



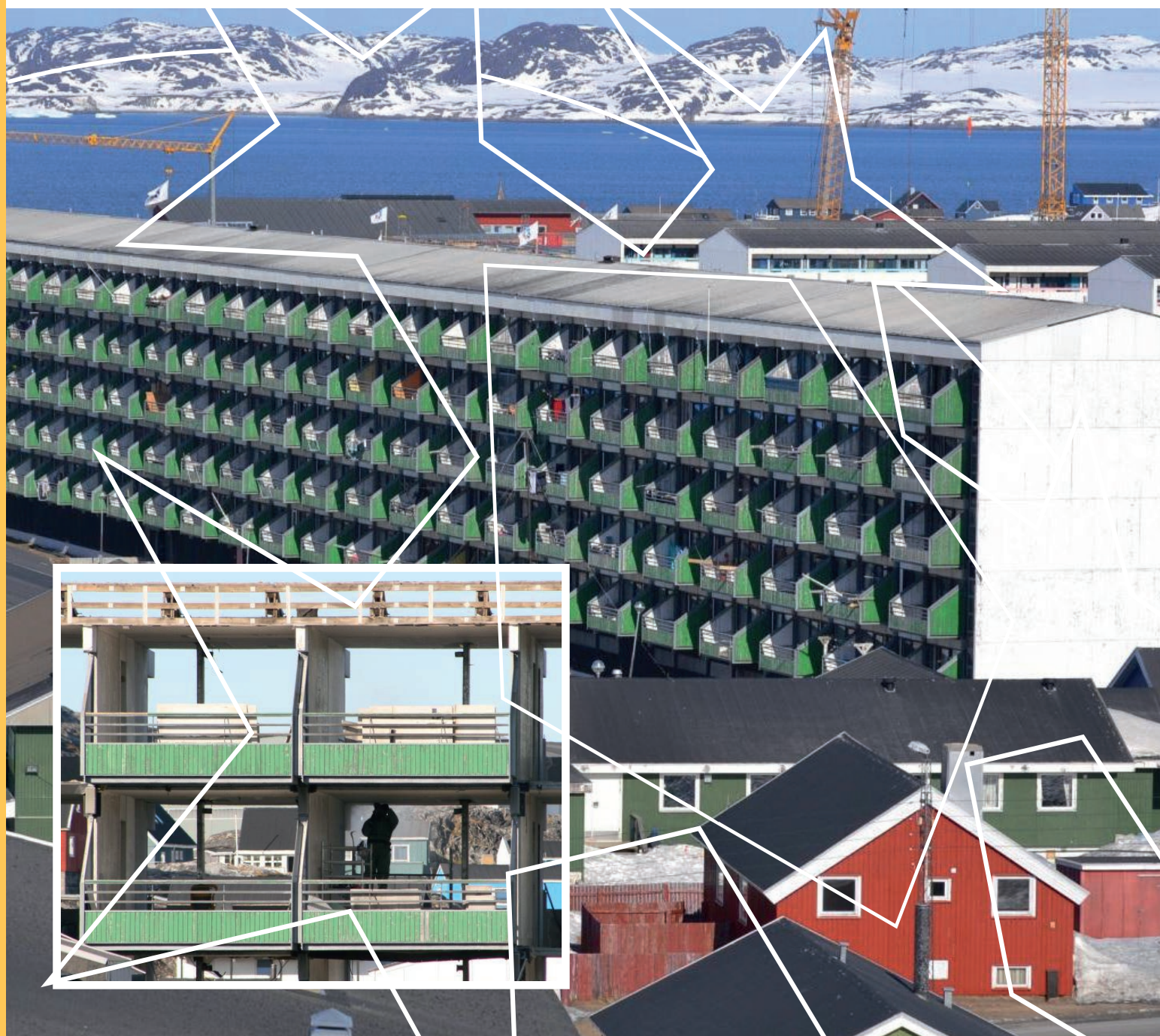
NORDREGIO
Nordic Centre for Spatial Development

Proceedings from the First International Conference on Urbanisation in the Arctic

Conference 28-30 August 2012
Ilmimarfik, Nuuk, Greenland

Klaus Georg Hansen, Rasmus Ole Rasmussen
and Ryan Weber (editors)

NORDREGIO WORKING PAPER 2013:6



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the First International Conference
on Urbanisation in the Arctic

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ISBN 978-91-87295-07-2

ISSN 1403-2511

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Nordic co-operation seeks to safeguard Nordic and regional interests and principles in the global community. Common Nordic values help the region solidify its position as one of the world's most innovative and competitive.

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is a forum for co-operation between the Nordic parliaments and governments. The Council consists of 87 parliamentarians from the Nordic countries. The Nordic Council takes policy initiatives and monitors Nordic co-operation. Founded in 1952.

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conducts strategic research in the fields of planning and regional policy. Nordregio is active in research and dissemination and provides policy relevant knowledge, particularly with a Nordic and European comparative perspective. Nordregio was established in 1997 by the Nordic Council of Ministers, and is built on over 40 years of collaboration.

Stockholm, Sweden, 2013

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1. Preface

The First International Conference on Urbanisation in the Arctic was held in Nuuk in Greenland from the 28th to the 30th August 2012. The conference was organized by Nordregio, the Nordic Centre for Spatial Development, in cooperation with Ilisimatusarfik, University of Greenland. The conference took place at Ilimmarfik.

Economic support for the conference has been granted from the Nordic Council of Minister's Programme "Samarbete med Nordens grannar i vast", Nordic Council of Minister's Arctic Co-operation Programme, National Science Foundation in USA, and the Government of Greenland. Without this support the conference would not have been possible. The organizers are grateful for this generous support from the foundations in and outside of the Nordic countries.

The frame for the conference was phrased with a citation from the book Megatrends:

"Urbanisation is a global trend which will significantly contribute to the shaping of human life in the future. The Arctic region is no exception ... Since the 1960's, most of the population growth in the Arctic has occurred in urban centres tied to industrial activities, social services and public administration" (Rasmus Ole Rasmussen, Megatrends, 2011, pp 22).

Thus, the presentations and the discussions at the conference did not focus on if there is an urbanisations going on in the Arctic. The presentations and the discussions looked at how the urbanisation in the Arctic actually has been going on and is developing.

The conference was open to researchers, planners and decision-makers who are directly involved in the administration or development of Arctic societies. For the conference 64 participants were registered. Unfortunately, a few last minute registrations had to be rejected due to lack of seating capacity. Geographically the

participants represented 13 countries – 28 participants from Greenland, 19 from North America, 12 from the rest of the Nordic countries, 3 from European countries, 1 from Russia, and 1 from Australia.

The main purpose of the conference was twofold. First, it was the idea to create a forum where politicians from some of the Nordic countries could meet politicians from Canada and discuss mutual experienced with the urbanisation process and share ideas on how to manage the urbanisation process from a politicians' point of view. Second, it was a success criterion to give the politicians and the researchers an opportunity to discuss on an informal basis what the politicians would like to know more about from the researchers and what the researchers could have of recommendations to the politicians in the Arctic societies.

That purpose was fulfilled in a unique and clearly constructive way. It was not least due to the discussion group sessions on the last day of the conference. In these sessions there was time to go into a deeper and informal discussion on several of the topics which had been discussed in the presentations during the first two days of the conference. The main recommendations from these discussions can be found in chapter 31.

The proceedings include 10 abstracts and 18 papers not previously published. They represent some of the most distinguished researchers on socio-economic, social and cultural aspects of urbanisation in the Arctic. The articles have not been peer reviewed but the editors have made a light language revision of the texts.

Klaus Georg Hansen, Rasmus Ole Rasmussen and Ryan Weber (editors)
Stockholm, 5th May 2013

2. Program for the conference

Monday 27th August 2012

Registration

15:00-17:30 Registration. Ilimmarfik.

Reception

18:00-21:00 Get together Reception.
Hosted by Palle Christiansen,
Minister for Education, Research and Nordic Cooperation,
Government of Greenland.
In Hans Egedes House, the Old Harbour ("Kolonihavnen").

Tuesday 28th August 2012

Registration

08:00-16:00 Registration. Ilimmarfik.
08:00-08:30 Coffee and tea.

Plenary session I

Chair: Klaus Georg Hansen, Nordregio.

08:30-08:40 Welcome from the organizing committee.
Klaus Georg Hansen, Deputy Director, Nordregio, Sweden.
08:40-08:50 Welcome from the host institution Ilisimatusarfik.
Tine Pars, Rector, Ilisimatusarfik, Greenland.
08:50-09:05 Opening speech.
Urbanisation – an obstacle or a precondition?
Palle Christiansen, Minister for Education, Research and Nordic Cooperation,
Government of Greenland.
09:05-09:40 Megatrends in Arctic Development.
Rasmus Ole Rasmussen, Senior Research Fellow, Nordregio.
09:40-09:50 Short break.

Thematic session 1a: The process of urbanisation – Diversity in the Arctic

In the first session, focus is on the general development of urbanisation in the Arctic.

Chair: Lawrence C. Hamilton.

09:50-10:00 Introduction to "The process of urbanization" (Sessions 1a + 1b).
Lawrence C. Hamilton, Professor of Sociology, Senior Fellow of the Carsey Institute,
University of New Hampshire, Durham, USA.
10:00-10:20 A History of Urbanization in the Arctic.
Timothy Heleniak, Department of Geography, University of Maryland, USA.
10:20-10:40 Differentiation of Russian Arctic Regions: urbanization, economy, demography.
Lyudmila Zalkind, Senior Researcher, Kola Science Centre RAS, Russia.

- 10:40-11:00 Marginal Cities in Discursive Space: Understanding Political Economies of Urbanization in the Canadian and Russian Arctic.
Andrey N. Petrov, PhD, Assistant Professor and Director, University of Northern Iowa, Department of Geography and Arctic Social and Environmental Systems Research Lab, USA.
- 11:00-11:30 Break – coffee and tea and a bite of something.

Thematic session 1b: The process of urbanisation – Planning in the Arctic

In this session, the focus is on the changing role of planning in connection with the process of urbanisation in the Arctic.

Chair: Lawrence C. Hamilton.

- 11:30-11:50 The history of urbanization and Urban Planning in the Faroes – the case of Tórshavn.
Sámal Johansen, Director for the National Archives for the Faroe Islands.
- 11:50-12:10 Iqaluit – Growth of an Inuit Capital.
Authors: Rob Shields and Barret Weber.
Presented by Rob Shields, Henry Marshall Tory Endowed Research Chair and Professor, Departments of Sociology and Art and Design, University of Alberta; Director, City – Region Studies Centre Faculty of Extension, Canada.
- 12:10-12:30 Nunavut – Examples of Community Unplanning – A Brief Historical Review.
Kirt Ejesiak, M.P.A., C.A.S, Partner and Alain Fournier, OAQ, OAA, FRAIC, Partner Panag Design, Iqaluit, Nunavut, Canada.
- 12:30-13:00 Open discussion.
Panel: Rasmus, Themothy, Lyudmila, Andrey, Sámal, Rob, Kirt, Alain.
- 13:00-14:00 Lunch.

Thematic session 1c: Contemporary challenges – Climate in the Arctic

An important part of the planning process is to meet the challenges imposed by the environment. In these years, focus is especially the question of the role of the ongoing changes in the climate.

Chair: Andrew Taylor.

- 14:00-14:10 Introduction to “Contemporary challenges” (Sessions 1c + 1d).
Dr. Andrew Taylor, Senior Research Fellow, Charles Darwin University, Australia.
- 14:10-14:30 Arctic Urban Development and Climate Change: Past, Present, and Future of Russian Urban Infrastructure in permafrost regions.
Authors: Nikolay I. Shiklomanov and Dmitriy A. Streletskiy.
Presented by Nikolay I. Shiklomanov, Assistant Professor, Department of Geography, The George Washington University, Washington DC, USA.
- 14:30-14:50 Arctic Urbanization: Testing the Urban Heat Island Effect in Greenland.
Tony Reames, PE, School of Public Affairs and Administration, NSF C-CHANGE IGERT Program Trainee, University of Kansas, Lawrence, USA.
- 14:50-15:10 The Role of Winter/Ice Roads in Industry and Communities in Northern Alberta. Scott Stephenson, Ph.D. student, Department of Geography, University of California, USA.
- 15:10-15:30 Break – coffee and tea and a bite of something.

Thematic session 1d: Contemporary challenges – Urban life in the Arctic

A general challenge in the process of urbanisation is to identify what are the major social changes as a result of moving from villages to towns.

Chair: Andrew Taylor.

- 15:30-15:50 Urbanization of the Alaskan Arctic: The Great Reversal?
Hal Salzman, Professor, E.J. Bloustein School of Planning & Public Policy,
J.J. Heldrich Center for Workforce Development, Rutgers University, USA
- 15:50-16:10 Greenlandic urbanization and urban life – decline or development?
Gitte Tróndheim, Associate Professor, Ilisimatusarfik, University of Greenland, Nuuk,
Greenland.
- 16:10-16:30 Urban Sami and the city as a frame for the development of a new sami cultural form in the
Scandinavian countries.
Torill Nyseth, Professor, Department of Sociology, Political Science and Community Planning,
University of Tromsø, and Paul Pedersen, Norut Tromsø, Norway.
- 16:30-17:00 Open discussion.
Panel: Nikolay, Tony, Scott, Hal, Gitte, Torill, Paul.

Wednesday 29th August 2012

Registration

08:00-16:00 Registration. Ilimmarfik.

08:00-08:30 Coffee and tea.

Plenary session I I

Chair: Gitte Tróndheim, Ilisimatusarfik.

- 08:30-09:00 ‘Coming off country’ – the unthinkable process of Indigenous urbanisation from remote
Australia.
Dr. Andrew Taylor, Senior Research Fellow, Charles Darwin University, Darwin, Northern
Territory, Australia.
- 09:00-09:30 Your region – your choice.
Maliina Abelsen, Minister for Finance, Government of Greenland.
- 09:30-09:45 Short break.

Thematic session 2a: Work, mobility and planning – Labour and industries

Large-scale industrialization, energy and resource exploitation have become a reality in connection with development in the Arctic – a situation with high impact on settlement structures and processes of urbanisation.

Chair: Keith Storey.

- 09:45-10:00 Introduction to “Work, mobility and planning” (2a + 2b).
Keith Storey, Honorary Research Professor, Memorial University
of Newfoundland, St. John’s, Newfoundland, Canada.
- 10:00-10:20 Remoteness, Transportation Infrastructure, and Urban-Rural Population Movements in the
Arctic. Authors: Matthew Berman and Lance Howe. Presented by Matthew Berman, Professor,
University of Alaska Anchorage, Alaska, USA.
- 10:20-10:40 Long-distance commuting (LDC) in the Russian North.
Elena Nuikina Vladimirovna, Political scientist, Scientific collaborator University of Vienna,
Austria.
- 10:40-11:00 Oil and Gas towns in Western Siberia: past, present and future challenges.
Yvette Vaguet, CNRS-UMR I.D.E.E.S, Department of Geography,
University of Rouen, Mont Saint-Aignan, France.
- 11:00-11:30 Break – coffee and tea and a bite of something.

Thematic session 2b: Work, mobility and planning – Changing economic realities

With large-scale activities as a reality, the economic structure has changes, and the local responses are crucial in meeting these new challenges.

Chair: Keith Storey.

- 11:30-11:50 Urban Greenland: A spatial analysis of Nuuk's evolving labour market.
Michael J. Dangerfield, D.Phil. candidate, School of Geography and the Environment (SoGE), Worcester College, University of Oxford, United Kingdom.
- 11:50-12:10 New industry and changing demography in East Iceland.
Hjalti Johannesson, Assistant director and Researcher, RHA – University of Akureyri, Research Centre, Iceland.
- 12:10-12:30 New Industry and Changing Demography in Newfoundland and Labrador.
Keith Storey, Honorary Research Professor, Memorial University of Newfoundland, St. John's, Newfoundland, Canada.
- 12:30-13:00 Open discussion.
Panel: Andrew, Matthew, Elena, Yvette, Michael, Hjalti, Keith.
- 13:00-14:00 Lunch.

Thematic session 2c: The Arctic goes global – Structural responses to global dynamics

The challenges for the urbanised Arctic encompass several issues – impact on demography and mobility, and by global crises.

Chair: Hjalti Johannesson.

- 14:00-14:10 Introduction to The Arctic goes global (2c + 2d).
Hjalti Johannesson, Assistant director and Researcher, RHA – University of Akureyri, Research Centre, Iceland.
- 14:10-14:30 Arctic Alaska population challenged by climate change.
Lawrence C. Hamilton, Professor of Sociology, Senior Fellow of the Carsey Institute, University of New Hampshire, Durham, USA.
- 14:30-14:50 New Economic Activities and Urbanization: individual reasons for moving and reasons for staying – Case Greenland.
Authors: Klaus Georg Hansen and Rasmus Ole Rasmussen.
Presented by Klaus Georg Hansen, Senior Research Fellow, Nordregio, Sweden.
- 14:40-15:10 Aftermath of growth in Reykjavik Capital region – land-use and values inherent in Icelandic urbanization.
Anna Karlsdóttir, Assistant Professor, Geography, University of Iceland, Reykjavik, Iceland.
- 15:10-15:30 Break – coffee and tea and a bite of something.

Thematic session 2d: The Arctic goes global – Social responses to global dynamics

In connection with the new challenges, social relations and conditions require new types of response.

Chair: Hjalti Johannesson

- 15:30-15:50 Gender dynamics in the “oilopolis”: consequences of boomtown growth for women in Yuzhno-Sakhalinsk, Russia.
Jessica K. Graybill, Assistant Professor, Department of Geography, Colgate University, Hamilton, New York, USA.
- 15:50-16:10 Sociological perspectives on Canadian Arctic urbanization;
What is a town?
Thibault Martin Ph.D., Professor and Chairholder, Canada Research Chair on AboriginalGov

ernance of Territory, University of Québec, Université du Québec en Outaouais, Québec, Canada.

16:10-16:30 Diasporas in the Arctic Urbanization.
Rasmus Ole Rasmussen, Senior Research Fellow, Nordregio, Stockholm, Sweden.
16:30-17:00 Open discussion.
Panel: Lawrence, Klaus, Anna, Jessica, Thibault, Rasmus.

Thursday 30th August 2012

Registration

08:00-13:30 Registration. Ilimmarfik.
08:00-08:30 Coffee and tea.

Thematic session 3a: Urbanisation and policy implications

Chair: Klaus Georg Hansen.

09:00-09:15 Introduction to the panel discussion and group work process.
Klaus Georg Hansen, Senior Research Fellow, Nordregio, Sweden.
09:15-10:30 Panel discussion.
“What do the politicians need from the researchers?”
Politicians:
Madeleine Redfern, Kirt Ejesiak, Naaja Nathanielsen, Palle Christiansen.
Researchers:
Andrew Taylor, Tine Pars, Keith Storey, Torill Nyseth.

10:30-11:00 Break – coffee and tea and a bite of something.
10:30-12:30 Group discussions.
The conference delegates will be divided into four discussion groups.
“Identify the five most important recommendations to politicians
in the Arctic societies regarding the urbanization process.”

Group 1: Facilitator: Anna Karlsdóttir
 Presenter: “A person from Group 1”
Reporter: A student from Ilisimatusarfik.
Group 2: Facilitator: Sámal Johansen
Presenter: “A person from Group 2”
 Reporter: A student from Ilisimatusarfik.
Group 3: Facilitator: Gitte Tróndheim
 Presenter: “A person from Group 3”
 Reporter: A student from Ilisimatusarfik.
Group 4: Facilitator: Ryan Weber
 Presenter: “A person from Group 4”
 Reporter: A student from Ilisimatusarfik.

12:30-13:30 Lunch.

Thematic session 3b: Urbanisation and policy implications

13:30-13:40	Introduction to the reporting back from the four groups. Klaus Georg Hansen, Senior Research Fellow, Nordregio, Sweden.
13:40-14:00	Report from Group 1. By the Presenter from Group 1. Including questions and comments.
14:00-14:20	Report from Group 2. By the Presenter from Group 2. Including questions and comments.
14:20-14:40	Report from Group 3. By the Presenter from Group 3. Including questions and comments.
14:40-15:00	Report from Group 4. By the Presenter from Group 4. Including questions and comments.
15:00-15:30	Break – coffee and tea and a bite of something.
15:30-16:15	Introduction to the final discussion about policy recommendations. Klaus Georg Hansen, Senior Research Fellow, Nordregio, Sweden. Panel: Politicians: Madeleine Redfern, Kirt Ejesiak, Naaja Nathanielsen, Palle Christiansen. Researchers: Andrew Taylor, Tine Pars, Keith Storey, Torill Nyseth.
16:15-17:00	Final remarks from the organizing committee. Presentation of the preliminary structure of the forthcoming book from the conference – obtaining commitments from the contributors. Klaus / Rasmus / Keith / Hjalti / Samal

3. Urbanisation – an obstacle or a precondition?

Palle Christiansen

Abstract

Urbanisation is a global trend and is the result of people seeking new opportunities. There are two ways – at least – that we can choose to look upon urbanisation. One way to look at it is that it is a threat to the way of living, meaning the way we live now and the life we have become accustomed to. The other way is, to look upon urbanisation as a natural way to adapt to the ever changing world we live in.

Some countries are planning the urbanisation, both so they can maintain economic growth, but also so they can provide proper housing, education and work for those who choose to move from rural districts to the cities – or related urban areas. I dare say that this is being done in the developed countries and in countries where they have politicians who has the foresight to see the gain obtained from urbanisation.

On the other end of the scale, we have politicians with less or no foresight regarding urbanisation. These traditionalists fight against urbanisation and the

result is that their countries will fall behind on all areas. The way I see it urbanisation cannot be stopped, so the countries (and thereby their politicians) that fight against urbanisation will face problems. Problems with proper housing, lack of sufficient possibilities for education for their population and as a result a rise in unemployment rates.

So, is urbanisation an obstacle or a precondition?

The answer depends on, what kind of political goals the majority of the politicians have in a given country. If they do not want change or development, urbanisation is an obstacle. If the same majority wants to help develop their country and seek a sustainable adaptation to the ever changing world, urbanisation will be one of the strongest preconditions.

Urbanisation equals change. Change is not welcomed by everybody. Therefore urbanisation often ends up being a taboo for many politicians and other decision-makers. And in my opinion, taboos can only be broken with knowledge and political courage.

4. Megatrends in Arctic Development

Rasmus Ole Rasmussen

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.



In the report Megatrends (TemaNord 2011:527, Nordic Council of Ministers) we have identified the following nine megatrends:

1. Increased urbanisation – a global trend also including the Arctic

- Urbanisation is a process where society is transformed from predominantly rural characteristics in terms of economy, culture and lifestyle, to one which can be characterised as urban.

- It leads to a further concentration of the Arctic population on fewer and larger places - with increased diversification of the economy, social relations, and cultural activities.

- It entails a complex set of processes, not only in where people live and what they produce, but in who they are, how they live in terms of economic well-being, political organisation and the distribution of power, demographic structure and social relations.

- The pace may differ in different parts of the Arctic, but the trend is the same!

2. Demographic challenges – the old stay while the young leave

- A decline in birth rates leads to a reduction in the number of people in the active workforce. This, combined with a general ageing of the population, results in increased old age dependency rates.

- Stagnating or declining predominantly rural regions are experiencing the temporary out-migration of young persons seeking educational opportunities, usually resulting in the permanent out-migration of young and well-trained persons.

- As relatively more women than men leave, this has a profoundly negative effect on the social life and the economy through opportunities for marriage, maintenance of family life and family relations etc., as well as through the loss of educational skills.

- A few municipalities – basically the urban ones - can show a positive net in-migration, most of them in relation to either new economic activities creating jobs, or educational opportunities attracting youth segments.

3. Continued dependency on transfers and the exploitation of natural resources will continue to dominate the Arctic economies

- The Arctic continues to be a region of economic contrasts. The international economy supports modern

large scale, capital intensive production, while the traditional economy exists in small individual or family groups.

- Growing global competition combined with the over-exploitation of natural resources creates structural and economic crisis in many Arctic/Northern communities.

- Exploited to the limit, these living resources are not expected to provide the necessary economic surplus to enable further welfare development. In addition, 'traditional' activities remain vulnerable to international opinion in relation to the environment and animal welfare.

- Growth in the Arctic tourist industry will continue with an increasing emphasis on large vessels and land-based tourism.

- Future extraction of the vast land-based resources of the Arctic will increasingly be based on 'company-towns' generating few jobs in established communities.

- The most significant shift in the economy, however, is from primary and secondary towards tertiary sector jobs funded through transfers from royalties and governments.

- The Arctic will remain a high cost production region because it is located far from markets, it is sparsely populated and it is situated in a harsh environment. In most parts of the region development occurs along 'frontiers' with a limited infrastructure and with few available workers.

4. Continued pollution and ongoing climate change will have a significant impact on the nature and environment of the Arctic.

- The future will see challenges such as increasing temperatures, melting of sea ice and glaciers, sea-level rise and probably also increased precipitation in some areas and drought in others.

- Whether or not they are fatal themselves, anthropogenic forces add to the stress on local ecosystems. Their combined effects can be cumulative with substantial causality. In some cases innovative approaches might reduce the impact of these processes.

- Biological diversity could be significantly impacted if climate change continues at its current pace, though the new composition of species is likely to be based on heat-tolerant fast adapters, resulting in patterns where these 'invasive species' will tend to re-structure local ecosystems.

- Management of renewable resources is a complex

and highly advanced exercise, with several different layers and players. The challenge here is to provide management systems such as co-management approaches where the different levels of interest meet in order to provide a means of regulatory control and follow up schemes while at the same time remaining open to outside involvement.

- Especially in the Arctic, where cross-boundary interests between nations, regions, and communities are often involved, it seems obvious that resource management could benefit from such experiences.

- While pollution from outside the Arctic is a recognised problem which may increase with rising levels of activity in the Arctic, pollution from internal Arctic activities needs also to be addressed.

5. The Arctic needs to generate more Human Capital by investing more in its people

- The advent of what is often characterised as the 'knowledge economy' requires the enhancement of human skills and talents which will be the key to the next development process. As education has a leading role to play new initiatives are needed to enable communities to take charge of their own development processes.

- The service sector, providing wage work in administration, education and social services, has become the main income source for most families in the Arctic. These sectors serve as the economic mainstay for local communities and are also increasingly necessary for the maintenance of many of the traditional renewable resource activities.

- Ensuring the availability of educational opportunities and the jobs that enable young people to remain in the community, or at least in the region.

- Establishing job opportunities for women is important as they tend to be the main source of an educated workforce in most of the Arctic, and already tend to be a primary source for labour in the public sector's service activities, while unskilled or technical jobs tend to be taken up by incomers.

6. Changes in the nature of interaction between the public and private spheres will impact development

- While most of the Arctic is still characterised by a

large public sector with state authorities involved in most regulation and planning measures, processes supporting the delegation of power and responsibility to lower administrative structures have been widely introduced, promoting and maintaining strong local autonomy and democratic accountability.

- Of similar importance is the fact that the private sector is now gradually moving into fields which used to be dominated by the public sphere, most prominently in retail sale, housing and professional services.

- Access to natural resources has long been subject to such a process. In fisheries Individual Transferable Quotas and Community Quotas have turned into forms of private ownership. And most prominently, Russia has experienced a process where privatisation has entered into a broad spectrum of basic economic activities such as mining and smelter industries.

- Due to the high costs of establishing infrastructure and maintaining connections in the Arctic, however, the public sector will prevail as the major provider of such services.

7. Renewable energy will contribute to a 'greening' of the economy.

- The Arctic has major potential in terms of developing non-fossil fuel based local energy resources including substantial freshwater sources which may be the basis for further development.

- Energy is a key component for development, and a major challenge here is that the Arctic is among the most sparsely populated areas in the world and with obvious difficulties in establishing energy-related infrastructures.

- The current impetus to 'green' the economy reflects three major concerns: the need to tackle climate change and other environmental problems; the desire to strengthen energy security by reducing dependence on oil and gas; and the need to stimulate job-creation through local renewable energy production in many rural areas.

- The inflow of consumer goods to the Arctic in combination with a more urban lifestyle generates a substantial amount of waste material. Increasingly, the re-generation and re-use of some products and increased use of recyclable materials will provide a new approach to waste management, while other non-recyclable materials are converted into energy.

8. Increased accessibility provide opportunities as well as new risks

- The much predicted easier ocean access to transport and resources in the region will generate increased shipping, but also create new risks for the environment.

- It may provide inhabitants, at least some, with better connections to other parts of the world, but the costs may still be a limiting factor.

- It will, however, provide the cruise liner industry with easier access. This may not however be of particular benefit to small Arctic communities as they have only a minimal ability to benefit from mass tourism. The necessary infrastructure costs – port facilities and hotel beds – are prohibitive and the risk that they are never able to prove their economic viability remains great as such communities would be at the economic mercy of the cruise line companies.

- Ubiquitous low cost communications technology will change the relationship between citizens and states. In some areas, however, uneven capacities and problems over access due to socio-economic limitations will undoubtedly remain an issue due to charging systems based on the amount of traffic.

- The compound effects of the impact of numerous interrelated components raise the question of whether this is voluntary or forced. Globalisation has a penetrating effect.

9. The Arctic as a new player in the global game

- The Arctic is no longer an isolated or remote region. It is a member of the global society, often at the centre of global attention and fundamentally influenced by global changes,

- Increased global interest is however a potential source of tension between the need for exploration and the requirements of conservation. This balancing act requires effective governance. Resource development, therefore, will be conducted in the framework of 'stewardship', with a greater emphasis placed on sustainability and the principle of inter-generational equity.

- The complexity and rapidity of the changes experienced require that substantial international effort is made to share 'stewardship' and that concern for this

fragile area of vital includes Arctic and non-Arctic stakeholders and global society more generally.

■ In this context however, the need for new data, knowledge, and information is required for a further

in-depth understanding of the interaction between the different systems and in order to fully understand current and potential future changes.

5. A History of Urbanization in the Arctic

Timothy Heleniak

Abstract

This paper traces the process of urbanization in the Arctic starting in about 1900 when industrialization began in the region in pursuit of the region's natural resources. The period from 1900 to the present is one of unprecedented population growth and urbanization across the world and the Arctic regions have been part of this process and have been impacted by them and the rapid industrialization of the global economy.

In 2010, the global population reached a milestone with over half of the population now living in cities, but a far higher portion of the Arctic population resides in urban settlements. The paper will draw upon census and population data, historical records,

and government policy documents. The role that factors such as the discovery of new resources, improved transportation and communication, new methods of construction on permafrost and high-latitude regions, militarization, and government policies in developing the urban Arctic will be examined.

Both terms 'urban' and 'Arctic' need to be defined. The definition of urban varies across countries and is defined using a combination of population size and density criteria and economic activity. Arctic is defined using latitude, climatic, and other factors. The purpose of examining past trends in urbanization in the Arctic is to see if there are any clues for future patterns in the region.

6. Review of Russian Arctic Regions: urbanization, economy, demography

Lyudmila Zalkind

Introduction

Attention to the Arctic as a geopolitical and economic world future is increasing. Russian state has paid much attention to the development in the Arctic since the 20th century. It was a period of great industrial expansion of the Russian state, which required large natural resources. Much of these resources are concentrated in the Arctic regions of Russia.

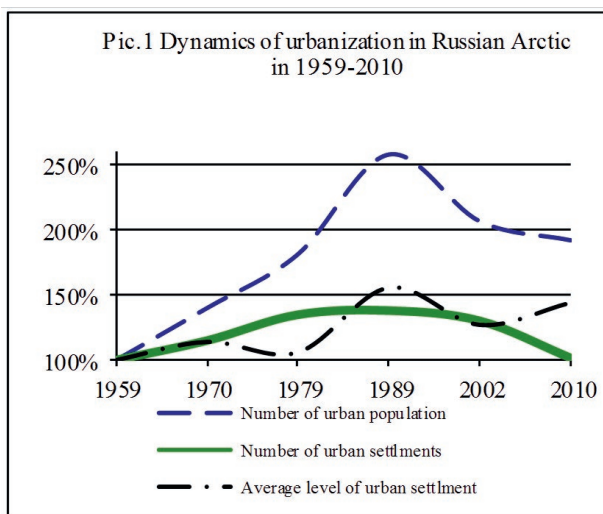
During the Russian industrialization huge masses of people moved to the North and Arctic, previously inaccessible regions of Russia. This was a period when Russia created the new industrial economy, the main settlement structure of Arctic regions and passed population to filling unpopulated areas.

Direct Arctic territories of Russia are the Chukotka Autonomous District, several areas¹⁾ of the Republic of Sakha (Yakutia), the Taimyr Peninsula (including the Taimyr Autonomous Okrug and Norilsk city district), Yamal-Nenets Autonomous Okrug, the Nenets Autonomous Okrug and Murmansk region.

History of urbanization in Arctic Russia

Urbanization of Russian Arctic regions has been an uneven process, which began in the late 19th century. However, it wasn't until the 20th century that this process became permanent and sustainable under a centralized, government run economy that addressed issues of creating new settlements.

Since 1959, growth continued in both the number of urban settlements and the number of people (pic. 1). During this period, new ventures went to the operational stage and old ones expanded, so the indus-



trialization of the Arctic continued. The Soviet government concentrated its efforts on the development of the Northern Sea Route and air transport to ensure economic links between eastern and western regions.

The dynamics of urbanization is considered in the context of the inter-censuses period since 1959, when the emergence and growth of cities had become most visible. Each period had its specifics from exponential growth to reduced rates of urbanization. Since the period between censuses have different lengths, then a direct comparison is not valid, and therefore only the features of each period will be described.

Since the 1960's new cities were built as planned settlements equipped with electricity, running water, etc. The heating system was centralized in the cities, for this purpose, the power plants were built. Each city was provided hospitals, clinics, cultural centers, schools, kinder-gardens, etc.

This trend continued through 1979-1989, but the rate of urban population growth increased significantly. In the same period, reduced growth in the number of urban settlements took place as already established settlements continued to grow.

1) Разные исследователи по разному определяют количество этих районов – от 5 (Селин), до 13 (Мегатрендс). В данном исследовании рассмотрены 10 районов, полностью лежащих севернее Полярного круга.

However, due to political and economic crisis in Russia, urban population began to decline in most regions of the Russian Arctic. The steepest decline in population occurred from 1995 to 2002, resulting in the mass closure of some municipalities. This led both to a reduction in the number of urban settlements and the concentration of the population as people migrated from the dying communities to larger urban areas not only outside the region, but quite often in the same region. Rate of decline of the urban population has slightly decreased in the second half of the 2000s, but the process continues in most parts of the Arctic.

The overall reduction of the population in cities than in rural areas, leading to a further increase in the share of the urban population of the Russian Arctic, from 83 % in 1989 to 88 % in 2010.

Contribution of Russian Arctic regions

This is the general picture of the urbanization process in six Russian Arctic regions. At the same time, the regions themselves have their own dynamics of urbanization, in some cases, significantly different from the overall picture (Pic 2).

The most urbanized area is the Murmansk region, which gave the majority of the weight indicators of urbanization for almost 50 years, until the early 2000s. It really is the most urbanized region in terms of both

population and in the number of urban settlements and provision of urban infrastructure. Since the 1950's, a high level of urbanization was evident in Taimyr, which a much smaller total population than Murmansk region, but is concentrated in almost only one enclave – Norilsk – and its emerging satellite towns. Accordingly, the contribution of these indicators in Taimyr is significant, even though it is less than one fifth of the size of Murmansk.

In the 1970's Yamal also emerged as an important participant of the Russian urbanization process. Population grew more than threefold between 1960 and 1980 alone. As such, the region became an important player in the mix of active Russian Arctic regions. In 2010, Yamal urban population was more than half of the Murmansk region, a telling statistic considering that Murmansk was 26 times larger in 1959.

The urban population of the rest of the Russian Arctic, although increasing, remains low and does not have a significant impact on overall migration processes in the greater region. Thus, the population of the Chukotka and Nenets region, and also the Arctic Yakutia is less than 10% of the total population of the Arctic, and on average 20 times lower than the most densely populated region - the Murmansk region.

The contribution of each of the regions in the economic and demographic situation in the Arctic is also uneven (Table 1).

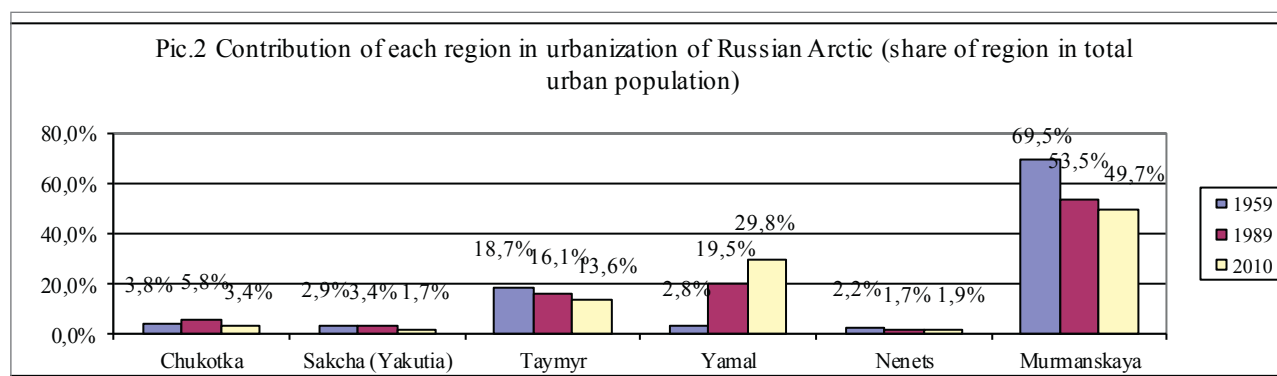


Table 1 Russian Arctic regions in 2010

Region	Urban population, th. people	Population changes, % to 1989	Fertility, number for 1000 persons	Mortality, number for 1000 persons	Natural growth, number for 1000 persons	Migration rate, number for 1000 persons	GRP per person in 2009, th.RUR
Chukotka	32.7	- 71.0%	14.7	13.8	+0.9	-16.8	925.4
Sakha (Yakutia)	24.6	- 62.9%	16.8*	9.8*	+7.0*	-7.4*	417.1**
Taimyr	201.5	- 36.4%	n/a	n/a	n/a	n/a	1 77.2**
Yamal	443.0	+14.8%	15.8	5.5	+10.3	-6.1	1 180.0**
Nenets	28.5	- 16.9%	16.4	11.7	+4.7	-3.1	3 053.6**
Murmansk region	738.4	- 30.1%	11.7	11.9	-0.2	-8.4	240.3

* Data for Sakha Republic in whole.

** The estimated GRP, divided by the number of permanent population in the area.

Practically all Russian Arctic regions other than Murmansk exhibit a natural increase in population. This is due to the high birth rate of both the local indigenous population and the migrant population; where the average age of the population is 30-35 years. Only Murmansk has a low birth rate and a high mortality rate, which is due to the very small indigenous population and an older age structure compared to other Russian Arctic regions.

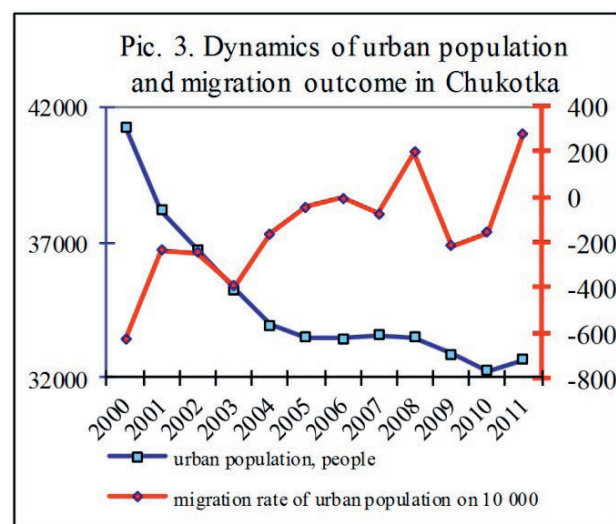
Migration balance in 2010 was negative for all regions, due to the global crisis of 2008-2009, and a decline in production even in economically successful regions such as the Yamal-Nenets and Nenets Autonomous District took place. But in most regions of the Arctic a high fertility rate blocked negative migration trends and the population continues to grow.

The level of economic development is uneven. Oil and gas producing regions are the most economically advantaged. The high level of per capita GRP in these regions is a consequence of high production and high prices, and low permanent population. As such, the lowest level of economic well-being is in Murmansk, which also has the highest resident population.

Chukotka is the most eastern Arctic region of Russia. The pace of town development has been quite slow, especially considering that even though the first wooden house was built in 1889, people were still living in mud huts in the 1960's.

Now, there are three settlements with city status and four with village status in Chukotka. However, due to the closure of production facilities in the early 2000's, twelve settlements have been shut in the region. As a

result, the region has lost more than two thirds of its population in the last ten years (around 8 % per year), and the outflow from the cities and towns was higher than that of rural areas. A majority of this emigrated population were new comers who arrived there in the 1960's and 1970's, but because of the recession in the 1990's were forced to migrate to other regions of Russia²⁾ (Pic. 3)



One of the main reasons for such strong emigration in Chukotka - far more than in other regions – has been due to the “syndrome of postponed life”. That is, their lives in the North is temporary, but real life will begin

2) Стратегия для России: новое освоение Сибири и дальнего Востока// Е.Андреева, Ж.Зайончковская, О.Кузнецова, В.Лексин, В.Любовный, Е.Скатерщикова, А.Ушаков, А.Швецов. – 2001.

later, when they can return to the “continent” – to the place from which they came. And this expectation of life has stretched to 30-40 years and more.

This is due to a relatively small labor market in the region. Tin and tungsten mines, worked in the Soviet era, were closed and mining companies had disappeared. Now, there are small amounts of coal mining, fish processing and building materials for local use. There are many sources of electricity - Bilibinskaya nuclear power station, Chaunskaya heating plant, Anadyr heating plant, Anadyr gaz heating station, Egvikenotskaya hydropower station and Anadyr wind station. All of them work only for the regional market and are not connected to the nationwide power grid.

In the 2000's the outflow of new comers continued, but much slower rate (averaging about 1% per year). In 2000, the Russian oligarch Abramovich became governor of Chukotka. He began to systematically implement the concept of “minimal population in the North”³⁾ in order to reduce the number of people residing in the territory and move to shift method of work in enterprises. This initiated a massive company resettlement of people in central and southern Russia, but already by next year people started refusing to grant resettlement. Seizing the opportunity to find a job and start again to earn decent money swayed the pendulum of migration back to Chukotka.

The basis of the economy of the region is dominated by the mining of gold and other precious metals. The main perspective direction of economic development in Chukotka is gold mining, which is implemented on a rotational basis (within and inter-regional). In 2009, construction began on one of the GOK's gold mines, which in theory should be running this year. In addition, the current construction of a road will finally connect the Chukotka region with other regions in the Far East.

In the Republic of Sakha (Yakutia), most of the population lives in rural areas. Total population in the region has decreased twofold since 1989, mainly in rural areas. In the 1990's alone over half of the settlements were closed.

Settlements with city status - Verkhoyansk and Srednekolymsk – have between 1000 and 3000 residents, with most engaged in hunting, herding and fishing. The more populated urban areas have between 4000 and 6000 residents, primarily active in agricultural activities, especially since the areas has extinguished its Tin deposits and the associated firms have long left. Some companies were considering relocating in the re-

gion to restore the production of gold and silver, but crisis of 2008-2009 thwarted these plans.

Now on the Taimyr Peninsula there are two cities - Norilsk and Dudinka. Before 2004, there were four separate towns, three of which are areas of the city of Norilsk. The population of the region grew slowly until 1989, but now the population is slowly decreasing. The urban population increased on average by 5.8% per year from 1959 to 1990, but went into decline in the 1990's. In recent years, the rate of decline decreased, but a negative migration balance remains.

The region's economy is based on the Norilsk deposit and processing of copper and nickel. A major transportation hub Dudinka and hydropower plant serve the Norilsk nickel plant.

Settlement was initially localized at two points (Norilsk with satellites and Dudinka). As such, not as many towns were created in Taimyr as in other regions, so that the structure of settlement remains relatively unchanged.

The Autonomous Okrug of Yamal-Nenets is still a growing region in the Arctic. This is due to large oil and gas reserves, which are being actively exploited at present. As a result, the level of income in the region is much higher than in other regions, which attracts migrants. During the 20th century population growth was mainly due to in migration.

The capital of Yamal – Salekhard - remains a rather small city with a population of just over 40 thousand people. Most of the urban population is concentrated in two growing cities - New Urengoy and Noyabrsk. Since the mid-2000 their population has passed 100,000.

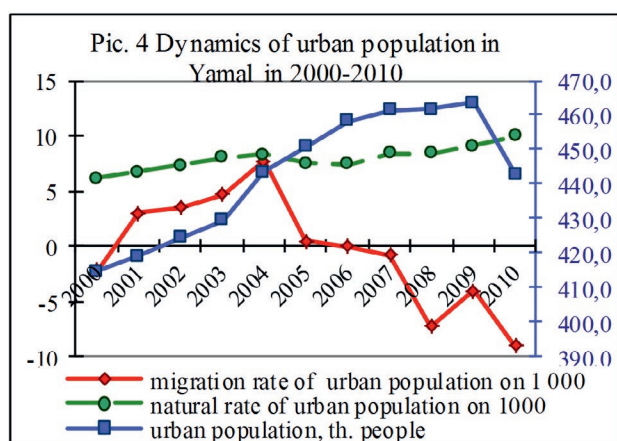
There has been almost no closing of settlements in this region; and until 2005, Yamal's in migration was greater than the out-migration of all other regions in the Russian Arctic combined. Since 2005 however, Yamal has had a high coefficient of out-migration (pic. 4). Population growth is still ensured by a high birth rate and relatively low mortality rate.

