and learning but also on historical and geographical commonalities and similar legal frameworks which ease cooperation between the Nordic

countries even on planning issues. A consensual common strategy could even encourage transnational learning between the Nordic countries that have not yet been cooperating on climate change adaptation and thus contribute to overcoming local conditions that may hamper successful adaptation work such as the lack of financial resources, expertise and labour. Furthermore, a common database is needed that makes information and data on climate change impacts and adaptation easily accessible while also providing appropriate tools.

A potential joint strategy on the Nordic level would help to raise awareness and communicate the breadth and seriousness of climate change to different administrative levels and to the general public. As governmental bodies are able to carry out cross-sectoral analysis within their respective countries, cooperation at the Nordic level could take advantage of this expertise.

A clear advantage is also seen here in respect of the exchange of certain experiences such as those in relation to adaptation cost assessment especially between EU and non-EU countries in the Nordic Region. The EU has extensive experience of different types of projects concerning adaptation and has been working on collating statistics relating to adaptation costs which is an issue that is integral to the member countries if they are to apply for funding to work on adaptation.

According to the interviewees, the Nordic Council of Ministers could be a potential facilitator perceived as having the resources, information (including contact details) and data available to coordinate a joint strategic approach to climate change adaptation. Research programmes (such as NordForsk), ongoing projects and the Nordic Working Groups that already exist under the NCM could serve as a starting point here. However, a common strategy would need to take into account the existence of different local circumstances and needs to ensure a sense of ownership. As one of the respondents stated, it will not make sense "if we do not feel at home in the strategy".