At present, the nature of settlement is changing. Although no new towns are being developed, there are dozens of work camps scattered about the region, which in many ways act as small cities themselves (e.g. Yamburg)⁴⁾.

Favourable economic conditions in oil and gas production will continue to contribute positively to the development of this area and it is expected that the region will continue to grow, both economically and demographically for several decades. However, if the

3) Север как объект комплексных региональных исследований/ Отв. ред. Лаженцев В.Н. –Сыктывкар, 2005. – 512 с.

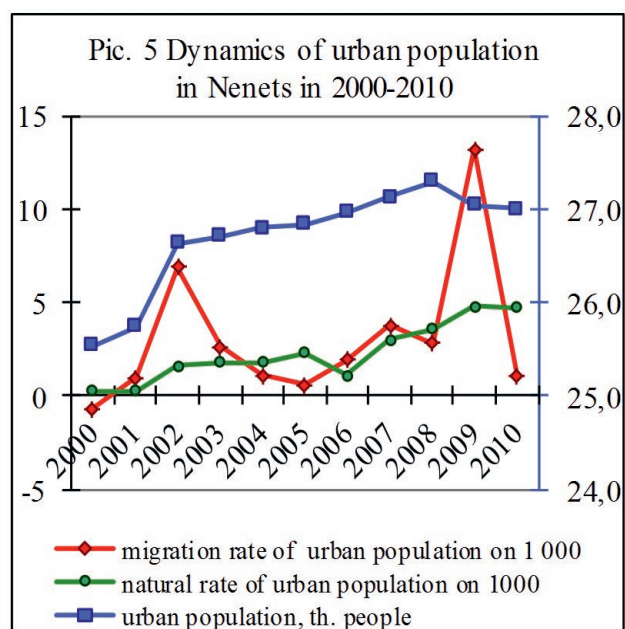
4) Жукевич Г.В. Модернизация экономики и социальной сферы северных и дальневосточных регионов России// Вопросы Севера, № 3, 2011.



growth of shale gas production and a free pricing of gas continue as many believe it will, then the income of the Yamal will be reduced significantly. This may lead to decommissioning and the region will face the same fate as other Arctic regions of Russia.

The Autonomous Okrug of Nenets, developed with the same trends as its neighbour - the Murmansk region it showed high rates of urban population growth between 1959 and 1989 and relatively small decline (24%) in the 1990's. In the 2000's population growth resumed (8%), due to in migration and natural increase (pic. 5). The main reason behind this was the rise of oil and gas industry, which due to high oil and gas prices, made production profitable again.

Despite the original idea of developing work camps,



human nature to settle down in a new place has led to an increase of the permanent population. And as in Yamal, the main way of organizing work is via shift labour. However, work camps in Nenets are generally smaller and not as developed as in the Yamal Penin-

sula,.

The Murmansk region is still the most populous region in the Russian Arctic, but it is the only region that does not have the status of national territory. This is likely due to its very low share of aboriginal population (which in the last census was approximately 1500 people).

The number of cities and towns in the Russian Arctic in 2010 was 28, which is several times more than any other country in the Arctic. Over the past 90 years, the region has lost about 30% of its population. In general out-migration is gradually decreasing, and in the last 10-15 years the population of the region as a whole has stabilized. The first and foremost driver of this stabilization has been the basis of the economy - mining plants located throughout the western part of the region.

Conclusion

The Soviet government established strong economic and social incentives in order to convince people to move to the Arctic, which has led to rapid population growth of the region. At the same time, migration flows have been distributed unevenly: they concentrated around large industrial complexes set up in the Yamal, Taimyr and Murmansk regions during the mid-20th century.

The transition from a centralized to a market economy has had a negative impact on production systems and demographic processes in the Arctic regions. In the 1990's there was a mass closure of settlements, and while this trend ceased in the 2000's there are still a number of settlements that face the threat of closure. So on one hand, the system of settlement in the Russian Arctic has stabilized, but many settlements are still almost completely dependent on the success of single firms.

Moving forward, cities and the populations will remain highly concentrated in Murmansk and Yamal. The Norilsk enclave (Taymyr peninsula) will also survive as long as the mining industry supports it, with estimates ranging from 30 to 50 years.

In Yakutia, as the economy of the Arctic regions continues to shift toward shift work, existing urban settlements gradually turn into rural areas. The same process is taking place in the Nenets and Chukotka as well.

If the trend of declining profits for producing raw materials holds up in the longer term then economic prospects will not be good for the Yamal and Nenets regions. If this happens, Yamal will likely face significant depopulation or complete closure. In Nenets, the situation is not so critical due to the fact that it is the youngest of the mining regions, and it did not create a

mass of urban settlements.

The main factor driving population change continues to migration, while the natural shifts via births and deaths account for only a small proportion. All regions, except for the Murmansk region, show natural growth, although low. This is due to the high birth rate of both the local population and newcomers. In contrast, the percentage of the population above retirement age is only about 10%. The Murmansk region showed a negative natural increase due to the very low birth rates among all Arctic regions. This is connected with the fact that many teenagers and young adults have left the region looking for new opportunities.

Overall, the urbanization process in the Russian Arctic has significantly slowed. However, the settlement systems of the regions are very different. This is due to historical conditions: the density of indigenous peoples living in these places until the 20th century, as well as the level and spatial distribution of industrial development of the North in the 20th century. Accordingly, the East of the Russian Arctic is an area with small settlements and small administrative town centres. Ural Arctic is also characterized by a large number of small settlements and higher concentration of population in large cities. The Western Arctic is mostly from the towns and cities with a small number of villages. Factors that significantly influenced the settlement system is centrally managed economic development of the territory. In the Western Arctic in the framework of

development in the 20th century was adopted by the principle of construction of permanent settlements. In the Urals and the eastern part the decision was a mixed type of development: a combination of permanent settlements and the work camps.

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7. Marginal places in discursive space: Political economies of development and urban space planning in the North, conceptual shifts

Andrey N. Petrov

Introduction: development regimes and urbanization in the Canadian and Russian Norths

Arturo Escobar provided a provocative reevaluation of development policies enforced by the West and its institutions in the Third World. He claimed that modernist normative views on development upon which the development project was conducted, brought this effort to a devastating failure (Escobar, 1995). Escobar's comments on development in the Third World have a direct link with events in the Canadian and Russian North, which, in fact, are frequently referred to as the Fourth World (Young, 1995). Since the Fourth World was embedded in the First, the Western (in a broad meaning of the term) political economic discourse of development has dominated in the North and has been empowered there as nowhere else. This discourse juxtaposed "developed" mainland and "underdeveloped" frontier and justified the "regime of truth" (in Foucauldian terms, Foucault, 1970) under which the superiority of "developed" was unquestionable, while underdevelopment was unacceptable. The assumption of mainland supremacy over the Hinterland gave birth to the discourse of nordicity (see West, 1991) and validated state-led economic, political and social intervention into the periphery by the means of development. The state-based character of this process should be accentuated, because other performers in the region (such as private corporations) have never been interested in the development per se. Even the semi-private Hudson Company, which ran the Canadian North for centuries

on behalf of the British government, was more focused on the exploitation of space rather than on its development (Rich, 1958). On the other hand, Russian Tzars were more concerned with controlling the space⁵ rather than exploiting and developing it (Hill & Gaddy, 2003; Wood, 1987).

This suggests that, at first, the discourse of the frontier development in the North was produced by the Canadian and Russian states, but, at second, that it was done relatively recently in historic terms. In Canada the genealogy of this discourse can be traced to infamous works of Harold Innis. It coincided with the birth of the Keynesian welfare state, which adopted Innissian approach amid the struggle of the Canadian nation-building, and, then, through Defenbakerism, implemented developmentalism in the North. In Russia, the discourse of northern development became an element of the communist political economies almost from the very beginning of the Bolshevik's regime, and especially when country's isolation became obvious.

Although Canadian and Soviet discourses had noticeable similarities in how they represented the idea of development, the production of discourses was the result of societal evolution in both countries and bear explicit differences. Therefore, employing Peet & Watts (1993) term, one must differentiate the Canadian and Soviet regional discursive formations. The major discrepancy between the two was not within the field of questioning or propagating development, but in terms

5) Commodification of space rather than its resources was a peculiar fact of pre-imperialistic colonial expansion. In our context, this attitude culminated with Alaska sale by the Russians in 1867.

of what political economic strategies were used to accomplish this task.

Elsewhere we identified the following development regimes that emerged in the North at different points in time: Innissianism, Diefenbakerism and neo-liberalism in Canada and different versions of 'Gosplanism' (Stalinist and Developed Socialist) and neo-liberalism in Russia. Innissianism is associated with early years of developing Canadian Arctic and Subarctic and formation of pre-Fordist urban places under the conditions of extensive accumulation, instability, frequent boom and bust cycles and lack of organization and state intervention. Since the 1950s the 'Diefenbakerism' took over as a dominant development regime of resource Fordism that brought the interventionist state in direct or indirect control of northern development and urbanization (Petrov, 2008). Focus on construction of urban settlements, settling and using the North was tied with a system of priority-constraint system exercised by the state in tandem with resource corporations. As we will see, during this period larger, more elaborate urban settlements appeared in various parts of Canadian Arctic and Subarctic. Finally, the neo-liberal shift and diminishing state support coincided (not accidentally) with major 'winding-down' of Canadian northern cities and towns. However, a number of communities was able to embark upon urban reinvention - efforts to refurbish urban centers in on the post-modernist basis (e.g. using place-sensitive design, diversity, sustainability, promotion of social cohesion, etc. (Iqaluit).

The outset of the Soviet northern urbanization is signified by mobilization economy of Stalinism (neglect of local costs, forced cheap labor), fully institutionalized state control, and dominant GOELRO development discourse (Petrov, 2008). As a result, sporadic camp-urbanization consisted of town-like GULAG camps was a prevailing form, alongside with emerging civilian towns. However, even there the rate of uncontrolled population growth was too high for planners to keep up. The lack or insufficiency of urban planning in the North (despite its high profile in the USSR!) was inherited in the post-Stalin times of what we can call 'Developed Socialism' with its 'temporary' focus on resource (rather than 'complex' development) and state command-and-control development regime that bears some similarities with Canadian 'Diefenbakerism.' Soviet northern urban system although desired as an eventual outcome of development, by essentially a byproduct of industrialization that was heavily prioritized over urbanization. As a result, Soviet northern megapolises emerged and spatially evolved as *sloboda* - a 'worker town' attached, dependent and subdued by a dominant industrial plant. As indicated below whereas the state attempted to con-

trol and design these urbo-industrial spaces, it largely failed to meet the needs.

This paper provides a brief survey of urban development, planning and formation of urban places and spaces in the Canadian and Russian Arctic and Subarctic in the context of changing development regimes in the North.

Planning urban places and spaces in the Canadian and Russian Arctic and Subarctic

The genealogy of developmental discourses and changes in urban political economies in the North determined shifts in strategies of northern urban design in the distinct periods of colonization. The above discussion presented several versions of possible periodization of northern urban development in the context of the general development discourses that dominated in Canada and the USSR. In Canada (along the lines of Escobar's analysis) we have accounted for two major variations of modernist (Keynesian-Fordist) discourse: pure Innissianism of the 1900s-1930s⁶) and Diefenbakerism/post-Diefenbakerism of the 1950s-70s. It was also argued that neo-liberal tendencies in the northern discourse appeared in the 1980s, but were quickly followed by post-developmental approaches, which are beyond the scope of this study. In the USSR we found two northern versions of Gosplanism, namely the Stalinist-GULAG and "developed socialism" discourses of development.

Spontaneous town-spaces. The early settlements both in the Canadian and Russian North were spontaneously organized temporary shelter communities "rude and haphazard collections of tents and shacks at the edge of mining area" (O'Mahony, 1978, p. 18). There was no notion of particular planning (McCann, 1978), and the urban structure of larger cities represented a conglomerate of various structures of different shapes, sizes and functionality. In the booming Gold Rush towns like Dawson, it was impossible to control the growth and systematize the construction (Baldwin, 1978; Innis, 1974). Social capitalization of such communities was extremely low, and residents kept weak ties with neighborhoods, abandoning them almost immediately upon downturns in the resource sector. Towns born under the discourse of 'pure Innissianism' (i.e. with no con-

6) Innissianism was formulated in the 1930s, but as a general discourse of colonization was in place prior to that period. This study considered only the length of the 'urban history' of the North, which started roughly in the late 19th-early 20th century.

ceptual regional and settlement development, Fig.1) both in Canada and Russia were the typical boom-bust communities.

Company Towns. Further mineral discoveries in the North and the growth of mines production made possible more permanent and better-established settlements. The period of 1920-1930s was marked with the appearance of dozens of “company towns.” Mining corporations created these settlements close to working mines and maintained them permanent for the entire period of exploitation. It is problematic to distinguish any specific planning perspective on how the urban space was organized (Robinson, 1962; Stelter & Artibise, 1978). Towns were constructed as residential areas of the south, but possessed limited elements of social infrastructure and could barely provide basic social needs. By implementing rudimentary community planning, corporations attempted to secure their capital returns through attracting skilled labor and cutting workers’ turnover. Dwellings consisted of relatively small apartment buildings and houses – light structures (“matchboxes”), imported from the south, which could be moved to another location if necessary (e.g. town of Sherridon).

“Company towns” were under a full control of corporations who owned everything from dwellings to telephones (Lucas, 1971) and executed autarchic rule over the social life. These practices frequently were not appreciated both by companies’ management (who was unhappy with maintenance and construction costs and rising conflicts) and by residents (who felt intimidated by the “big brother” policies)⁷. Many mining companies were inclined to transfer their responsibilities to local governments to achieve cost reduction and lower labor turnover by forcing workers to own their houses and be involved in community-building. However, self-determination (“municipalization”) of “company towns” brought new challenges and controversy to the governance, while being sometimes only a façade for the old corporate rule, when a city council consisted of company’s employees. The interosculation of local government and private capital in northern cities constituted a long-term obstacle to formation of the civil society and development of community sustainability there.

“Company towns”, in pure terms, started to disappear since the 1950s, when the federal and provincial governments moved to increase their control in the

North. Adopted “new township” acts⁸) required government approval for newly established mining towns as well as granted them mandatory self-governing status. This marked a transition of responsibility in northern urban development from individual companies to the state (Gill, 1994; Robinson, 1962) and from pure Innissianism to Diefenbakerism (Fig.1).

The notion of “company towns” could be successfully used in reference to the GULAG prison-camps. They shared all major characteristics: they were built, maintained and governed by a ‘profit-seeking’ organization that applied its internal standards and economic needs as guidelines for community development. Indeed, NKVD’s⁹) economic subdivisions were not separate companies, although they usually had corporation-like organizational structure (Khlevnuk, 2003), as they did not benefit from their activities in conventional terms (their profit was expropriated by the state at large). But ‘GULAG quasi-corporations’ such as Dal’stroi (Nordlander, 2003; Pilyasov, 1996), did create and run urban settlements where the civil government was not present (Ertz, 2003).

Therefore, company-led planning efforts or the absence of planning constituted the basis of production of the urban space in resource towns in the Canadian and Russian North in the 1920-1940s. There was no particular vision on how northern towns should be organized. Canadian companies quickly realized superiority of small, mobile and spatially-concise settlements with at least minimal level of social infrastructure development. Populated places in the Soviet North were planned and put together under conditions of construction ‘boosterism’ with little consideration for community-building and social capitalization in place (e.g. in Noril’sk, Magadan, Kolyma’s towns)

Northern Suburbia. The shift towards state-regulated planning and the development of northern single-industry towns under the discourse of Diefenbakerism brought innovations in the planning perspectives. Since the 1950s new resource towns must be built according to prepared and approved by the government city plans. The after-war period was characterized by the introduction of the ‘comprehensive planning’ paradigm (Stelter & Artibise, 1978; McCann, 1978). Developers, among which the state quickly took a leading role, introduced latest innovations of planning science in theory projects. Basically, the idea for the spatial

7) Lucas (1971) provided an in-depth analysis of interests and contradictions in “company town” development in Canada. See his book for details on social conflicts and community problems.

8) E.g. Mining Act in ON (1954), New Towns Act in AB (1956), Instant Towns Act in BC (1965).

9) NKVD – Peoples Commissariat of Internal Affairs – the ministry in charge of GULAG.

organization of northern towns was borrowed from a typical suburbia. The discourse of developing the North in accordance to 'southern' standards remained unchallenged. As correctly noted by Gill, "in the absence of relevant social research it was a widely held belief that this type of urban environment was appealing to labor force... from the cities of southern Canada" (Gill, 1994, p. 138). "Wilderness suburbs" (Robinson, 1962) adopted the neighborhood units principle for organizing residential spaces. Family houses were distributed in neighborhoods-clusters with complex of social infrastructure (schools, local shops, parks and churches) in each neighborhood. However, eventually it became obvious that deconcentrated internal urban structure was largely unsuitable: wide driveways and roads required heavy snow removal costs, expansive lawns were impractical and unsightly during long winters, sprawled urban structure demanded more traveling (both costly and uncomfortable), sparsely located houses did not protect from winds and could not provide positive microclimatic effect, and so forth (O'Mahony, 1978). Among northern towns constructed as "wilderness suburbs," were those appeared in the 1950s-60s: Thompson, Kitimat, Schefferville, Elliot Lake, and many others (see Figure 1). Overall, these towns being a subject of admiration at the time of founding (Karpov, 1972) appeared to be much less successful in achieving high life quality and residents satisfaction than expected (Gill, 1994; Lucas, 1971). This was an apparent failure of the planning in the long-term.

Northurbus. The last generation of northern towns reflected an attempt to overcome shortcomings of suburbia-like planning. Planners hired by government agencies and private companies undertook a major effort to create communities that would account for northern specifics, both natural and social. First, new towns were designed to provide family housing with extensive provision of recreation and community facilities. Second, the updated planning principles were environmentally sensitive and adapted to northern climate: enclosed town center (Leaf Rapids), buildings blocking wind (Fermont), high concentration of facilities and dwellings (Tumbler Ridge), etc. The sites for new towns were carefully chosen to ensure maximum exposure to sunshine, protection from cold northerly winds, optimal elevation and so forth (O'Mahony, 1978). Streets were designed short and curved with limited driveways. Variety of dwelling types (in opposition to monotonous northern 'suburbia') allowed for less sprawled city structure and presented a choice of housing for residents. Instead of dispersing public spaces and facilities across the town, they were gathered within the central district, where all residents

could enjoy their free time (McCann, 1978).

The major goal of revised planning practices was to create sense of place and community among citizens and encourage them to stay longer. BC planners in Tumbler Ridge – the most elaborated example of this wave of communities, used the concept of 'Main Street' as a town-wide public-private space of social interaction. Interestingly, the notion of 'crime prevention through environmental design' and ideas of territoriality and defensible space led them to implementing design methods, which enhance surveillance and reduce opportunity of crime (e.g. placed a hotel and a pub outside the town). Therefore, the paradigm of social cohesion, as a way to stabilize population, was at the top of the developers' list and defined other aspects of the urban space organization (Gill, 1994).

At the same time, innovative design was criticized on a number of grounds. Again, the city-space in new communities was produced by southern architects, who sometimes misunderstood local realities. For example, large wind-screen buildings seemed alien and artificial for small-town residents (e.g. in Fermont). In the same town, it was found that concentration of public spaces in one area (and one building) did not necessarily enhanced social interaction, but denied people of choice and, thus, reinforced a feeling of isolation (living in "cocoon"). Overall, the design was perceived as reducing creativity and forcing residents to accept certain behaviors envisioned by planners (Blanc, 1990). Compactness of the settlement was considered a negative feature and led to overcrowding the inter-house space with residents' vehicles and equipment. In contrast, large public spaces between housing groups were not sufficiently used. In short, the innovative, but still imposing design was not very successful (Blanc, 1990).

The ideas, worked through in newly established communities, were, to some extent, spread to the older towns (see Wonders, 2003). In many of them situation with housing and social infrastructure was far from desirable. The Government of Northwest Territories, trying to overcome housing shortages, ensure affordability and slowdown deterioration of existing buildings, subsidized construction of ergonomic houses, and funded rehabilitation work, including training program for residents focused on saving energy and house maintenance (Goliger, 1984).

It is evident, that the introduction of northern-specific architecture and the emphasis on social prosperity and sustainability of northern communities reflected the influx of post-development discourse that accounted for north-specific knowledge and dismissed direct transfer of urban planning principles from the south. This planning approach was promising and could have

brought new development perspectives to northern cities. Unfortunately, it did not happen, because the North was devastated by the neo-liberal triumph. Many if not most northern industrial towns faced economic crisis and depopulation. Even communities designed by the latest standards became unattractive for residents, and, therefore, failed to fulfill the major goal – to ensure stability of northern population. Once again, the urban development efforts in the Canadian North have failed. And although assistance to existing communities was not discontinued or severely cut, the perspective for further development has perished.

Soviet northern megapolises. In the Soviet North, for the four decades after the demise of GULAG northern population continued to grow. In contrast to Canada, where the focus was on individual towns, the Soviet planning efforts were centered on developing settlement system with at least four level of hierarchy (Slavin, 1985): multifunctional regional centers (100,000 and over), leading local cities (30,000-100,000) (both with a range of industries and amenities according to the ‘complex development’ principle), smaller resource towns and temporary settlements (30,000 and less). First two categories concentrated the majority of population, and consisted of large cities, many with hundreds of thousands residents. They also demonstrated the highest population increase (Wilson, 1987). City general plans (genplan), therefore, were designed for large cities, and a major challenge was to provide necessary infrastructure and mass housing for arriving migrants. Needless to say that it has never been done, partly because the industrialization was prioritized over the urban development. Delays in planning and funding, lack of equipment and the abundance of corruption caused a systematic failure to meet required deadlines and fulfill the plans. Boosterism (*shturmovschina*) in industrial development, when thousands of workers were sent to the North prior to housing construction and de facto ignorance of social cohesion in communities led to the persistent faults in the development efforts. For example, Nefteugansk has been developing unplanned for 12 years; Surgut was promoted to a city in 1965, but construction works occurred without any plan until 1970 (finally composed genplan quickly became obsolete, because it underestimated population growth, and thus, city infrastructure was not able to accommodate all residents, many of whom had to live in mobile homes and use local inefficient boilers to heat (Wilson, 1987). At the same time, some of the proposed plans were good (in terms of projected social and cultural infrastructure) and several cities later achieved considerable success, for example Noril’sk. But the average communities were far behind with poor housing,

inconvenient urban organization and underdeveloped public facilities.

The approach to organizing urban spaces was borrowed from the general urban design in Soviet cities. Northern urban places were filled with monumental concrete multistory apartment complexes located along straight streets in a relatively simplistic city setting. As a result, houses were inefficient for heating, inconvenient for living and contingent for fast physical deterioration. Straight-cut city layouts encouraged the ‘canyon’ wind effect and created unfriendly landscapes. A purposeful design of public spaces was largely a prerogative of the largest cities. But even there it was underfunded, since the issue of social cohesion was considered to be secondary, compared to the permanent housing crisis. The unsustainable character of urban design caused the dependence on funding and supplies from the south. Construction and maintenance costs paid by the government to support the northern urban system were enormous and tended to increase every year. At the end, the USSR overstrained itself funding the North and slipped into deep economic depression.

In other words, stereotyped city planning in the Soviet North could hardly be called effective. Unfortunately, the innovative design techniques developed by the Soviet northern scientists (see Slavin, 1985) have never been fully implemented. Overpopulation and faulty organization of urban spaces and lack of social capital in the communities of the Russian North was one of the factors why neo-liberal policies responsible for economic crisis, resulted in such dramatic out-migration.

Concluding thoughts

This paper attempted to connect (and compare) policies economies of regional development and histories of urbanization in the Canadian and Russian Norths. By tracing the genealogies of regional development once can identify the driving forces of urbanization and shed a new light on the origins of the urban form and space in the Arctic. Urban places and spaces in the North have undergone considerable evolution following changes in dominant regimes (and development discourses). However, a number of similarities is also as remarkable as the number of fundamental differences. Both regional urban systems appear to fail to reach stability and sustainability of its components and forms. Fortunately, Canada and Russia are experiencing the rise of post-development thinking, which put the emphasis on reconciling needs of development and alternative modernities, local knowledge and traditional economies of the North. Although it is evident

that some its elements have to be demised (for example, to end overpopulation in the Russian North), there are chances that northern communities will cope with harsh realities by using both top-down and bottom-up post-Fordist development opportunities (Ironsides, 2000).

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8. The history of urbanization and Urban Planning in the Faroes – the case of Tórshavn

Sámal tróndur Johansen

Abstract

At least since the late 18th century people in the Faroes have been migrating away from the old settlements either to newer settlements around the Faroes or to Tórshavn. Since the first half of the 20th century though people went even further and out-migrated, mainly to the neighboring Nordic countries. During this period of about 200 years the pattern of migration has not always been a straight forward or simple process but the main development has been a process of urbanization, sometimes slow and at other times faster. Tórshavn has not been the only place in the Faroes experiencing a process of urbanization. During different periods people have migrated not only to Tórshavn but to different places in the Faroes. Over time though Tórshavn seems to be the most important place of population growth in

the Faroes, growing from less than 10% of the total Faroese population in the 19th century to around 35-40% of the total population in the early 21st century.

From the 19th century and onwards the process of urbanization, combined with the implementation of a modern administration, made the authorities address the challenges of a growing urban population, by implementing different forms of regulations. In 1856, with the establishment of a 'Building Commission' in Tórshavn authorities began systematically to regulate the public and private space of Tórshavn. As the city grew outside of its old boundaries, the municipality began to implement some form of initial city-planning. Since then city-planning generally has become more professional, comprehensive and invasive, sometimes more successfully than other times.

9. Iqaluit – Growth of an Inuit Capital

Rob Shields and Barret Weber

‘There are no Inuit in Iqaluit’
(cited in Searles 2008; 2010:153, 159)

Iqaluit, Nunavut has experienced rapid growth in the last decade as the capital city of Nunavut. Despite administrative decentralization, Iqaluit has become a destination at least for a period for many Nunavut residents (majority Inuit) seeking education, administrative jobs, experience and employment in mining developments on Baffin Island. Propelled by both circumpolar and national geopolitics as much as by the ambitions to form Nunavut, Iqaluit’s expansion into an Inuit capital city has been an unintentional consequence of Territorial governance. The social problems of urbanization and lack of housing, reflects this lack of planning and the unanticipated role a capital city would play as a centre of attraction for Iqaluit as a regional growth pole. Academic and social welfare practitioners contribute by continuing to stress the cultural inauthenticity of Inuit urbanization and to deny the new urban scale and sprawling, suburbanized shape of Nunavut’s settlements.

This paper considers the implications a developing city such as Iqaluit poses for changing the spatialisation of Inuit culture from one understood to be primarily rural and seasonally nomadic, to a life centred in towns.

Spatialisation

The irony of the spatialization of Inuit identity in the Arctic is that many Inuit seem unwilling to extend that identity into urban spaces even as more and more Inuit are becoming urbanized (Searles, 2010: 157, 164). What would an urban expression of Inuit culture and lifestyles (plural)? In the Canadian context Inuit have been largely urbanized in the sense of dwelling in hamlets established at trading posts and near military camps since the Second World War. By the end of the twentieth century, Inuit settlements in Nunavut and elsewhere had begun to develop into large towns, with Iqaluit the largest. These experiences of urbanization were also amplified by travel to southern metropolises, beginning with emergency medical evacuations, terms at high schools and universities, and the establishment

of permanent Inuit organizations in major cities such as Ottawa, Toronto, Winnipeg and Montreal.

The ‘spatialization of Inuit identity’ refers to the way in which activities and understandings of place fit together in specific sites making them ‘places for “this” and places for that’. This spatial division of labour and activities is not just couched in specific places but in a network of places and regions that are differentiated compared to one another (R Shields, 1991; Rob Shields, 2006). This structure of difference defines the identity of any given place and does so at successive scales. This network or ‘formation’ is social and cultural, not natural. That is, it is based on activities within locations, not just the topography or affordances of sites. Thus Iqaluit was always more than a ‘place of many fish’ – it was a good place for people to encounter fish (in the social activity of fishing)!

It follows that changing the identity of a place involves changing its relationship with other places, changing its position within the network. While there is much that can be done locally, attention has to be on the relative identity of place.

Land versus town

Although he aims to transcend a mere dichotomy, Searles reports, there is an abiding bias against settlement life and Iqaluit in particular as places where lifestyles are influenced by southern culture and household economies profoundly changed by part-time wage labour and aspirations to acquire consumption goods promoted in popular media culture. It is axiomatic that Inuit identity is related to hunting and fishing camps (see Collignon, 2006): some places nourish one’s Inuit identity (e.g. outpost camps) while other places drain it away (e.g. Iqaluit) and concomitantly ‘the articulation of Inuit identity entails a positive affirmation of Inuit culture and a simultaneous repudiation of Qallunaat [white people’s] culture’ (Searles, 2008: 240) that is privileged and accorded status in settlements. This reflects tensions and a debate within Inuit society. Although Inuit now hunt to express their identity and supplement their diet, rather than to survive (Rasing, 1999:97) there is a spectrum of authenticity from traditionalists (inummariit), weekend-traditionalists and

intermarried couples of Qallunaat and Inuit (qallunaamiut), and those who have migrated to large southern cities, or have a life integrated with southerners, viewed as whites (Qallunaamariit, 'real white people' (Rasing, 1999). Within this framework of 'place images' (R Shields, 1991), Iqaluit is also disadvantaged as a truly Qallunaat city, compared with the southern metropolises.

This anti-urban, anti-settlement spatialisation of Inuit is shared by anthropologists most of whom have seen themselves as advocates for the Inuit in southern fora.

According to this interpretive framework, many Inuit believe that larger towns like Iqaluit, Nunavut, where large numbers of Qallunaat live, work, and intermarry with Inuit, are places where Inuit culture and identity are being lost. Conversely, places like outpost camps and smaller settlements, which are thought to exist beyond the influence of Qallunaat culture, are imagined as places where Inuit can learn properly about their culture and heritage.... no place reflects this process better than Iqaluit, the current capital of the Territory of Nunavut. If being on the land is a kind of utopia, then being in Iqaluit symbolizes a dystopia (Searles, 2010:152-3).

Searles identifies this as an ideology of the Inuit leadership, which he finds himself repeating as a researcher by associating 'the act of maintaining ties to the land with personal virtue and collective vitality and the work of living in towns with depravity, marginalization, and the loss of self-esteem' (Searles 2010:162). As if in support, Searles cites anthropological research on the cultural geography of the Navaho (Basso, 1996) without much thought to the appropriateness of a comparison legitimated mostly by anthropological conventions around traditional cultures. Partly as a result, Canadian northern anthropology celebrates life on the land. There is little insight offered and in fact little research on contemporary urban culture and its relationship to social problems in Nunavut, even though the Inuit are now amongst the most urbanized populations in the world, living almost entirely in settlements. Even on the land, insights on Inuit understandings of landscape and place identity are rare in the social science literature. One example is the work of Béatrice Collignon. Her work documents the social spatialisation shared by the Inuinnaït of Ulukhaqtuuq ([Ulukhaktok] formerly Holman) on Victoria Island. This involves settlements, a network of camps linked by rapid travel

across ice and frozen land, with the South appearing beyond as a distant site outside this network.

Nuna (the land in general including earth, ice and water) is differentiated in practice from seasonal hiku (ice sheet) where no game live and tariuq (salt sea). These surfaces are crisscrossed by lines of travel across otherwise ignored spaces where game is not abundant. This geography is enlivened by memory and significance which is only hinted at in place names that often refer to activities possible at a place, or a significant event that took place at a site. Uumajuit (animals, and all living beings including people and mythical creatures) also contribute to a spiritual sense of nuna as a network of sites as a living environment. 'Great myths and small tales from the oral tradition are one of the many signs on the land, that transform the landscape into a 'memoryscape', as Mark Nuttall describes it (1992:51-58). With changes in travel, language and the Inuinnaït economy, many are now less familiar with this geography and less engaged in the activities that it refers to and which in turn refresh it: 'Inuinnaït have primarily taken advantage of the speed. They do not travel farther, but do not stop at the traditional staging areas anymore and they go 'back and forth' more often....from the 1980s onward, snowmobiles...have been a means toward a life increasingly centred in and around the settlement' (Collignon, 2006:188). Mapping local place names, she notes that "The abstract, virtual map of the Inuinnaït is closer to the experience of the land it depicts than the [abstract] Western system," (p.167) She is ultimately unsuccessful at encapsulating the paradox of Inuinnaït toponymy: it is not a system of abstract locational signposts but an annotated geography which casts places as sites of activities, affordances and events.

While it was once more detailed and intensely engaged, Inuinnaït toponymy still reveals a network of settlements and ancient fall and winter camps nearby. These places are often named for regular activities or events. Second, spaces of trails are traversed on seasonal migrations which may now only be quick hunting trips out from town on snowmobiles. A third border zone which were historically associated with summer camps and with trapping during the fur trade period from about 1920-1970. One could add that beyond these areas of activity, lie less frequented southern spaces such as southern cities visited by plane (sometimes for health care) and the globalized mediascape of places represented on television shows.



Figure 1 Iqaluit Central Core 2012, showing high school, new cathedral, and administrative core, left to right (the author)

Iqaluit Nunavut

Iqaluit faces a number challenges to its image and development as an Inuit capital. Thus neighbourhoods in Iqaluit have contrasting qualities while Iqaluit has a contrasting identity compared to other places (see also Kishigami, 2006). Iqaluit has been challenged as a meaningful site for Inuit dwelling, rather than purely a governmental place (Weber, 2013) or strategic location (Loukacheva, 2007; Weber & Shields, 2010). Iqaluit, Nunavut has experienced rapid growth in the last decade as the capital city of Nunavut. Despite administrative decentralization, Iqaluit has become a destination at least for a period for Nunavut residents (majority Inuit) seeking education, administrative jobs, experience and employment in mining developments on Baffin Island. Iqaluit stands out – it is much larger than any other settlement in Nunavut.

Iqaluit originated as the USAF's "Crystal Two" airbase in the 1940s and developed as a military outpost with a small population of southern Baffin Inuit families encamped nearby (see Timeline). It has undergone dramatic social and political changes in its status, first as the settlement of Frobisher Bay and then as the capital of Nunavut under the name Iqaluit from 1987. Iqaluit received official status as a city in 2001 and has since emerged as Canada's most rapidly growing municipality (pop. 7500+; see Fig. 1). From its beginnings as an American airbase, it has been an amalgam of long-term and short-term residents and of Qalluunat, Inuit and other cultures. Inuit made up a steady 60% of the population between 1996 and 2006 (Statistics Canada, 2006) and include both long term and temporary Inuit residents from across the North, meaning that multiple dialects are spoken and that Inuit residents are them-

selves a heterogeneous group. Although census data is quickly out of date in a rapidly growing city, over the last decade, Iqalumiut have become a more multicultural group, with at least 22% moving from other provinces or territories (Statistics Canada, 2006). A small but growing and visible number are new Canadians (Sudanese, Somalis. At only 1% in the census, this appears to have doubled since 2006, while non-Aboriginal visible minorities have also grown from just over 4% of Iqaluit's population in 2006 (Statistics Canada 2006b)).

As a transportation hub, air links correlate with the significant populations from Quebec (10% in 2006) and Newfoundland (a new and visible group almost absent in the 2006 census returns). Iqaluit offers an intimation of how northern populations are change and how diversity will play a key role in forging the future of the Canadian Arctic, within the Inuit-centred context of the land claim and legislation establishing Nunavut (85% Inuit in 2003). Further, in 2006 25% of the city's population was under 14 years old meaning that they did not participate in the process of land claims negotiation. Notions of sovereignty and viewpoints on these governance structures vary between generations. The most significant new economic opportunities, mineral resource extraction and offshore fisheries, were hardly conceived of by many elders who negotiated the original claim (Pilot visit data 2008). Finding themselves witnesses to, rather than owners or participants in economic development, raises questions of identity, dwelling, and of social and economic citizenship. As a capital, Iqaluit must be a cultural capital as well as a governmental capital. It has to become a place where Inuit culture and identity can prosper and be expressed.

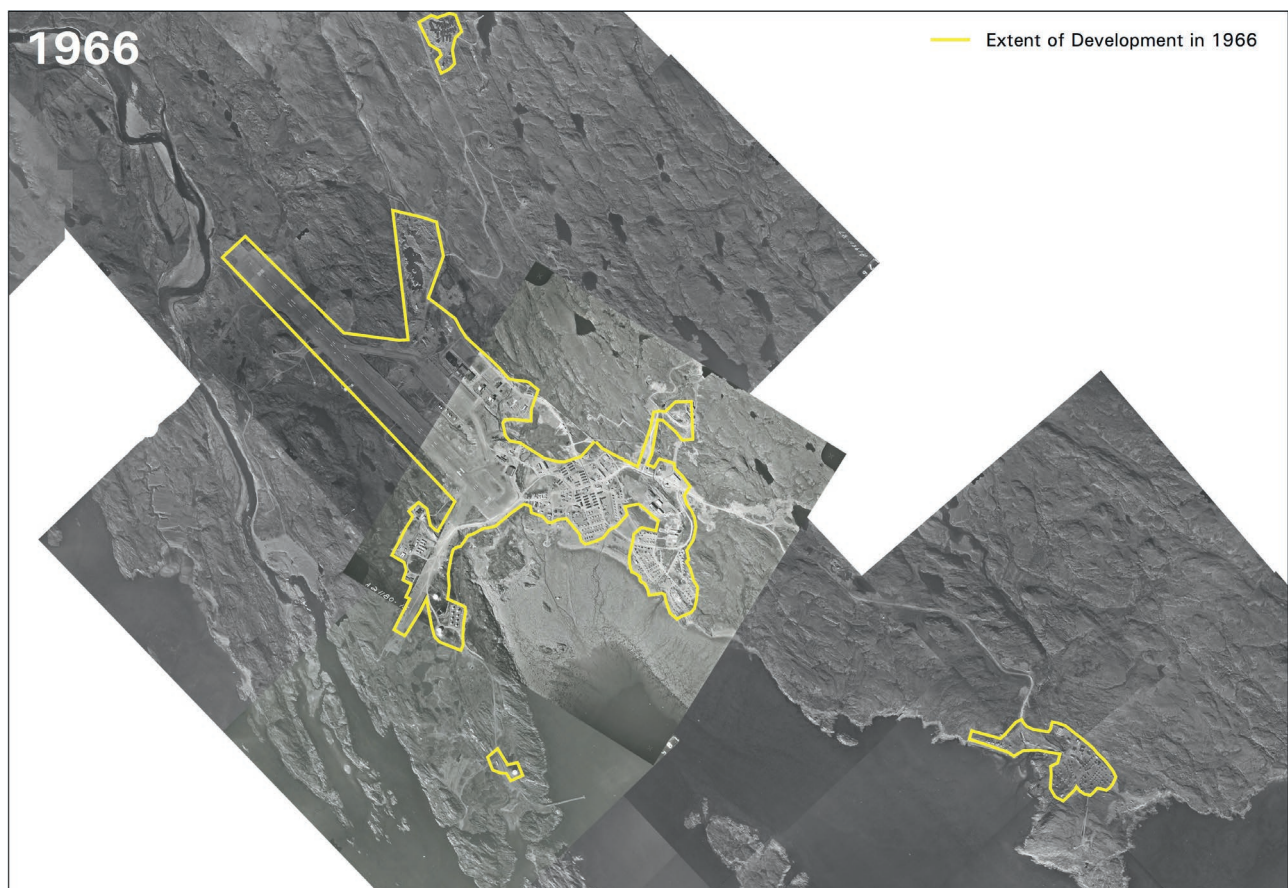


Figure 2. *Iqaluit 1966 showing administrative boundaries (Courtesy: City of Iqaluit)*

Iqaluit is also a key regulatory host for Arctic air and sea navigation (eg. Nordreg, which tracks shipping throughout Canadian Arctic waters), for public safety services, and a base for the extension of sovereignty through civil emergency and military exercises such as the annual Operation Nanook or its predecessors. These demonstrations respond to transnational pressures, which also include air safety, epidemiological trends, and competing sovereignty claims in Baffin Strait and on the extended continental shelf (Steinberg & Shields, 2008). Iqaluit is atypical but still significant because it is culturally and political-economically positioned as a social and spatial capital within Nunavut, Canada and the Arctic (see also Dybbroe, 2008). Iqaluit is a nodal point at which legal strategies (on all sides) for the implementation of the Nunavut Land Claim Agreement link to territorial governance and to on-the-ground practices of administrative actions, everyday life and economic development activities of resource industries onshore and off. It is integrated through neoliberal economies into global socioeco-

nommic networks of regulation and enterprise, and flows of human resources and capital (Gombay, 2009). Its emergent urban identity is hypothetically one novel expression of a socially- and economically-based form of ‘cultural sovereignty’ - what political scientists have appreciated as ‘popular’, ‘community’, or ‘local’ sovereignty.

The aerial photograph mosaics from 1966 and 2011 (see Fig. 2 and 4) provide an original glimpse into the development of Iqaluit along roadways that have followed dips and valleys that avoid major rock outcrops. Both multistory and detached prefabricated and wood frame housing stands on pilings into the permafrost, avoiding construction in concrete, with local stone or on the bedrock outcrops (see Figure 3). By the date of the last photos, Iqaluit was reaching the limits of its capacity to pump water to further development, limiting this pattern.

Drawing on sources such as the Qikiqtani Truth Commission, we can summarize Iqaluit’s growth as Table 1.



Figure 3 Iqaluit construction: driving pilings (the author)

Population and dwellings	Iqaluit, City Total	Percentage Change	Nunavut Total
Population in 1951 (Crystal Two)	304 (50 near base, 14 employed)		
2006	6,184		29,474
2001	5,236		26,745
2001 to 2006 population change (%)		18.1	10.2
Total private dwellings	2,460		9,041
Aboriginal identity population in 2006	3,650		24,915
Non-aboriginal identify population in 2006	2,435		4,410

Table 1: The statistical summary is based on: Statistics Canada. 2006 Community Profiles. Census Subdivision Iqaluit. Ottawa: 2007. Available online at: www.statcan.ca (blank fields indicate where data is unavailable or unreliable) (Courtesy Qikiqtani Truth Commission – Iqaluit Pre-hearing community History 2008)

Iqaluit has grown rapidly with a current population of between 6700 and 7500 depending on the number of temporary residents staying in Iqaluit with relatives to access health care, attend school or obtain training. 2010 figures give an official population count of 6185 in 2075 housing units with 7.8 % unemployment, and average income of \$44885 Canadian, and 70.8 % subsisting on traditional hunting and fishing, as well as arts and craft making. Yet only about half of the population is made up of Inuit Nunavummiut (northern residents) and the other half are southern metropolitan Qallunaat, often on 2-year work contracts, and refugees (such as the highly visible Sudanese) or economic migrants. This indicates the unreliability of population statistics for Iqaluit.

Coming from Pangnirtung, Iqaluit seems like a little slice of Paris. With its movie theatre, busy bars and gourmet latte shops, it's by far the most urbane place in Nunavut. Just about everyone seems to have a BlackBerry. Brief-but-real traffic jams clog the city's main street as people drive home for lunch in subdivisions built on the tundra... statistics show it's become considerably "whiter." But it's also drawn countless Inuit immigrants, who've moved in from more rural outposts to join this Arctic metropolis. With so many newcomers, Iqaluit's lingua franca has become English (Reaney 2009: 52)

Iqaluit, however, has earned its poor esteem as a site identified as a place where Qallunaat 'monopolize power and initiative (Honigman & Honigman, 1970:159), a reputation that stemmed,

directly from the government policy directed at Inuit in the 1950s and 1960s. This policy, referred to as tutelage by some anthropologists (Paine, 1977), concentrated the social and economic power of the towns in the hands of a few civil servants, most of whom had little to no experience living in the Arctic. Each settlement and town was run by a government-appointed Northern Service Officer who became responsible for mentoring Inuit into the "proper" ways of getting an education, maintaining a house, and keeping a job. The ultimate goal of tutelage was to enable Inuit to assimilate into mainstream Canadian society. The asymmetrical relations of power and privilege that existed in each community made casual and intimate relations between the two groups awkward and strained (Searles 2010:158).

... The near-total inversion of power and prestige also fed the stereotype linking place to ethnicity, to the idea that the land is a place where Inuit traditional knowledge and identity thrive while the towns are

places where Qallunaat forms of power and knowledge dominate. (Searles 2010:158).

In similar work in the late 60s on Western Arctic settlements (Inuvik, NWT), Honigman does not even index politics or struggles over power in the community. Participation is directed to the churches, and instrumental groups such as the day nursery. A Village Council had only just come into being in 1967 (Honigman & Honigman, 1970:91-2):

a disinclination to participate in public affairs is consistent with the individualism and the anti-organizational attitude characteristic of a frontier culture and...people's beliefs about their social role. ...By no means do natives regard existing social conditions as a matter of chance or fate. They know that somebody someplace regulates the social order ...but to exert such influence requires more patience and effort than people are willing to put out. ...it also requires more skill and confidence than most people feel they possess. ...they are embarrassed to get up and speak. They know that their form of speaking English differs from the form spoken by people coming from southern Canada.. Natives possess that nonreceptivity and distrust of strangers which Gans... ascribes to working class people. Honigman & Honigman, 1970:92)

This is not just a problem of a lack in the cultural sense of place but in the economic realities of places. Inuit experienced unemployment and lower wages than Qallunaat in towns, with Iqaluit being no exception (Hicks & White, 2000; Billson, 2001). Northern racial economic stratification compounded the low esteem for urban living and the social pathologies of settlement life including alcohol and drug addiction, suicides, and communicable disease. Weber adds a regional dimension: the poor image of Iqaluit is also related to the differential experience of migrants from other parts of the arctic and local families who are successful as 'established insiders' (forthcoming 2013).

Iqaluit finds itself as a space of uneven development pulled in several directions (Harvey, 2005). Its direction of development seems uncertain. Streets with names such as The Road to Nowhere are ironic, but hint at the sense of confusion southern-trained planners face in developing an Arctic city (See Fig. 5). In all of these portraits, the image of Iqaluit is related and compared to other places: other regions of rural camp life in general, Baffin Island and Nunavut and other centres beyond including Southern metropolitan places such as Ottawa. These other centres currently determine the identity of Iqaluit as deficient.



Figure 4 Iqaluit 2011 showing current and dotted 1966 administrative boundaries (Courtesy City of Iqaluit)

Searles concludes that ‘The possibility of an authentic urban Inuit identity continues, in many ways, to be frustrated by an unwillingness on the part of Inuit and Qallunaat alike to imagine the more densely populated, ethnically diverse towns’ (Searles 2010: 157). However, the problem is deeply rooted in social spatialization of Iqaluit as a genuinely Inuit and Arctic capital that are partly shared and partly contested by these groups.

Timeline: History of Iqaluit

1576 - Englishman Martin Frobisher sails into Frobisher Bay believing he has found the route to China
 1861 - Charles Francis Hall, an American camps at the Sylvia Grinnel River and explores the waters of Kojese Inlet, which he names after his Inuit guide
 1979 - U.S. Air Force selects Iqaluit’s current location as the site of a major air base
 1980 - The HBC moves its trading post from Ward Inlet to Apex
 1955 - Frobisher Bay becomes the center for U.S. Canada Dew Line operations
 1979 - US military move out of Iqaluit
 1980 - First community council formed; population of

Frobisher Bay is 900

1970 - Frobisher Bay officially recognized as a Settlement
 1974 - Settlement of Frobisher Bay gains Village status
 1976 - Inuit present the Nunavut proposal to the Federal government
 1979 - First mayor elected
 1980 - Frobisher Bay designated as a Town
 1982 - Government of Canada agrees in principle to the creation of Nunavut
 1987 - Frobisher Bay officially becomes Iqaluit, reverting to its original Inuktitut name meaning “place of many fish”
 1993 - The Nunavut Land Claims Agreement is signed in Iqaluit
 1995 - Nunavut residents select Iqaluit as capital of the new territory
 1999 - Territory of Nunavut comes into being
 2001 - Iqaluit given status as a City



Figure 5 Iqaluit Arctic sprawl: *The Road to Nowhere* 2008
(the author)

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10. Un-Planning in Iqaluit, Nunavut

Kirt Ejesiak and Alain Fournier



Introduction of our team

Kirt Ejesiak-M.P.A, C.A.S. is Partner and Alain Fournier-Architect, OAA, FRAIC is Design Partner. They have been involved in the Arctic built environment for over 35 years. Panaq Design has its headquarters in Iqaluit, Nunavut Canada.

PANAQ DESIGN was founded in 1997 by Kirt Kootoo Ejesiak, President, for the purpose of fostering active Inuit participation in the development of Nunavut.

We will look at planning for Arctic communities from the vantage point of hands-on professionals having contributed building designs to various communities, large and small.

Un-planning in Iqaluit, General Context and Personal Encounters

General Context

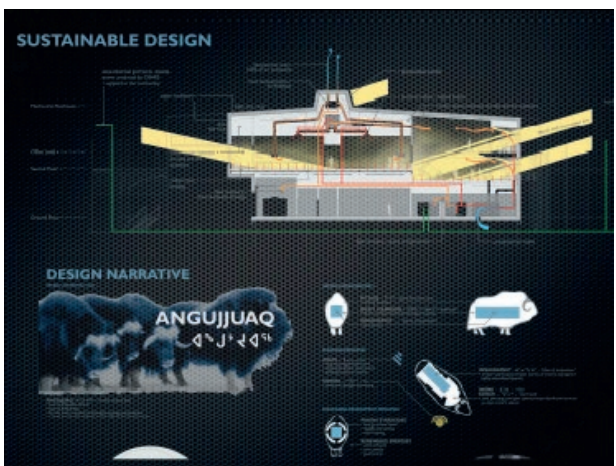
Before I give a very brief account of my first-hand encounters with un-planning in Iqaluit I think, that to be fair, it is necessary to put planning in a more global context. One may cringe at our oversimplification, but it is an effective way of getting the message across.

Canada does not have a tradition of strong, centralized, from the top down planning as it can be found in Europe and elsewhere. The belief is that individuals' rights be they private citizens or private developers will, at the end of the day, prevail over those of community rights. In Canada, the "anything goes" attitude to

development is alive and well.

Larger Canadian cities try to contain this situation but with more than mitigated success. Private developers and money seem to always get the zoning changes

they need. In smaller, outlying towns like Iqaluit, this attitude is rampant. It is in this context that we must judge Iqaluit's successes and failures.



Personal encounters with Iqaluit Un-planning

1970, My first uneducated encounter with Iqaluit was during its heyday as Frobisher Bay. My student job that

summer was working on an extension to the Frobisher Developments Limited "high-rise complex". At the time FDL was looming heavily on the Town's development, in fact they seemed to be the only act in Town.

I used more brawn than brains that summer to

help build the pool and the Hudson's Bay store. The high-rise complex was a large, monolithic, linear development overlooking a hodge-podge of rag tag buildings, match boxes, shoe boxes, shacks and tents. The High-rise complex was a smaller version of the "omni building" approach that a number of private and government planners alike favored at the time for the Canadian Arctic.

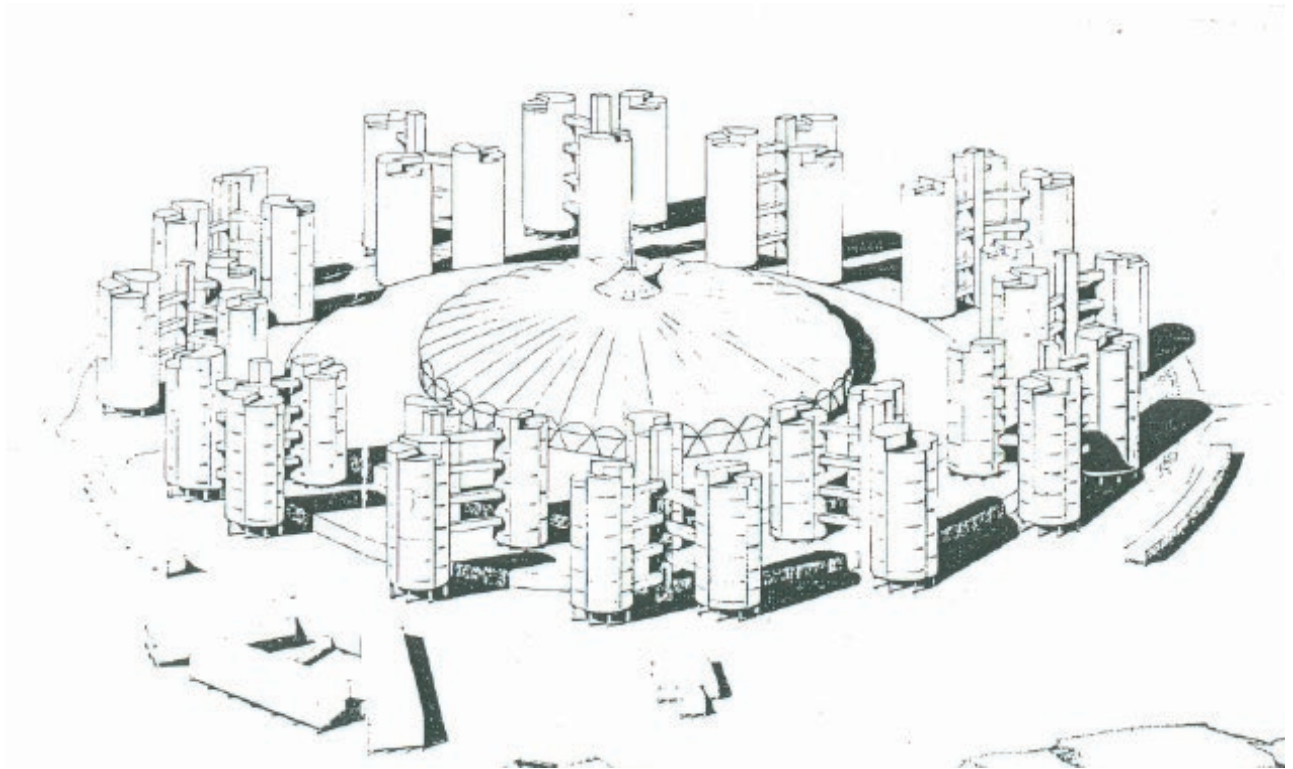
The 4 most prominent structures in town were the High rise complex, the Federal building by the airport, the Oil tanks along the cargo beach and the massive mountain of rusting barrels. Prince Philip, on his visit to Frobisher Bay, that summer, anointed Frobisher Bay by calling it a "dump".

At least now, it was not just any other dump, it was a royal dump.

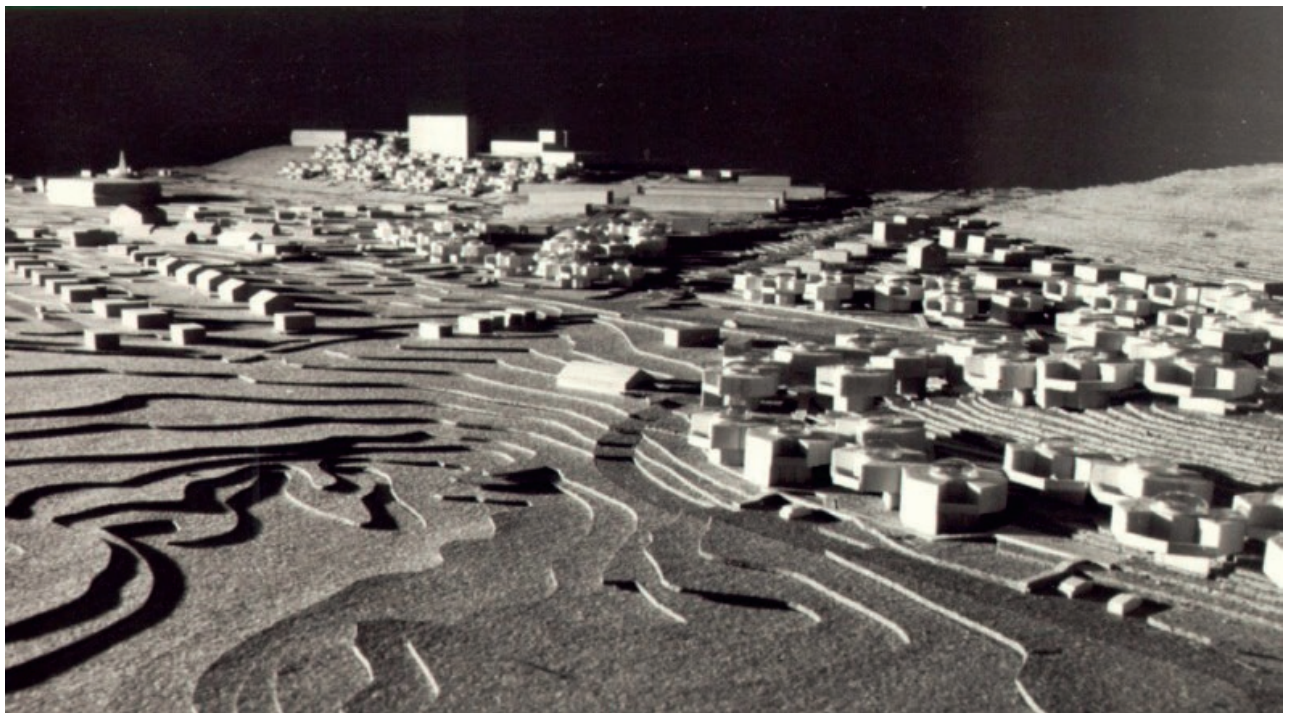


1982, My first educated look at Frobisher Bay, was as a young, idealistic, professional architect bent on making Frobisher Bay a better place to live in. My colleagues and I went on to design a new Air Terminal Building, the unabashedly yellow building that no longer needs introduction. We felt that our

work should not stop at a single building and in 1986 we proposed to start exploring Planning and Urban Design for Arctic Communities. The time was not ripe for such an endeavor. None of the governments showed any interest whatsoever.



Mega project circa 1977 M. Safdie



Mega Building project 1958

1999, Nunavut is created; all hell breaks loose. The hodge-podge feeling remains, only difference is that the shoe boxes have gotten bigger.

From American Army Base to Frobisher Bay to Iqaluit: a series of half-hearted, misguided or non-existent efforts at planning: End result: **Un-Planning**.

Kirt Ejesiak - former city councillor

As a city council member and deputy mayor of Iqaluit it was evident the developers were in control. It was a constant struggle to ensure they followed the city planning and bylaws we passed. It was only when we began fining developers for not following the rules the development community took notice and we were serious about sustainable planning principles.

Looking recently at the discussions at the current city council I see the struggle continues- this after many years after my political stint with the municipal council.



FDL complex , nicknamed the "the high-rise"-1972

"We've had so many 5 year plans in this town ... I don't even know which 5 year plan I'm on."
Sytukie Joamie at Iqaluit planning session.

Other examples of Un-Planning

Iqaluit is in its 3rd temporary dump since the military closed down.

Diesel generators for electricity being used beyond their useful life- 40 plus years.

Remnants of toxic waste being discovered as city de-

velops further. No one wants to take responsibility for these.

Planning for the future: The need to develop Planning and Urban Design Criteria for Arctic Communities

As an example of what developing Planning and Urban Design Criteria for Arctic Communities could mean, the following is the list of criteria that were submitted to the Central Mortgage and Housing Corporation (CMHC) in Canada in 1986 as part of an application for a research grant. The submittal was rejected.





But as this conference clearly exemplifies, Arctic Urbanization is no longer a matter of science-fiction or neglect. There is a more than ever dire need for Arctic-relevant Town Planning tools.

At the time we proposed to use a list of criteria developed by the well-respected urban planner Kevin Lynch as a preliminary conceptual framework that would help sort and analyze information gathered in Nuuk, Iqaluit, Puvirnituk and Ivujivik.

Lynch's criteria were developed to provide a direct relationship between the viewer's perception of his environment and the quality and relevance of his environment. These criteria would provide us with a basis for generating settlement design criteria that are specific to the Arctic. These newly derived criteria would have served both as assessment tools and as means of communication with the residents when testing out the relevance of the new criteria against Case Studies.

Lynch's 6 Perceptual Criteria¹⁰⁾ are:

Comfort

Sensations should be within the range of comfort, and not interfere with the activities that people wish to pursue: not too hot, noisy, bright, cold, silent, loaded or empty of information, too steep, dirty or clean.

Diversity

Within this range of toleration, a diversity of sensation and setting will give the inhabitant a choice of the environment he prefers, and correspond to his pleasure in variety and change. Diversity is an important support for human cognitive development, and indeed, for the very maintenance of the perceptual and cognitive system.

Identity

Places in the environment should not only be diverse, but have a clear perceptual identity: recognizable, memorable, vivid. A street should not look like all other streets.

Identifiable Parts

These identifiable parts should be so arranged that a normal observer can mentally relate them to one another, and understand their pattern in time and space.

Meaning

The environment should be perceived as meaningful, that is, not only should its visible and identifiable parts be related to each other in time and space, but they should seemed to be related to other aspects of life: the natural site and its ecology, functional activity, social structure, economic and political patterns, human values and aspirations, even to individual idiosyncrasies and character.

Fostering

The environment plays a role in fostering the intellectual, emotional and physical development of the individual, particularly in childhood, but also in later years.

10) Principles and Practice of Urban Planning, chapter 9 City Design and City Appearance Kevin Lynch, International City Managers' Association, Washington DC 1968. Goodman, William 1 editor.

There is a serious need for a vision of Arctic communities, a vision that is holistic, comprehensive, fully integrated and culturally sensitive. Only then, can relevant and sustainable Town Planning tools, be developed.

the Arctic experience and meaningful to its culture and society. These tools are needed as much for the small to medium sized Hamlets as for Towns like Iqaluit. This conference should not just be a wake-up call, it should also be a call to action.

Conclusions

More than ever, there is an urgent need to develop Arctic-Relevant Urban Planning tools; tools derived from





Arctic Sprawl



Mural near Qikiqtani General Hospital, Iqaluit



11. Arctic Urban Development and Climate Change: Past, Present, and Future of Russian Urban Infrastructure in Permafrost Regions

Nikolay I. Shiklomanov

Abstract

Russia has been building urban settlements in the Far North since the 16th century, a situation that is unique in the history of all Arctic regions. Planned socio-economic development during the Soviet period promoted migration into the Arctic and work force consolidation in a few, sparsely-distributed urbanized settlements to support mineral resource extraction and transportation industries. Despite the mass migration from the northern regions during the 1990s, followed by the collapse of the Soviet Union and the diminishing government support, the Russian Arctic population remains predominantly urban. In five Russian Administrative regions bordering the Arctic Ocean 66 to 82 % (depending on region) of the total population is living in Soviet-time urban communities. The political, economic and demographic changes in the Russian Arctic over the last 30 years have co-occurred with unprecedented climatic changes, which negatively affect centrally-developed Arctic urban communities. More

than 75 % of urban structures in Russian permafrost regions were built according to the passive principle, which promotes equilibrium between permafrost thermal regime and foundations of the structures through the foundation bearing capacity. Majority of Russian northern urban infrastructure consists of mass-produced standard design structures built in the 1960-1970s and are not designed to withstand changes in permafrost conditions beyond the natural variability. Permafrost warming observed in the Russian Arctic can be responsible for significant decrease of foundations ability to support structures leading to deformations and even collapse of the buildings. The survey of structures in series of settlements across the Russian Arctic showed that the percent of buildings with deformations increased significantly over the last decades indicating both changes in climatic and economic conditions. This presentation briefly examines a history of urban development in Russian permafrost regions and provides a quantitative assessment of impacts of climatic change on Russian Arctic urban communities.

12. Environmental Impacts of Urbanization: Policy Implications for Local Warming in Nuuk, Greenland

Tony Reames

Introduction

The world is urbanizing. For the first time in history, more people now live in urban areas than do in rural areas. By mid-century, the United Nations projects that urban dwellers will account for more than 60% of the global population. This trend is highly visible in Arctic nations, with nearly 70% of Arctic populations now residing in urban areas. In Greenland, the focus of this paper, 84% of the population now lives in urban centers. In Nuuk, Greenland, the population has exploded over the last three decades, nearly doubling in size from the late 1970s when the population was just over 8,500 to a population today greater than 16,000 (See Figure 1 below).

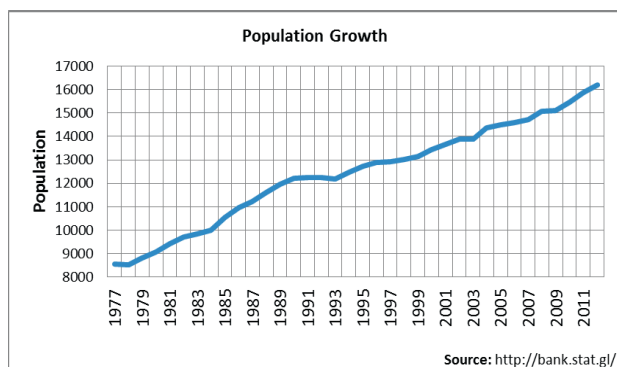


Figure 1. Nuuk population growth trend increasing (1977-2012)

Although multiple motivations may explain the migration to urban centers (education, housing, healthcare, and economic opportunity), the effects of climate change, particularly for small, remote Arctic communities, may inevitably force both voluntary and involuntary, government-mandated relocations. However, research in Greenland continues to emphasize the traditional Inuit way of life in the remote Arctic, and environmental research focuses heavily on the Greenland

ice sheet and ice retreat in the Arctic Ocean. While both are very important topics and critical to a holistic understanding of Greenland, it is equally important that researchers also examine the country's urban centers. Recognizing that urbanization trends will continue, the various social, economic and environmental impacts must be identified in order to pursue more sustainable urban development. A clearer understanding of the urban environment enhances urban planning, facilitates appropriate policymaking, and may prevent occurrences with adverse consequences for human and other ecological populations.

The effects of urbanization present a host of environmental impacts. For example, urban land-use changes increase pollution. In a study measuring how urbanization impacts levels of nitrogen dioxide, Hansen, et al. (2001) found that levels of nitrogen dioxide were greater in Nuuk than in smaller, less populated cities in Greenland. The authors attributed the measured difference to Nuuk having greater urban activity, such as, more automobiles, greater demand for winter heating of buildings, and more industrialization. This paper evaluates another environmental impact of urbanization, increased localized urban warming known as the urban heat island (UHI) effect.

Although only one aspect of the effects of urbanization on local climatological conditions, the urban heat island effect is among the best expressions of human activity on the local environment (Hinkel, et al. 2003). Recognized and studied for nearly two centuries, urban heat islands describe the effect that land development and other human activities have upon air temperatures in and around a city. Urban warming as explained by Hinkel et al. (2003) is "a manifestation of the direct and indirect alteration of the energy budget in the urban boundary layer." The direct impact is typically seen in the transformation of fossil fuels for such activities as generating heat for buildings and powering vehicles.

Therefore, since human activities are concentrated in urban areas, a net flux of heat into the atmosphere is often detectable in cities known as anthropogenic (caused or produced by humans) heat release (Hinkel, et al. 2003). The indirect impacts include land use patterns and changes in surface geometry and morphology. Impermeable surfaces, such as, buildings and paving, possess different thermal and optically reflective properties than does vegetation. Evapotranspiration processes in plants cool areas; thus, urban vegetation deficits also result in higher temperatures. Buildings alter the reception of solar radiation and impact local winds, also leading to temperature fluctuations (Bowling, Research, & Development, 1983; Magee, Curtis, & Wendler, 1999).

UHI research has typically focused on tropical and mid-latitude cities for a variety of reasons, and results have been applied to issues of urban pollution, energy conservation and heat-related health problems. In the United States, UHI research has also brought awareness to environmental and climate justice issues affecting the urban poor and disadvantaged communities.

However, it is important to note that not all heat islands are created equal. There exist fundamental differences between heat islands in high-latitude cities and those in lower latitudes, mostly attributed to the solar cycle and consequent impact on the urban energy budget. The UHI in high-latitude cities, like those in the Arctic, has a strong seasonal component with maximum development and intensity in the winter, and a weak or nonexistent expression during other seasons (Benson, Bowling, & Weller, 1983; Hinkel et al., 2003). Arctic winters are long and cold and there is a period of near continuous darkness. These cold, dark winters provide a unique window where contributions, other than anthropogenic, to the urban heat island are essentially eliminated (Hinkel et al., 2003; Magee et al., 1999; Simmonds & Keay, 1997). Energy demands in the winter are much higher than during the summer, and space heating is a major source of energy consumption. Energy used to heat buildings must ultimately escape into the atmosphere. Thus, winter months isolate the influence of anthropogenic heat loss as the short days make solar influence practically negligible and latent energy transfer is minimal because water remains in the solid state. Because solar radiative heating during winter in high-latitude cities is so slight, the heat island becomes particularly intense. The expected urban heat island intensity is further heightened by the frequent occurrence of strong surface inversions during the winter (Magee et al., 1999; Wendler & Nicpon, 1975). Surface temperature inversions trap heat and pollution near the surface, suggesting a further intensification of

the urban heat island.

Additionally, the characteristics of urban cities in high-latitude regions are different. The populations are relatively small, and lack the density and tall skyscrapers typically associated with large cities. Construction materials in the Arctic often differ with wood and concrete used over brick and steel. The release of building heating energy into the atmosphere presents significant implications and opportunities for construction design and energy efficiency policies.

In urban areas underlain by permafrost, warming may be problematic because it may reduce the load bearing capacity of the “ice-cemented” permafrost. During the winter, warmer urban air temperatures have the potential to accelerate snow cover ablation, and reduce the rate of heat loss from the ground, causing an increase in ground temperatures. Warming at the surface can also increase the thickness of the active layer. An ice-rich, underlying permafrost, coupled with an increase of active-layer thickness can result in differential ground subsidence and have a detrimental effect on buildings and infrastructure (Goldman, 2002; Hinkel et al., 2003; Nelson, Anisimov, & Shiklomanov, 2001). Though not a major issue for Nuuk, as it located south of the Greenland permafrost boundary, this may have implications for Greenland’s fast-growing urban centers to the north, such as, Sisimiut and Aasiaat.

Site description and data

Nuuk (64° 10' N, 51° 45' W) is the capital of Greenland, and is its largest city. As of January 2012, Nuuk had a population of 16,181. Unlike many other Greenland towns and settlements, Nuuk has experienced 89% growth since the late 1970s, from a population of 8,545 in 1977. The municipality has a total area of 105,000 sq. km, of which 19,000 sq. km is free of ice and 6,500 sq. km is ocean. Situated on the southwest coast, the climate is heavily influenced by the rather warm West Greenland current and is thus relatively humid. The mean annual precipitation is 752 mm. Nuuk is located south of the Arctic Circle. The mean annual temperature (1977-2011) is -1.2°C, with a mean temperature of -7.9°C in January and 7.2°C in July. Nuuk has experienced increased mean annual temperatures over the last thirty years (See Figure 2). The winds experienced in Nuuk are relatively high when compared to prevailing wind forces in Greenland.

This study evaluates the temperature difference between two sites in Nuuk, one located in the central city, and the other located north of the central city at the Nuuk Airport to assess the impact of urbanization on local warming. Meteorological data was acquired from

Asiaq HOBO Test Station Number 500 (Asiaq Headquarters at 64°10'11.5"N, 51°43'59.7"W, 39m) and from the National Climatic Data Center's Global Summary of the Day (GSOD) records for the World Meteorologi-

cal Organization Station Number 042540 (Nuuk Airport at 64°11'35.52"N, 51°40'35.76"W, 87m) (see Figure 3 for station locations).

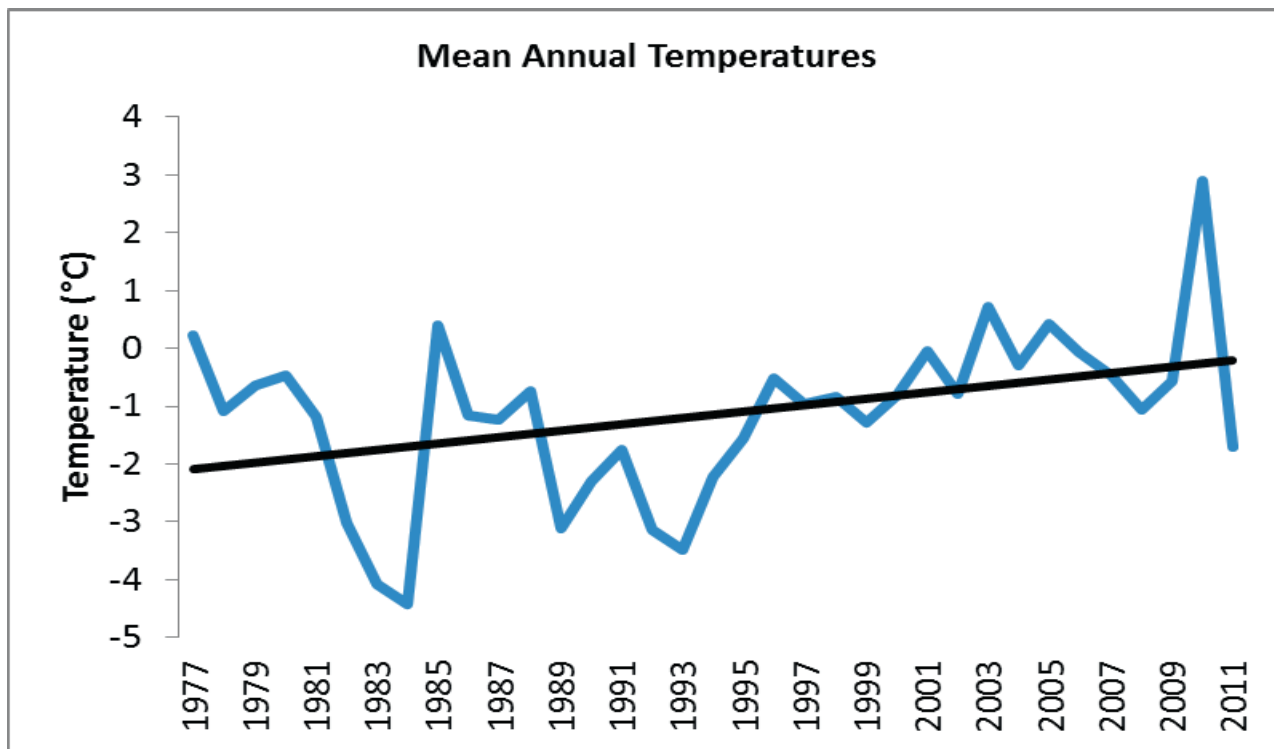


Figure 2. Nuuk mean annual temperature trend increasing (1977-2011)



Figure 3. Location of two weather stations in Nuuk

Methodology and results

The urban heat island is the temperature at a specific location in a city subtracted from the temperature at that same location if the city had not been developed. Since this is impossible to measure, there are two surrogate methods to assessing a heat island (Magee et al., 1999). The first approach is to approximate the magnitude of the urban heat island by taking simultaneous temperature reading differences between two locations, one located within the urban area, and the other in a nearby rural setting with similar geographic features. The second approach is to analyze trends in climatological records, assessing the differences between an urban weather station and a nearby rural weather station.

I examined temperatures and temperature differences between Asiaq Station 500 (urban) and Nuuk Airport (rural) for all days in 2011, independent of

weather conditions. The urban heat island magnitude (UHIM) is typically defined as the difference in temperature, ΔT between the urban (u) and rural (r) locations, or ΔT_{u-r} . These differences can be calculated using hourly, daily, or monthly means to examine patterns at different temporal scales. Calculations can be done using individual representative stations (i and j), or spatially averaged measurements from a group of stations representing (u and r) (Hinkel, et al. 2003). For this study the UHIM is calculated using monthly means ($\Delta T_{m, u-r}$) from individual stations (i and j), or Asiaq Station 500 and Nuuk Airport. The winter season is considered January-March, as these are the coldest months of the year. Other seasons are as follows, spring (April-June), summer (July-September), and fall (October-December). Figure 4 illustrates the monthly mean temperatures for Nuuk, showing lower temperatures during the winter and fall, and higher temperatures in spring and summer.

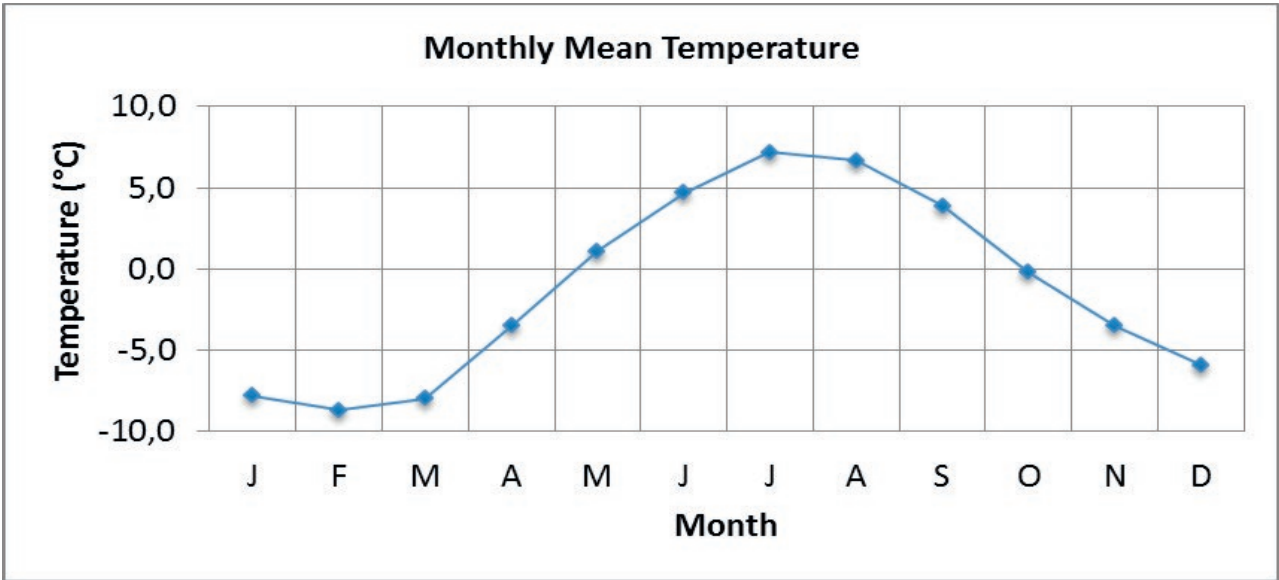


Figure 4. Nuuk Monthly Mean Temperatures

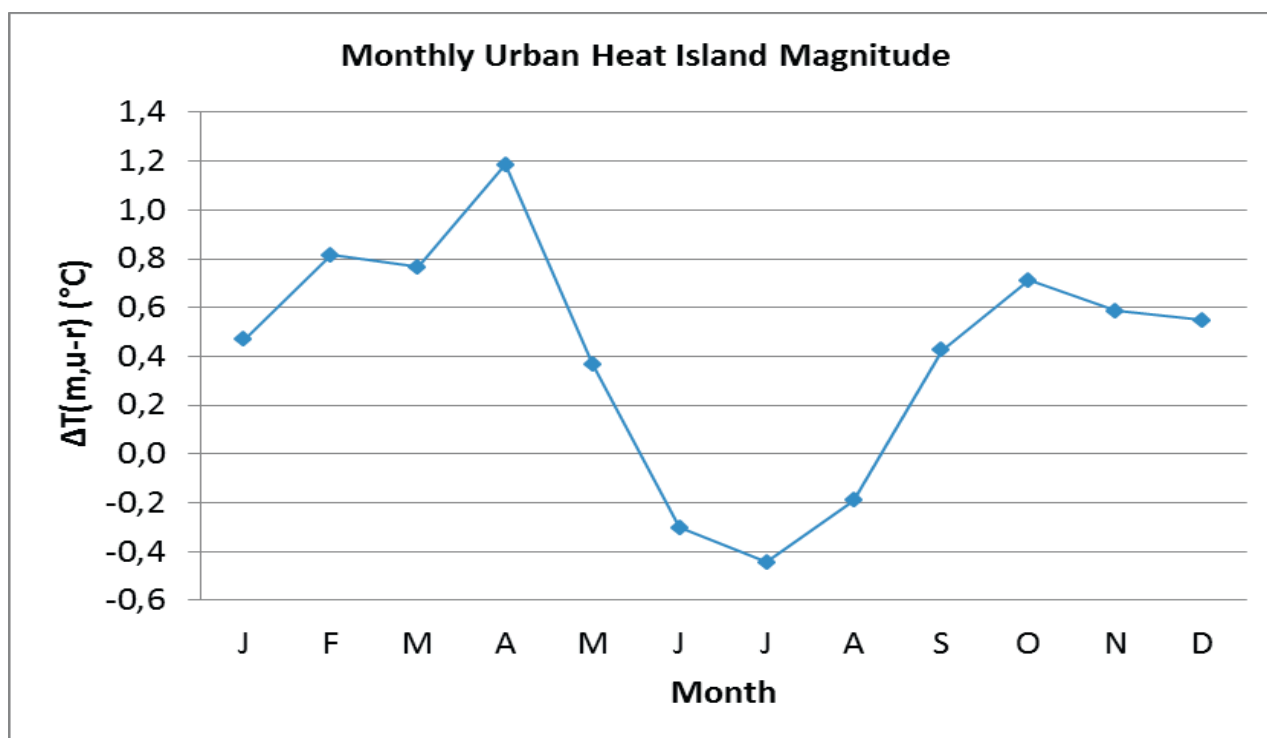


Figure 5. Nuuk Monthly Urban Heat Island Magnitude

Figure 5 illustrates the magnitude of the urban heat island for each month in 2011. The trend is somewhat the inverse of the monthly mean temperature, with a greater UHI effect seen in fall and winter, and lower in spring and summer. April 2011 exhibits the greatest UHI with the central city being 1.2°C warmer than the airport; however, only three days of temperature data were collected for urban weather station and therefore this UHI explains the difference between the average of the last three days of April (April 28-30, 2011) at both locations.

Therefore, it is more appropriate for this study to assess the UHI seasonally. Seasonal averages are given in Table 1 providing values describing the magnitude of the general warming trend for three-month periods. With the exception of summer, all seasons experience an urban heat island effect, with the greatest urban heat island experienced in the winter (0.68°C warmer),

followed closely by the fall (0.60°C warmer). During the summer months, anthropogenic heat pollution is minimal compared to the strength of solar radiative warming, as well as minimal nocturnal heat loss, thus we witness a small negative UHI effect. Negative UHIM values, seen in other studies (Oke, 1987; Taesler, 1991; Steinecke, 1999; Hinkel et al., 2003), indicate what is known as an inverse heat island or cold island.

°C	Nuuk Urban	Nuuk Airport	ΔT = UHI
Winter	-6.96	-7.64	0.68
Spring	1.04	0.62	0.42
Summer	5.97	6.04	-0.07
Fall	-4.10	-4.69	0.60
Annual	-1.01	-1.42	0.41

Table 1. Seasonal Temperatures and UHI

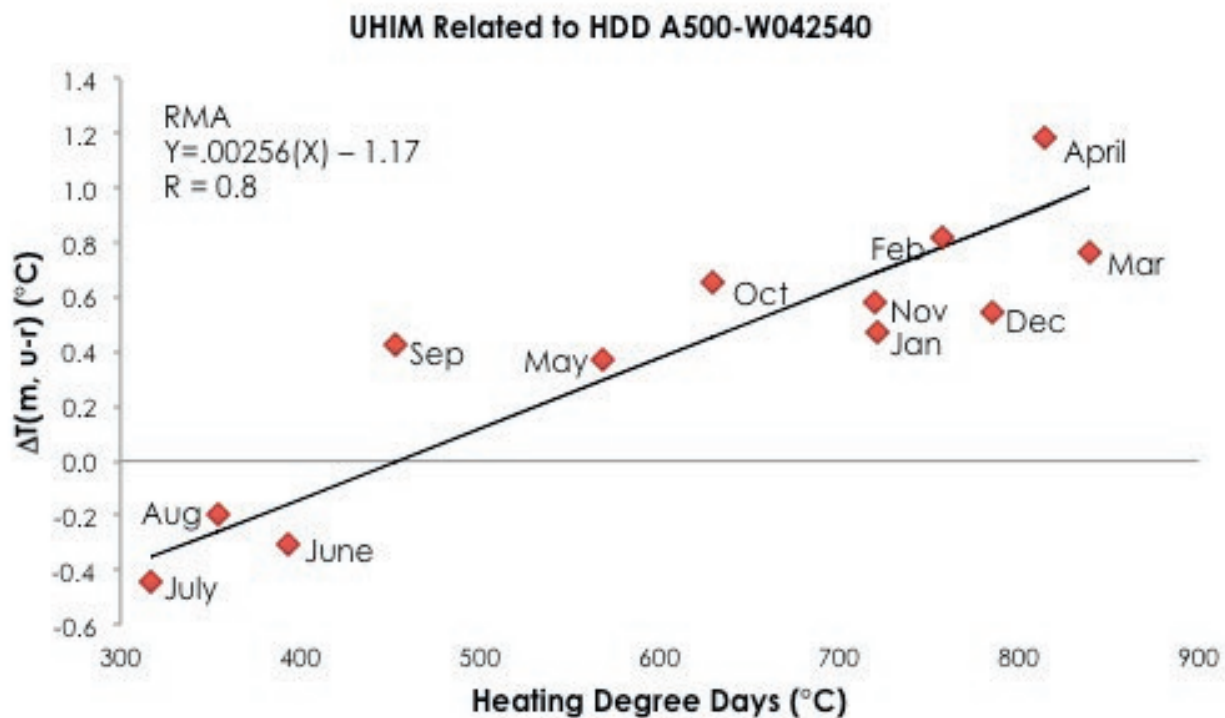


Figure 6: Monthly UHIM related to monthly HDD (2011)

As a measurement designed to reflect the demand for energy needed to heat a building, heating degree days (HDD) also illustrates winter severity. This is a measure of the amount of energy needed to maintain building interiors at a comfortable level. Monthly HDD values are calculated by accumulating daily HDD over the month. A base temperature of 18.5°C (65.3°F), was entered into the site, www.degreedays.net for Nuuk to determine HDD values. The HDD are a measure of how much (in degrees), and for how long (in days), the outside air temperature was below the base temperature, thus the need for heat.

Figure 6 shows the relationship between average monthly UHIM and monthly HDD for the period January to December 2011, based on reduced major axis (RMA) analysis (Hinkel et al. 2003). A strong positive relation ($R = 0.8$) exists between heating need and the magnitude of the UHI. The months with the highest UHI correlate with the highest number of HDDs. A clear relationship exists between the need for and use of heating buildings and increased warming in the urban center of the city during the winter and fall. It is also important to note the negative UHI values for the month June through August related to the lowest number of HDDs requiring less demand for heat.

Conclusion

This preliminary study offers a first look at the urban heat island effect in Greenland's largest and fastest grown city, Nuuk. Nuuk experienced a mean annual temperature increase of 1.6°C from 1973 to 2011, and a mean winter temperature increased 1.4°C from 1973 to 2012. By comparing two stations in Nuuk, the urban heat island effect was revealed. As expected, the winter season exhibits the strongest expression of urban warming. During the winter of 2011, the urban center was 0.68°C warmer than the airport area north of town during the same period. For comparison, winter UHIM from studies in other high-latitude cities ranged from 4.5°C in Fairbanks, Alaska (McGee et al., 1999) to 2.2°C in Barrow, Alaska (Hinkel et al., 2003).

As time progresses, the study can be conducted using strategically placed stations in Nuuk as sufficient data will exist to adequately assess trends. The installation of additional weather monitoring stations in and around Nuuk would be beneficial to gauging the true spatial variations in urban versus rural temperatures. Additional data on energy consumption, especially the use of fossil fuels for heating, automobiles, and other industrial uses, would allow for drawing additional correlations with increases and decrease in the UHI as

population and demand changes.

A complete understanding of the impact of urban development is beneficial for scientists and policymakers alike. Scientists can use these studies to inform policymakers. Policymakers can in turn develop policies that ensure the well-being of human and other ecological populations who share urban spaces.

The lower UHIM in Nuuk could be contributed to both Greenland's and Nuuk's open commitments to the environment, as evident from the information listed on their government websites. The Greenlandic government has taken steps that may influence the urban heat island, particularly in the reduction of dependency on fossil fuels. In 1990 Greenland was 100 % dependent on imported fossil fuels. With the introduction of waste incineration in the early 1990s, dependency on foreign oil decreased to 99 %. Further reduction was realized in 1993 with the opening of the Buksefjord hydroelectric power plant that provides the majority of the electric power for Nuuk. The dependence on oil was reduced to 91 %. The government has made a strong commitment to increasing the use of renewable energy. Greenland's energy company, Nukissiorfiit, actively promotes energy saving tips for customers on its website.

The private sector has also come on board to meet the environmental challenges faced by Greenland, with development proposals that meet the economic, social and environmental needs of the country. For example, the demolition of Block P housing apartments will be replaced with the purported, eco-friendly Nuuk Center masterplan. Academics and researchers are also joining in by conducting top-notch research and opening research centers and labs, such as, Asiaq, Nuuk Basic and the Greenland Institute of Natural Resources.

Although many motivations exist for migration from rural areas to urban centers, climate change may force voluntary or even government-mandated relocation. If small Greenland settlements become environmentally, socially and economically nonviable, and people seek an improved quality of life elsewhere, policymakers must consider the impact of urbanization on the environment. For example, Sisimiut is the second largest city and has experienced a near 50 % increase in population over the last three decades. Sisimiut may serve as another site to monitor the magnitude of urbanization, by establishing climate monitors in and around the city to test the urban heat island effect. This information could facilitate government policies on energy efficiency, housing construction, green infrastructure, urban planning and more. Unlike Nuuk, Sisimiut is underlain by permafrost, thus additional concerns surround the impact of local warming as a result of urbanization.