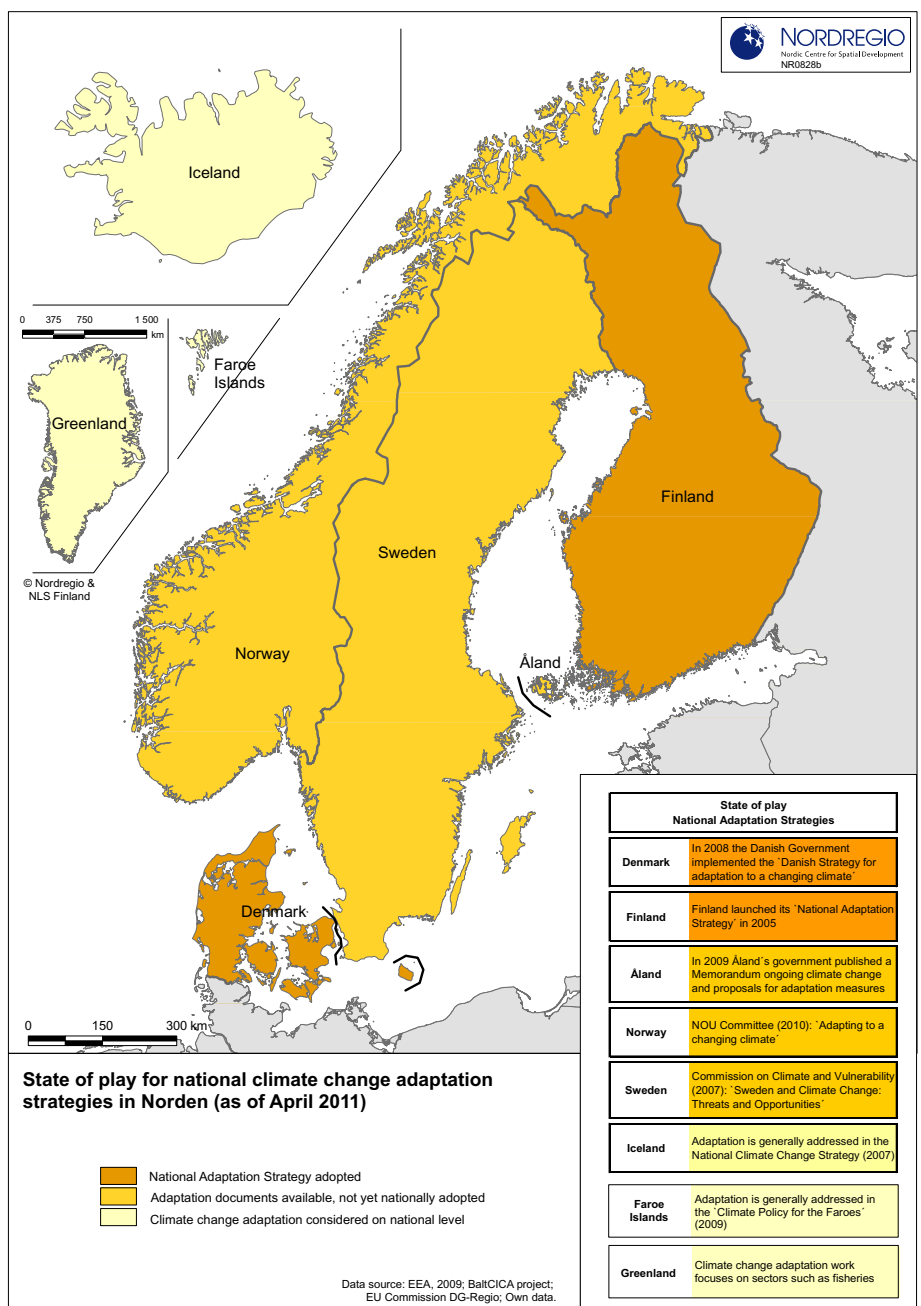
Concluding remarks

A joint Nordic approach to climate change adaptation in the form of a common strategy could create the following added value for the region: While coordinating adaptation efforts that are taken at all levels in the Nordic countries, the strategy could represent the long-term perspective that is needed when addressing climate change and supporting climate change adaptation on its way into all levels, sectors and institutions, i.e. "mainstreaming adaptation" (Nilsson 2010).

One possible strategy could function as a guiding framework and action plan for the highly complex issue of climate change adaptation by providing guidance 'from above' (top-down approach) and illuminating local examples 'from below' (bottom-up approach). Moreover, the strategy could play an important role as a knowledge broker between science (e.g. climate models and data) and practice (e.g. implementation of adaptation measures).

Facilitated by the Nordic Council of Ministers, the strategy could both ease and encourage cross-border cooperation and transnational learning by providing a discussion forum and focal point for all relevant national authorities and policy units. As climate change adaptation is a cross-cutting issue, a common strategy could link the issues that are of relevance in each policy field.

The strategy could also provide data and tools for climate change adaptation work at the regional level where Nordic cooperation could make a difference compared to the efforts taking place e.g. only at the national level, as it would have a larger impact on policy development. A joint approach to climate change adaptation could also strengthen the Nordic position *vis-a-vis* other regions (e.g. the Baltic Sea Region) and countries (e.g. Russia).



Map 1: State of play for national adaptation strategies in the Nordic Region.

The Nordic Council of Ministers (NCM) is well placed to facilitate cooperation between the Nordic countries. The strategic position of the NCM provides both a good overview of numerous actions at different policy levels in various policy fields and the ability to connect and align these dispersed activities according to the specific needs of the region. A possible joint strategy on climate change adaptation could be elaborated with input from the Nordic Working Groups within a new CSO (to be established) or an already existing CSO (e.g. Committee of Senior Officials for Regional Policy, EK-R).

Acknowledgement

This article is based on a literature review and telephone interviews conducted during March and April 2011 and complemented by e-mail communication (June 2010) with national actors from four Nordic countries and two autonomous areas. The authors would also like to thank José Sterling who produced the map as well as Lisa Van Well, Klaus Georg Hansen and Ole Damsgaard for valuable input and comments.



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Programme area: Denmark, Germany, Poland, Russia, Latvia, Lithuania, Estonia, Finland, Sweden and Norway.

BaltCICA project: Climate Change: Impacts, Costs and Adaptation in the Baltic Sea Region., www.baltcica.org

BALTADAPT project: Baltic Sea Region Climate Change Adaptation Strategy, www.baltadapt.eu

BalticClimate project: Baltic challenges and chances for local and regional development generated by Climate Change, www.balticclimate.org

Project example: NordKlim-Adapt project: www.smhi.se/hfa_coord/nordklim/index.php?page=about

Member states: Canada, Denmark including Greenland and the Faroe Islands, Finland, Iceland, Norway, Russian Federation, Sweden, and the United States of America

More information about the councils of the NCM: www.norden.org/en/about-nordic-co-operation/organisations-and-institutions/councils-of-ministers

More information about the CSOs: www.norden.org/en/nordic-council-of-ministers/committees-of-senior-officials

Nordisk Handlingsprogram 2011-2014 - Planlægning som instrument for beredygig udvikling i Norden

More information on the Nordic Working Groups: www.norden.org/en/about-nordic-co-operation/organisations-and-institutions/working-groups

E.g. the seminar: *Stadplaneringens utmaningar i ett förändrat klimat*: www.nordregio.se/?vis=artikel&fid=5836&cid=0504201117173115850&magasin=ja

Project examples: Nordic Centre of Excellence (NCoE) NORD-STAR (Nordic Strategic Adaptation Research) and NOBILITI project: Nordic Climate Cooperation on the Municipal Level



Climate Change - and the North Atlantic

Provides a comprehensive insight into the consequences of climate change for the North Atlantic region. The book takes a special look at regional consequences with regard to the sea, the land, the people, the natural living resources, transport and geopolitics. Editors: Lars Thostrup and Rasmus Ole Rasmussen. NORA 2009.