Acknowledgements

This work was supported by the National Science Foundation C-CHANGE (Climate Change, Humans, and Nature in the Global Environment) Integrative Graduate Education and Research Training (IGERT) program at the University of Kansas. I am also grateful for the help received from Mark Pernosky and other staff members at Asiaq (Nuuk, Greenland).

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13. The Role of Winter/Ice Roads in Industry and Communities in Northern Alberta

Scott Stephenson

Introduction

The Arctic and subpolar northern latitudes are among the infrastructure-scarcest regions in the world. Cold winters, permafrost terrain, and remoteness from population centers combine to significantly increase the building cost and upkeep of physical infrastructure, such as roads, and implementing human infrastructure, such as search and rescue operations (ACIA, 2005). For example, per-capita transport and communication costs are much higher in the Northwest Territories (+36 %) and Nunavut (+160 %) compared with Canada as a whole (Statistics Canada, 2009 data). In the eastern Arctic, the average density of paved roads east of the Ural mountains is 13.9 km per 1000 km², compared with 194.8 km per 1000 km² in European Russia (Tarkhov, 2002). Due to high cost, transportation infrastructure in northern countries has often taken the form of vast projects requiring considerable investment by federal governments, such as the Alaska Highway and the Trans-Siberian and BAM railways. Where such routes exist, freight volumes may be limited due to congestion from heavy use (Dibb, 1972). Navigable rivers may make possible freight transport by barge, but their operation period is constrained by season and their service area by geography. Warmer winters due to future climate change may make some areas more suitable for road construction, but these benefits must be weighed against the additional maintenance cost of built infrastructure over thawing per-

mafrost (Instanes et al., 2005).

Where permanent transportation infrastructure is scarce, winter/ice roads (hereafter termed “winter roads”) provide a viable and often cost-effective alternative. Vehicular access in many areas of the North is restricted to winter, when frozen ground provides a workable driving surface. Winter roads are seasonal roads constructed across frozen land and water surfaces from various materials, including compacted snow, applied ice caps, and ice aggregates (Adam, 1978). In Canada, winter roads are typically constructed by removing snow from land or frozen water bodies and applying water in layers to promote a smooth driving surface (Cardinal, 2011). Winter roads have been used to support exploratory oil drilling in Alaska since the early 1970s, beginning after historic Arctic transportation methods such as peat roads were found to have significant long-term environmental effects (Guyer et al., 2005). Over 5400 km of winter roads connecting local communities and supplying mining operations have been mapped in Canada (Government of Canada, 2007); 13 % of the population of the NWT rely entirely on winter roads for land-based transportation (Government of Canada NRTEE, 2009). Unlike all-weather (permanent) roads, winter roads are not generally intended as a long-term transportation solution and most have an expected tenure of 2 years (Table 1).

Class	Tenure	Seasonal	Description	Watercourse Crossings	Category	Clearing Width (m)	Road	
I	20+ years	All-weather	Fully graded, all season access, pre-determined running surface widths, side slope ratios, flat bottom ditch widths and back slope ratios.	Long-term crossings (bridges, culverts, etc.)	Generally Primary	Up to 40m	Up to 10m	Route is
II	10+ years	All-weather	Same as class I but with a lower design standard and tenure. Generally built to handle a lower traffic volume and number of users.	Long-term crossings (bridges, culverts, etc.)	Primary, Secondary, and Tertiary	Up to 30m	Up to 10m	Route is
III	2-20 years	Dry or Frozen	Generally common winter access roads which are used consistently every season. May also be longer tenure dry access routes (ungraded).	Seasonal crossings (i.e. snow/ice fills). Some crossings may be longer term.	Generally Secondary; May also be Primary routes.	Up to 15m	Up to 8m	Route will
IV	Up to 2 years	All-weather or Seasonal Access	A temporary road which results in equivalent or lesser amount of environmental disturbance to a Class V road. Examples: matting, drivable wood fiber roads, and other non-conventional dry ground access methods.	Temporary (snow/ice fills, logfills, portable bridges, etc.)	Generally Tertiary	Up to 15m	Up to 6m	Route will be almost entirely existing access with very little new cut
V	Up to 2 years	Frozen	Road constructed only during frozen conditions and only for a duration less than 2 years.	Temporary (snow/ice fills, logfills, portable bridges, etc.)	Generally Tertiary	Up to 15m	Up to 6m	Route will be almost entirely existing access with very little new cut

Table 1: Road Classes (adapted from Alberta Energy and Natural Resources, 1989).

Decisions of whether to build all-weather roads or winter roads are based on an extensive cost-benefit analysis of expected returns from increased access to resources, cost of labor and construction materials, and where required, cost of environmental impact assessments. Whereas construction of all-weather roads (Figure 1) in Canada's Northwest Territories may cost upwards of \$1 million per kilometer, a heavy-freight winter road (Figure 2) may cost only \$5000 per kilometer (Zaitsoff, 2011). In some cases, laws may favor construction of winter roads—the Bureau of Land Management requires that all oil and gas exploration activities in Alaska be conducted in winter to limit environmental impact (Guyer et al., 2005).

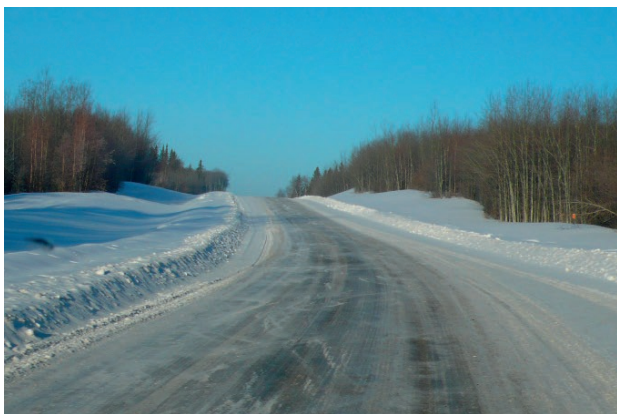


Figure 1: All-weather road. (Photo by author)

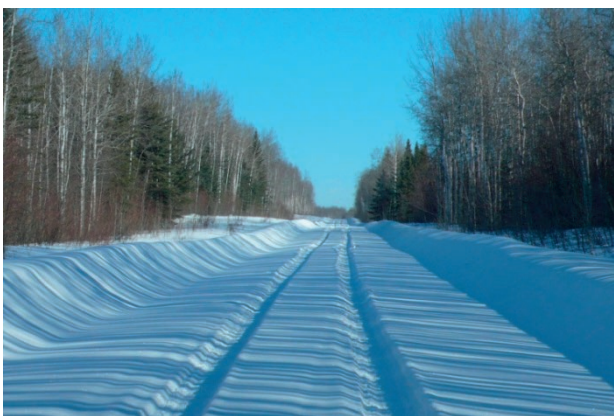


Figure 2: Winter road. (Photo by author)

Suitability Factors for Winter Road Construction

The cost of constructing winter roads depends on numerous physical factors, including land cover, topography, hydrography, and climate. Forested terrain must be cleared of vegetation; thus, road builders will utilize existing routes when possible to minimize clearing cost and ecosystem disturbance, particularly in the

case of Class IV or V roads (Table 1). Many winter roads are built to utilize cut lines cleared for seismic surveys (Figure 3):

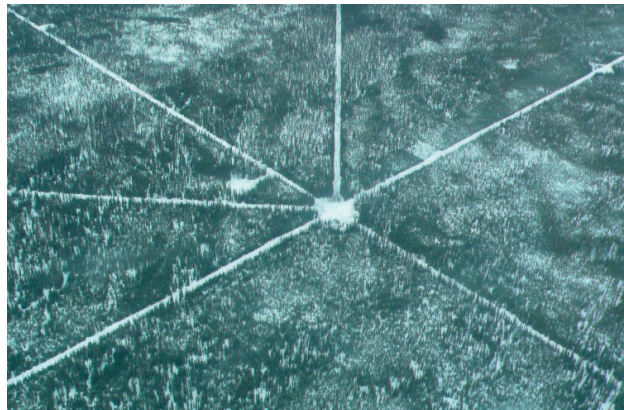


Figure 3: Winter road utilizing existing cut lines from seismic surveys (photo by author)

Some terrain features may increase costs further, such as muskeg, sloped terrain, and river crossings. Muskeg (bog terrain) is impassible when unfrozen and must be removed before permanent roads may be built. Areas like High Level have muskeg extending 60 meters below surface, making permanent road construction unfeasible. In muskeg, winter roads are often the only practical form of land transport available to anything other than some specialized All Terrain Vehicles (Rollheiser, 2011). Roads over sloped terrain typically break up faster than roads on flat terrain due to higher stress loads on sloped terrain from vehicles, which may have to use chains to avoid slippage (Kirschner, 2011). Furthermore, roads oriented in an east-west direction typically break up faster than north-south oriented roads due to greater sun exposure (Kirschner, 2011). While frozen water bodies may comprise part of a winter road route, flooding may occur at crossings over small rivers where ice extends to the river bottom causing a backup of flow (Kirschner, 2011). The most cost-efficient route maximizes use of existing disturbance while avoiding areas of muskeg, high slope, and river crossings.

Winter roads depend upon climatic suitability; i.e. whether an area will remain cold long enough to allow sufficient freezing of land and water surfaces. A salient question for transportation planners in northern provinces is which areas are climatically suitable for winter road construction at which times of the year. While sub-zero temperatures are typical in northern Alberta in late fall and early spring, interannual variation in temperature and precipitation leads to uncertainty in the length of the winter road season. Analysis of climate model data may permit long-term

spatial and temporal projections of winter road viability (Stephenson et al., 2011). Previous studies have identified the rate of ice formation as the most critical climatic factor (Instanes et al., 2005). Subzero temperatures are required to maintain ground strength and ice thickness; low temperatures must persist long enough to allow buildup of ice to a critical thickness before vehicles may travel safely (Instanes et al., 2005). A temperature of -10°C is required before application of water layers may begin (Cardinal, 2011). Care must be taken to allow each water layer to freeze completely before additional layers are applied, to avoid unfrozen water occlusions (Cardinal, 2011). A warming trend of positive-degree temperatures (“Chinook”) signals that roads may be used for approximately 7-10 days before closure, during which time travel may be possible only at night (Kirschner, 2011).

Fallen snow acts as an insulator, slowing the rate of ice growth. However, snow may also be packed to create a base sufficient for vehicle travel (Adam, 1978), as is typically done in Russia where snow removal equipment is less common (Cardinal, 2011). Thus, snow may hinder or facilitate winter road construction depending on construction method and equipment availability. Snow may be removed by blading to hasten ground freeze; thus, snow accumulation is not a major concern for developers with capital available for snow removal equipment, but may negatively impact small communities unable to maintain roads without government assistance.

Winter Road Usage in Northern Alberta

Winter roads are a fundamental part of the resource development sector in northern Alberta. The region is home to the majority of the province’s energy development projects (primarily in-situ oil and gas drilling and oil sands mining), comprising over 30% of provincial GDP in 2008 (Government of Alberta, 2011). Winter roads are often the first road infrastructure built by oil and gas companies to support extraction, particularly during the exploration phase when the economic viability of a deposit may be unknown. Winter roads are often replaced by all-weather gravel, dirt, or paved roads during the development phase to accommodate larger and/or more frequent vehicles; however, winter roads may remain in place for the development phase if frequent traffic is not required (Rollheiser, 2011). Where

all-weather roads are present, their summer use is subject to weight limits that may restrict loads to as little as 30% of a typical winter load due to softer terrain surfaces (Rollheiser, 2011). For this reason, winter roads are often necessary for transport of heavy equipment that exceeds summer weight limits for all-weather roads. Winter roads are also used heavily by logging companies, such as DMI Forestry. Many extant winter roads in the Peace River area are built and maintained by logging and oil and gas companies. The public may make use of these roads to access public lands at the operating company’s discretion due to safety concerns (Rollheiser, 2011). Winter roads in northern Alberta tend to be shorter and greater in number than those used in the Northwest Territories, often taking the form of small roads “branching” from larger all-weather arteries (Kirschner, 2011).

In addition to industrial use, winter roads play a vital role in supporting communities throughout Canada’s northern provinces. In northern Alberta, winter roads are often the only land links to remote aboriginal towns. Fort Chipewyan, for example, is linked by winter road (Figure 4) to Fort McMurray 280 km to the south, and to Fort Smith, NWT to the north. The Fort McMurray-Fort Chipewyan winter road was built over several years beginning in the 1980s and taken over by the Regional Municipality of Wood Buffalo in response to citizen demand in 1997 (Kirschner, 2011). Its southernmost portion has undergone a continuous upgrade to a high-grade dirt road since 2000 to accommodate high traffic volume (Kirschner, 2011). Resupply of remote communities such as Fort Chipewyan occurs primarily when winter roads are open to vehicular traffic.

When closed (Figure 5), winter roads are impassible by automobile (although some roads may remain open to all-terrain vehicles) and resupply may take place only by air or river barge. However, because barge transport often requires dredging to remove sand bars, ecosystem disturbance due to barge transport may be higher than that of winter roads. In addition to their role as supply routes, winter roads also serve as access routes for search and rescue teams and recreation-seekers in backcountry areas. Where permanent roads exist, winter roads may serve as alternate routes in the event that primary roadways become closed due to accidents or other disasters; one example is the winter road accessing the Seal Lake area through the Métis settlement of Peavine, which was recently upgraded to an all-weather road (Rollheiser, 2011).



Figure 4: Southern entrance to Fort Chipewyan. (Photo by author)



Figure 5: Closed winter road during spring thaw Winter Road (taken 4/2/11). (Photo by author)

Evidence has been growing that climate change is reducing winter access by delaying opening or advancing closing dates of winter road operation. The Tibbitt-Contwoyto winter road, the Northwest Territories' longest heavy haul ice road, is expected to lose 17% of its operating season from 2008-2020 (Hayley and Proskin, 1998), while operating seasons on Alaska's North Slope have shortened from over 200 days to just over 100 days from 1970-2002 (Hinzman et al., 2005). These empirical data are supported by climate models which project reduced winter road potential by mid-century in all Arctic states (Stephenson et al., 2011), particularly in Canada and Russia, which currently have the densest network of winter roads and the largest area of winter road-suitable land. In northern Alberta, it is unclear whether climate change to date has had a measurable detrimental effect on winter road viability. Opening dates for the Fort McMurray-Fort Chipewyan winter road do not exhibit a clear long-term trend toward shorter seasons (Kirschner, 2011). However, road operators are concerned about increased

interannual variability in season length, as opening and closing dates have varied by 3-5 weeks in the past 20 years (Kirschner, 2011). Uncertainty in the prediction of opening dates can have negative consequences for supply chain coordination wherever winter roads are used. For this reason, industrial projects that use winter roads must be able to adapt quickly to changing weather conditions (Kirschner, 2011).

Reduced winter road access has profoundly negative implications for numerous stakeholders. A shortened winter road season implies higher costs for those working in impacted areas. When winter roads fail due to insufficient ice formation, overland travel may become dangerous and even impossible, as drivers may become trapped in muskeg or fall through river or lake ice (Winnipeg Free Press, 2011). Unless located near a navigable waterway, communities reliant on winter roads face steep increases in the price of supplies and food resulting from expensive air delivery. High prices have induced residents of some remote communities to ignore warnings and drive in potentially dangerous conditions, even when road operators attempt to restrict usage to night travel only (Champagne, 2011). In especially warm years, the opening of the Fort McMurray-Fort Chipewyan winter road was delayed until January, extending for months the period during which prices for basic supplies are high (Champagne, 2011). Similarly, roads may close early due to warm weather, as in 1996 when roads flooded and became impassible in February (Champagne, 2011).

Shortened winter road operating seasons also portend higher costs for industry. Inland mining, energy and timber interests face shorter time windows to transport necessary equipment, supplies and product, rendering these industries increasingly uneconomic in areas where permanent infrastructure is scarce. Recent study of mining operations in the Northwest Territories shows that failed ice roads may cause annual supply delivery losses of up to \$84 million (Goldstein, 2011), indicating that reliance on winter roads carries significant economic risk. Continued mineral exploitation in remote areas may require investment in all-weather roads, as has taken place north of Baker Lake, Nunavut, or a shift toward port facilities, as has been proposed at Bathurst Inlet (Government of Canada NRTEE, 2009). Airships present a third alternative to winter road transport (Dorminey, 2011). While this option has considerable cost-saving potential compared with other aircraft, its utility has yet to be demonstrated on a large scale in northern industrial operations, and its practicality is limited as a mode of local community access.

Conclusion

This paper has provided a brief overview of winter roads as a critical seasonal transport infrastructure in northern Alberta. As permanent roads are scarce in much of northern Canada, winter roads are often the only means of land transport of supplies to northern communities and industrial sites. Winter road construction costs vary with land cover type, proximity to existing cut lines, terrain slope, and climatic factors including temperature and precipitation. However, winter roads are nearly always more cost-effective than permanent roads for short-term operations. Because winter roads require subzero temperatures, warmer temperatures and higher precipitation projected by climate change threaten their seasonal life, leading to shorter operating seasons. As a result, communities reliant on winter roads are at risk for higher costs of living and lower mobility as operating seasons contract, while industrial operations in remote areas may become increasingly uneconomic.

Acknowledgements

This paper was prepared with the support of the Northern Alberta Development Council, Northern Sunrise County and the Regional Municipality of Wood Buffalo (NADC Grant 2011-21G). Sincere thanks to Dan Dibbelt, Dave Kirschner, Kris Rollheiser, and Steven Rowe (Northern Alberta Development Council); Stan Champagne and Bob Miles (Northern Sunrise County); Ken Zaitsoff (Shell Canada); Michael Cardinal (Lakeshore Enterprises); Rene Belland (University of Alberta); and Laurence Smith (University of California, Los Angeles) for assistance in the production of this manuscript.

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14. Urbanization of the Alaskan Arctic: The Great Reversal?

Hal Salzman

Abstract

The urbanization of the Alaskan Arctic may be somewhat different from that in other regions of the arctic. Whereas other regions may be experiencing urban growth because of migration and fertility, because of a movement for health, education, technology access, and other aspects of welfare and urban attractions, the Alaskan North Slope, by contrast, has been on a path of population decline (or perhaps stable more recently) and has, at the same time, been able to develop its health, education, and social and physical infrastructure and generally maintain its traditional land and marine uses. What promises to be the reversal of historical trends of outmigration and rural settlements is the greater period of open seas and the changes in marine use. That is, it is the increase in commercial marine activity that is likely to lead to urbanization on the North Slope.

Offshore oil production in the Beaufort and Chukchi Seas and the opening of shipping lanes along the high-latitude western Alaskan coast may have profound impact on the terrestrial settlements, leading to urbanization in Barrow and perhaps other areas. To support marine activity, there are dramatic changes in land uses, from hosting bases for the Coast Guard, oil companies, and other military operations to expanding local services ranging from spill response teams to housing to all the other indirect and associated services such as housing, shopping, transportation, etc. Most of

these services, perhaps with the exception of spill responders, are unlikely to draw on the local population but, instead, be staffed by outsiders, and largely migrants for the lower service jobs.

The population growth is thus different from urbanization that results from the regional migration of rural populations to urban centers. This urbanization will be largely if not entirely “outsiders” from other urban areas, and many will be transient populations (e.g., on work rotation). The challenges are those of both physical and social planning: how to develop infrastructure in changing permafrost and restricted lands and how to expand settlements, with largely outsider and transient populations, in ways that do not undermine the social and cultural integrity of the communities.

This paper is based on field work on the North Slope of current trends and the socio-economic transformations of those communities over the past decades, of the proposed and likely changes in marine activity (off-shore drilling, shipping lanes, other vessel traffic and support capabilities) and the challenges and opportunities it will present for urbanizing settlements. It will examine both the socio-economic and social/cultural consequences. The key institutions in those communities, most notably the Native Corporations and some of the other entities are discussed in terms of their potential and their limitations in providing for community responses, preserving community integrity, and management of urbanization.

15. Greenlandic urbanization and urban life – Decline or development?

Gitte Tróndheim

The discussions on how to define an Arctic city and when one can talk about Arctic urbanization have been difficult for many Arctic researchers. The challenges often arise because of efforts to compare Arctic cities and urban formations with large metropolises.

Swedish anthropologist Ulf Hannerz writes about the difficulties in defining the city: “To identify its boundaries, to define it in a way which is valid for all times and in all places, for small towns and megalopolis, has turned out to be far from easy” (Hannerz 1980, 59).

But how is urbanization to be understood in the context of Greenland?

Colonization, the introduction of Christianity and commercial capitalism have been contributing factors to urbanization in Greenland, and cities clearly developed in Greenland because they were in the interests of the colonial power.

In the literature about Greenland, there are three periods in which intense urbanization can be identified in Greenlandic society:

- The 1800s; when demographic development was comparable with Danish conditions.
- At the beginning of the twentieth century (1900-40); when the shift in occupations from hunting to fishing triggered increased urbanization, ushering in city-like life.
- 1950 to 1970; when the Danish state in collaboration with Greenlandic politicians carries out industrialization, modernization and population concentration.

The first two periods of urbanization cannot be characterized as urban formation in the modern sense; however the establishment of colonial cities, new commercial opportunities, wage income and the increasing population concentration represent the first tendencies toward urbanization in Greenland.

In the third phase of urbanization, during the 1950s and 1960s, urbanization processes intensified in Greenland, with the implementation of modernization programs. The New Regulation of 1950 (Nyordningen

af 1950) was intended to improve the health system, housing conditions and the education system, just as the technical development of the country was necessary to make possible the commercial conversion to industrialized fishing.

The urbanization that took place in the 1950s and 1960s is not unique to Greenland; other Arctic countries were subject to enormous social and cultural changes in the same period too. In that sense, urbanization is a relatively new phenomenon in the Arctic area (Csonka and Schweitzer 2004, 63). Given that the Arctic countries were colonized at different points in time by different colonial powers means that urbanization has followed historically specific trajectories. These trajectories have created differences in the urban situations and urbanization patterns in the respective Arctic countries (Dybbroe 2007).

The urbanization process has continued to this day. Policy continues to encourage the population to settle down in towns and cities, where the workplaces and educational institutions are concentrated.

In an article entitled ‘Is the Arctic really urbanizing?’, anthropologist Susanne Dybbroe assesses, that Greenlanders – in relation to the understanding of urban living in classic urban theory – fulfil the criteria established by the theories. As Greenlanders become commercially specialized, they are included in a complex division of labour and come into interaction with many different people that they do not know beforehand. The individual subject to urban living conditions also has greater freedom to choose than those living in smaller, ‘traditional’ areas. Social relations, networks of exchange and communication between members of an urban society stretch in all directions, both within and outside of one’s immediate place of residence. Moreover, Arctic urban living is also characterized by different cultures, and the dependency on modern information technology (IT). This means that the urban residents in Arctic countries live life as it is lived in other cities around the world. Dybbroe writes that everyone living in Arctic countries is affected to some extent by urbanity- Given that the Arctic is an integrated part

of the world marked by interaction with foreign ways of life this affects Arctic cultures, behavioural norms, language, food, music and fashion (Dybbroe 2008, 2).

Despite the fact that the first signs of urbanity can be traced all the way back to nineteenth century Greenland, Greenlandic literature is marked by many depictions of the city as a negative place to be for Greenlanders. The question is whether urban living should be narrowly seen as representing decline, or are there – despite the negative depictions of city life – tendencies pointing in the direction of development?

Urban living – Decline or development?

While urban development in the Arctic countries is not comparable with the big city life that sociology and anthropology have dealt with at length, the same anti-urban tendencies are found in Greenland and the Arctic (Inuit) countries in general. Arctic urban research has had a particular focus on how Inuit have adapted to city living that is influenced by a colonial power. Urbanization studies often become acculturation studies (Chance 1966; Honigman and Honigman 1965, 1970). Arctic research has instead had a long series of traditions for local community or town studies, marked by an emphasis on a traditional way of life. In relation to the Inuit, a move towards urbanity was regarded as the adaptation to a foreign environment. In the literature on Inuit living in cities and towns, the focus has generally been on social changes and adaptation, the general objective being to investigate the conceptual pairing of tradition vs. modernity, often revolving around social problems (Dybbroe 2007).

It is my impression that the urban family – and not least the city dweller – in Greenland is perceived as being divided and marked by poor social integration. There is hardly anything new about assessing city residents in this manner however. Already in the 1800s, many observers opined that the population of western Greenland was well on the way towards material and spiritual decay: Inspector Heinrich Rink's writings provide the impression that his contemporaries in western Greenland were in danger of ending up as the unhappy victims of modernization (Marquardt 1992, 147). In the 1850s, the observers of the day note the increasing misery of the population and provided numerous explanations for it (Møller and Dybbroe 1981: 154).

In the literature about Greenland, the wave of urbanization that struck Greenland in the 1950s and 1960s is often depicted as the reason why the people in

Greenland have become alienated. During this period, the Greenlanders not only become alienated in relation to the city and their housing, they also become alienated from their family-based network (Nuttall 1992: 181). Increased alcohol consumption and the actual migration away from traditional settlements are also mentioned as causes contributing to families being split up during this period (Andreasen and Huctin 2007: 293).

Anthropologist Bo Wagner Sørensen writes that the urban societies in Greenland have been associated with social problems and at the same time have been set against the smaller places, where life is described as safe, good and simple. Equally important, these smaller places are regarded as more 'Greenlandic', something that reinforces – and is reinforced by – the notion that Greenlanders fare better in smaller communities than in bigger towns and cities (Sørensen 2003c, 25-6).

Anti-urban perspectives describe the city as a very negative place for people to be. Despite shifting opinions in the urban field, this depiction has proven remarkably persistent (Rygaard 2006-07, 148-53).

Urbanization in Greenland has undoubtedly been accompanied by a number of negative effects that have had an impact on many families. Urbanization has also had a positive impact on life in Greenland however. It has provided new opportunities for many families in the form of better housing, health, education and not least, work.

The respondents who were born and raised during this period, which is usually regarded as a violent period of urbanization in Greenland (1960-70), tell of a childhood and youth with tight family ties:

"The city wasn't that big at the time – we were children and kids – everyone greeted one another in a friendly manner, even if people didn't know one another" (Woman born in the period 1943-47, NI).

The city is also where jobs are found, and the city – Nuuk in particular – offers many opportunities, which is the reason why many people from the coast have been drawn to the city:

"I already moved to the city when I was young because there wasn't too much to do in the settlement where I was born. I lived with different relatives. I only returned to the settlement for Christmas" (Man born in the period 1948-52, NI)

"Many people from the coast are attracted to the city of Nuuk because the city has so many opportunities" (Public sector employee). These opportunities were reflected by one informant who reported how her life had clearly improved when her family moved to a housing block in the 1970s, particularly because they no longer had to fetch water and coal:

"When I was a child, we were living in the old part

of town in a little house. We all lived together – my father and mother and eight kids. Our house had not been renovated. Like the other houses, we had a coal-burning stove. In 1975 we moved to Narsarsuaq. Living in block housing was very different – there was a laundromat, we had running water and it was a lot easier to heat. We often visited the other people living in the same block, including our Danish teacher – we visited him often” (Woman born in the period 1953-57, NI).

As indicated above, housing blocks in Greenland are often described as a very bad place to live – a place where many live involuntarily against their will, alienated from their neighbours. But the female respondent – who has always lived in housing blocks – refers to moving from a house to block housing as a positive development in her life. Not only did she experience improved housing conditions, she also had new neighbors who became a part of her social network.

Research in Greenlandic urbanity in recent years has also shown how, despite the traditional pessimistic and anti-urban perspective on towns and cities in Greenland, a positive shift in perspectives is occurring (Rygaard 2004; Sørensen 2008). Wagner Sørensen explains this shift through the fact that Greenland, after more than 20 years with home rule, can no longer maintain the notion of cities and towns as alienating and incompatible with the way of life in Greenland (Sørensen 2008, 131).

According to classic sociological theory, the population in the town is so great, dense and diverse in terms of lifestyle, work activity, culture and ethnicity that various communities become diluted. This diversity leads to the primary ties with family, ritual and the immediate community being replaced with secondary contacts, a dynamic which leads to the undermining of communities in the city, replaced by conflicts and alienation (Vacher 2000, 4).

As already mentioned, in Greenland there has been a sense that urbanization threatens the family. However as my study has shown, the family has not lost its significance despite urbanization. But it is correct that secondary contacts have also become part of the individual's family social network:

“On the other hand, your colleagues become part of your family. Work colleagues become part of your everyday life and they also become part of your network” (Woman born in the period 1953-57, NI).

Including colleagues in the family social network is not the same as saying that family ties have been diluted. In many ways, it would appear as though comrades – or those with whom one is forced to spend time together with and to whom one forms bonds – can function just as well as a community as those one lives

close to or together with. In traditional urban theory, there is also a sense of the city as a cold, emotionally forsaken place, inhabited by lonely people with a minimal sense of community. Nevertheless, my study demonstrates how emotions are pervasive among the families in town and that these emotions play an important role in terms of how the individual creates their social network. But loneliness is found in the cities of Greenland just as it is found in any other society. One respondent, employed in the public sector and working with people in need, had this to say about Nuuk:

“Many people move to the city, even though they can't find housing. They're counting on being able to live with family members – they might end up having to move from place to place. Also when couples separate – the one part becomes homeless. There are a lot of lonely people here who have moved to Nuuk. Even though there is a lot of housing and many families in town, people become very lonely, shy and embarrassed – they have to walk around town all day, not having anyone they can visit.” (Woman employed in the public sector).

Obviously, new arrivals to town are not alone in experiencing loneliness, as it can affect everyone in society. But very few are starting entirely from scratch when they move to, for example, Nuuk. Most people either have close family or relatives in the town as well as others from their hometown or settlement.

The idea in urban theory about how the neighbourly feeling is minimal because people have not chosen to live together is not entirely correct. Rather, people living in cities also create close social networks with their neighbours. But the claim regarding a minimal sense of neighbourliness also exists in the towns and cities.

“We're in touch with my mother's cousin – she lives in the second door in this block – but we don't have any contact to our neighbours. Unless you count when we're angry at one another – they make so much noise and drink so much. And they play such loud music.” (Man born in the period 1948-52, NI).

This man, who moved into the block housing in 1980, had no plans to move, however, as he was so fond of the beautiful view. The block housing in the city has a reputation that is often worse than the realities. Complaints regarding domestic disputes, noise and beer bottles being thrown from balconies are expected around here (Rygaard 2006, 160).

Despite the very negative description of family life in the city, family remains very important for the people in the city. For many families in cities, very day life revolves around the immediate family, while socializing with the wider community, including other families and relatives is often organized around holidays, birth-

days, births and deaths.

City dwellers in Greenland have not merely been suppressed and passive members of society; they have, as Hannerz says, 'coloured and formed their lives.' The Greenlandic families in cities have been able to adapt and mix 'old' and 'new' elements, because they are constantly re-constructing their family life. Those living in towns and cities do not lose their family network, but—often—actively work at maintaining and renewing this network.

Many people in Greenland and other societies need and use the closeness and caring in their everyday life that they find in various types of communities. Communities and social processes include the immediate and extended family because the family is not an isolated institution, but rather, dynamically connected to the surrounding world. As a result, the family remains an institution of significance to the individual, collective and Greenlandic society. It can also contribute to the understanding of Greenlandic society as a whole.

Current urbanization in Greenland is different from what occurred in earlier periods in history on one decisive point. The introduction of home rule and Self-Government have meant that the Greenlanders themselves are making the decisions and actively participating in the urbanization process that is unfolding today. Urbanization is part of the contemporary lifestyle in Greenland, and it is no longer experienced as an alienating factor, as the younger Greenlanders in particular are living a more individual life and defining themselves both locally and globally.

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16. Urban Sámi and the City as a frame for the development of a new Sámi cultural form in Scandinavia

Paul Pedersen and Torill Nyseth

Introduction

Being a Sámi in a Scandinavian context has not been associated with settlement in cities despite of the fact that this has been the case for decades. As a consequence of demographic and socio-economic processes particularly after 1950, the urban Saámi population has increased in all the Scandinavian countries. Urban Sámi societies have a whole range of particular characteristics compared to the traditional Sámi society settled in the remote rural peripheries. Their composition is more heterogeneous compared to different Sámi sub-cultures and they are to a high degree settler societies growing during the last generation with the modern city as materiel and social context. The urban Sámi societies are therefore marked with characteristics that make them unique along several dimensions. Despite of that fact that 1/3 of the registered Sámi population is located in towns the scientific knowledge of this segment of the Sámi nation is almost non-existent. Large saami urban populations in the three Scandinavian countries consists basically of a relatively young migrant population with their cultural roots from elsewhere.

Research questions

To what degree is it possible to identify a certain urban Sámi identity? 50 years ago it was not easy to be recognized as an urban citizen if you were a migrant and even less if you proclaimed a Sami identity. The Sámi migrants didn't always want to be identified as Sámi in every context. It is possible to live as a guest in the town and commute to other territories where one have acquired roots, by origin or through own relationships. This is a main characteristic at least among the first generation of urban Sámi. Many Sámi can however look backwards at least 40 to 50 years as citizens settled

in towns and urban areas. There are therefore reason to believe that to live in a town has made a difference in their identity and revise; that the town Sámi population has made a difference to the towns where they live, study or work.

Is it possible to say anything about what the 'sami-ness' is in an urban context? When a Sámi identify himself with the town where he lives, and recognize this town as a sami town, what then is it that he understands as particular Sámi or Sámi artefacts in that town? How does the Sámi practice their Sámi identity in an urban context? In this context what importance does the formal and informal Sámi organisations play? How is the Sámi identity and culture connected to basic local institutions as primary school, kinder gardens, religious societies, higher education and universities and other main cultural institutions? What is the importance of the new forms of official recognition of the sami, for instance that some towns recently are being promoted as Sámi towns?

The urban Sámi society in the larger cities represents a particular concentration of most of the different Sámi sub cultures that exists. The emergence of a Sámi public sphere through different forms of organisation and institution building has therefore been formed within a multi-cultural Sámi environment. Larger cities function as research and knowledge centres. The plurality of cultural arenas make them to important meeting places for people and cultures both from the third and the fourth world, which have created a multi-cultural environment. Parallel with this the density of proclaimed urban Sámi has strongly increased in the largest towns in all the Scandinavian countries. In this context a new generation of native Sámi population has grown up, and this new generation now imprints their urban environment. Our main hypothesis is that this

structural characteristic creates new frames for Sámi identity building and culture where diversity and difference in the promotion of Sámi identity is a central characteristic. Our main focus is to describe and interpret this part of the urban culture.

Theoretical approach

The research project builds heavily on modern urban theory. As a context the city is characterized by certain spatiality, a particular density and difference. To become an urban Sámi involves not only living in a new cultural context but also a different space. The city is not only different from the rural context, one city is also different from another city, and is in a state of constant flux. The city is a dynamic spatial construction of social practices and materiality in continuous transformation (Østerberg 1978, Pløger 1997, Aspen 2005). As context the city is characterized by a certain spatiality, density and differentially (Massey 1999). City life is difference and plurality, resistance and conflicts. The city has many faces, lifestyles, cultures and practices – for instance as a consequence of being a meeting place between the local and the global (Simonsen 2005). Modern urban societies are characterized by identity not as something stable and fixed, but rather something fluid and loose that can be characterized by concepts like "nomadism," "placepolygami" and "ethnopolygami" which focus on individuals in the city constructing a form of fluid identity that is in conditions of constant flux without fixed borders (Deleuze and Guattarie 1983, Beck 2000, 2006). The construction of urban sami communities the last generation in many of the largest cities in the Nordic Countries represents not necessarily a contrast to this, but it is a question of to what degree these processes are working in these three cities.

This is why the city is an interesting arena to study as a meeting place between cultures, in this context as a meeting place between different forms of Sámi culture and Norwegian, swedish, and finish urban culture,

and the many new cultures mixing up withimmigration. The urban Sámi population represents only one of many ethnic groups populating the city. In an urban context meetings are taking place not only between the Sámi and Norwegians, but also between a number of other nationalities and ethnic groups.

Methods and data

The data which this paper builds upon is based on four different sources; 1) Quantitative data on migration and urbanisation of the sami population, 2) qualitative interviews, both individual and focus groups interviews conducted in the three cities in 2011 and 2012. The principle of the "snowball" method has been used to find informants. 3) Some form of participatory observation has also been conducted in formal and informal Sámi arenas both related to labour relations and leisure activities and cultural events. 4) A number of secondary data, particularly policy documents and media presentations has also been analysed.

This paper is based on a case study of the three cities Tromsø, Rovaniemi and Umeå, the northern capital cities in Norway, Finland and Sweden with a population between 60 – 120.000, including a considerable and growing Sami population. All three cities host important institutions, such as state and regional administrations, universities and other higher education. According to a strict definition of Arctic, these cities belong to the sub-arctic, but still: Tromsø is located at 69 degrees north, which is the same latitude as Illulissat, Greenland. And Tromsø is now hosting the secretariat of the Arctic council, and has for a long period of time defined itself as an arctic city, based on its position in the polar history, in polar research, and no also as the capital saami city outside Lappland. All three cities are profiling their multiculturality, and they are recognizing the saami as indigenous people with legitimate rights to services necessary to preserve their language and culture.

	Tromsø	Rovaniemi	Umeå
Population	70 000	60 000	120 000
State and regional administration centers	x	x	x
University and higher educational centers	x	x	x
Economic and cultural centers	x	x	x
Profiling multiculturality	x	x	x
Recognizing saami as indigousnes people	x	x	x

Table 1. Main characteristics of the three cities

The urbanization of the Sámi

During the last generation a profound change in the sami settlement pattern has occurred in the Scandinavian countries. This is due to two parallel processes. The first one has to do with the revitalization of sami language and culture. The second is the urbanization of the sami population. The revitalization is closely linked to the legal rights, the establishment of the sami parliaments, and the construction of regional institutions, particularly related to language and cultural policy fields and to media communication has result in a considerable increase in the number of persons who

want to define themselves as sami. Parallell to these events, processes of urbanization has been going on as a consequence of the restructuring of industries in all parts of the northern Scandinavia (Pedersen and Moilanen, 2012). A recent study of the migration pattern of the most mobile age groups show that there exist what we might call a North-Scandinavian mobility pattern. The consequences have been a decisive regional centralization of the population to a number of larger fast growing cities such as Tromsø, Alta and Bodø in Norway. Similar development is found in Umeå in Sweden

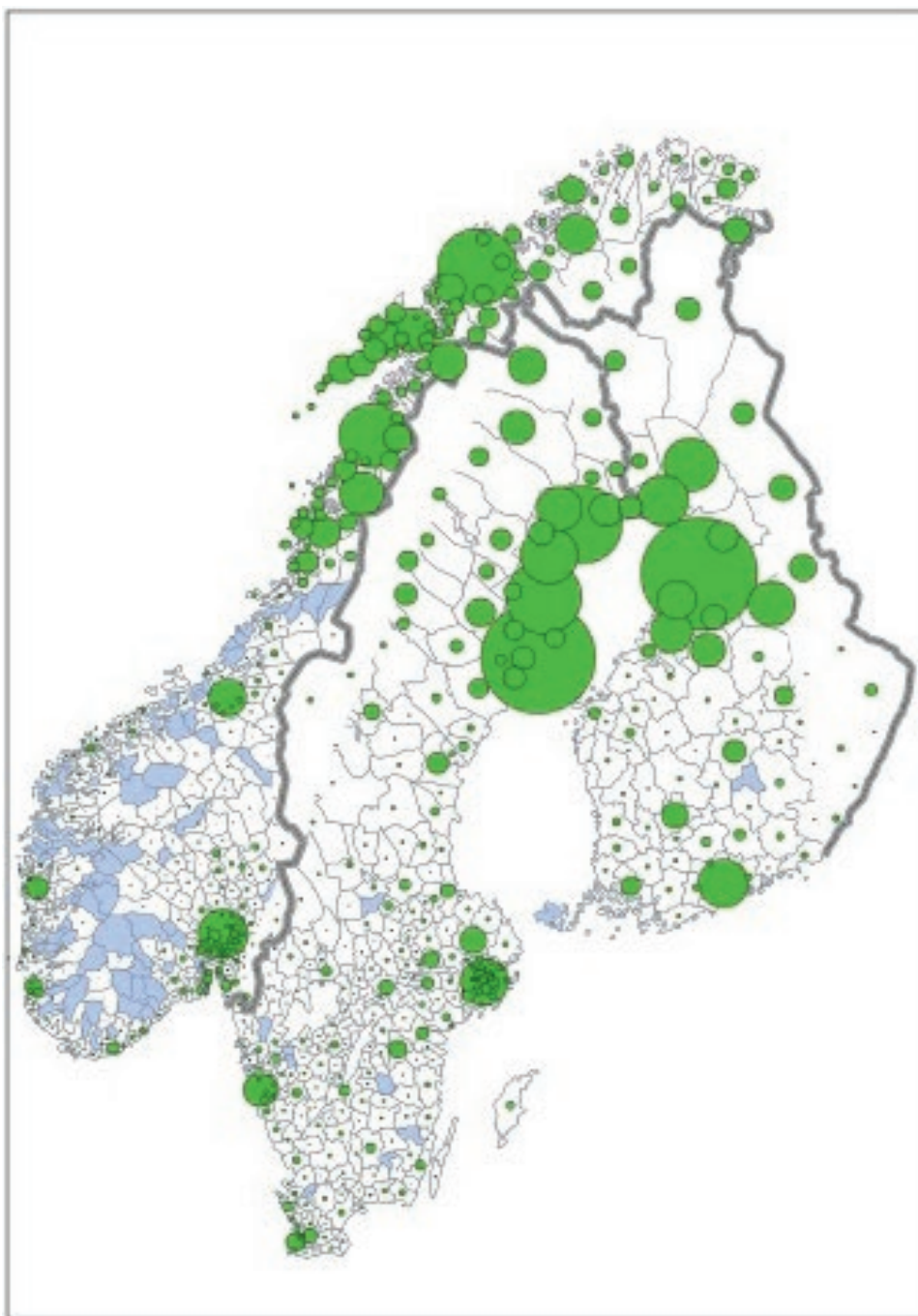
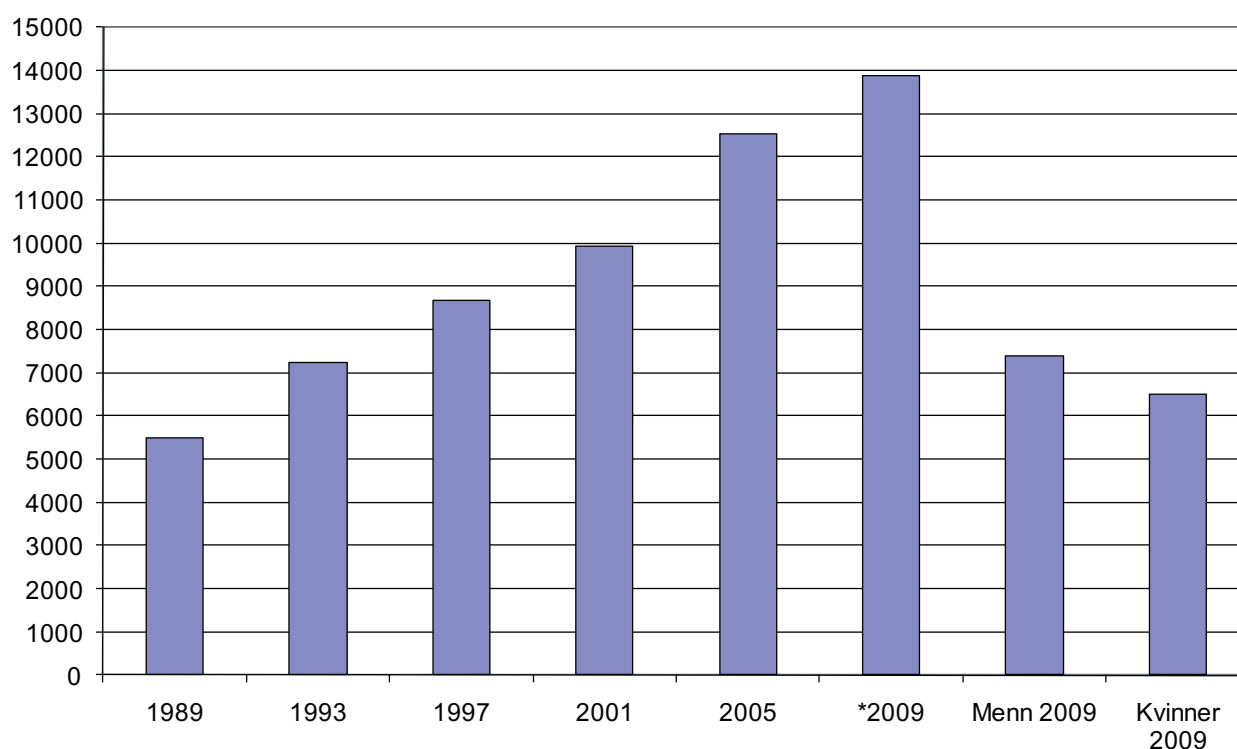


Figure 1. Residence of people 18-25 year in Northern Scandinavia. 2005

and in Rovaniemi in Finland. Approximately 20 % of the class of young people between 18-25 year who lived in Northern Scandinavia in 2000 were 5 years later settled in larger urban centers in mid – and Southern part of Scandinavia in all three countries. These figures also include the sami population. The sami population can however not be separated in the statistics since public statistics do not register the citizens ethnic background in Scandinavia. On a more indirect level we still can grasp some of the main tendencies through the sami electoral register established in connection with the es-

tablishment of sami parliaments in the three countries. Since this register is published at the municipal level ever fourth year (in connection with the elections), we are able to study the strength in the sami revitalization process and its possible regional variation. Our reasoning is this; If you choose to register for the sami electoral register, then you would like to become a full member of the sami community. We interpret this act as a valuable, although strict indicator of the degree of sami revitalization. Those who are ambivalent, and they are many, will be excluded.

Figure 2. Number of sami registered in the electoral register 1989-2009 and the gender balance in 2009



Source: Archive Sami Parliament.

If we measure the growth in the sami electoral register, the sami revitalization has been strong throughout the period from 1990 and onwards, particularly in Norway. In Norway the number of registered sami increased strongly and evenly all this 20-year period. If we compare the first register in 1989 with the last in 2009, the increase was from 5505 to 13886, or an increase of 150 %. The revitalization process has had impact both on man and woman to the same degree, even if men still are the majority in the register (53 %). During those 16 years since Sweden established this register, the increase here has been 45%, from 5390 in 1993 to 7812 in 2009. The growth in Finland is approximately as in Sweden, but has taken place over a longer period of time.

A large and growing urban sami population

To illustrate the processes of urbanization we will look more deeply into the Norwegian electorate. By the end of the II world war, the sami population lived basically in Northern Norway and Trøndelag. Migration from periphery to central regions over several generations changed this picture. The restructuring of the primary industries, a more open labor market in central regions and mass education from mid 1980ies, also in the sami districts, led to a strong migration towards towns and cities. A consequence of this has been a massive change in the settlement pattern of the sami population. This can also be measured through the geographic redistri-

bution of the registered sami. One of the most profound tendencies the last 20-year period is the geographical redistribution of the registered sami from rural to urban districts. We will illustrate these tenden-

cies by looking at the 10 rural and urban municipalities with the largest population of registered sami. These 20 municipalities settled in sum approx. 9000 – or 2/3 of the sami electoral.

Tabel 2. Number of registered sami i 2009, increase in percent after 1989 and gender

The 10 largest Urban sami municipalities	Regi-sterd sami in 2009	Increase 1989-2009 (%)	The ten largest sami rural municipalities	Registerd sami in 2009	Increase 1989-2009 (%)
Tromsø	994	481	Guovdageaidnu	1557	35
Alta	943	461	Kárásjohka	1276	27
Oslo	623	302	Deatnu	859	48
Hammerfest	295	334	Porsángu	727	285
Vadsø	288	343	Gáivuotna	347	41
Narvik	167	318	Unjárga	377	130
Trondheim	147	444	Sør-Varanger	374	368
Rana	114	322	Tysfjord	262	249
Bodø	113	335	Lyngen	186	417
Harstad	105	556	Skånland	175	147

Source: Elecoral register in 1989 and 2009. Archive: Sami Parliament.

To sum up these tendencies:

■ There has been a strong growth in the urban sami population. In many of the cities, the saami electorat have increased 4 – 5 times. The ten largest urban sami municipalities settle approximately ¼ of all the registered sami. This is a new pattern in the history of the sami nation.

■ There has also been a strong growth in the coastal sami population in Northern Norway despite of high out-migration. This is an effect of the saami revitalization, as the process of norwegianisation was at its strongest.

Different discourses on Sámi identity: Case studies in three Cities

In this section we will analyse our data focusing on some of the consequences and possible implications of this development:

■ Implications related to the cities themselves: they are becoming more differentiated, and more important as centres also for profiling and expressions of Sámi issues

■ Implications for Sámi identity: do we see an urban Sámi identity emerging?

These questions cannot be answered simply by yes and no. To a certain extend this has to do with degrees.

Sámi living in the city

When asked about their own place identity, most of the informants referred to other places than the city, basically in the sami core areas where they either had been raised, or the birthplace of their parents, even if they themselves were born in the city. But some referred to the citysami, with a twist, and almost like a joke. The citysami were those who expressed themselves as sami in every setting. This distinction was made by themselves, and refer to at least two different forms of urban sami identities:

1. Sami living in the city:

To them, the city is not what mark their identity. It is only a place where you live at the present, your place identity is somewhere else:

“I do not identify directly with this city, because my sami roots are somewhere else. What’s sami in me, does not come from Rovaniemi” (Rovaniemi).

“I have never hided my sami identity, that is what I am, and people from Karasjok is not concerned with being a sami, because its so natural, we do not need to promote

it (Tromsø, but born and raised in a sami core district).

"To me, Rovaniemi is just a temporary place to live... I see myself as a sami living in a city.(Rovaniemi)

"I keep a distance to the word citysami identity. What is sami to me I do not relate to the city and the activities I am involved with here. (Rovaniemi)

"I am against the concept citysami; I am a sami, period" (Rovaniemi).

"It is more difficult being a sami here than in the sami districts. Here you live a ordinary city life" (Rovaniemi)

To the first person, Tromsø does not add anything to his sami identity, he is a sami living in the city. Many migrants to Rovaniemi express the hostility they feel to the sami in the town. Those who say they have become attached to the place then refer to the nature, either the river or the woods which make them feel at home. Easy access to nature is important, for some to the extent that they have moved to the outskirts of the town to get easier access to the nature. To them, segregating leisure activities in the nature as a particular activity that you have to organize is strange. "In.....we just find our self in the nature", not like here, separated from everyday life".

2. City Saami.

City Saami are those who live out their sami identity in the city, even if they were born elsewhere. Lets listen to two of them:

"In Tromsø I can be what type of sami I like, that I could not do in Karasjok." (man from a sami core area where the sami is expressed all the time, but according to this informant in a very conform way)

"In Tromsø I can live out my sami identity, that I could not do in Hammerfest. There being a sami was a privat issue, nothing you marked in public, here I express myself as a sami in a quite different way" (woman from a coastal area where the sami issue had been oppressed for a very long time and not and therefore people with sami roots hide their sami identity).

For these two the city represents freedom, for the woman from the coastal district, a freedom to express herself as a sami, which was not accepted where she was born. In Tromsø there exist a sami public space that legitimize being a sami in quite a different way than where she was born. In the coastal areas in the north was also saami areas, or more precisely heterogeneous,

with a population of mixed ethnic origin, saami, kven and Norwegian. From 1960ies and onwards these areas has been considered as completely Norwegian (Eidheim 1971). The coastal saami disappeared and became attached to the past. In some of these areas, for instance Hammerfest, being a saami is still a private matter.

To the young boy who were born and raised in the interior where the majority is saami, the city represents another form of freedom; a freedom to define his personal saami identity - not the form that was the norm where he was born. This is in contrast to a recent study from Alta, a regional center in Finnmark. According to Olsen (2010): "...this Saaminess in the interior has a dynamic that is absent in the Norwegian dominated areas. Here it becomes conventionalised and reinforces clear cut boundaries". This may be true in more Norwegian cities further south, but according to our informant, not in Tromsø. According to him, it is in the interior saaminess is represented in a conventional way. This is perhaps also an example of the fluidity of ethnic categories; it can be modeled quite differently according to the immediate context in which life unfolds (Olsen, 2010).

The idea of the City Saami also exists in Rovaniemi:

"I know two City Saami. They are very City Saami and they name themselves as City Saami, and organize activities for sami in the city. (Young, Rovaniemi)

" what sami is to me I do not relate to the city and the activities I am involved with here (Young, Rovaniemi).

For many in Rovaniemi, marking their sami identity is a private business, not a public one. You take on your sami outfit in private parties and in family gatherings, not when you go to work, or to the shop. In Tromsø you see more of sami clothing and people wearing sami symbols more often, not the full dress, it could be a scarf, an earring, and so on.

In Rovaniemi, sami organisations have had a fight against the way sami has been presented in the tourism industry, and in the museum where sami has been put on display in very odd ways only in order to attract more visitors. There has also been a fight about dressing in graduation ceremonies in high school, where fake sami dress were used. This fight has been a success in the sense that such dresses are no more in use on this occasion.

And then we find those who have even more complex identities:

"Yes, I am a citysami, but I am much more than that

(Tromsø)

Everyday life in the city is first of all a Norwegian life if you do not have children in a saami kindergarden or in school, you might not speak saami all day. To be “more than a saami” may also refer to a mixed identity. She does not define herself as a saami in her profession, when she meets her Norwegian friends, or when she attends a social gathering that is not saami. She relates her saami identity to those spaces which are defined as saami. According to Olsen (2010:206): *“As long as most spheres of everyday life are considered to belong to a local Norwegian modern culture, few arenas are left to the values of attachment that can be defined as Saami”. And further; Additional belongings can be expressed inside certain spaces in standardized forms or in private spheres that do not hamper the flow of everyday life* (Op. cit:204). The citation may also be an indication of the fact that flagging a saami identity in a Norwegian majority culture often is regarded as a political statement, a result of an ethno-political struggle where particular ethnic symbols are promoted.

We also find quite clear differences between generations related to question about identity. An informant from Rovaniemi (born 1963) says:

“The young does not carry the older generations burden, they have not met all the prejudices against the saami, .. they seem to have more confidence. Those who are ten years younger than me, marking their saami identity more explicit, they use jewelry and sami clothing, to them this is not associated with shame, and they are more educated, they speak the language better, and they make claims for more services, and they take a phd.....”

For some in this generation their saami identity was clearly defined, and not questioned. For others, this was never so obvious, on the contrary, the road to a saami identity has been a long and jumpy journey:

“ it's been a turbulent journey. I was 30 when I understood that I was of saami descent, but my own process of recognition myself as saami, has taken much longer. I have had many doubts if I had that competence. Unfortunately it was other saami who questioned my saami identity more than the swedes.” (elder, Umeå)

“I have never hid my sami identity, that is what I am, and people from Kautokeino is not concerned with being a sami, because it's so natural, we do not need to promote it (Tromsø)

For many in Rovaniemi, marking their sami identity is a private business, not a public one. You take on your

sami outfit in private parties and in family gatherings, not when you go to work, or to the shop. In Tromsø you see more of sami clothing and people wearing sami symbols more often, not the full costume though, it could be a scarf, an earring, and so on.

These examples represent different understandings of what the city represents to their identity. Young people are to a much larger extent citysami, and to them, being a sami is something obvious, nothing you question, and therefore nothing that has to be demonstrated all the time.

Many of our informants have moved several times, not only from their place of birth to the city, but they have lived many other places as well. They end up in for instance Tromsø because, as one of them said: “Tromsø is the only north-norwegian city that is both urban and at the same time a place where it is possible to live a full sami life.”

Discussion

The urban communities seem to have several similarities in the three countries when we look at how the Sámi express their identity. The urban Sámi populations can be distinguished from the Sámi population in the traditional areas through their density and their diversity, as they not only consists of Sámi from one area, but the whole variety of Sámi will be present (In Norway: Nordtsami, Coastal saami, and Markasaami, in Sweden Lulesami, PiteSaami, South Sami and a large and diverse group of sami origin from the coastal districts, in Finland: “Inarisami”, “Skoltesami”, “Skogfinn”). The urban Sámi population represents both the cultural heterogeneity and variety in meanings related to the past, the present and the future about contested issues in the Sámi society (Paine 2002, Pedersen og Høgmo 2004, Valkonen 1998, Lindgren 2006).

The urbanization of the Sami population represents for the sami as for all other migrants who moves to the city, new opportunities related to education and career opportunities. The city also represent another arena for revitalizing or redefining Sámi identity. In Tromsø we for instance will find a number of sami activists, researchers, cultural workers, people with higher education and who represents the modern sami middle class.

Among those who define themselves as Sámi in Tromsø today, the majority is first generation inhabitants, particularly the age group 40 +. They still maintain their relationships to their origin, where from they also have their ethnic signifiers. Their everyday life is however in the city. Here they have their house, their career and friends, and they have become assimilated to the Norwegian culture. They define themselves as

Norwegians as well, and they live out their Sámi identity mostly in the private arena or when they visit their place of birth. The picture is more complex when we look at the second and third generation, particularly those younger than 40. Some of these identify themselves as some form of city Sami, which is underdeveloped as a category, but still gives meaning as other Sámi categories does not fit in the urban context.

A number of new Sámi arenas has been established, both in the public sector as well as in civil society and everyday life. In Tromsø for instance we will find a Sámi football team, a civic association of parents with children taking Sámi classes in primary school, associations organizing Sámi cultural feasts and celebrations, not only during the Sámi week, but also throughout the year. There are also a Sámi Christian congregation society organizing Sámi services in church.

The Sami nation has as a consequence of urbanization been extended, more dispersed and also become more diverse, more so in Tromsø than in Rovaniemi and Umeå. Saminess can be expressed in new ways, particularly in a city like Tromsø, where the Sámi is well integrated in many areas and at several levels. The urban setting accepts other forms of expression of identity that would not have been accepted in for instance the Sámi core areas, where there are particular and strict norms of what a Sámi is. In the city context one is mixed with others, not only Norwegians/Swedes/Finns, but also new groups in immigrants and people with another Sámi background than oneself. Tromsø is a multi-ethnic city, with more than 130 nationalities. The city reflects the whole picture of saminess, a Sámi pluralism that we cannot observe any other place. We are dealing with a form of heterogeneity that is not present in the Sámi core areas. The urban Sámi community therefore is complex and multifaceted. May be it gives meaning to talk about the emergence of a new Sámi identity which has the city as main reference? There are other studies from other countries with a much older urban indigenous population than in the Scandinavian countries that supports such a hypothesis, for instance in Canada and in New Zealand (Kishigami:2002, Gover:2002).

The same cannot be said about Rovaniemi. Here the Sámi situation is radically different. Here the Sámi is more invisible in the public. Numbers probably could be one explanation; the Sámi are fewer than in Tromsø. However, the political struggle for rights is quite different in Finland than in Norway. Also the local policy seems to illustrate a more hostile environment; Sámi issues and services are few. Many informants talked about the hostility in the municipal administration to Sámi claims.

Conclusion

City Sámi or urban Sámi has not been adopted as a meaningful category by the majority of the informants. Only a few identifies themselves with this. A bit surprisingly is that most Sámi city dwellers were more attached to the districts where they had their Sámi roots, even if they were born and grew up in the city. They see themselves both as Sámi and Norwegians/Finns/Swedes – not only as Sámi. In that sense we could say that they are carriers of a hybrid identity.

There are an emerging Sámi presence and also promotion of Sámi culture in the cities, more in Tromsø and Umeå than in Rovaniemi. And there exist a Sámi everyday life, particularly in Tromsø, related to institutions build up the last 30 years such as kinder gardens, primary school, university studies and research. In addition cultural events and civic organizations contributes to an urban Sámi culture as well.

Some of the questions that were raised by some of the informants in all three cities were the lack of discussion and interest in issues related to urban areas in the Sámi parliaments, for instance related to language education, particularly in schools, the building of cultural arenas and meeting places in the cities etc. The political agenda in the Sámi parliaments have in all three countries had its focus on issues related to land rights and fishing rights (mostly in Norway). Sámi rights to land and water resources are core questions in Scandinavia, but then as common rights in the rural areas.

Some processes has however started in Norway, related to the conflicts in Tromsø in 2011 about a decision to not become a Sami City a member of the Home Land, the special districts that has adopted a policy to strengthen Sámi culture and language in the municipality. One of the arguments against was that this policy was not attuned to an urban context with a Norwegian majority population. As a consequence, negotiations have started between the municipal leadership and the Sámi parliament to find solutions that fits better to an urban municipality. The outcome of this we do not know at the moment.

Through the growing presence of a modern Sámi network of institutions, the urban Sámi society has become more visible, and they play an important role when Sámi identity is being marked through traditional and new symbols. The urban Sámi culture can be described through freedom, reflection and innovation (Dankertsen, 2006). The rural Sámi community with its strict forms of social control, for instance about how you use your traditional costume, «kofte» is not present in the larger cities. The modern city is a meeting place between different Sámi identities and representa-

tion of saminess. In these meetings there is no right or wrong way to be a Sámi, and you are not exposed to sanctions as in the rural community. The city creates a situation dominated by cultural diversity that gives room for some form of freedom to construct your own identity. Meeting Sámi with another background than yours might give room for reflection on one's identity and how this might be accepted. The urban Sámi, particularly those attending higher education will have to reflect and legitimize their identity. New and innovative forms of expression of identity might come out of these interactions. In the urban cultural diversity it is perhaps necessary to experiment with new forms of social interaction. There are experimentations going on, with the language, with dress codes and other forms of signs that are unknown to the rural communities where these young people originate from.

To wrap up this discussion, there are differences between Tromsø, Rovaniemi and Umeå. Not all cities with a Sámi population have developed specific urban Sámi communities (Lindgren 2007). Tromsø is the leading city, 15 years of active profiling the city as Sámi, with a number of public services for its indigenous population. Umeå has just started. When it comes to Rovaniemi, the public policy framework is less generous particularly when it comes to financing Sámi language education in school. The institutions that have been established, the schools, the kindergartens, the language policy in the administration, particularly in Tromsø, demonstrate their importance in the creation of a living Sámi culture. The urban Sámi society in the larger cities represents a particular concentration of most of the different Sámi sub cultures that exists. This is a new aspect in Sámi history.

The emergence of a Sámi public sphere through different forms of organisation and institution building has therefore been formed within a multi-cultural Sámi environment. Larger cities function as research and knowledge centres. The plurality of cultural arenas make them to important meeting places for people and cultures both from the third and the fourth world, which have created a multi-cultural environment. Parallel with this the density of proclaimed urban Sámi has strongly increased in the largest towns in all the Scandinavian countries. In this context a new generation of native Sámi population has grown up, and this new generation now imprints their urban environment. They claim the city as their own, particularly where they have reached a "critical mass" as in Tromsø, where they claim fundamental rights related to school, education, cultural and leisure activities. This has made possible the establishment of institutions that was not there 20 years ago.

As to the question about a particular Sámi cultural form is emerging, the answer is Yes and No. We find at least three different forms of urban Sámi identity. For some the city becomes an arena where it is possible to live out one's Sámi identity, it represents a free space for experimenting with identity. And for others, the city is only a place to live, not a place you become attached in the same way as your homeplace. Some urban Sámi, not many in numbers, but very important are the "ambassadors and entrepreneurs that have made a career out of their identity as Sámi. They are researchers, public administrators, consultants, teachers, lawyers etc who represent to the front in the battle for acceptance and policy, they have an international indigenous network, attending international conferences, often in a north-scandinavian context. The Sámi urban identity are therefore heterogeneous and multiple, it is not one identity, identity is something plural, also for the individual over the lifetime. Sámi urban identity is dynamic, flexible and also linked to ambiguity and sometimes contested. With Rosaldo we could say that the cities represent "a cultural borderzone that is always in motion, not frozen for inspection. These zones are sites for creative cultural production and areas for creative identity processes that refuse to fit into neat entities, or cultures, with clear-cut boundaries and claims of authenticity" (Rosaldo 1989:207-208)

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17. 'Coming off Country': The unthinkable process of Indigenous urbanisation from remote Australia

Andrew Taylor

Preface

This paper is a summarised account of a plenary talk delivered at the First International Conference on Urbanisation in the Arctic. The conference and days around it were a remarkable and stimulating intellectual experience, particularly given many of my academic 'idols' were present. Equally pleasing was the presence of ministers of the Greenlandic Government and the mayor of Iqaluit. All were open to discussing the difficult ('taboo' as it became labelled during the course of the conference) issue of population movements towards large towns and away from small villages where more traditional lives have been, and continue to be, played out.

The intention of my talk, composed well before I landed (after two failed attempts incorporating an unexpected trip 280 km north of the Arctic Circle) on Greenlandic soil, was to highlight similarities in the issues and challenges facing Greenland and the Northern Territory of Australia as both grapple with tumultuous transitions in their Indigenous settlement demographics and in the structure of their economies. Having now visited Greenland, the similarities are starker than I had ever imagined and are by no means limited to Indigenous issues. So strong are the resemblances I can now confidently employ my oft used (tongue-in-cheek but nevertheless pertinent) catchcry that "Greenland is the Northern Territory with snow" or (alternatively) that "The Northern Territory is Greenland with red dust". My time in Greenland was life changing on many levels both professionally and personally and I wish to thank my hosts Klaus Georg Hansen (and his wife and children) and Rasmus Ole Rasmussen (the font of all knowledge!) who's giving of time and intellect made my visit so special.

Introduction

Yesterday I was stopped by a group of school students in the Nuuk mall who were surveying people about what is important to the future happiness of the Greenlandic population. The questions included whether staying on the land is more important than evolving into a modern economy and what urbanisation would mean for culture, traditional life and overall happiness. The parallels to my country are amazing because today I want to explore the tenuous and delicate issue of the changing settlement patterns of Indigenous people in the remote Northern Territory of Australia to propose what this means for policy. The proposition behind my talk is that Indigenous people in developed nations around the globe, and including in the Arctic Circle, have been 'coming off country' and will increasingly do so. Of course the big difference between our nations is that nearly all Greenlanders are Indigenous while in our country just 2 % of the population are Indigenous. Nevertheless, in the remote areas, which are the subject of today's talk, up to 90 % of the population at individual settlements are Indigenous.

At the same time there is reluctance amongst the general society and policy makers to countenance the phenomenon of urbanisation, even to the extent that there can be found elements of 'anti-urbanisation' in the discourse, rhetoric, programs and policies of Indigenous affairs. In my talk today I want to firstly discuss trends in the settlement dynamics of Indigenous people of the Northern Territory of Australia and then present you with four key drivers which may already, but are more likely to be in the future, driving higher rates of urbanisation for Indigenous people in the Northern Territory than we see today. Finally, I will discuss what this might mean in a more practical sense - for policy making and for the individuals whose lives are changed through the decision to migrate.

An overview of Australia and the Northern Territory

But first a little bit about where I am from. Yes, it's the big place with the kangaroos. To give you a sense of the scale of Australia, the UK fits into its land mass 59 times and Greenland fits in 2.5 times. To drive from the East Coast to West Coast can take around 6 days. Where I live in Darwin it takes 1 hour to fly to East Timor but over 4 hours to fly to Sydney. We have population of just 23 million and consequently a low population density of just 2.7 persons per sq. kilometre. Only your nation (Greenland), Norfolk Island, The Falkland Islands, Mongolia and Namibia have lower population densities. Outside of the heavily concentrated (by Australian standards) eastern coastal strip which only stretches inland 150km, density is at less than one person per square kilometre. We have five State's and two Territories under our Federal system of government, as represented by the border lines (Figure 1). I am from the Northern Territory of Australia which is the most sparsely settled jurisdiction. We have a population of just 230,000, one third of who are Indigenous. Colloquially we call ourselves 'Territorians' and, yes, we are quite territorial.

Australian Indigenous people number around 580,000 with a quarter of these living in remote and discrete Indigenous settlements – represented by the black dots in Figure 2. Actually, although this map doesn't show it, at the national scale most Indigenous people in Australia live in the major cities, and increasingly so. In the Northern Territory things are different with about 30 % of the population identifying as Indigenous and 70% of these currently living remotely. My talk today is focused on places represented by the black dots and the people that live in them. These are what are known as discrete Indigenous communities and you can see the concentration in remote NT. These are some of the most distant, smallest and remote settlements in Australia. Demographically their populations are extremely young, at 23 years median age, with life expectancies of around 62 years for men and 69 years for women, a gap of 14 years and 12 years respectively in comparison to at-birth life expectancies for non-Indigenous people.

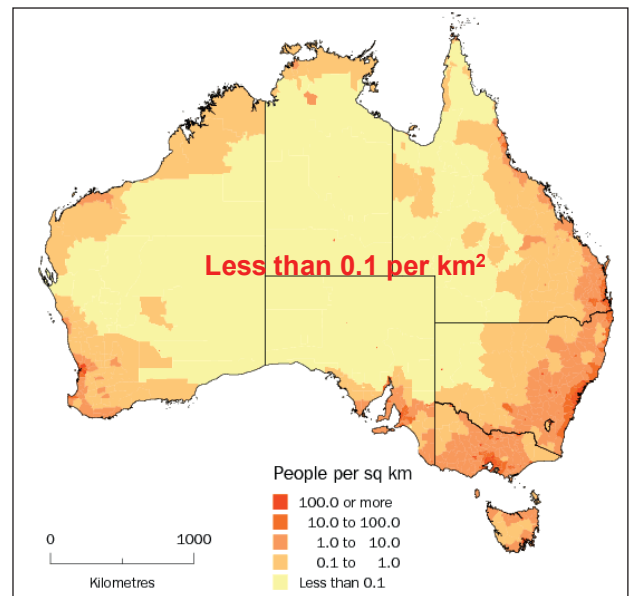


Figure 1 – Population densities, Australia

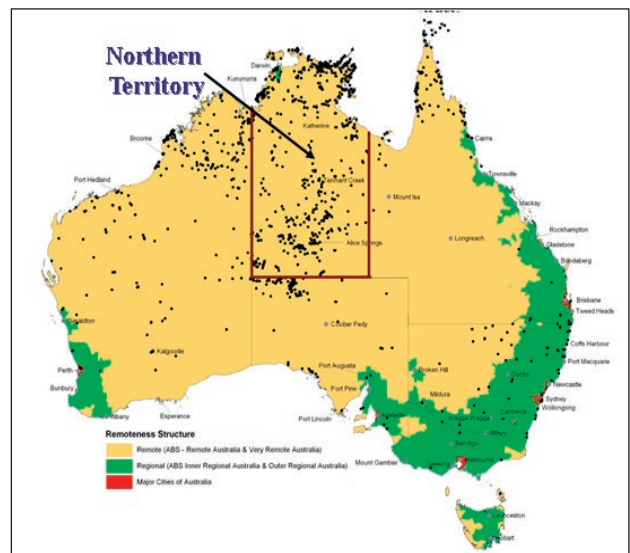


Figure 2 – Indigenous settlements, Australia

Indigenous representations

The original Australians living in remote parts of the country are often portrayed and represented as the 'real' indigenous people of the Nation (Figure 3). The perception is that most still maintain strong links with and between their ancestral lands and cultural practices. At Illulissat a few days ago a Danish person living in Nuuk told me "This is the real Greenland." I asked her why and she said "Because there are sledge dogs, hunting and icebergs." We are similar. The attachment of remote living Indigenous people in Australia to land is seen as inextricably related to their health and well-

being, with the notion of healthy communities requiring of people to living 'on country' (on their ancestral lands). In addition, Australian Indigenous cultures are portrayed as commodifiable on the basis of art, cultural practices like dances, 'bush tucker' and ancestral sto-

ries which are the means by which culture and language have been passed down through generations. These sorts of images adorn almost every marketing campaign by tourism organisations in Australia, and especially in the Northern Territory.



Figure 3 – *Positive representations of Indigenous Australians*

But of course there are counter images to the mythologised view portrayed in tourism marketing paraphernalia. Images like those in Figure 4 regularly appear in the media as being indicative of the more everyday experience. I want to emphasise though that there are great diversities in living conditions and levels of community harmony across communities. Nevertheless, most of the communities we saw as the black dots on

the prior map are those into which people were rounded up and forced to settle by missionaries and others. People were 'overseen' and put through a forced programs of assimilation. Babies were extracted from their mothers in order to provide a lifetime of moral and spiritual rectitude. So began the long history of pain and trauma.



Figure 4 – Other representations of Indigenous Territorians in the media

The ‘anti-urbanisation’ paradigm

We could spend the rest of the conference discussing and debating why these images persist in the face of decades of expenditure and policies to rectify things. While the Nation is, on the one hand, disgraced by it, on the other hand we find ourselves questioning why, when we have spent decades and billions of dollars trying to fix things, there appears to have been little in the way of improvements in the majority of measures of socio-economic status and wellbeing.

This long and complicated history, which again varies widely between settlements, helps explain current policy stances which overwhelmingly focus on bringing about change in situ. The precept is that people’s lives can be changed by investing heavily into remote communities on the expectation that people will continue to live at these and that better outcomes can be derived at these locations. Such policies and programs were devised on the basis that remote communities ARE the places where people do and will want to live in future, that they ‘belong’ there for health and wellbeing reasons, that economic opportunities exist, AND that feedback loops from any developments in educational attainments or labour force participation will not

change people’s desires to stay ‘on country’.

Collectively these paradigms in support of little or no change to existing settlement patterns manifest in the construction of policy and government programs. The language behind these emphasises things like ‘real jobs’ and ‘mainstreaming’ with a view to making these places like any town in Australia. Demographers too tend to favour the status quo in terms of their projections about future Indigenous settlement distributions. Most projections, for example, have a zero net interstate migration parameter setting in the modelling. In other words, they see migration to and from other States and Territories as having a zero net impact on Indigenous settlement patterns in remote areas into the future.

A perfect example is the Northern Territory and Australian Government’s Working Future policy which seeks to establish a hubs and spokes model for service delivery to Indigenous communities centred around 20 or so “growth towns”; some of which aren’t growing at all and the smallest of which has around 200 residents (Figure 5). The idea is to have their levels of infrastructure and services equal to those of any other town in Australia with a population of similar size. Most agree that it is overt economic rationalism (note: while I was in Greenland a new Northern Territory Govern-

ment was elected and they subsequently abandoned the Working Future policy). Controversially the policy ceases funding for new infrastructure at outstations,

a tacit acknowledgement that it is just not feasible to build houses, schools and roads at places occupied for parts of the year by as little as two people.



Figure 5 – The Working Future policy of the (then) Northern Territory Government

The case for urbanisation

Having provided the macro-view of how others might see the situation for remote living Indigenous Territorians I would like to present an alternative perspective, held by myself and my colleagues. We have a different outlook on how populations behave in remote areas, including Indigenous populations. It's based on what we call the 8D's of remote demography. It is founded on the principle that most assumptions embedded in the analysis of population behaviours and change are predicated on demographic models which are difficult to defend in their application to remote places. We argue that in remote Australia we find fundamentally different types of population systems which need to be understood for effective policy to be forthcoming. Our theory about how remote places work brings together what we have learnt from studies in the NT, as well as comparing ourselves with other remote places in your jurisdictions. We call this theory "Beyond Periphery" and, not surprisingly, the role of migration (both short

term and residential) in changing remote populations is emphasised.

In essence, the 8 D's of Remote Demography argues that remote populations beyond the periphery are very "D like" – dynamic, delicate, different, dependent, and so on as you see in Figure 6. This applies not just to their populations but also to the ways in which populations influence resource, labour and capital flows to and from, as well as within remote jurisdictions. We propose that just small changes to such flows can manifest in big demographic change in future years. For example, the general consensus is that remote Indigenous communities are largely similar in their population compositions and diversity is simple a reflection of the extremes in population characteristics between Indigenous and other Territorians. We also emphasise there is great diversity between Indigenous settlements themselves. Figure 7 is an attempt at classifying such diversity based on census data. We see some are older and more mobile communities, some have a female dominated workforce, and so on.

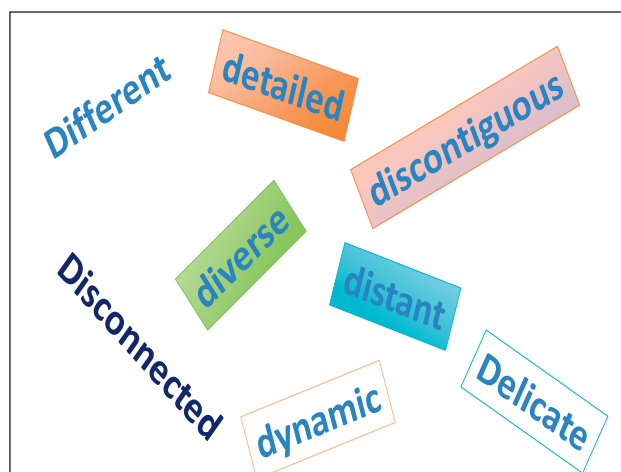


Figure 6 – The 8D's of remote demography

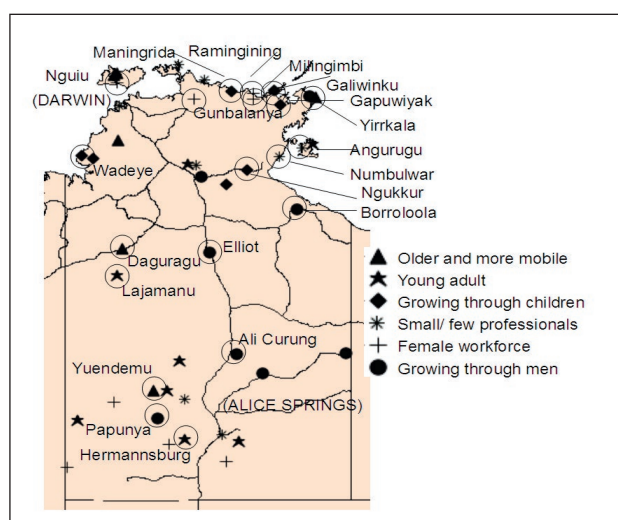


Figure 7 – Diversity across remote Indigenous communities

For too long, indigenous peoples have been depicted as static and unchanging communities. This mistake has arisen from studies that treat indigenous people separately and as distinct from questions of the “modern” world.

It is time that this blind spot be corrected.

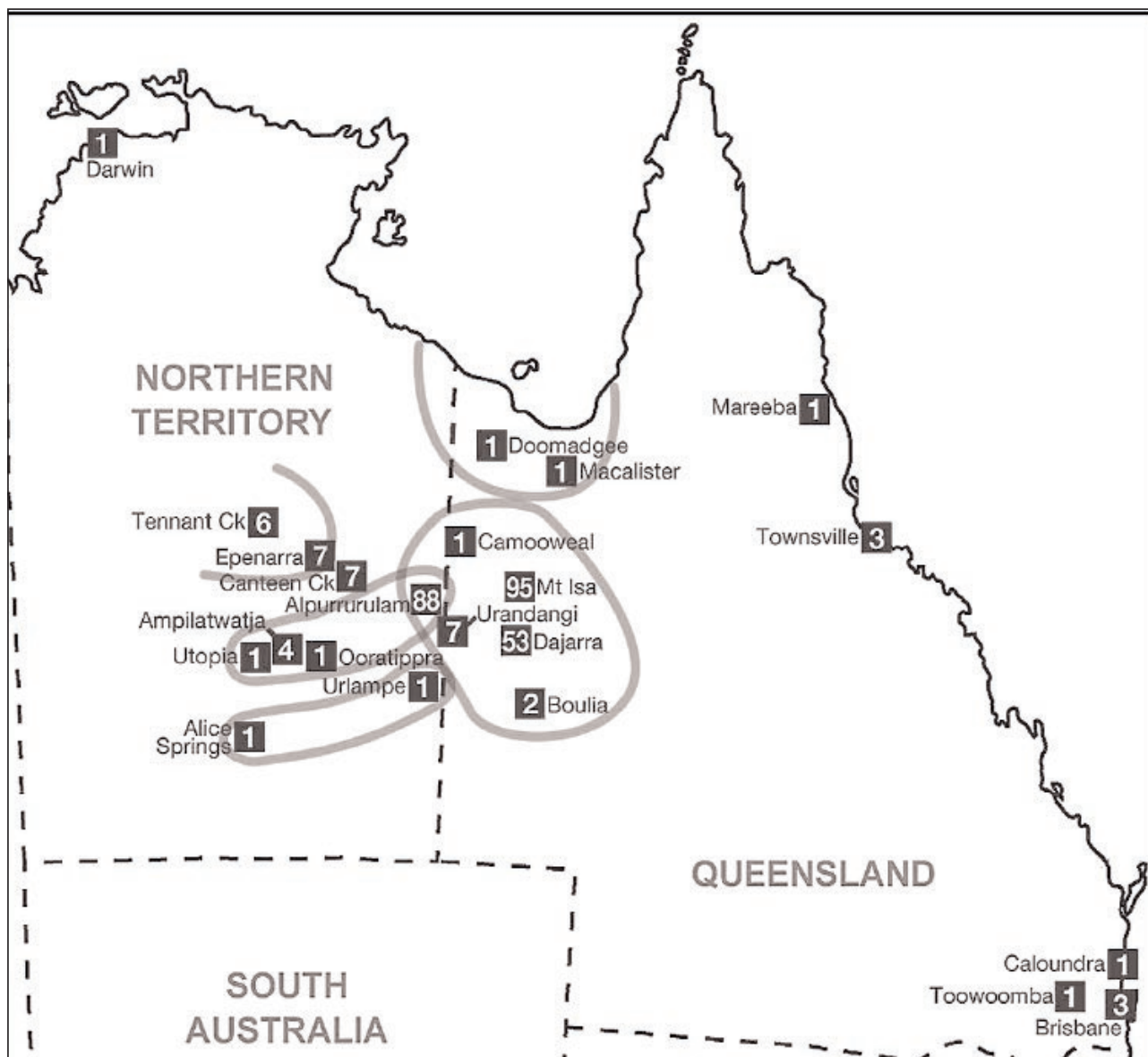
(International Organisation for Migration, 2008)

What I am suggesting is that the 8Ds are good lenses through which we should re-consider established paradigms around Indigenous demographic futures, and in particular around the role that migration will play in changing these. I wasn't clever enough to devise a succinct statement to summarise what I mean by this so instead I stole this one you see here by the International Organisation for Migration which encapsulates my argument well. That is, in all our expenditure on pro-

grams and policies to keep people ‘on country’ there is a crowding-out of the voices of those who have and who will in the future vote with their feet to ‘come off country’. And the 8D's tell us that it only takes minor redistributions for major changes to eventuate. For the rest of my talk today I want to provide some reasoning behind this proposition.

As background it is important at this point to distinguish between mobility, which is a temporary absence from home, and migration; a choice to reside elsewhere on a long-term basis. The two are interrelated on many levels of course. The literature on Indigenous populations in remote areas of Australia focuses heavily on the former (mobility) but very little on the latter (migration and its impacts). Mobility is seen as being driven by the need to visit friends and relatives, participate in cultural activities, access services and ‘do bad things’ like drinking alcohol (consequently, because alcohol is banned at most communities they are described as ‘dry’ communities). I find the lack of willingness to consider the role of migration in the future of Indigenous settlements in the Northern Territory disturbing given ongoing investments into these.

Demographers find it very hard to parametise and model population movements into and around remote settlements, and this makes our job of advising policy makers and others about the future very difficult. Indeed the residential migration of Indigenous people to and from remote areas of the Northern Territory is very much absent from the extant literature and research. Instead, the focus has been firmly on temporary mobility. Temporary mobility creates a constantly churning population and is posited as being centred on discrete communities and regional centres. It may occur across officious borders and may be unknown and unplanned in its spatial realms. Movements are denoted as occurring regularly and featuring a return to these ‘home’ communities. Research on Indigenous migration invariably focuses on this sub-set of population movements and is depicted in similar ways to the diagram here.



Source: AHURI (2004) *The mobility of Aboriginal in remote and rural*

I want to propose there are four key areas for re-conceptualising the role of residential migration in bringing about the further urbanisation of remote Indigenous populations of the NT. These are:

1. Humans are human;
2. The influence of women;
3. The urbanisation enablers (especially education); and
4. Technology uptake.

You will notice that the search for jobs is not amongst the themes. At the moment participation rates in the labour force for Indigenous people in the NT are extremely low in both urban and remote areas. There is no evidence of employment helping to drive migration to towns and cities and perhaps this is one area where we differ from the Arctic experience.

1. Humans are human

Figure 8 really does sum up and emphasise that things are not static in the remote parts of the Northern Territory. We are fortunate that our most recent Census data has just become available a couple of weeks ago (we have one only every 5 years) and the latest data shows

that the long term trends observed for the past 30 years are continuing. Quite simply, a diminishing proportion of remote living Indigenous Territorians are choosing to live in remote settlements, in spite of continued expenditure to encourage them to do so.

So looking first at the discrete communities themselves, I have put around 80 of these into clusters: small (population between 200 and 500), medium (population 500-999) and large (population 1,000 and over) settlements. Large communities are continuing to trend upwards in terms of their overall share, medium are fluctuating somewhat and small are actually increasing

their share slightly. But the biggest story is the significant reduction over time in people choosing to live in settlements of less than 200 residents. These include the outstations or homelands which are seen as archetypal in the relationship to land and country because these were and are located on traditional lands, unlike most of the discrete communities which were established by colonial powers established. Likewise, the long term trend is migration towards the urban centres of Darwin and Alice Springs, as well as towns, which are 6 largely non-Indigenous service centres.

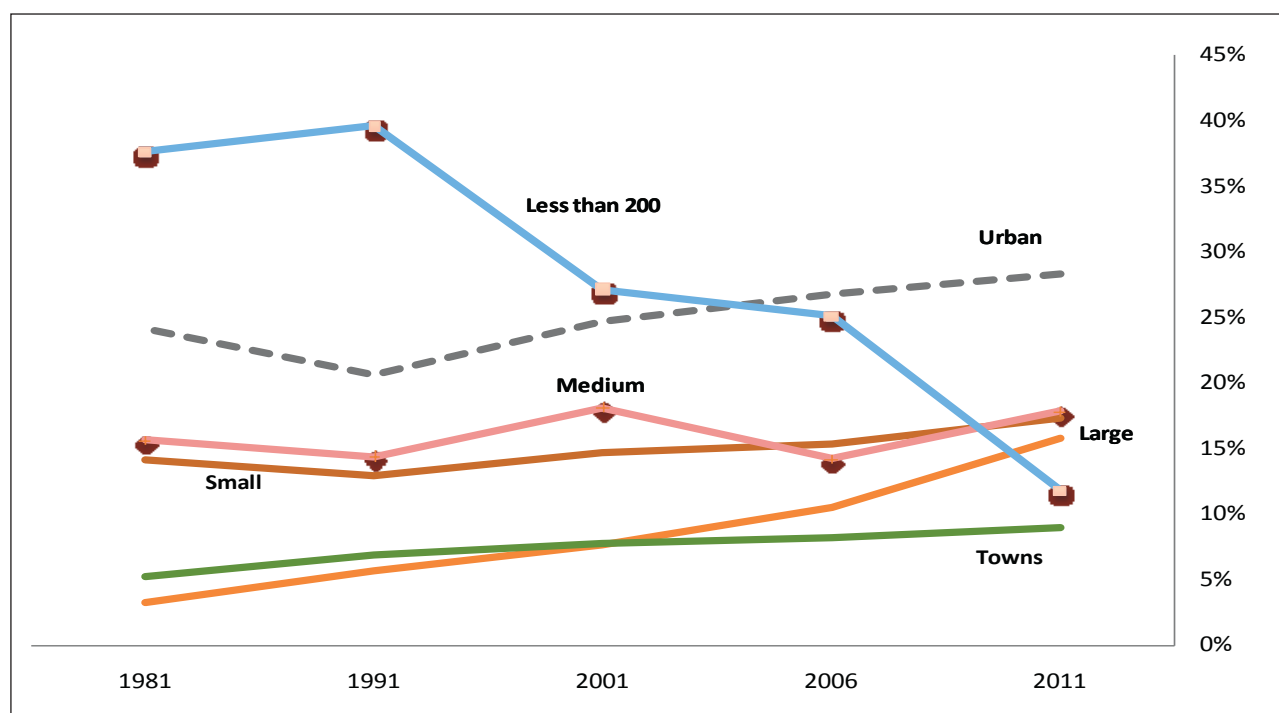


Figure 8 – Long term trends in Indigenous settlement patterns in the NT (share of total Indigenous population by clusters of settlements)

In reality this chart could represent any population in any developed nation as they transition from an agrarian to industrialised or globalised economy. The history of human settlement systems is reflective of these sorts of trends and I argue that we should not expect Indigenous people to behave any differently over the long-term. It is human behaviour to progressively gather in larger sized settlements. Consequently, this chart does not support the proposition that attachments to land are and will act as barriers to Indigenous Territorians behaving, in a migration sense, as other populations have behaved. The fundamental behaviour is a long standing history of urbanisation. This distinction is itself delicate and difficult because of the entrenched, romanticised and

mythologised views about remote living Indigenous people which are entrenched in our national psyche and indeed embedded in most research on Indigenous migration and mobility in the Australia context.

2. The influence of women

Now we have examined the recent history of urbanisation in the NT I want to talk about three other factors which I believe will speed up its rates. The first is the role of women in changing societies. Literature from amongst you here today speaks of the demographic effects of women either being motivated by or driven to seek a life outside of their traditional communities.

This is particularly the case when there is emerging success in improving rates and levels of educational achievements, while another body of research documents the push factors including violence, disharmony and living conditions. During the 1990's a bunch of researchers began to explore the causes and consequences of the substantial out migration of Indigenous women from small villages, Alaska, northern Europe and the Aboriginal nations in Canada. They first focused on regions where they could see the demographic 'footprint' of these migration flows – a female deficit in the form of increased and relatively high sex ratios (or diminished or low proportions of women). Lawrence Hamilton and Carole Seyfrit labelled the phenomenon as “female flight”.

Studies in the field point to these sorts of reasons for women choosing to migrate out of small remote Indigenous communities:

- Girls plan for an education future...“It’s [education] a girl thing” (Hamilton and Seyfrit – Alaska)
- Escaping violence at home communities (Petrov – Canada)
- Higher educational achievement > school (Alaska, Canada)
- Securing skilled jobs - men take intermittent blue collar work (Rasmussen, Greenland)
- Non-traditional activities are male focused (for example, in mining or skidoo riding)

In essence, these are combination of pull factors, like the desire to obtain education or a career, and push factors such as escaping social dysfunction. It's not hard to imagine the downstream impacts of just a few women leaving small and remote communities. Young women, if they do not return, take future births with them and therefore diminish opportunities for fertility to contribute to population change and renewal at the source community.