Date of publication: December 2009.

ISBN: 978-99918-3-293-7

Language: English

Number of pages: 128

Publication number: TemaNord 2011:527

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The EU's Arctic Footprint

The EU is a relative newcomer to Arctic policy and may appear to have limited options for influencing the future of the Arctic. However, all Arctic States and neighbouring countries, including the EU, have a stake in the health of Arctic ecosystems and communities, as well as the sustainable development of new sources of economic growth in this region.

The EU, as a major consumer of Arctic resources and a significant contributor to Arctic pollution, can play a role in guiding the future of this region through a range of policy pathways, including stronger EU environmental laws, increased cooperation through multilateral agreements and international leadership.

Using a new methodology for assessing the environmental impact of one region on another, the EU Arctic Footprint and Policy Assessment project determines the EU's current footprint on the Arctic. It also analyzes relevant existing policies in nine distinct issue areas and presents policy options to inform decision makers about how the EU can reduce its environmental footprint in the Arctic. These results could serve not only to improve EU policies, but also to provide a model for countries that want to assess their environmental footprint on the Arctic or another region.⁵

EU Arctic Footprint

The results of the EU's Arctic footprint assessment are presented according to nine issue areas: biodiversity, chemicals, climate change, energy, fisheries, forestry, tourism, transport and Arctic livelihoods (see Figure 1). Within each issue area, the EU's share of each flagship indicator is shown as a percentage of the total global contribution to Arctic impacts. Lack of data prevented quantification of the EU's impact on forestry, transport and Arctic indigenous and local livelihoods. Further research is needed to address these information gaps.

Policy priorities to address EU Arctic impacts

Climate change is a driver in many of the policy issues addressed in this assessment. While the EU cannot address this challenge and its Arctic impacts alone, it can act as an international leader in emissions reductions and create pressure for the necessary reductions from other developed regions.

The EU is currently addressing many of the potential impacts on the Arctic environment, and is aware of the potential for more severe effects in the future. However, to decrease the EU's current and potential Arctic footprint, key policy gaps must be addressed. As concluded by the detailed analysis of each issue area, there are multiple Arctic impacts to which the EU contributes significantly (>35% of global contribution).

The policy assessment component of the analysis indicates that there are policies in place to address most of these impacts, both within the EU and globally. However, some of these major impacts are more completely addressed than others. Two important policy issues to address are: EU management of consumption-related impacts (i.e. EU imports from Arctic industries with high infrastructure-related impacts and SO₂ emissions), and control of black carbon emissions.

The EU could effectively contribute to Arctic policy making and reduce its Arctic footprint by taking steps to develop an environmental strategy specifically for the Arctic, using multilateral fora and discussions to reduce the environmental impacts from imported goods and services, and adapting its policies to international standards in Arctic management. As the EU moves forward, it is critical to present a consistent message and continue to work with the eight Arctic states, and across sectors, to implement policies that promote sustainable resource development and protect the Arctic environment.

CATEGORY	FLAGSHIP INDICATOR	EU SHARE
Biodiversity	no flagship indicator	n.a.
Chemicals	PCB-153 emissions from Europe	57%
	Market demand for BFRs in Europe	17%
	EU-27's share of Mercury emissions over the Arctic	24%
	EU-27's final demand for products from Mercury-intensive Arctic industries	36%
	SO ₂ emissions from the EU-27	42%
	EU-27's final demand for products from SO ₂ -intensive Arctic industries	38%
Climate change	GHG emissions from the EU	16%
	Europe's share of black carbon emissions to the Arctic	59%
Energy	EU-27's final demand for products from the Arctic oil and gas industry	24%
Fisheries	EU-27's share in fish imports from Arctic countries	39%
Forestry	EU-27's final demand for products from the Arctic forestry industry	n.a.
Tourism	Share of EU-27 tourists in the Arctic	27%
Transport	EU share of global shipping traffic in the Arctic	n.a.
Arctic livelihoods	EU impact on employment/income in the Arctic	n.a.

	<20%		20-35%		35-50%		>50%
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Figure 1: EU Arctic footprint scorecard with flagship indicators
Source: Sustainable Europe Research Institute (SERI), 2010.

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Veteran workers on the 1st of May 2011 in Murmansk. The green building at the end of the street is the railway station. Photo: Odd Iglebaek