Given this, I wanted to examine whether there is any evidence of female flight from remote Indigenous communities in the NT. First let's look at the left chart (Figure 9). Looking at sex ratios and age structures during the past 25 years we see a rather dramatic decline in the proportion of females in the population in larger communities, but, in contradiction to female flight in other nations, an increase in small communities of less than 500. The evidence here then is rather mixed.

However, comparing the proportion of women in each age group between remote and urban NT we do see there is a deficit of women in remote compared to urban NT across all ages from 15 onwards. This is most pronounced from age 50 onwards (Figure 10).

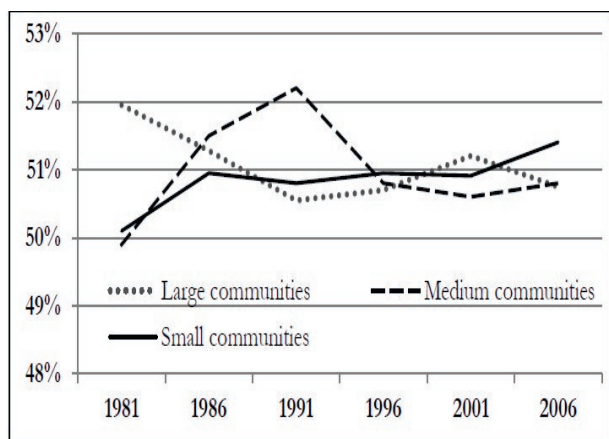


Figure 9 – Sex ratios, Indigenous communities (1981 to 2006).

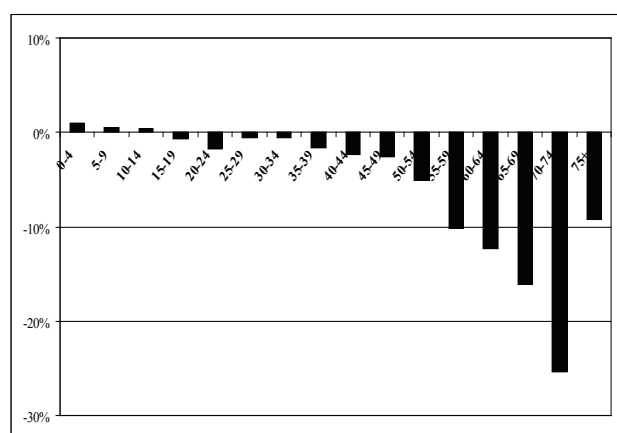


Figure 10 – Remote age cohorts minus In the NT urban (% difference).

And if we examine the composition of the migrating cohort who used to live in remote communities but now live in urban centres (Figure 11) we see overwhelmingly there is a female biased sex ratio in the urbanising population. From age 45 years and up the sex ratio for urbanising migrants is consistently below 80 (males per 100 females) and falls as low as 38 at ages 60-64. While I have found no conclusive evidence of female flight taking hold in the NT to the extent it did in Alaska, sex ratios in large communities are clearly falling. A continuation of this trend will bring about the sorts of demographic footprints which were found in other nations.

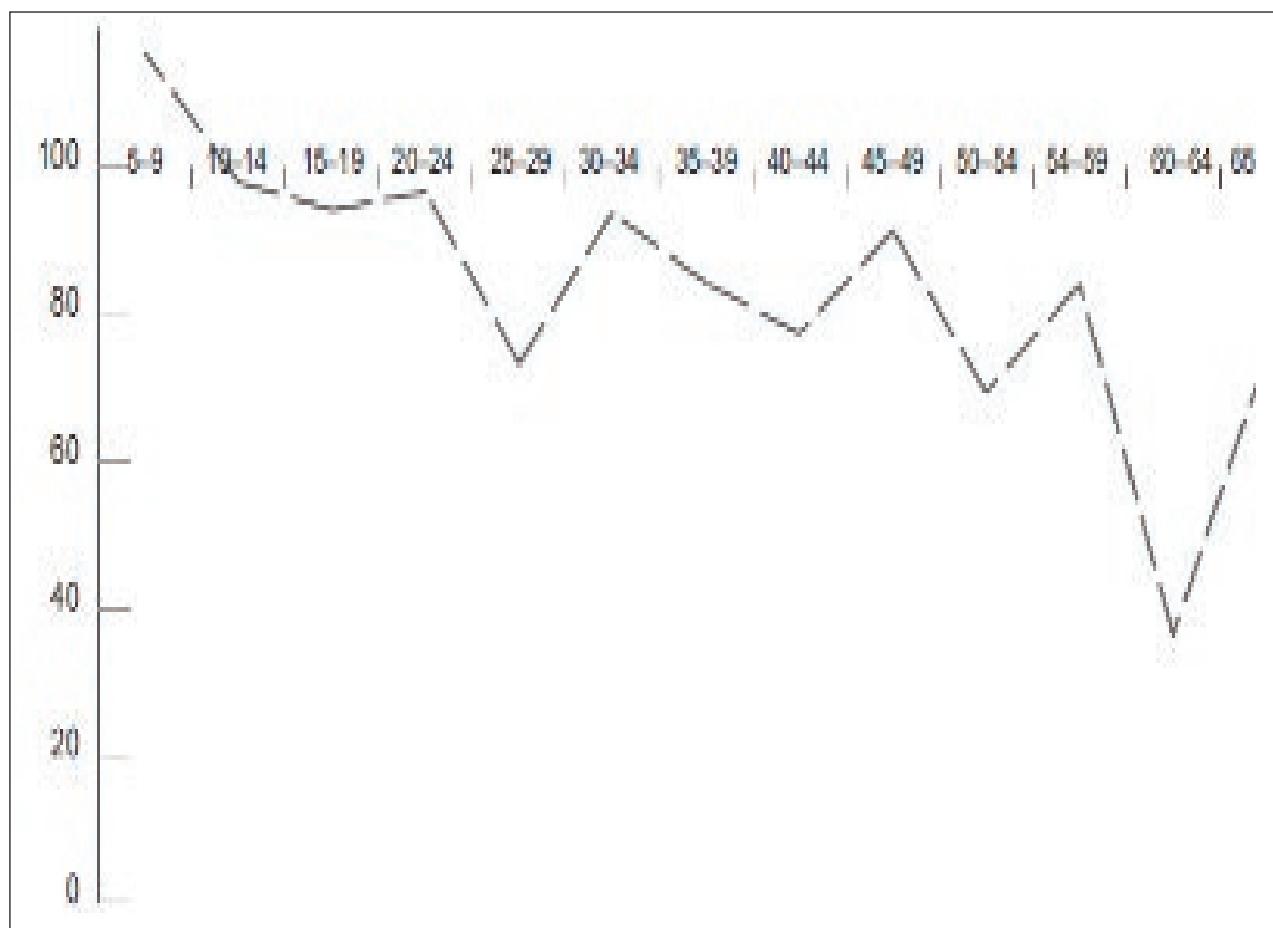


Figure 11 – Sex ratios, remote to urban Indigenous migrants, 1981 to 2006

3. The urbanisation enablers (especially education)

Moving now to the role of education in the urbanisation process in the NT. Education is recognised globally as a migration enabler. Quite simply the higher the level of education you possess the more opportunities are opened up. If you are living in a remote community such opportunities to obtain and apply education are limited.

Figure 12 shows the ratio of Indigenous women to men for those who have achieved certain levels of education in remote areas. For example, we see that 60% of all people living in remote NT in 2006 who had com-

pleted the final two years of high school (Years 11 and 12) were female, while 70 % of those who had a post-school qualification were female and, similarly, 70 % of those who had graduated at post-school levels with an advanced diploma level or above were female. On the one hand these data might suggest that women will contribute to their remote communities through their educational achievements, but on the other hand, the female dominance in the attainment data might also suggest we will see many of these migrate to urban areas to apply their education in a career or to further it. These may or may not be pre-cursors to a more widespread phenomenon but are certainly ‘female flight like’.

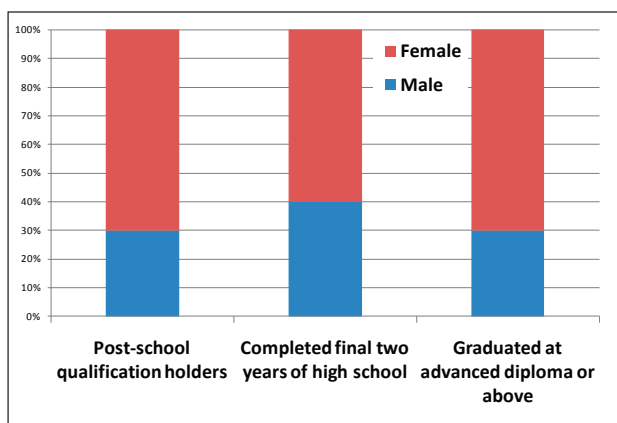


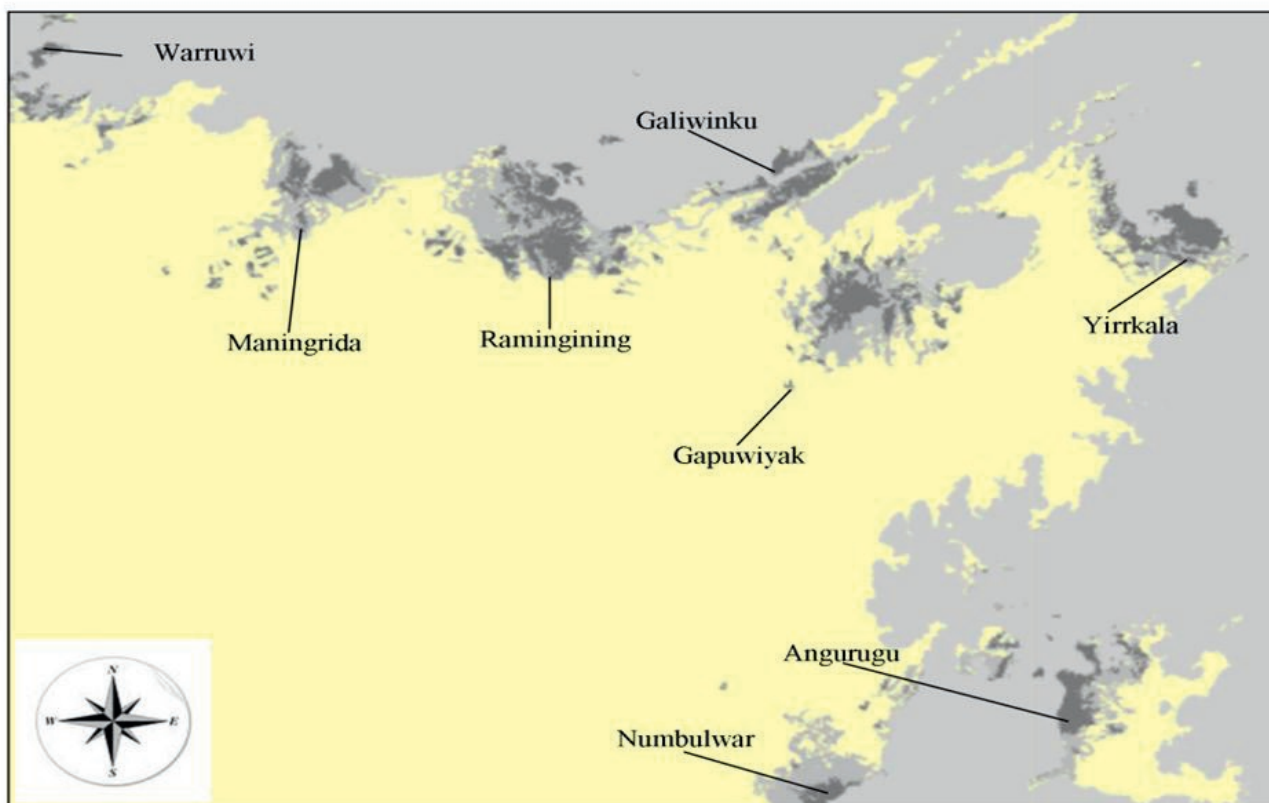
Figure 12 – Female bias in Indigenous educational achievements, 2006

4. Technology adoption

The fourth theme in relation to Indigenous urbanisation in the NT is the role of technology

uptake in changing individual's perceptions about space and their desires in relation to where to live. Prior to the last 5 years only satellite technology was available to access the Internet. This was slow and costly, and consequently out of reach for most residents. All of the literature on technology uptake (or the lack of it) by remote Indigenous people was very pessimistic, citing a lack of literacy and numeracy as well as the cost of access as key reasons for continuing low rates of uptake into the future. But during the past five years the Australian Government has rolled out broadband towers to even the most remote communities. This network, called Next G, provides very good coverage and data transfer speeds in comparison to pre-existing technologies. Figure 13 shows the coverage of the Next G broadband network in and around several very remote communities in a region called East Arnhem Land. The coverage is not only good in the communities but also outside of them over a relatively large distance.

Figure 13 – Next G coverage in and around remote East Arnhem Communities.



Source: Modified by author from Telstra, 2010.

Note: Darker shading indicates Voice, Picture, TV, Video & mobile broadband coverage. Lighter shading indicates an antenna is required to access mobile broadband. The remainder are areas where only satellite phone or Internet is available.

Early research by Dyson and Brady on impacts from the rollout of the network was situated in North Queensland. They found that, despite warnings from the doomsayers about low levels of literacy and numeracy and the costs of mobile phones impeding progress, almost 60% of people owned and regularly used a mobile phone within three months of the switching on the Next G network. Rates were found to be much higher for young people at around 80% to 90%. These equate to the highest rates of uptake in the world.

The Next G network has been now rolled out to many communities in the NT. From a situation of almost no access to a reliable and affordable means of communicating with the outside world things have rapidly changed. A year or so ago I was lucky enough to escape the office and talk to people in a number of remote communities about what technologies they use in everyday life and how. It's clear that mobile phones are used by the vast majority on a daily basis from the age of 8 or 9 up. Rates of everyday use are as high at

90% for young people. Even in communities where no Next G coverage is available the vast majority of people still have mobile phones for travel away and for music and other functions. I found that young people were accessing Internet chat rooms daily from their phones but didn't realise they were using the Internet per se. They also help each other to compose SMS messages to ensure the grammar and sentence structure is suitable when they compose a message in English.

And right now all children are getting a wireless internet enabled laptop which is sturdy and dust proof (Figure 14). All schools now have relatively reliable Internet access and this is being used by some teachers to reward students who attend and work hard. Recently the NT Government announced it would fund free SMS and music downloads for children who attend school. There are now even dating web sites specifically for Indigenous people – the one we see here is called 'Black Match'.

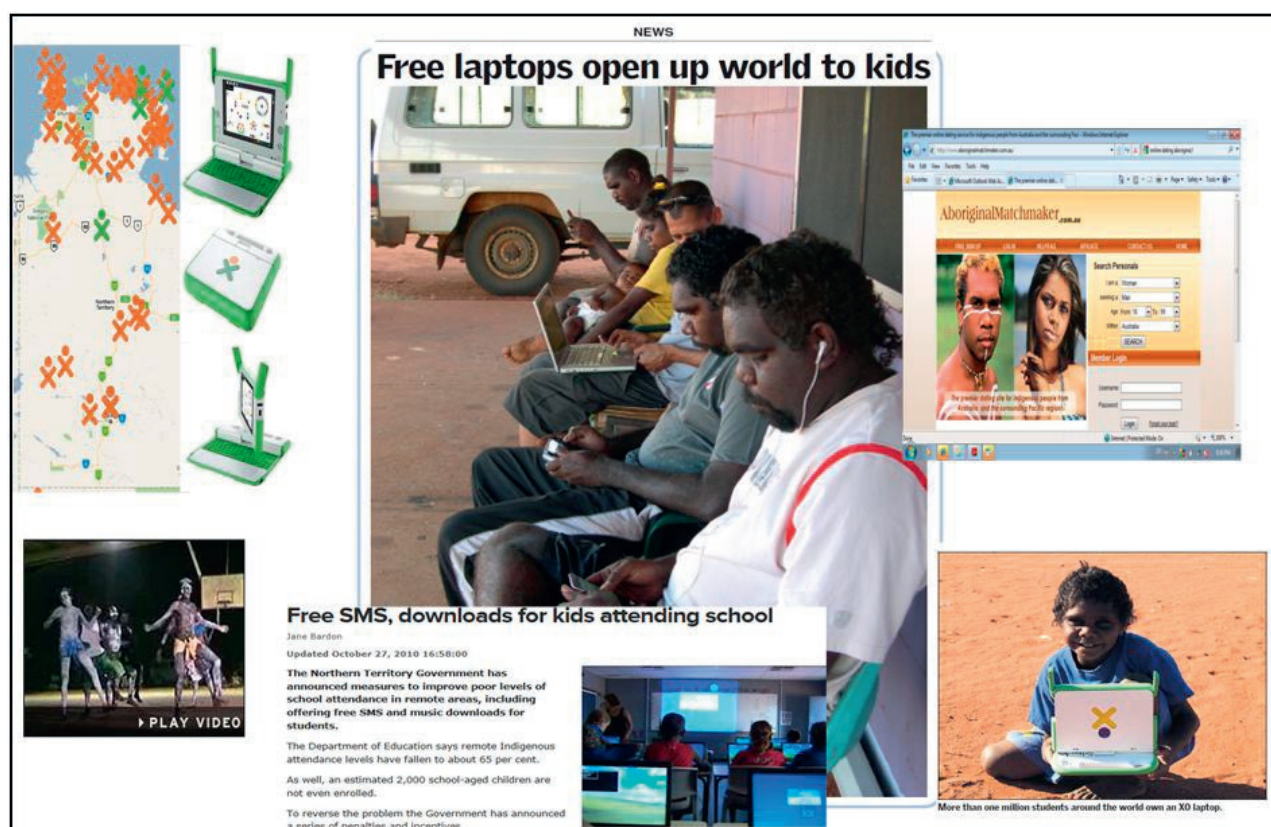


Figure 14 – Examples of technology use in remote Indigenous communities

"I don't believe there's a more momentous day than coming into East Arnhem Land and looking at kids in a school that are punished because of their isolation being given an opportunity to get an eye on the world that certainly some of their forebears didn't, it is truly momentous."

Source: John Hartigan, CEO of the Fairfax company

The point about this leapfrogging in technology adoption is that the currently young generation is now seeing and interacting with the global world. We must expect this to influence their behaviours in relation to a range of areas including where they desire to live in the future. Technology adoption shows that people can act to change the direction of their own life without intervention from outside, if the right baseline conditions are established. There were, for example, no courses on 'how to use a mobile phone' run at communities. Technology adoption also emphasises to individuals that certain things are only available in other places: jobs, nightclubs, shops, a bigger partnering pool, universities, holiday experiences and so the list goes on. The more people experience and learn about these things, the more they will want to experience them.

Summary

And so, can we really expect future generations to want to remain 'on country' when the global world with all its opportunities calls them? I discussed these things with the boss of the Canadian Department of Indian and Northern Affairs a couple of years ago. She found great parallels between the Northern Territory and Canada's experience in Indigenous Affairs, with the main difference being the earlier timing there. Canada too was previously wedded to policy and programs aimed at addressing disadvantage in situ by 'closing the gaps'. They have now abandoned that language all together in recognition that it may do more harm than good by proposing that we (the industry of politicians, bureaucrats, academics and service providers), who work altruistically to improve things, simply condemn people to existing within an artificial non-economy, or as one commentator labelled them "outback ghettos". Other than isolated pockets of activity there are no functioning economies 'out there', nor are there the means to generate them. Three decades of targeted fis-

cal pump-priming has demonstrated this.

In summary, it is my belief that the reluctance in policy circles to consider that settlement patterns could change is damaging to the prospects of those who do transition from remote to urban areas. This is because there are no policies or programs to help facilitate individuals transitioning. Consequently we see homelessness and public angst about what is reported as the 'drift' of people to Darwin and Alice Springs. In fact, as our research with homeless people in Darwin last year



found, up to a third of the primary homeless can be considered as residents of Darwin.

I don't have all the answers but I see the following as critical to addressing the paradox which the continuation of policies wedded to development in situ has created:

1. Developing information systems to inform and assist people about how to successfully transition from a remote to urban lifestyle: Obviously housing is a crucial issue but also things like work experience trials and the use of technology to deliver information on making the transition could be explored.
2. To cease to view 'coming off country' as an abandonment of culture and lands and instead promote it as a means of cultural-renewal and re-development: As an example, in one community I have visited there is only one person left alive who knows a special set of ceremonial dances and she is very old so cannot teach them to young people. To save that aspect of local culture the dances have been recorded on digital media under her instructions for future generations to access and learn.
3. Do not assume people want to or will always want to

live at communities: Programs such as the 'Return to Country' scheme which financially assists people to go back to their home communities are embedded with this notion. In fact, our research with homeless people in Darwin, for example, found that many people did not want to go back. Instead they considered themselves as residents of Darwin, even though they were homeless.

4. Place the issue in a broader context and learn from others: At the end of the day it will require a shift in policy paradigms to help enable people to transition from lives at communities to lives in larger centres and interstate. There is much to be learnt from the sorts of cross-fertilisations of ideas which are occurring through research collaborations and these should be encouraged at the policy maker level as well. Ultimately, a revisionist view of 'where Indigenous people belong' which is encompassing of the trend to urbanisation will save governments money and is more likely to deliver positive life courses for migrants and their families, as well as for those who choose to stay at communities.

5. Research and monitor changing patterns of urbanisation but also changing aspirations through the voices of youth: Represented in any statistic on migration are the lives of individuals. Too often this is forgotten. Individuals make complex decisions based on a range of factors. Aspirational factors are important and so is research which tracks changing attitudes and aspirations in the face of modernity and rapid technology adoption. The current young generation and the ones to follow will give the clearest signals about what might happen and how society can organise around new aspirations. This is because they are technology savvy. If our efforts remain focused on the long-held assumptions that people belong and want to be 'out there' we not only face the threat of misaligned policy settings but also the danger of continuing to impose damaging expectations on individuals. We deny their capacity and ability to seek out and obtain something new, to innovate and to progress, even though this is what 'we' are demanding through policies which focus on in situ progress.

Thank you for listening.

18. Your region – your choice

Maliina Abelsen

I would like to start by thanking the organisers for giving me the opportunity to make this speech at "The First International Conference on Urbanisation in the Arctic". The Government of Greenland, Naalakkersuisut, is particularly concerned with the problems resulting from the continued development in the urbanisation and the settlement pattern here in Greenland. In nearly all contexts of society, a discussion of the urbanisation process is relevant.

In the current parliamentary term, we have had a large number of aspects clarified that have a direct impact on how the urbanisation and the settlement pattern will develop over the coming years. A couple of commission surveys, official reports and analyses conducted by researchers have provided us with a good basis for trying to be at the forefront of developments in terms of how the urbanisation and the constantly changing settlement pattern will affect the various sectors of our society and in terms of our possibilities of further developing our welfare state under these conditions.

Urbanisation is an issue that has always been of great interest to me personally. Among other things, I have had the opportunity on behalf of the Self-Government authorities to contribute to a report prepared by the "UN's Housing Rights Programme". My contribution consisted in a case study on Greenland in the report "Urban Indigenous Peoples and Migration". One of the results of this work was precisely a recommendation to conduct intensive research on the subject "indigenous peoples and urbanisation". Therefore I am pleased to see so many competent researchers attending this conference on urbanisation here in my hometown today.

Push and pull factors

Naalakkersuisut is highly aware that both push and pull principles underlie our policy. The demographic development shows that in the coming decades, the number of elderly people will double whereas the group of people who are of working age will decrease. This causes large challenges when it comes to creating

sustainability in public finances.

Naalakkersuisut does not want to undermine the welfare state by maintaining the status quo. This also goes for the settlement pattern. Some outlying districts may, for example, experience an overweight of elderly people. This will give rise to great challenges when it comes to providing care of the elderly if the required professional labour force is not available in the outlying district. In order to defend the basic elements of our welfare, including not least the social safety net for the weak groups in society and for the elderly, we must constantly make sure by means of push and pull factors that the population has access to housing, health services, institutions and schools.

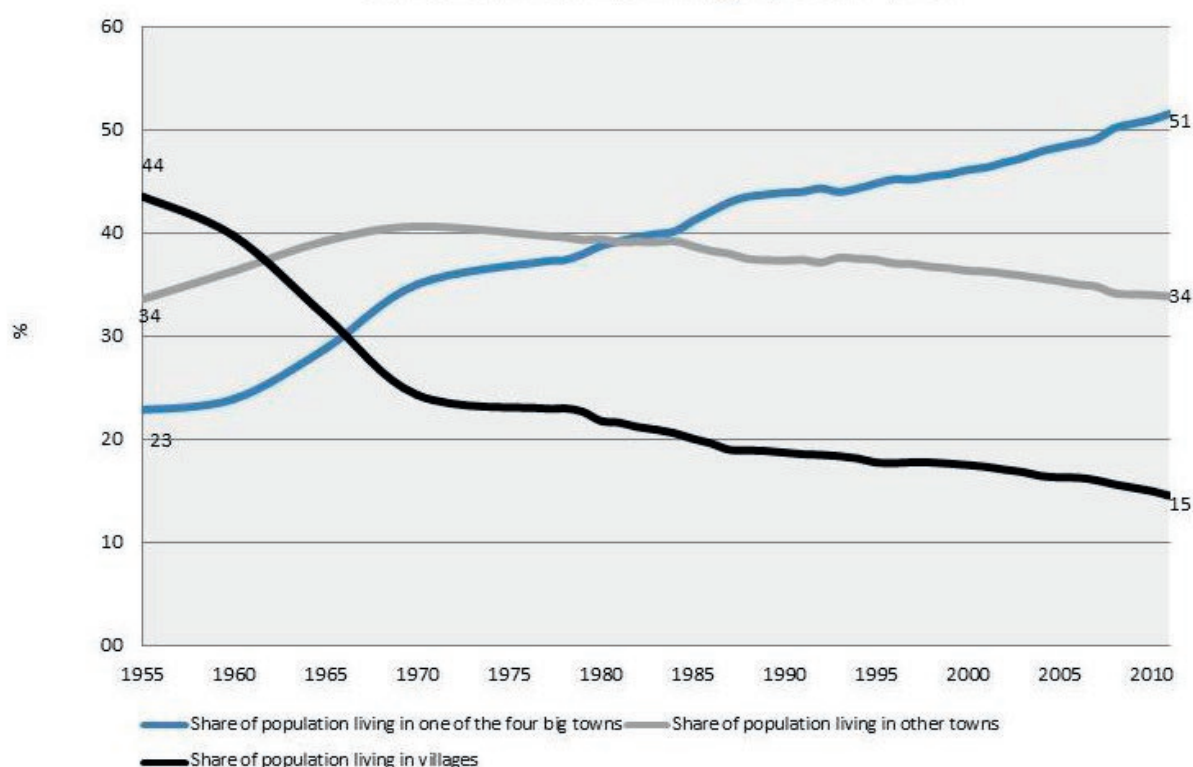
State of affairs today

The settlement pattern is changing rapidly. Like in the rest of the world and not least in the rest of the Arctic, there is a significant migration from the outlying districts the towns year by year. With the rest of the world we share the fact that people migrate to find a job and because they want a better life with more opportunities. Globally, everybody is challenged by urbanisation. In fact the urbanisation has been going on for many decades here in Greenland. In the old days, people moved to the places with the best catch, and we have always had a great ability to adjust to new challenges in order to survive. Otherwise we would not be here today.

In recent times – and by that I mean the period since the implementation of Home Rule – we have also seen massive urbanisation. Despite the fact that politically and through business investments, politicians have demonstrated great willingness to support the villages.

It is still unclear how large-scale projects within energy-intensive industries and the oil and minerals sector will affect the settlement pattern. Existing settlements that are declining today will be able to regain vitality and achieve growth if large-scale projects are implemented in the immediate vicinity of the settlement in question.

The share of the total population living in the four big towns, other towns and villages, 1950-2011



The overall picture, however, clearly seems to be continuous urbanisation of one or several towns; such urbanisation is expected to continue over the next decades.

The urbanisation takes place mainly in Nuuk, but has also taken place in the largest towns in the other municipalities. All four towns are experiencing a population growth that exceeds the population growth in the rest of Greenland.

Urbanisation does not cover migration to the major towns only, but also locally from the small villages to the larger town in the local area. A good example of this is the population growth in the largest town in East Greenland, Tasiilaq. Following the migration from the other settlements on the east coast to Tasiilaq, the population growth in this town, expressed as a percentage, has been just as big as in the capital Nuuk in recent years.

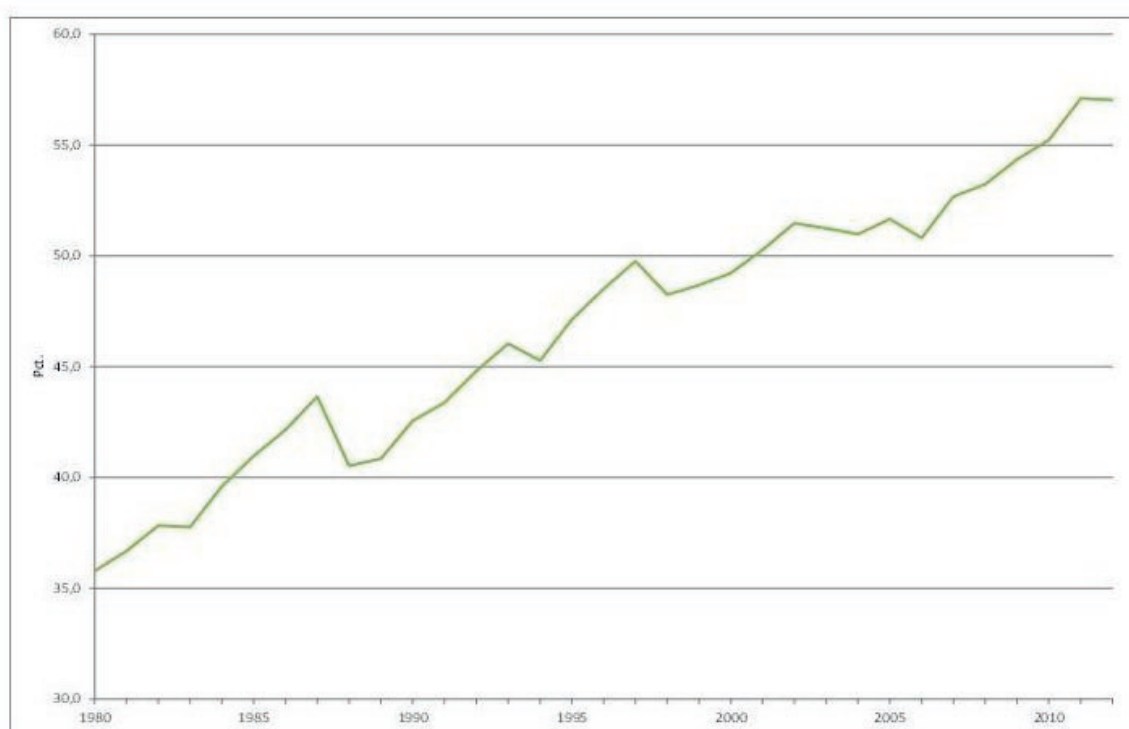
On the other hand, the growth rate in the majority of the other settlements is low and even negative. This also goes for the villages. Like in other countries, the fact that young people and especially women leave

the small towns and the villages more frequently than the elderly and men constitute a special challenge. This means that these settlements must not only struggle with economic imbalance. Attracting families will also constitute a challenge.

Consequences of urbanisation

The consequences of the urbanisation are of many different kinds. The development of infrastructure and housing should take place where business and training opportunities and consequently increased employment and higher income are available. At the same time, the increased strain on public finances, like in other countries, also creates a need for increased centralisation of institutions etc. in order to improve efficiency and thus make sure that the level of costs can constantly be held in check. We need to acknowledge that the service level is not – or cannot be – the same all across Greenland. This is neither practically nor financially possible. This calls for a conscious, political discussion of the service level in medium-sized and small settlements.

Tasiilaq's share of the total population on the east coast, 1980-2012



Source: Grønlands Statistik, Statistikbanken, March 2012.

One of the most important objectives of our policy is to generate increased economic growth. Without economic growth, we will in the future not be able to finance the welfare services which we want our society to be able to offer.

However, we all know that economic growth in itself does not automatically and exclusively give us a good life. Therefore it is important that we create the frameworks for inclusion of everybody in the educational system and on the labour market. At the same time we will continue to focus on creating proper frameworks for enhancing and developing cohesion with the family, neighbours and society in general.

Moreover, the rapid change in the settlement pattern puts a large strain on the traditional occupations and ways of living, on family conditions and on the cultural values that constitute significant cohesion in the Greenland society. Over the next years, many small settlements are in danger of reaching a sustainability threshold where the population is reduced to an even lower level where upholding even the most basic services in the settlement becomes extremely expensive per citizen.

On the other hand, it is in the towns – and especially the towns experiencing growth today – that the ground

for economic growth is typically most fertile. Both the average income and the educational level are higher in these towns than in the rest of the settlements. At the same time, the threshold for what types of commercial activities are financially viable is higher where the number of inhabitants is bigger.

This does not mean that the solution simply is to uncritically try to make as many people as possible move to the biggest towns. The big towns in Greenland are also facing large social problems and unemployment, and we are spending a lot of resources on addressing such problems.

Solutions to the challenges

Unfortunately, the discussion of the settlement pattern easily ends up in one-sided and polarised points of view rather than constructive and holistic considerations. Naalakkersuisut is therefore open to inspiration and new input as to how we can solve our regional problems. We realise that we do not have all the answers to the challenges facing us. We are therefore very pleased that at this conference we will now be able to obtain new inspiration and knowledge of how these challenges are addressed in other regions in the Arctic.

We have only limited possibility of controlling the demographic development. Naalakkersuisut has basically chosen to stick to the solidarity principle for society as a whole. The solidarity principle implies that everybody is responsible for safeguarding a population group, for example a settlement, when a need arises.

The solidarity principle manifests itself in the form of services being widely financed by the public funds via tax payments or through financing subsidies for utilities etc. via the Budget. The solidarity principle also manifests itself in inter-municipal financial equalisation and via cross-subsidisation etc. through the publicly owned utility companies. However, Naalakkersuisut has instituted analyses to establish whether this kind of equalisation and subsidisation is sufficiently effective. We have many examples showing that this kind of solutions does not create a sufficiently dynamic society and does not precisely enough target the social groups with the biggest need.

But the solidarity principle also takes as its starting point that the individual citizen has rights and obligations. Therefore it is not just a unilateral process where society exercises solidarity without the population in question contributing actively to the development at the same time.

It is very important for Naalakkersuisut that the individual citizen is involved in the decision-making process concerning the most important issues in society and not least in the issues relating to the individual citizen himself or herself. We know that challenges are best addressed as close as possible to those facing the challenges. Therefore we need to make each individual

citizen engage actively in a dialogue on what Greenland and what the local areas should rely on for a living in the future. In our coalition agreement, Naalakkersuisut has therefore laid down the principles for the regional development under the heading "Your region – your choice".

We have far from finished this dialogue. It will be strengthened in continuation of the upcoming plan for a sustainable development towards 2025 which Naalakkersuisut will present in September. This plan is to result in a discussion of extensive and coherent reforms in order to ensure both welfare and prosperity for the future generations.

In the upcoming plan, Naalakkersuisut contemplates, for example, increased investments in training and education, inclusive of creating the appropriate framework that can ensure children and young people equal access to training and education qualifying them for a job, no matter where they grew up. This calls for, among other things, better exploitation of our human resources and increased use of ICT in the classroom in order to create good opportunities in even small places. On the other hand, we cannot rule out that a higher level of training and education will contribute further to accelerating the urbanisation process here in Greenland. Some will see this as a problem, some will see it as a solution.

I would like to hear your comments on this.

Qujanaq / Thank you / Tak.

19. Remoteness, Transportation Infrastructure, and Urban-Rural Population Movements in the Arctic

Matthew Berman and Lance Howe

Introduction

The historical geographer, Lewis Mumford, described urbanization as a global phenomenon that has progressed in three stages over the course of human civilization. In the first stage, settlements appeared in ancient times as nomadic hunters and herders took up agriculture. In this first stage, the scale of urbanization was limited by the amount and productivity of the nearby farm land. Development of transportation technologies and infrastructure led to expansion of markets and long-distance trade, fueling growth of much larger communities in the second stage. The third stage of urbanization, which continues to this day, began in the 19th Century as global economies shifted from a primarily agricultural to an industrial economic base (Mumford 1956). Modernization of agriculture and global trade in the third stage has led to a decline in rural populations in wealthier nations, not only relative to urban populations, but in absolute numbers. In some regions rural areas have become depopulated (Lowden 1927; Marini and Mooney 2006; Pinilla et al. 2008).

Throughout the Arctic, urban centers are growing relative to rural settlements, with some small communities showing an absolute decline (Hamilton et al. 2010). Urbanization of the Circumpolar Arctic in some ways reflects the three stages characterizing global trends. The processes driving arctic urbanization, however, differ in many respects from the global processes described by Mumford (1956). In contrast to much of the rest of the world, the Arctic has never developed a significant agricultural base to drive the first stage of urbanization. The lack of agriculture also meant that the Arctic did not develop the internal transportation infrastructure to move agricultural products to markets during the second stage. Instead, the first stage

-- settlement of arctic peoples -- occurred largely as a consequence -- intentional and inadvertent -- of colonial policies of the states that governed these regions from distant capitals. Arctic towns and cities built around exploitation of nearby resources such as gold mines tended to be highly seasonal and ephemeral. Exceptions were communities developed as centers of public administration of the territories, and those following direct government intervention for national defense or industrial policy such as the Russian cities of Murmansk and Norilsk, and Anchorage, Alaska (Armstrong et al., 1978; Sugden 1982).

Given the different drivers of arctic and global urbanization processes, should we anticipate the rural Arctic to depopulate as have rural areas elsewhere in the developed world? Some evidence suggests that arctic depopulation may be occurring (Hamilton and Rasmussen 2010; Heleniak et al. 2011, Rasmussen 2011). However, we suggest that if arctic rural depopulation does take place, it too, like the creation of arctic urban centers, will be a consequence of public policies. Barring forced removal of rural residents, population movements result from voluntary choices of individuals and households. In the next sections of the paper, we describe results of an empirical investigation of determinants of mobility decisions among rural arctic residents: specifically, Inuit people in Alaska, Canada, and Greenland. We examine how a number of policy-driven factors influence place-specific migration intent and actual intercommunity population movements, focusing on effects of remoteness. We find that remoteness, along with other policy-driven factors, strongly influences mobility patterns. The results suggest that remoteness-driven migration in arctic rural communities is not simply a matter of geography; it is heavily influenced by government policy.

Arctic Remoteness

What is remoteness? In the language of economists, remoteness may be seen as a transaction cost for spatially separated markets. That is, remoteness poses a spatial barrier to market equilibrium. A simple way of thinking about remoteness is that it is what determines the cost of moving goods, services, information, or people from one place to another. The moving cost could include the cost of time and indirect effects as well as the direct financial cost. With implicit reference to the Arctic, Huskey and Morehouse (1992) described remote regions as those that are “physically, economically, and politically distant from centers of wealth and power.” To this list we might add social and cultural distance as well.

What creates remoteness? Clearly, geography plays a part. But one could argue that remoteness is constructed or torn down by human agency, just like housing

and other infrastructure. National and sub-national boundaries, international treaties, and rights of citizenship create or mitigate political remoteness. Language and religious differences, and diverse livelihood ways create social and cultural remoteness. Perhaps most salient among features of constructed remoteness is the state of the transportation system linking rural settlements, towns and regions. Transportation systems include both the physical infrastructure -- roads, railroads, ports, airports -- and the predictable network of routes and connections. In the Arctic, where roads and rail lines are scarce, transportation was originally based primarily on water. Water transportation was only reliable along the coasts and major rivers, and only available seasonally in many places. Once air transportation became a reliable mode in the Arctic, it assumed dominance for moving people and most goods other than fuel and other bulk commodities.

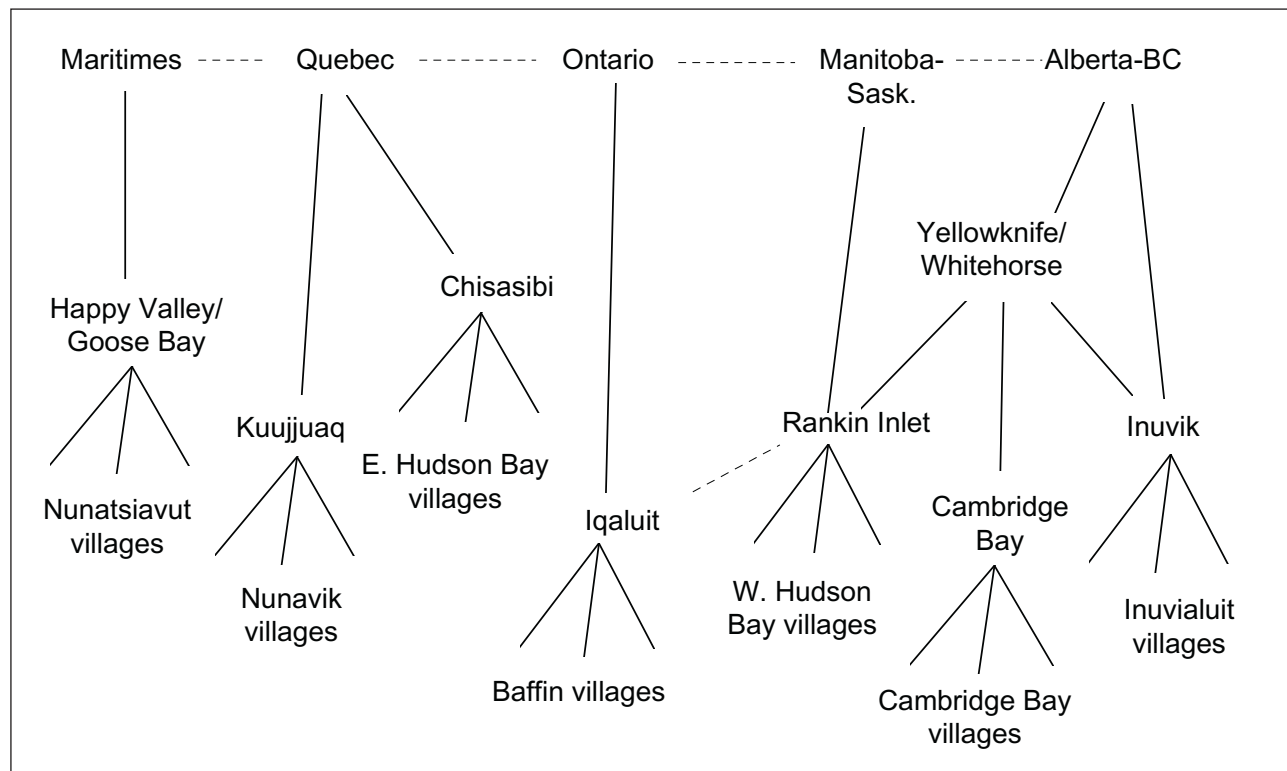


Figure 1. Colonial Legacy: Air Transportation Network for Arctic Canada

Since major arctic resource extraction projects typically have their own single-purpose infrastructure for transporting their products directly to world markets, air transport networks often developed to meet the needs of colonial administration. The network of direct flights in arctic Canada (Figure 1) illustrates this principle. The colonial origin of the Canadian arctic air network reveals itself in the north-south axis of major routes, with minimal connections across the North ex-

cept from villages to local hubs. The result is that arctic communities in the same geographic region may be more remote from each other, in terms of both flight time and costs, than they are from the southern Canadian city which serves each community's local hub, if different administrative hubs were selected to serve the two communities. Arctic Alaska shows the same general pattern of north-south connections (Figure 2), but with an important difference. Anchorage serves as the

gateway for direct flights in and out of arctic Alaska; flying from an arctic community to another U.S. state generally requires changing planes in Anchorage. Anchorage serves as an air transportation hub for all communities in Alaska, and is much less remote to arctic Inuit communities than any southern Canadian city is to Inuit communities in Canada. Consequently, it is often much less costly and takes much less time for a resident of an Alaska arctic community to fly to Anchorage, or through Anchorage to another Alaska arctic community, than it is to fly from one Canadian arctic community to another.

Historical patterns of remoteness built by air service networks in arctic Canada and Alaska became entrenched as colonial governments built regional education, health care, and social service institutions, and private enterprise built supply networks around the logistics of air travel. Social, family and business ties followed connections opened up by administration and commerce. This ensured that travel patterns intensified along the links of the air route network, and did not develop between places that required lengthy and

relatively costly itineraries, causing the network to replicate itself over time. Modern media and the internet can mitigate the absolute degree of physical remoteness to some extent, but still have little ability to reduce the relative remoteness of communities embedded in the transportation system.

Greenland provides perhaps an even more interesting case of constructed remoteness related to the air transport system. The runways at Kangerlussuaq and Narsarsuaq, originally built for military use during World War II, remain the only ones in Greenland large enough to serve intercontinental jet aircraft. Travelers from Copenhagen, the colonial capital, must land in one of these two airports and change to a smaller plane to reach the regional capital, Nuuk, or any other Greenland community. This peculiar arrangement separates internal connections among Greenland communities from international connections, reinforcing Greenland's remoteness from Europe. One wonders whether this might be a factor abetting the push for independence among the younger generation of Greenlanders (Dahl 2010).

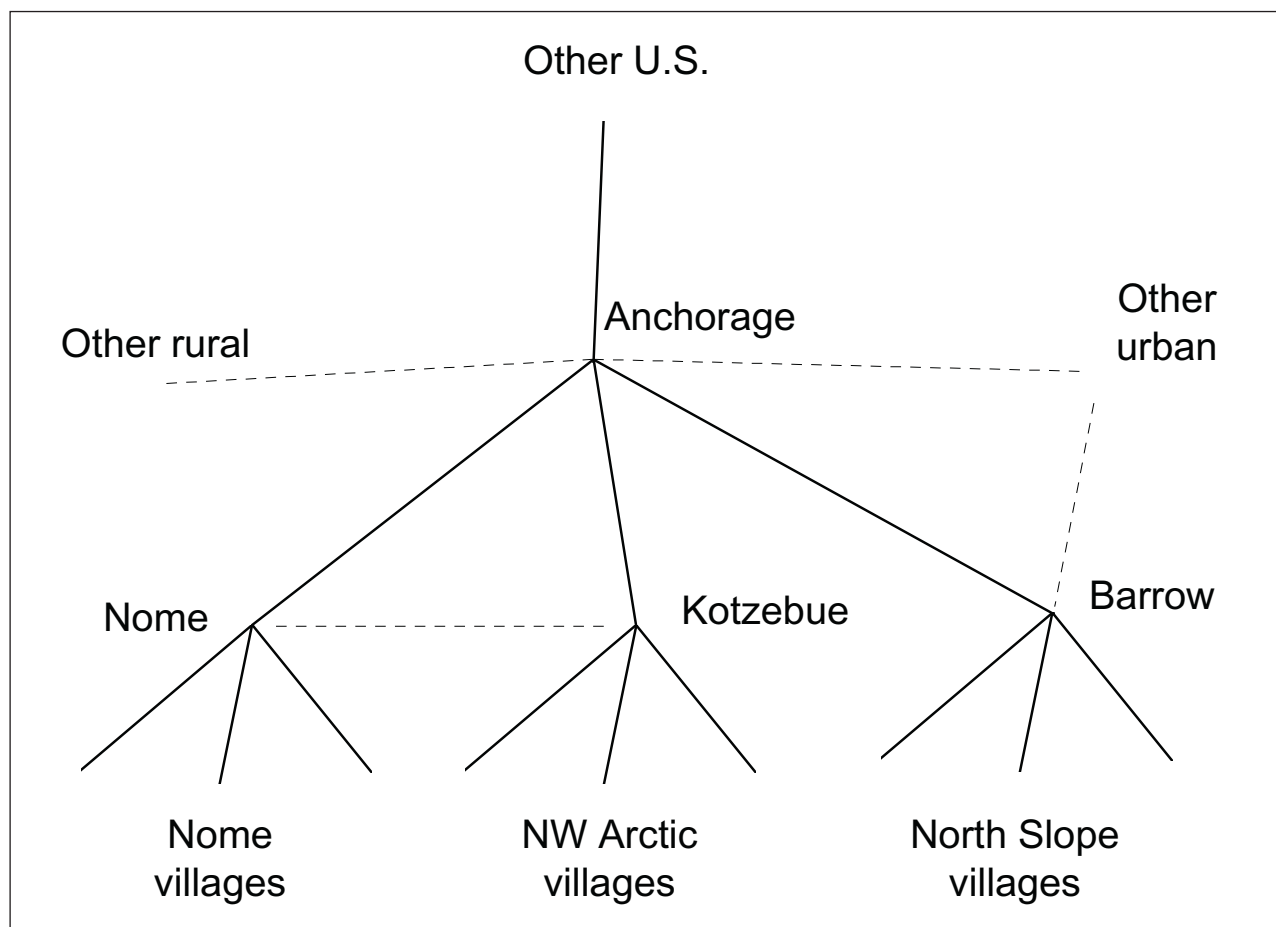


Figure 2. Colonial Legacy: Air Transportation Network for Northern Alaska

Empirical Investigation of Factors Determining Migration Decisions of Arctic Inuit People

The effects of the differing regional transportation networks and relative remoteness they construct on population movements and urbanization can be demonstrated empirically by examining the determinants of migration decisions of arctic residents. In this section, we explore statistically factors potentially affecting decisions to move among Inuit people of Alaska, Canada, and Greenland. We discuss results of two related analyses: determinants of desired mobility -- place-specific migration intent -- and determinants of actual place-to-place migration. Both analyses rely on the same model of the mobility choice.

Modeling determinants of mobility

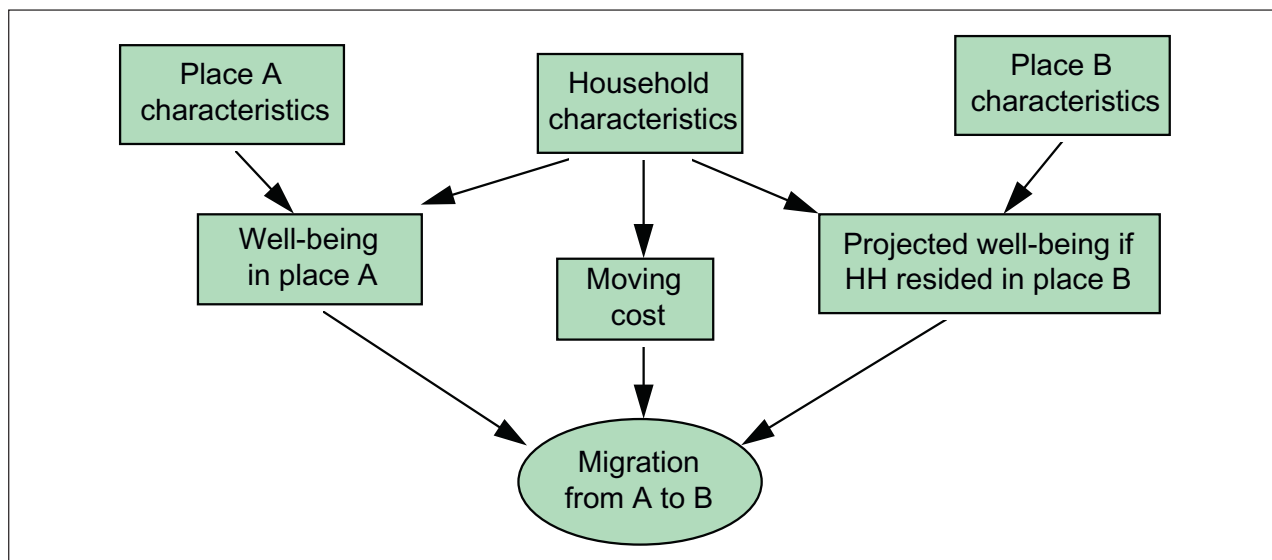
(Huskey et al. 2004) outlined a formal economic model of voluntary individual and household mobility. In the model, households decide whether or not to move and where to move by comparing well-being potentially available in different places and the cost of moving to attain that place-based well-being. Well-being attainable from living in a particular community derives from potential livelihood opportunities and factors related to the quality of life in a community, including public services and infrastructure, local family and social ties, and attachment to homes and landscapes. Figure 3 illustrates how individual and household characteristics such as age, education, and family and social ties, as well as place characteristics such as job opportunities, public safety, and environmental amenities influence

well-being attainable from residing in a place. Information about opportunities and amenities available in other places enables people to project well-being potentially attainable there and the cost of moving.

For many, livelihood opportunities rank at the top among all potential determinants of well-being in different places (Greenwood 1997). In the Arctic, livelihoods include traditional activities -- subsistence hunting, fishing, and herding -- as well as modern livelihoods generating cash incomes (Poppel and Kruse 2009). Well-being is also enhanced by amenities provided by the built and natural environments, influenced by local social and cultural beliefs and practices.

State policy strongly affects many of the determinants of place-based well-being illustrated in Figure 3. National and regional governments either directly finance community infrastructure, education and other local public services such as health care and public safety, or award grants to local governments and non-governmental organizations to carry out these functions. Provision of infrastructure and public services supports local jobs as well as improvements to the community quality of life. Government spending therefore creates a large fraction of income in most arctic communities, especially counting transfer payments as well as earnings from work (Goldsmith 2007; Berman et al. 2004; Knapp and Huskey 1988). Additional government support for the cash economy comes through subsidies and cross-subsidized ("postage-stamp") rates for transportation, energy, telecommunications, and other privately provided services. Government subsidies for transportation and related infrastructure such as airports, roads, and ports also affect moving costs.

Figure 3. Migration as an indicator of relative well-being at the community level



Characteristics of places such as livelihood opportunities and amenities determine well-being, along with household and individual characteristics. Well-being potentially available from residing in one place compared to another is typically not observed directly, but may be inferred from information about moving costs and migration choices (Huskey et al., 2004).

Migration intent for arctic Inuit

Data for the analysis of remoteness on desired migration came from the Survey of Living Conditions in the Arctic (SLiCA), a large international household survey of living conditions among indigenous arctic residents (Kruse et al. 2009; Poppel and Kruse 2009; Usher 2003). Interviews were collected in all nations with arctic indigenous populations, including samples obtained between 2001 and 2004 from Alaska (663 households), Canada (4,735 households), Greenland (1,062 households), and Chukotka (520 households). The Alaska survey was conducted in the three predominantly Inupiaq census areas (North Slope Borough, Northwest Arctic Borough, Nome Census Area). Except in Canada, SLiCA was conducted privately, financed by research grants. In Canada, Statistics Canada fielded SLiCA as an addendum to the 2001 Aboriginal Peoples Survey in Inuit majority areas of the country. Direct government support in Canada provided the opportunity to obtain a large sample of households in return for a somewhat reduced suite of survey questions. While the SLiCA survey instrument varied somewhat among nations, a core questionnaire asked similar questions about livelihoods and mobility in all countries. In addition to individual and household data from SLiCA, the 2000 U.S. Census, 2001 Canada Census, 2003 Russia Census, Statistics Greenland, and other published sources provided characteristics of places

relevant to traditional and modern livelihoods.

SLiCA household data contain some information on attributes and activities of all household members, and include several questions about traditional activities, wage work, and mobility. We used the percentage of household meat and fish provided from the household's own harvest, and total household earnings divided by the number of households adults to represent success in traditional and modern livelihood activities, respectively.¹¹ The large sample contains significant internal geographic variation -- at least 20 communities in each country -- as well as international differences for identifying place determinants of livelihood and mobility choices. In Alaska, Canada, and Greenland, nearly all respondents were of Inuit or Yupik ethnicity. The common Inuit cultural heritage of the population reduces likelihood that differences among nations reflect ethnic differences rather than differences in regional conditions and policies.

We hypothesized that we would need to control for household characteristics to isolate place-specific con-

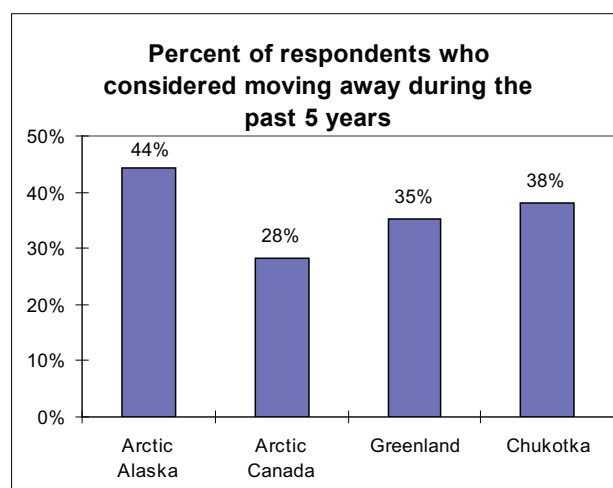
11) Alaska SLiCA respondents were asked the proportion of household meat and fish consumption that was provided by their own household's harvests, as well as the proportion consumed from local harvests. In Canada, the question about household production was not asked, so we used the reported proportion of consumption for households in which at least one household member reported harvesting activities. If no one reported harvesting, we set that household's harvests to be zero, regardless of the reported consumption of local foods.

tributions to traditional and modern livelihood opportunities. Household characteristics available from SLiCA included the number of adults by gender, number of teens, elders, children under 16 and children under 5 in the household, whether an indigenous language was used at home, and whether the household included a non-indigenous member. Households with more adults may more have more flexibility to allocate time to subsistence, wage work, and child care. Households speaking the indigenous language at home and households with children may have more interest in maintaining harvesting traditions. Subsistence skills learned as a child might increase household subsistence harvests. Disability might adversely affect both subsistence and earnings, while the social support offered by strong family ties – which were the subject of a series of SLiCA questions – may positively affect them both. Households with more children and elders may be less mobile, while younger respondents may be more mobile, other things equal.

SLiCA did not include a question about recent changes in permanent residence. Instead, respondents were asked whether they had “considered moving away within past 5 years?” Specific thoughts about leaving one’s community -- often called migration intent, do not indicate a specific plan or decision to move, or identify individuals who have recently moved. However, De Jong (2000) found it a strong determinant of future mobility, while Manski (1990) found consistency of intentions to move and actual moves. More than one-fourth of SLiCA respondents in each of the four regions had considered moving away from their community within the past five years (Figure 4). Migration intent was highest in Alaska (44 percent) and lowest in Canada (28 percent), with Chukotka and Greenland in between. Regional disparities between Alaska, Canada, and Greenland reflect statistically significant differences. Women were somewhat more likely than men to express an interest in moving, with the gender disparity ranging from two to ten percent (Poppel et al. 2007, p. 110).

To test whether regional differences in transportation systems were associated with migration intent, we applied a two-stage process to control for the effect of differing traditional and modern livelihood opportunities available in different places. In the first stage, we estimated censored regression equations that explained household subsistence harvests and household earnings as functions of individual, household, and place characteristics. The predicted values of the harvest and earnings equations modeled expected livelihood success for a person living in a given community with specific individual and household attributes.

Figure 4. Differences in Migration Intent Among Arctic Inuit and Indigenous Residents of Chukotka



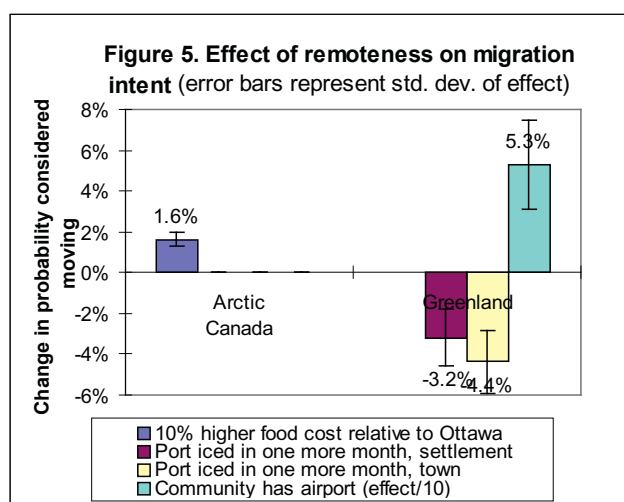
Source: Survey of Living Conditions in the Arctic (Poppel et al. 2007: 149)

In the second stage, we estimated probit equations for the probability that a person would have recently considered moving from the community as a linear combination of expected subsistence harvest and cash income, individual and household attributes, place amenities such as housing quality and public safety, and measures of remoteness. The details of the sample characteristics, estimation procedures, and results are provided elsewhere (Berman, in press). Here we summarize the results for the predominantly Inuit respondents in Alaska, Canada and Greenland, focusing on those relevant to the effects of remoteness.

As expected, individual characteristics representing human capital were strongly associated with household success in both traditional and modern livelihoods. Educational attainment was a prime determinant of earnings, along with gender and age. Inuit language use at home, an indicator of traditional knowledge, was strongly associated with higher levels of subsistence harvest. Households with favorable characteristics for expected earnings – typically households with better-educated respondents – were more mobile in all regions, although the effect was statistically significant only in Alaska and Canada. More favorable place-based earnings opportunities reduced the probability that the respondent had considered moving for all regions except in arctic Canada, where better community job opportunities were associated with a small but significant increase in migration intent. Households with favorable characteristics for success in traditional livelihoods were less likely to want to move in Alaska and Canada but more mobile in Greenland. Places with favorable opportunities for subsistence attracted people to stay in

Alaska and arctic Canada communities, but apparently pushed people to consider leaving in Greenland.

After controlling for earnings potential and other household characteristics, female respondents were significantly less likely to have expressed interest in leaving their home communities in arctic Canada. The absence of significant gender differences in migration intent in Alaska and Greenland and the lower rate for women in Canada, measured after controlling for livelihood effects, suggest that greater mobility aspirations among women observed in raw SLiCA data for these regions may be associated with differences in earnings potential, principally derived from disparities in educational attainment. Older people were generally less inclined to have considered moving, but the effect in Canada was much smaller than in any other region. Poor health status increased the likelihood of migration intent in Greenland.



Source: Estimated from probit equations evaluated at sample means (data from Survey of Living Conditions in the Arctic).

Remoteness could affect mobility by changing living conditions as well as by increasing moving costs. One indicator of remoteness in arctic communities is the cost of living relative to a national benchmark level. Higher relative cost of living was strongly associated with moving intent in Canada (the only region where sufficient data were available to test for this effect). For every 10 percent rise in the cost of living relative to Ottawa, migration intent increased by 1.6 percent (Figure 5). In Greenland, sea ice isolates some communities by making them inaccessible by boat for most of the year. Only larger communities typically have airports. Both these community attributes were associated with significantly lower rates of migration intent, after controlling for other relevant factors. One month additional port closure due to ice reduced migration intent by 3.2

percent in settlements, and 4.4 percent in towns (Figure 5). Having an airport increased migration intent by 53 percent (effect divided by 10 in Figure 5 for scale). Residents of the Greenland capital Nuuk, were also 26 percent more likely to express interest in moving, other things equal.

Communities with inadequate public safety and inferior infrastructure could also be said to be remote in a policy sense from the levers of political power. Political remoteness could reduce the quality of life in a community and could thereby increase migration intent. SLiCA respondents reporting that they had recently been victimized by crime were significantly more likely to express interest in moving in Alaska (6.9 percent) and Greenland (5.5 percent), other things equal. The effect of criminal victimization could not be tested in Canada, as the question was not asked there. Inadequate housing was significantly associated with migration intent in Alaska and Canada. One more person per room in Alaska was associated with a 5.2 percent increase in migration intent, while each additional adult household member beyond two increased migration intent by 7.7 percent in Canada (Figure 6), regardless of whether or not the household included more than one generation of adults. Twice the average percentage of old housing in the community increased migration intent by just under 4 percent in Canada and Greenland, although only the effect in Canada was statistically significant (Figure 6).¹² In general, the results demonstrated that remoteness was associated with reduced mobility if the effect was to increase moving cost, and associated with increased mobility if the principal effect was to worsen living conditions in the community.

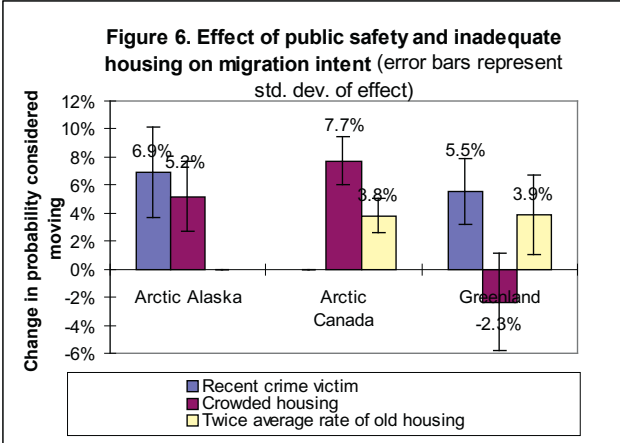
Place-specific mobility of Canada and Alaska Inuit

Shifting the analysis from moving from intentions to leave a community of origin to actual moves to specific places, we now consider explicitly the fact that all potential destinations are not alike to potential migrants. In particular, moving costs could play a role not only in whether or not a person moves, but also in the community to which a migrant moves once the decision to leave has been finalized. As early as the late 19th Century, Ravenstein (1985, 1989) noted a negative relationship between the distance from the origin community and destination of migrants. This pattern has

¹² Education opportunities could also be a factor influencing mobility of families with children. Unfortunately, there was insufficient variation in availability of schooling within each region to test whether education infrastructure or policy had an effect on desired mobility.

been called variously in the literature as a hypothesis of step-wise, hierarchical, stage, or chain migration (Conway 1980). Costs of moving, or remoteness of a destination community could include non-monetary costs of moving there, such as culture shock and loss of frequent contact with family and friends, as well as ex-

plicit monetary costs. For rural migrants to urban areas, the psychic remoteness might be predicted to increase with the degree of urbanization of the place, but could be diminished through connections with family or through social networks with previous migrants from the same community Sjaastad (1967).



Crowded housing represented in Alaska by one more person per room than the average, and in Canada and Greenland by one more adult in the household than the average. Old housing represents housing built before 1970 (Mean = 14 percent).

Source: *Estimated from probit equations evaluated at sample means (data from Survey of Living Conditions in the Arctic).*

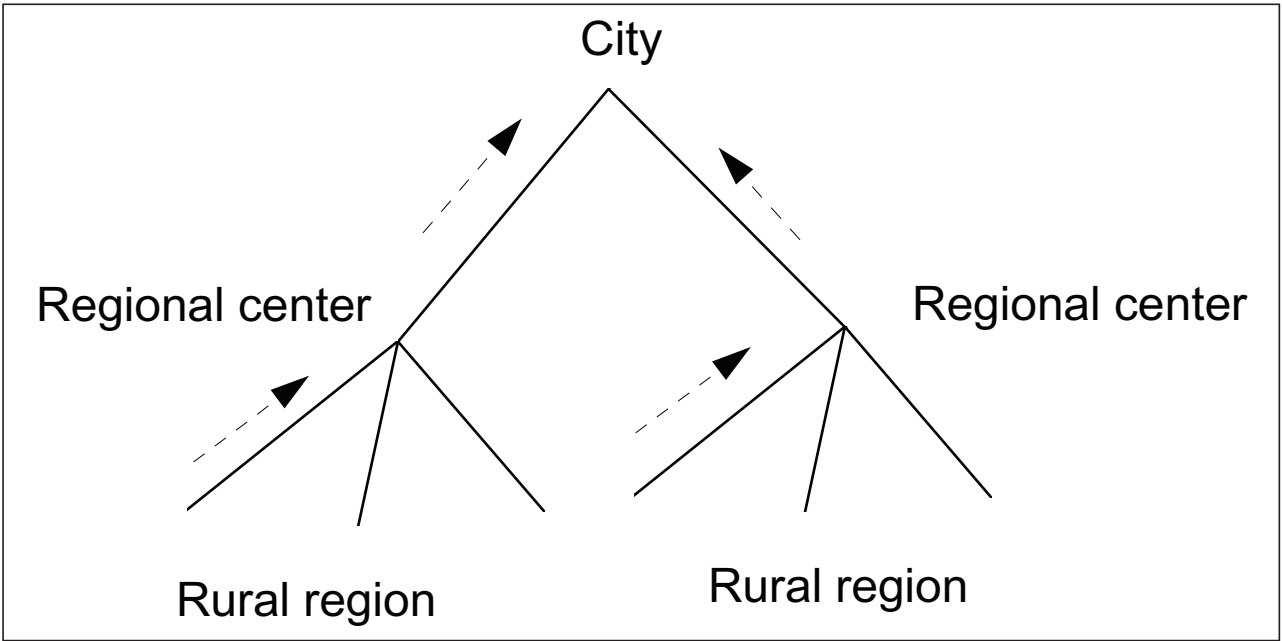


Figure 7. *Moving Cost Hypothesis: Stepping Stones Model of Hierarchical Internal Migration*

Empirical studies have found evidence consistent with a hierarchical migration pattern in both developed and developing countries (Flinn and Converse 1970; Riddell and Harvey 1972; Plane et al. 2005). Figure 7 illustrates a generic form of the stepping stones model of hierarchical migration for arctic Inuit people, based on the colonial transportation networks described for arctic Canada and Alaska in Figures 1 and 2. In Figure 7, the arctic regional center plays a pivotal role as an intermediate destination that mitigates the remoteness of

small villages from urban areas, and thereby hypothetically facilitates moves both up and down the mobility hierarchy.

We analyzed place-specific migration of Inuit in arctic Canada and Alaska using the same model of livelihood-centered mobility, informed by the stepping stones migration hypothesis. We estimated two-stage nested multinomial logit equations for the migration choice. The first stage equation predicted whether or not a person moved from the home community. If the

decision was to move, the second stage equation predicted the destination community. The “dissimilarity index” or inclusive value (McFadden 1981) formed from the coefficients estimated for the second stage equation passes information about potential destinations and the cost of moving there to the first stage equation for whether or not to move. The significance of the coefficient on the inclusive value tests the hypothesis that individuals with a more favorable set of relatively low cost destination communities are more likely to move than individuals facing high moving costs to favorable destinations, other things equal.

The data for estimating the migration equations also relied on SLiCA, but included additional geographic information on actual moves. For arctic Canada, mobility information came from the Aboriginal Peoples Survey (APS) for the period 1996 to 2001. APS is an individual survey, but SLiCA provided household data for APS arctic respondents. Selected 2001 census data matched to the APS respondents by Statistics Canada provided additional household and individual data. For Alaska, the main data source was the U.S. Census 2000 Long Form Survey, which included questions on mobility from 1995 to 2000. The study population included all individuals identifying as Inuit or Inupiaq, regardless of place of residence. Migration intent figures reported in SLiCA appear three to four times higher than actual five-year mobility rates in Census data for Inuit people in Canada and Alaska, perhaps reflecting the reality of high moving costs from remote communities. Access to microdata from the U.S. Census Long Form and the Canada APS is highly restricted to protect the confidential nature of the individual responses. All work with these data sources took place at official Research Data Centers in cooperation with the U.S. Census Center for Economic Studies and Statistics Canada.

Since SLiCA was an addendum to APS, we were able to link household work, demographics, and harvest information from SLiCA to mobility directly to individual mobility for Canada Inuit living in arctic communities. The same equations estimated in the analysis of migration projected a given household’s subsistence harvests and cash earnings to other potential destination communities, based on that individual’s characteristics and the other communities’ place characteristics. The U.S. Census contains no information on subsistence harvesting, so we used the equation for subsistence harvests estimated from the Alaska SLiCA microdata to project harvests for the Census survey population in arctic communities, projected with the Census individual and household characteristics. Subsistence harvests for Inuit who left the Arctic were

assumed to be zero in both the U.S. and Canada. A separate set of equations for earnings for the Alaska population was estimated from individual earnings reported in the Census survey. Details of the earnings equations are reported in Howe et al. (2012).

Place characteristics assumed relevant to moving decisions but not to livelihoods included measures of census-derived housing quality, public safety, and moving costs. Since many remote communities have spotty crime reports, we used injury death rates and whether the community banned alcohol (dry community) to measure public safety. Moving costs for Canadian communities included whether the community had jet service, whether it was linked to the origin community by a winter ice road (three communities in the Inuvialuit region), and the number of air segments required to travel from the origin to the destination community. For Alaska, the centralization of air service from Anchorage to regional centers to villages meant that whether the community was an arctic village, regional center, or urban center in practice determined jet service and air segments.

The precise specification of the estimated equations, estimation procedure, and complete estimation results are described in Berman and Howe (2012). Here we summarize the equations and interpret the results in the context of remoteness. Figure 8 illustrates the statistically significant associations and direction of the effects. The top rows show the significant variables explaining the choice of whether to move, while the bottom rows show the significant variables explaining the destination choice for the subset of the population who actually moved. Alaska results were estimated for Alaska Natives who in 1995 resided in an arctic village: a community located in one of the three predominantly Inupiaq Census Areas with population less than 1,000. Because of a relatively small sample size (708 cases), the destination choice was modeled as a selection among six regions: (1) another arctic village, (2) one of the three arctic regional centers (Nome, Kotzebue, Barrow) with population from 1,000-5,000, (3) rural Alaska outside the arctic region, (4) Anchorage, (5) other urban Alaska communities such as Fairbanks or Juneau, and (6) another U.S. state. The Canada results included Inuit respondents to APS who reported the place of residence in 1996. With the much larger sample in Canada (4802 cases), the destination choice was modeled as a selection from a choice set of 59 destinations: 53 arctic Inuit communities,¹³ the non-Inuit arctic region (Yukon Territory and the Northwest Ter-

13) The 53 places include all communities in the Inuit regions of Canada except Hopedale, Labrador, for which no 2001 APS data were collected.

ritory excluding the Inuvialuit settlement area), and five southern regions representing aggregations of Ca-

nadian provinces (Maritimes, Quebec, Ontario, Manitoba-Saskatchewan, and British-Columbia-Alberta).

Figure 8. Statistically Significant Associations in Mobility Patterns of Canada and Alaska Inuit

	Arctic Canada	Arctic Alaska
Equation for likelihood of moving		
Older adult	-	-
Female respondent		+
Children at home		-
Inuit language used at home		-
Pct old housing in community	+	
Pct new housing in community		-
“Inclusive value” of destinations	+	+
Equation for predicted destination		
Predicted earnings	+	+
Predicted harvest	+	+
Poor housing	-	
Cost of living		-
Number of air segments	-	
Jet service connection	+	
Winter iceroad connection	+	
Move up one level	+	+
Move down one level	+	+

+ (red background) -- Indicates statistically significant positive association with decision to move or with predicted destination if a move took place.

- (blue background) -- Indicates statistically significant negative association with decision to move or with predicted destination if a move took place.

Mobility for Canada Inuit is over the period 1996-2001; mobility for Alaska is from 1995-2000. Source: estimated with individual interview data from Canada Aboriginal Peoples Survey (2001), 2001 Canada Census, 2000 U.S. Census, and Survey of Living Conditions in the Arctic.

Figure 8 shows that livelihood opportunities -- both predicted subsistence harvests and predicted earnings -- were significantly associated with the choice of destination. A community with \$1,000 higher predicted earnings had a 7 percent higher odds ratio of being selected as a destination, in both regions. An increase by 10 percent in predicted household harvests in a community was associated with an increased destination odds ratio of 33 percent in Alaska and 10 percent in Canada. Higher living costs were a strong deterrent to migrants in Alaska, where a 10 percent rise in the fuel cost index was associated with a 15 percent lower odds ratio of selection. In Canada, the cost of living, represented by the food cost index, did not have a significant effect. However, food costs were highly correlated with the combined effects of other remoteness variables with significant effects: arctic region and jet service. When the equation was estimated without these two variables, the coefficient for the food cost index became a significant deterrent.

In Canada, indicators of lower moving costs -- jet service, and a winter iceroad connection -- showed strong positive effects on the choice of destinations, while the number of air segments between the origin and destination had a strong negative effect. A community with jet service from the origin had a 90 percent higher odds ratio of being selected, while the iceroad connection was associated with a three-fold increase in the odds ratio for the three Inuvialuit communities served by the winter road. Each air segment required to reach a community reduced its odds ratio of selection by 48 percent. The variables for one step up or down the hierarchy refer to the transportation tree (Figure 1), in which regional hubs lie between southern urban destinations and more remote communities. Residents of remote communities can move one step up the hierarchy to a hub, while non-arctic residents can move one step down to an arctic hub. Residents of hub communities such as Iqaluit, Rankin Inlet, and Inuvik, can move both up and down the hierarchy. Quantitatively, the effects on the probability of choosing a particular destination of moving one step up or one step down were roughly equivalent and large enough to offset the negative effects of several additional air segments, providing strong statistical support for the stepping stones migration hypothesis.

The results illustrated in the top rows of Figure 8 show that the quality of the housing stock in the community of residence significantly influenced the decision to leave the community, consistent with the findings for migration intent. For Alaska communities, an increase by one percent in housing less than 5 years old reduced the odds ratio of moving by 6.6 percent.

In Canada, an increase by one percent in housing considered "dilapidated" in the community was associated with a 6.3 percent greater odds ratio of leaving. The coefficient on the inclusive value, or dissimilarity index, was positive and significant for residents of both countries, suggesting that a more favorable set of destination choices available to an individual encouraged migration. Remoteness, whether measured indirectly by the cost of fuel (Alaska), or directly by geography and characteristics of the transportation system (Canada) is the main feature that distinguishes communities from each other, since they share the same set of potential destinations. The results strongly suggest, therefore, that remoteness affects the likelihood that people move as well as the places to which migrants move.

While the equations for Canada and Alaska showed many similarities with respect to the effect of livelihood opportunities and place characteristics on mobility, there appeared to be no general pattern for the effects of individual and household characteristics. The exception was that older persons were less mobile in both regions: the odds ratio of moving was 52 % lower for each elder in an Alaska household, while in Canada an individual elder had a 65 % lower odds ratio of moving compared to a young adult. Women without children or elders at home had a 51 percent higher odds ratio of moving in Alaska, but not in Canada. The higher odds ratio for women was nullified if children lived in the household. Inuit language speakers had a 60 percent lower odds ratio of moving in Alaska, but this variable had no significant effect in Canada.

Discussion

Before air travel became common, people moved in and out of Alaska by boat, with many coastal communities, including Nome, Seward, Valdez, Kodiak, and several towns in Southeast Alaska competing as gateway communities. When long-distance air travel became feasible after World War II, Anchorage quickly became the primary gateway for travel between Alaska and other states of the U.S., presumably because the location was much more favorable for flying than the older coastal port communities, and because it was much closer to Seattle than Fairbanks. Status as the air gateway to the south quickly positioned Anchorage to become the air transport hub for the entire state, including the arctic areas, and the regional administrative centers -- Nome, Barrow, Kotzebue, and Bethel -- became linked to Anchorage in the air transportation network rather than to each other. Consequently, Alaska Natives from around Alaska meet and assemble in

the Anchorage hub, creating a rapidly growing subarctic urban population.

In contrast, the independent north-south links created by the government of Canada for colonial administration of the territories persisted into the era of long-distance air travel. Lack of a subarctic hub (notwithstanding the status of Yellowknife as a hub for a small portion of the western arctic) resulted in a much longer and more expensive journey between small villages and the nearest urban area, as well as from one region of the Canadian Arctic to another. The constructed remoteness of Canadian arctic communities inhibits Inuit mobility across the Arctic and has likely substantially impeded urbanization of Canadian arctic people. The evolution of air transportation networks in Greenland follows a different pattern from that of arctic Canada, but with a similar effect to increase remoteness of communities from each other. Kangerlussuaq, the main gateway to and from Greenland and one of only two runways large enough to accommodate intercontinental jets, was built to suit military needs where the terrain and weather were favorable, far from any established community. The remoteness of Kangerlussuaq has prevented it from becoming more than a transfer station for internal and international flights. The cost of travel between most communities in Greenland remains very high, likely diverting migrants to the towns serving as local administrative centers.

Conclusion

The evidence from our statistical analysis of place-to-place moves for Inuit people in arctic Canada and Alaska, and of migration intent of indigenous people in these regions plus Greenland, suggests that government policies adopted to mitigate remoteness of arctic settlements have had unintended consequences on urbanization. In many cases, the legacy of national colonial development policies for arctic regions lives on through effects on contemporary patterns of mobility and resettlement. Transportation networks implemented decades ago to facilitate colonial administration of the northern territories constructed degrees of relative proximity and remoteness of arctic communities, thereby creating a path-dependent dynamic for population movement in each region. In particular, development of arctic regional administrative centers with a local hub and spoke air travel system created stepping stones in a hierarchy for moving between villages and more urban places. Other important factors we found to influence mobility patterns included housing quality, living cost, and public safety. All of these

factors are provided directly or heavily subsidized by governments: adverse conditions prevalent in certain communities could be considered evidence of political remoteness from the levers of power. The empirical evidence suggests that if arctic rural depopulation does take place, it too, like the creation of arctic urban centers, will be a consequence of public policies.

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20. Long-distance commuting (LDC) in the Russian North: understanding socio-economic impacts on host communities

Elena Vladimirovna Nuikina

Abstract

Today well-being of the Russian state and its population heavily depend on the export of mineral products, including metals, industrial minerals, and mineral fuels accounted for 70 percent of export values in 2005 (Levine and Wallace 2007). Overwhelmingly these resources come from the places often located at the sparsely populated northern periphery. The national interest in the income-generating Arctic resources increased considerably (substantially) over the last decades, which has resulted in the numerous projects such as, for example, industrial development of the Yamal gas fields. Success of these development projects fundamentally depends on the interregional workers traveling to the Arctic on a “fly-in fly-out” principle and the northern cities, which provide necessary conditions for the far-field operations in the region. These settlements use existing infrastructure and facilities for hosting long-distance commuters on the way to duty and supply industrial sites with food, construction materials, machinery and equipment, medical services, etc. Meanwhile, the impact of the LDC on socio-economic well-being and community life of the northern cities in Russia is very little researched.

In order to fill the gap in research, this article particularly aims to analyze the social and economic effects of LDC in the Russian far northern settlements. Empirical background for the paper is presented by the case study of the city of Vorkuta located in the Republic of Komi in North-West part of the Russian Federa-

tion. Being established as a mining outpost supplying coking coal for metal industry, it currently experiences new phenomena related to the inflow of mobile labour force coming to the place from all over Russia and the CIS countries for constructing gas export pipeline “Bovanenkovo-Ukhta”. Appearance of the new economic players, involved in this massive infrastructural project in the Vorkuta region, as well as influx of long-distance commuters to the area in various ways affects its socio-economic well-being as well as community life in general. On the one hand, it stimulates development of small and medium businesses in the city, especially in the hospitality sector and service economy. It also influences the real estate sector, creates greater diversification of labour market and provides an additional income for the municipal budget. On the other hand, LDC is perceived as a threat to existing order in the community and to the employment opportunities for the local specialists. It also changes the identity of the city from solely mono industrial mining settlement into a transit station.

The article particularly emphasizes how residents of host communities, such as Vorkuta, perceive LDC and the changes it brings to the city. It also intends to capture the perspective of companies as well as of municipal policy planners towards LDC. By bringing these two perspectives into the light, this paper contributes to a broader discussion on the perspectives and the challenges on cities’ development in the Russian Arctic with the new perspective.

21. Oil and Gas towns in Western Siberia: past, present and future challenges

Yvette Vaguet

Introduction

Western Siberia, lying mainly in a permafrost area, has been urbanised for two decades or thereabouts. Russia has had the most notable experience of urbanisation within the circumpolar zone and the landscape bears the most consummate signs of this experience in the region.

Oil extraction constitutes the major determinant of this urbanisation. The Ob' region is one of the biggest oil and gas basins in the world, and contributes up to 68 % of the national production of oil and 91 % of gas. Thanks to Western Siberia, Russia is the first gas producer in the world, and the second for oil. This exploitation started in 1964. During the Soviet era, the development of the oil/gas industry came with the spread of modern society northwards within the almost uninhabited taiga first, and the tundra later, as far as the Yamal peninsula along the coast of the Arctic Ocean. When the USSR collapsed less than 30 years later, 23 out of 28 towns had been created ex-nihilo and were associated with considerable in-migration. Building human residential and industrial infrastructure on this scale and at this pace within such a harsh natural environment, almost without any permanent human settlement nearby, was a challenge in itself. Town and country planning currently have new challenges to face.

One can wonder if these urban centres were actual towns rather than just short-term settlements. The current debate concerns the future of these towns: whether they can survive beyond the peak oil or even earlier by flooding of the marshy Ob' basin due to global warming and its associated melting permafrost. However,

what lies in the future could also be a flourishing economy with the prospect of oil-and-gas development northwards to the Arctic Ocean. Awaiting a response, the region still presents a positive migration balance and nowadays Western Siberian towns are trying to diversify their economic profile. Municipalities are also trying to improve the quality of life in order to retain, if not attract, inhabitants, especially the more highly skilled. Moreover, here and there in these towns, there are evident signs of gentrification, with the spread of the detached house model, as in many parts of the world.

To sum up, upcoming challenges question the resilience of this urban geographical system. The answer is not as easy as it might appear. This article introduces the complexity of the subject. Because of its unique 50-year experience, Western Siberia is a key area when considering urban development in the Arctic.

1. Past challenges: Building an urban system on the edge

The study area in this article covers three constituent entities of the Russian Federation. It includes two producing territories, namely the Autonomous Okrug of Khanty-Mansi (mostly oil producing), and towards the north, the Autonomous Okrug of Yamalo-Nenets along the Arctic Ocean coastline (mostly gas producing). It also includes the southern Oblast of Tyumen, which is not hydrocarbon producing itself but has administrative functions (fig. 1). The whole study region is 70 % the size of Greenland.

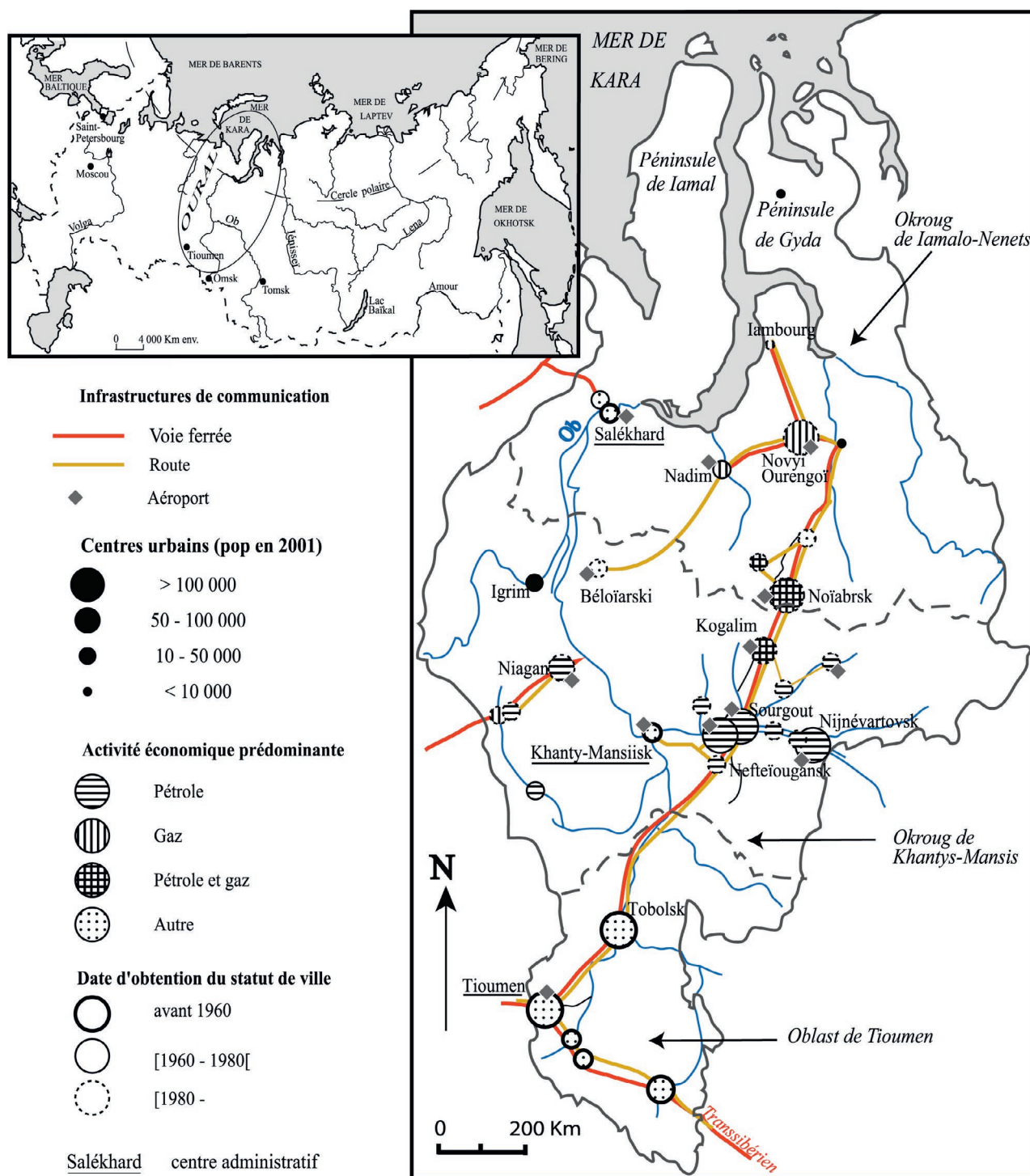


Figure 1: Western Siberia, its oil and gas towns

The development of industry started in 1964 at the Samatlor oil field near the future town of Surgut (61°15'N). This was the beginning of a fantastic human adventure, which was also, one should note, an environmental disaster. From the start, modern society, both urban and industrial, was to be found in the south, mostly along the Trans-Siberian Railway. Meanwhile, the two huge northern Okrugs were the territory of indigenous peoples (the Khanty, Mansi and Nenets). Their main sub-

sistence came from hunting, fishing, gathering and reindeer herding, as it still does today. Their territory was structured by rivers. There was neither major road nor airport, and their administrative centres (Khanty-Mansiysk (61°00'N) and Salekhard (66°32'N)) resembled fishing villages.

This economic transition brought not only industrialisation and urbanisation but also a rotation of the main regional strategic axis: from the east-west Trans-

Siberian, it developed northwards towards the Arctic. New hydrocarbon fields progressively opened up in these environments, which were increasingly difficult for humans and human activities. In the mid-1960s, the first oil pipelines were laid in the middle of the Ob River in marshy areas, in the discontinuous permafrost and an active 80 cm thick layer. In the late 1980s, the Urengoi gas basin opened up in an area where permafrost is up to 400 m thick and contains up to 50 % of ice. It produces more gas than all the European countries put together. Its associated town, Novy-Urengoi (66°05'N), is one of the biggest cities within the polar region (pop.≈100 000). Northwards, more recent gas fields extend across the continuous permafrost area, up to 500 m thick and containing up to 90 % of ice. Since 2000, a gas pipeline has connected the Yamal peninsula to Western Europe.

In-migration was high and directed towards the two northern Okrugs. The regional population increased from 1.1 million in 1959 to 5.2 million in 2002. In-migration reduced the gap between North and South

in many ways. First, numerically speaking, the picture of an empty Okrug was no longer a reality. If 83 % of Western Siberia's population were to be found in the southern Oblast of Tyumen in 1959, the northern two Okrugs had 57 % of the regional population by 1989. Secondly, in qualitative terms, the image of an urban and industrial Russian society in the southern part alongside a nomadic and rural indigenous society in the northern part is no longer true either (Zaitseva A.N., 2002; Vaguet-Marchand Yv., 2004; Vaguet Y., 2007). Out of the 28 towns, 23 are new, created for the needs of the economic transition. Among those, 21 were created within the northern two Okrugs that registered the biggest urban increases within the country for half a century (fig. 2). Their population became urban (>77 %). Moreover, the new population came from all over the USSR and was unrelated to indigenous peoples, their lifestyle and arctic environment. Meanwhile, a complex transport network emerged with a major north-south railway, a main north-south road and airports in every town.

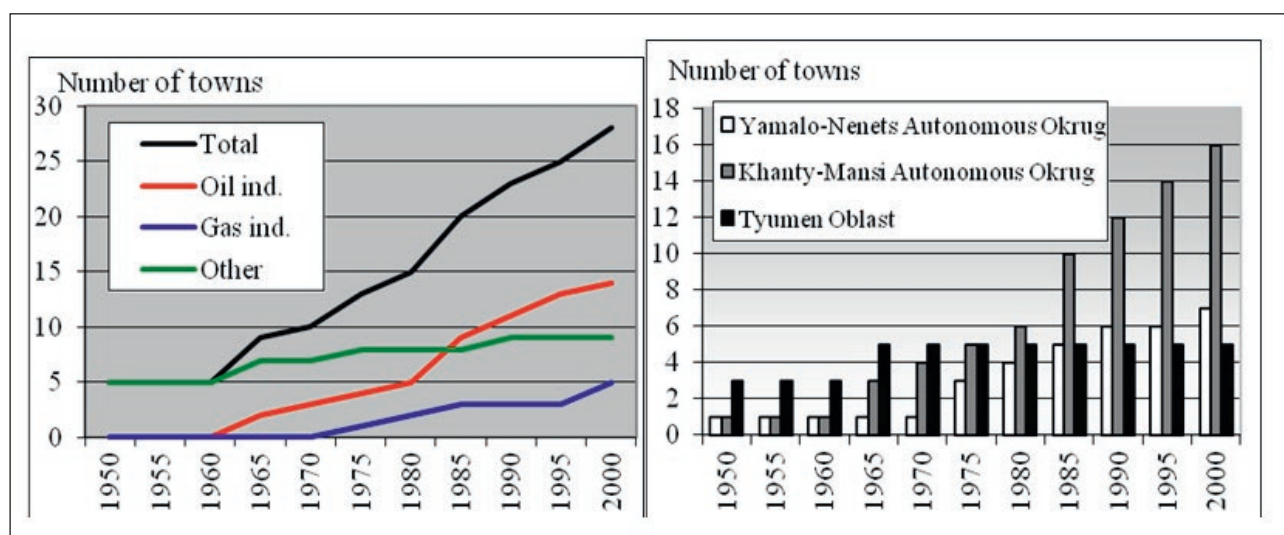


Figure 2: The urban transition (database: SiberCities ©Yv. Vaguet)

Apart from towns, there are other kinds of settlements that were introduced by the economic transition. In order to get an official town status, an urban centre needs to apply for this status from the government when its population is greater than 12,000 inhabitants. While there are 28 urban centres with town status, there are also about 40 urban settlements without this official status. They have all arisen since the mid-1960s for the needs of the economic transition; they are gas plant or road maintenance facility centres, etc. Besides these, long distance commuter settlements should also be mentioned. They are small outposts in the taiga or tundra where oil and gas shift-workers come to work for a

month or so, before going back home. Workers arrive mainly by air in the nearest town and the company picks them up at the airport by bus and drives them straight to the base. Thus, the town of Noyabrsk (63°12'N) for instance, had up to 10 % of its population employed as shift-workers, which is to say about 10,000 in 1991.

In this process of industrialisation and urbanisation of Western Siberia, the creation of a settlement follows a model. First, prospectors arrive and if hydrocarbons are found, human settlement starts. Newcomers are mostly young men (20-30 years old) and possessing few skills. They build all the required human infrastruc-

ture (roads, pipelines, industrial plants, houses, etc.). Shortly afterwards, women arrive and the settlement registers a baby boom. Meanwhile the building stage is still ongoing. Finally, skilled and white collar workers arrive to run the industry. During this process, priority is given to the industrial production. Social infrastructure is always under-developed and the need for housing prevalent. Thus, there is never an end to the housing construction process. Finally, the increase in the population slows down owing to the natural growth rate rather than the migration balance.

The population of Western Siberia is consequently young (median: 32.3 years). Newcomers are mostly single, from 20 to 30 years old, and childless. There is mostly an absence of elderly people except in the case of family reunifications. Men are over-represented (up to 113 men to 100 women). This fact is common in all frontier areas around the world, but this particularity occurs here in a country that has the lowest sex ratio in the world (88 men to 100 women). Nowadays, this demographic increase is still high (+10 % between 1989 and 2002). This results from a natural increase, among the highest in the country, as well as from a migration balance which is still positive. It is unique in Northern

Russia, which registered dramatic out-migration during the 1990s.

The city of Noyabrsk is a good example of this process. In 1973, oil flows and the first pioneers arrived. To start off with, people and material arrived by helicopter. The population suddenly soared when, a year later, the first train arrived at Noyabrsk from Surgut in the south. The latter city was the base town during the emergence of the new Noyabrsk settlement. Surgut was already an established settlement and provided the logistics for the new northward settlement. Every year, more than 15,000 people arrived in Noyabrsk. The rate of population increase culminated in 1977-78 with a mighty +224 %. The baby boom appeared in the 1980s with a maximum in 1987. Noyabrsk obtained the status of a city in 1982. Nowadays, the town maintains a population of about 100,000 residents, and the annual increase is due mostly to the natural growth rate. The town's population presents an average age of 26 years and elderly people are almost absent. On the 1999 age pyramid, the limited number of inhabitants aged 15-20 years marks the time of the first arrivals without children. The wide base of this pyramid marks the baby boom period (fig. 3).

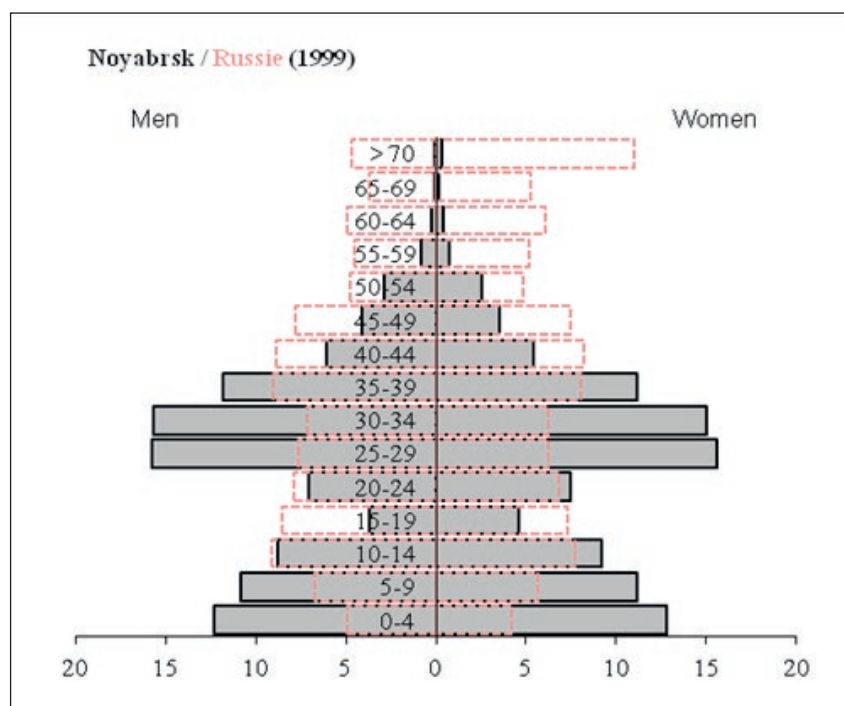


Figure 3: Age pyramid of Noyabrsk (database: SiberCities ©Yv. Vaguet)

Noyabrsk became a supporting city in its own right for Muravlenko and other new settlements. Western Siberia illustrates the Soviet policy of industrialisation and urbanisation during the period from 1955-1975. The process directed entirely by Moscow developed towards the north. The concept of supporting city is well

documented (Engel B., 2007; Gavrilova N.O., 1997; Radvanyi J., 2000).

A new identity of Western Siberia emerged in this transition period. Economically, the region was far behind central Russia, like the whole of Asian Russia. Nowadays, the region resembles a “Siberian emirate”

ranking in the top ten richest provinces of the Russian Federation, often just below the central regions (Moscow and St Petersburg) according to economic indicators (Direct Foreign Investment, Regional Gross Product). Although the high cost of living greatly outweighs high salaries, and the lack of housing leads to further disillusionment, the region is still attractive. It has gained an image of a rich, dynamic territory with real economic forces and young people showing entrepreneurship. However, the Soviet policy of regional planning has now been over for decades and all these towns face new challenges for the future.

2. Present and future challenges: Becoming a sustainable town

Filling up the tank of your car at a petrol station would cost far more than it would had the USSR not conducted this incredible challenge of populating the Arctic and Subarctic Western Siberia. The urban system of Western Siberia might therefore not have been in a market economy. Some settlements were still sustaining rapid growth when the USSR collapsed and the growth process stopped at this point. The Soviet government encouraged the development of small cities all over the national territory and hundreds of cities were created. Nowadays, the Russian government no longer

supports territorial equity and goes rather for supporting the development of regional metropolitan centres. The decade of the 1990s presented a multi-faceted crisis (political, economic, demographic and social) that had a greater impact in the northern part of the country. People were more exposed to the crisis when they lived in a single industry town in the remote north. Many settlements emptied as people went back to the central parts of Russia. Thanks partially to huge oil and gas consumption in the world, Western Siberia is well known as an exception within circumpolar Russia. Its 2002 census shows a healthy demographic situation, increasing its population both by natural growth and a migration balance. However, one of the main challenges for the future facing these new towns is sustaining themselves beyond the peak oil.

The price of a barrel of oil has to remain high in order to cover the costs of extraction in such a harsh environment (\$14/barrel compared to \$4 in Kuwait and The United States). Every year, depending on the production, reserves and the price of oil, these towns are threatened with closure. Looking at both hydrocarbon production and population over time illustrates how much town and industry are linked together (fig. 4). Noyabrsk is associated with an oil field estimated to last 50 years and it has been exploited for 40 years now.

Nevertheless, oil and gas will continue to support

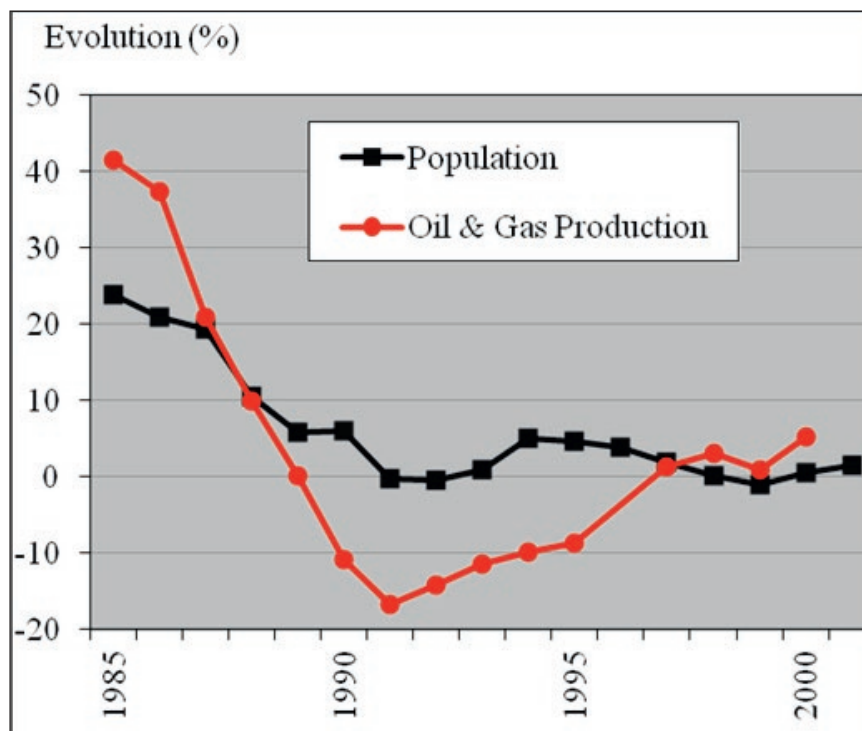


Figure 4: Population and Oil/Gas Production in Noyabrsk & Muravlenko (1985-2001) (database: SiberCities ©Yv. Vaguet)

the development of Western Siberia for some time and one can be optimistic when thinking about what West-

ern Siberia will look like in 2050 (Smith L.C., 2011). Reserves are vast especially over the continental shelf

(more than 18,000 billion m³ of gas for the Siberian part). Nowadays, the oil and gas sector contributes up to 23 % GDP in the circumpolar zone. As producers, the combined two Okrugs of Western Siberia and Alaska are among the top four strongest circumpolar economies. Together with the Republic of Sakha (Russia), these four regions provide 60 % GDP in the circumpolar zone (AMAP, 2007).

Towns in Western Siberia would benefit from ongoing developments of the industry, moving northwards into offshore extraction and transportation. Already, there is a very large-scale project in view for the Yamal peninsula. It includes building a gas processing plant, a seaport and an international airport. The new port is planned for 2018. Russia's Minister of Transport, Maxim Sokolov, says: "For Russia, this project will [...] change the very position of Russia in the world's economy. This project will make Russia one of the leaders in developing the natural riches of the Arctic region." (The Voice of Russia, 2012). Global warming could help in this way especially with increasing shipping in the Arctic.

In a less optimistic point of view, global warming could lead to higher frequency of icebergs, a danger for extraction and shipping activities. Also, it could be responsible for sea and river flooding. It could also lead to the melting of permafrost, especially the newest, thinnest and most discontinuous parts that coincide with the oldest human installations. Therefore, oil and gas fields and towns of the low, marshy Ob' basin could end up under sea level or river water or otherwise could disappear due to subsidence from the effect of permafrost melting. Some authors have already registered several indicators of climate change in this region (Grebenuk G. N. & Rjansky F. N., 2006). Human activity has to cope with a fast changing environment.

The diversification of the local economy is another challenge. Indeed, Western Siberian towns, like many Soviet cities, are mainly mono-industrial and linked to the military sector (Lyubovnyi V.Y. & Pchelintsev O.S., 2006). Worse, some towns are mainly company-owned, therefore raising the question of the definition of a town. All 23 new towns were created ex-nihilo in response to the needs of the industry. Very few of them are not directly oil or gas producing centres. All of them struggle with economic diversification and see hardly any positive results especially for the most recent towns close to the Arctic Circle. For instance, Novy-Urengoi was created 35 years ago and has a population nowadays of approximately 100,000 inhabitants. Gazprom, the biggest gas company in the world, employs up to 70 % of its population. Thus Novy-Urengoi is often called a Gazprom-town. Its residents have the advantage of

living off and being employed by the first Russian company. The company is more or less in charge of many key sectors such as health, education, sport, transport, and the municipality authority is hardly independent. The economic market tends to push the company into reducing its support for the social aspects of the city's life and to concentrate its activity on extraction. However, the municipality has neither the budget nor the knowledge to tackle transport issues, for instance, such as road maintenance, the tremendous increase in cars, or the strange new forest of electric cables connecting indoor power sockets in flats to car batteries at the base of buildings.

Southwards, Surgut, on mid-river Ob, is a good example of the first generation of these towns. Created for the oil industry in the 1960s, the town still depends mainly on this sector. Out of its 320,000 inhabitants, 100,000 are employed in this sector and Surgutneftegaz employs 80,000 of them. The company largely supports local infrastructure such as the stadium as well as health and cultural centres. Considering its geographical position, at the southern part of the permafrost and along the Ob River, river flooding and permafrost melting threaten Surgut. As one of the oldest oil centres, the aging of industrial installations is also a matter of concern.

Between Novy-Urengoi and Surgut, Noyabrsk is a third example showing a typical intermediate case among these towns. Noyabrsk is two decades younger than Surgut and boasts 100,000 inhabitants. The town produces both oil and gas. The industrial installations are getting old here too where the climate is harsher. Moreover, the municipality is facing the aging and the depressed state of its population. People rarely settle for long. Out-migration has always been high. A survey conducted during Soviet times showed that residents of Yamalo-Nenets Okrug where Noyabrsk lies, tended to stay fewer than 5 years in the same place (Logunov E.V., 1999). In the survey conducted in 2003, the wish to leave was ever present among adults and town officials note that the highly educated classes leave (survey Vaguet Yv. 2003; Noyabrsk official web site). The urban population is not indigenous. Therefore it is not well adapted to the local Arctic environment and has no affective links with it. People are always ready to move on, looking for a better salary and living conditions. The regular announcements of the forthcoming closure of the urban centre by the municipality itself contribute to maintaining local pessimism.

However, across Western Siberia, as in Russia, if a municipality finds it difficult to conduct an urban plan, the urban landscape changes as the result of the inhabitants' response to the new world order. The retail sec-

tor is booming all over Russia, as well as in the Arctic region which goes to show that residents have become producers of their own urban space and are taking part in the economic diversification process. Concerning the residential function, the social mix of Soviet times is less and less the rule. Here and there, signs of gentrification can be noted. Some Soviet buildings have

been renovated, with private access and a guard at the entrance. Looking at both satellite images and on the ground, urbanisation is visibly spreading. At the town's periphery, the detached house model is spreading as it is in many parts of the world. The boom in cottages shows the upper class is ready to invest here.



Figure 5: *The changing urban space* (photographs: Y. Vaguet & A. Gaye)

In addition to the points mentioned above, it is important to bear in mind that young people feel at home and do not want to leave. They were born in these towns, which are now as old as them. If their parents play with the idea of going back south one day, the teenagers questioned do not share this desire (survey Vaguet Yv., 2003).

All the above challenges are of equal importance when questioning the ability of these towns to remain alive. It is now a question of inventing a sustainable town in an extreme environment. From this study, it is obvious that a young, talented, adaptable and entrepreneurial population is present in this region.

Conclusion

Western Siberia is exceptional, being one of the most important regions for oil and the biggest for gas production in the world system. There are about 30 towns and 2/3 of them were created in connection with the

industry during Soviet times at a rapid pace in an extremely harsh environment for humans and human installations. This urban network would probably not have been created in Western Siberia if it had not been a communist country. However, these towns still attract workers and nobody can be sure that they will close one day. Global warming could be a positive factor locally though it could also announce natural and human disasters.

Because of its fifty-year experience, Western Siberia is a key area when considering urban development in the Arctic. The single-industry-, and sometimes the single-company-, economy is an often-shared characteristic of the (sub) Arctic urban centres. In addition, this trait is often an industry based on a non-renewable resource. The cost of extraction is always higher than at lower latitudes. The question of profitability is therefore more acute here. The diversification of the local economy can be difficult considering that it would imply fewer links between the major employer and the

municipality. What is important is to invent now and tomorrow a long-term town in an extreme environment. Once again, humans have to face a challenge in Western Siberia. The right demographic blend is an asset for these towns. Residents are tackling the debate: they are inventing new functions, transforming Soviet urban landscapes and creating new urban spaces on the periphery.

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22. Urban Greenland: A spatial analysis of Nuuk's evolving labour market

Michael J. Dangerfield

Abstract

Greenland's rise as a global indicator for climate change continues to attract recognition from the international community. Such attention has, in turn, highlighted the need for further research into the island's changing spatial, political and socio-economic trends. Furthermore, it has been argued that Greenland's urban spaces represent a potential focal point for the island's political and economic evolution, as well as its future capacity to become a resource frontier and shipping hub (Ackrén et al., 2011).

Greenland, and specifically the population of Nuuk, present an unique and important case both in terms of analysing an increasingly urbanised, indigenous population but also in the evolution of indigenous self-determination within a first world context (Abelsen, 2007).

It is within the context of arctic urbanisation that the role of the labour market, both international and domestic is highlighted as focus for this doctoral thesis (Fossland, 2012). The impact of the labour market on population diversity, distribution and structure as well as trade and foreign relations will continue to help shape the economic and political environment into which Greenlandic identity evolves (Dahl, 2010). In order to gain a better understanding into these processes, the doctoral thesis will examine the factors and trends exhibited by Nuuk's labour market and its interaction with the Greenlandic population. The research will place under scrutiny the challenges posed by balancing economic progress and service provision with urban social cohesion and mobility (Hansen, 2011).

The methods used will be interdisciplinary and consist of a combination of quantitative and qualitative approaches. Labour market data for each of the key districts of Nuuk will be correlated via a tailored regression model to differing dependent variables including;

origin of birth, gender, home ownership, educational attainment, and income. (Hamilton and Rasmussen, 2010; Hill and Wolman, 1997; University of Copenhagen, 2009). The results will then be mapped using GIS software and satellite imagery so as to highlight spatial trends and correlations across Nuuk.

A series of interviews will then be conducted with representatives from the Greenlandic government, employers and employees from Nuuk's private sector and the Greenlandic Workers Union or SIK (Salzman & Knapp, 2007). It is the intention that the thesis will help identify and contextualise key socio-economic trends in Nuuk's labour market, and in doing so, further contribute to a deeper understanding of indigenous and arctic urbanisation, income structures and social mobility (UN, 2008).

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23. New industry and changing demography in East Iceland

Hjalti Johannesson

Abstract

Inhabitants of East Iceland witnessed great changes during the first years of the new millenium. A large aluminium plant was built by Alcoa in the fjord Reyðarfjörður which has had much impact on the demography of the region and caused much challenge for the inhabitants and the local communities. There has been much population increase in the communities closest

to the aluminium plant the gender ratio has been a concern and high staff turnover and resulting migration to and from the region. Planning issues have been challenging as well as the transportation network of the region and this relates also to the development of the Icelandic economy in recent years. In the presentation the current demographic conditions and the main challenges for the region of East Iceland will be reviewed and discussed.

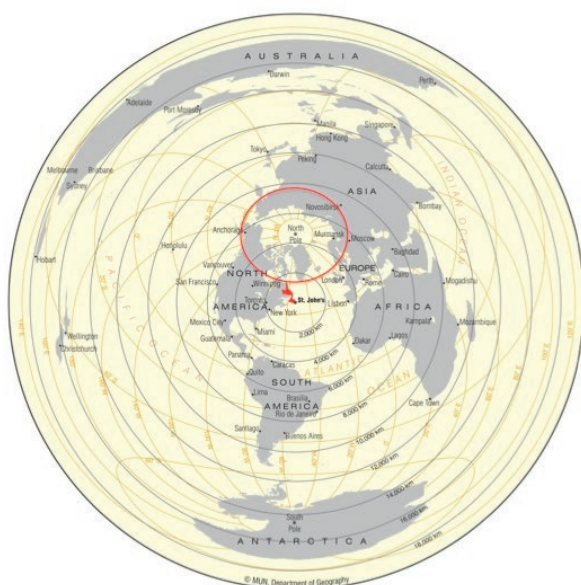
24. New industry and changing demography in Newfoundland and Labrador

Keith Storey

Introduction

This paper was originally presented at the “Urbanization in the Arctic” conference organized by Nordregio and held in Nuuk, Greenland in August 2012. Its focus is on the relationships between the changing demography and the changing economic structure of Newfoundland and Labrador, Canada. The purpose is to draw attention to some of the main challenges that these changes have presented, and indeed continue to present, to government, the private sector and rural communities in the Province. The approximate time frame considered here is the past and next 20 years (1992-2032).

Figure 1 – Newfoundland and Labrador and the Arctic



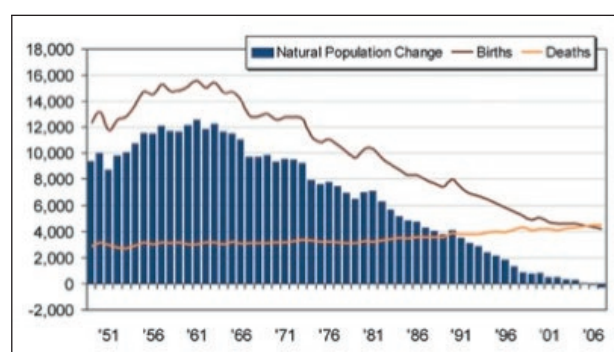
Source: Based on *The Newfoundland-centred World Map*, Department of Geography, Memorial University

The Canadian province of Newfoundland and Labrador (Figure 1) is south of 60 north and as such is not in the Arctic – the focus of the conference. However, its peripherality to the rest of Canada, its climate and the economic and social parallels suggest that there are urbanization-related experiences here, which may be relevant to some parts of the Arctic.

Demographic Change

In 1992 the total population of the province was estimated at 580,000, by 2011 it had declined to an estimated 514,600, a decrease of more than 11%. This has been the result of a steady decline in the annual number of births, a slow increase in the number of deaths (Figure 2) and high levels of out-migration (Figure 3).

Figure 2 – Natural population change, Newfoundland and Labrador 1951-2006



Source: Government of Newfoundland and Labrador, Dept. of Finance. <http://www.economics.gov.nl.ca/pdf2007/regionaldemographicprofiles.pdf>

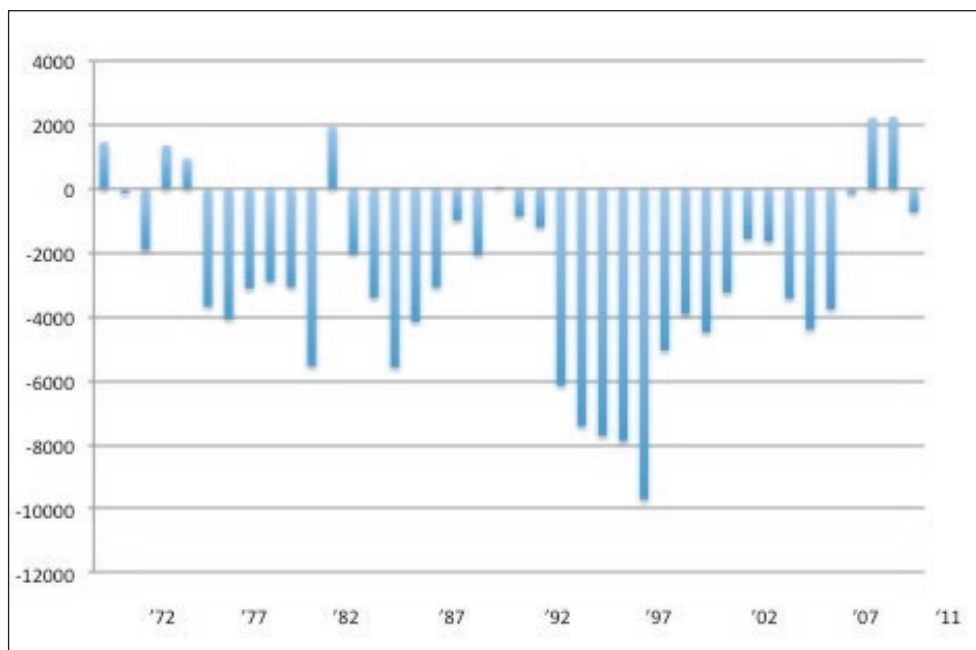


Figure 3 – Net Migration, Newfoundland and Labrador 1971-2011

Source: <http://www.stats.gov.nl.ca/Statistics/Population/PDF/Components.pdf>

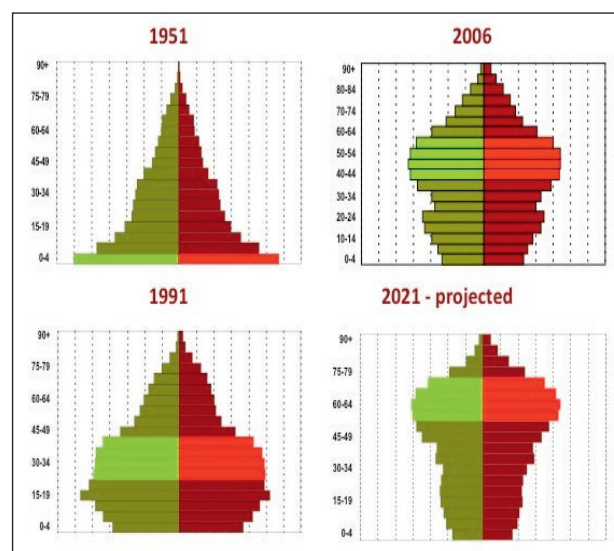
In 2006 the number of deaths began to exceed that of births. The high fertility rates experienced in the immediate post-War period ended in the early 1960s and the annual number of births declined steadily until 2008, since when there have been small increases in birth numbers. Whether these increases are directly attributable to the “progressive family growth benefit” program introduced by the Province in 2008¹⁴) (Newfoundland and Labrador 2008), and whether this pattern will continue, is not clear.

The main driver of population change has, however, been out-migration. Since the early 1990s there have only been two years (2009 and 2010) when net migration has been positive. Out-migration increased significantly following the federal government’s decision to impose a moratorium on the cod fishery in 1992 and subsequently on a number of other groundfish fisheries. While financial support and retraining opportunities were made available to displaced fishers and plant workers (Storey and Smith 1996), many people were forced to leave the Province in search of work elsewhere. More recently, in the middle years of the last decade, employment opportunities, particularly in Western Canada, saw another surge in out-migration. However, the recession of 2008 and a strengthening provincial economy have helped to reverse this pattern over the past four years.

These changes in birth, death and out-migration

components have had a dramatic effect on the age structure of the population (Figure 4). The Province now has an increasingly aged population – a characteristic that, notwithstanding the recent increase in the number of births and some in-migration, will likely be exacerbated through the remainder of the time frame under consideration.

Figure 4 – Age Structure, Newfoundland and Labrador, 1951-2021



Source: Statistics Canada and Department of Finance, Economics and Statistics Branch, 2006, Medium Scenario

¹⁴) This program designed to stimulate natural population growth in the Province provided \$1,000 for every child born or adopted, plus a parental support benefit of \$100 a month to parents for the first 12 months for each child.

Regionally the population is becoming increasingly concentrated. At present 95% of the population is on the Island of Newfoundland, with 37% of the total pop-

ulation in the St. John's Census Metropolitan Area (Figure 5). Few communities showed any growth between 2001 and 2006. Those that did were mainly those surrounding the St. John's CMA and along the Trans-Canada Highway, the main routeway across the prov-

ince. Many of these "highway" communities have been the recipients of migrants moving in from rural coastal communities and further evidence of this trend is expected to be seen in the 2011 census data.

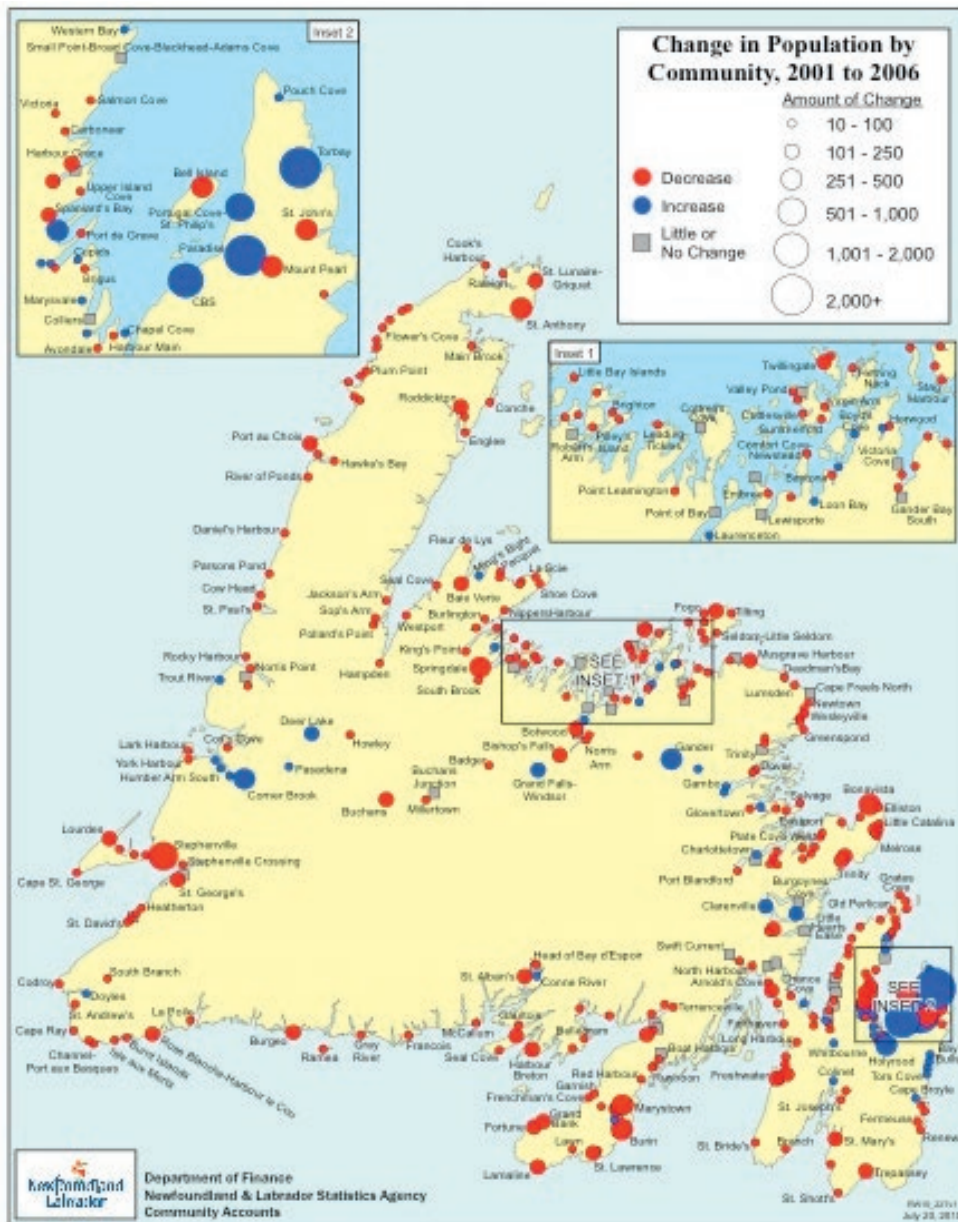


Figure 5 – Change in Population by Community, Newfoundland, 2001-2006

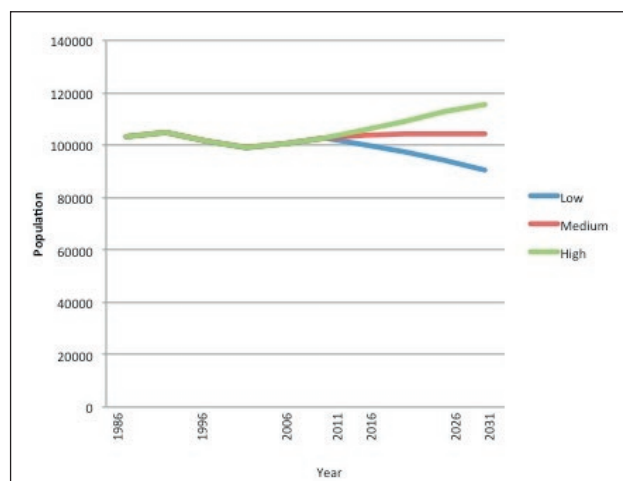
Source: http://www.communityaccounts.ca/SESA/nl_mapcentre/PopulationChange/Nfld0106.pdf

While the St. John's region is the largest urban agglomeration and the fastest growing area. The City itself has not grown much in the last 25 years and if the 'medium' projection for growth holds true will not grow much in the next 20 (Figure 6).

Labrador with 5 % of the provincial population

shows mainly decreases in community populations in the 2001-2006 period (Figure 7). However, the recent mining boom in Labrador West (Labrador City and Wabush) has resulted in at least temporary significant population growth in this area in the past three to five years.

Figure 6 – Population Projections, City of St. John's, Newfoundland and Labrador to 2031



Source: <http://www.stjohns.ca/sites/default/files/files/publication/CSJ%20Population%20Projections.pdf>

Innu and Inuit aboriginal populations in Labrador have been settled in permanent locations since the late 1950s. Innu are concentrated in two communities, Sheshatshiu in central Labrador and Natuashish in the north. Inuit are mainly found in the coastal communities from Nain to Rigolet on the north coast in Nunatsiavut and in Happy Valley- Goose Bay (see Figure 7). There are also approximately 6,000 NanataKavut (Metis) members who live mostly in central and southeast coast communities of Labrador.

While urban areas provide better access to employment opportunities and services for aboriginal people, at the same time separation from family, the community and the land can be difficult for many. Alcohol, drugs, family violence are all serious long-term issues in Labrador's aboriginal communities, but these are not exclusive to the larger urban areas.

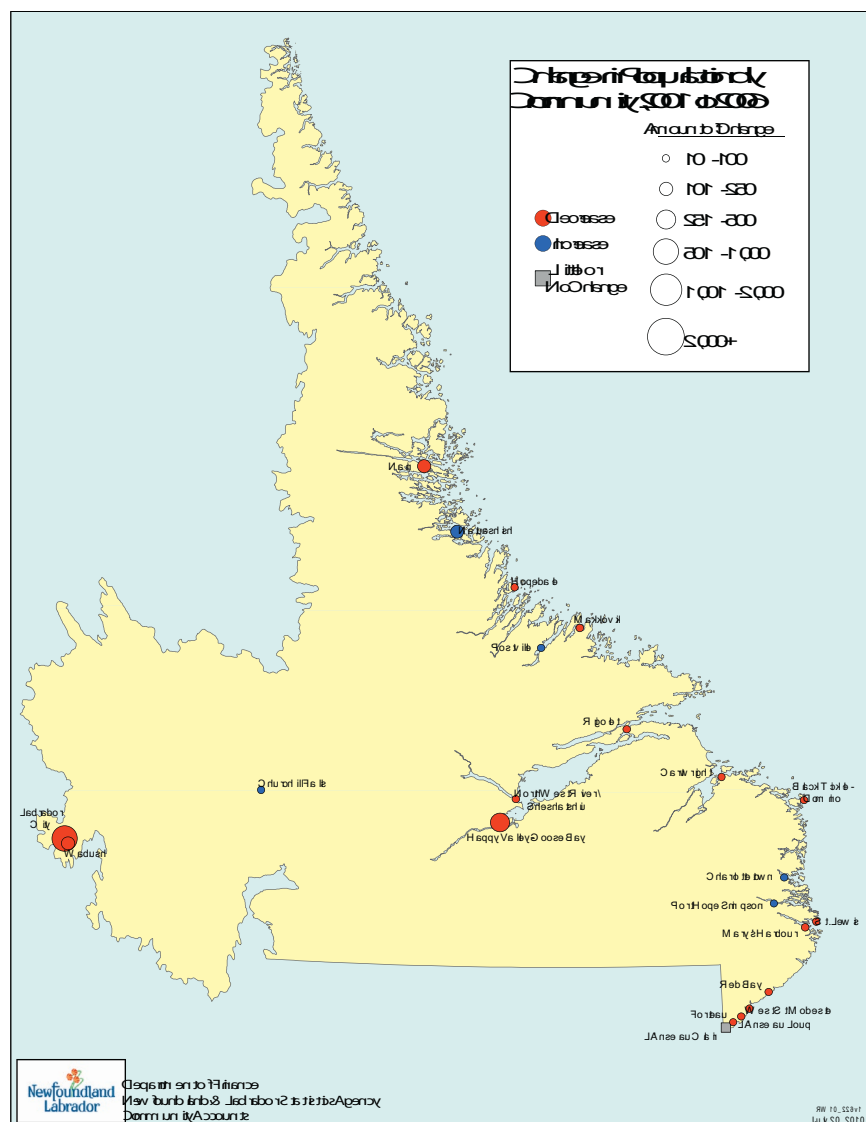


Figure 7 – Change in Population by Community, Labrador, 2001-2006

Source: http://www.communityaccounts.ca/SESA/nl_mapcentre/PopulationChange/Lab0106.pdf

Industrial Change

Once Canada's poorest province, the Newfoundland and Labrador economy has grown significantly in terms of GDP since the mid-1990s (Figure 8). Once a recipient of federal funds through the national regional equalization program and designated as a 'have-not' province, Newfoundland and Labrador is now considered, at least for the time being, as a 'have' province and no longer entitled to federal fund redistribution

Growth has been primarily driven by the petroleum and mining sectors and construction associated with the development of these resources (Figure 9).

In 2010 total GDP for Newfoundland and Labrador was \$26.3 billion, of this oil extraction accounted for over 30 % (Figure 10). In the goods producing sector mining is a distant second, at just under 9 % while the traditional resource sectors, harvesting and production in the fishery and forestry, account for only about 5% of provincial GDP.

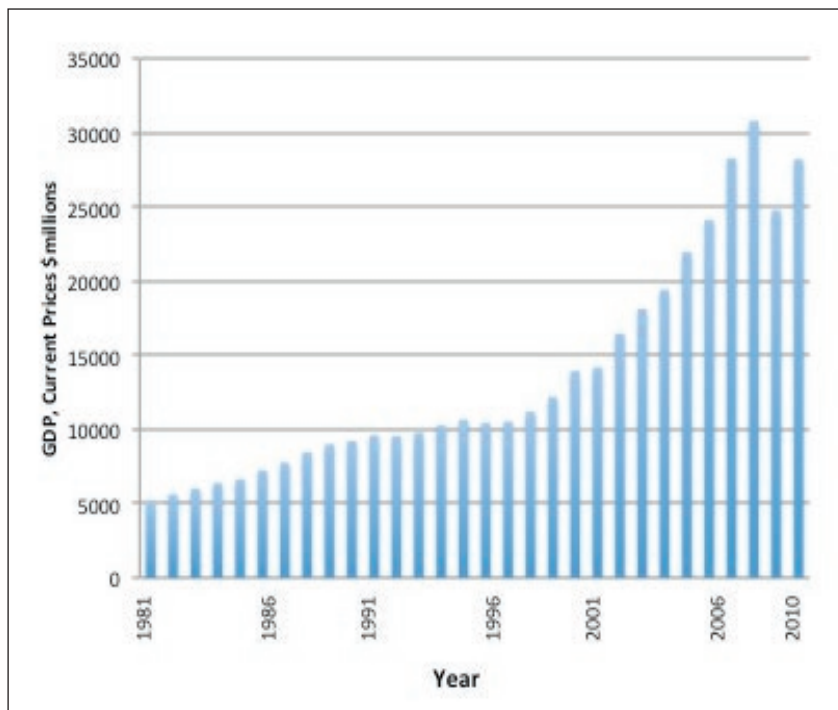


Figure 8 – GDP at Current Prices, Newfoundland and Labrador 1981-2010

Source: http://www.stats.gov.nl.ca/Statistics/GDP/PDF/GDP_Current_Prices.pdf

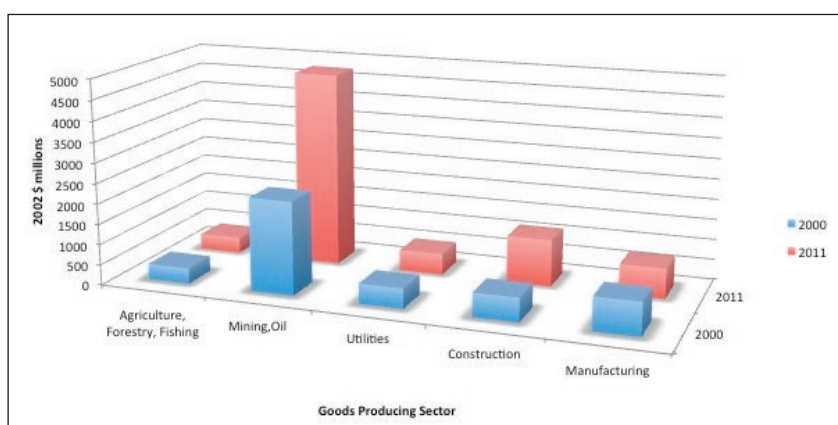
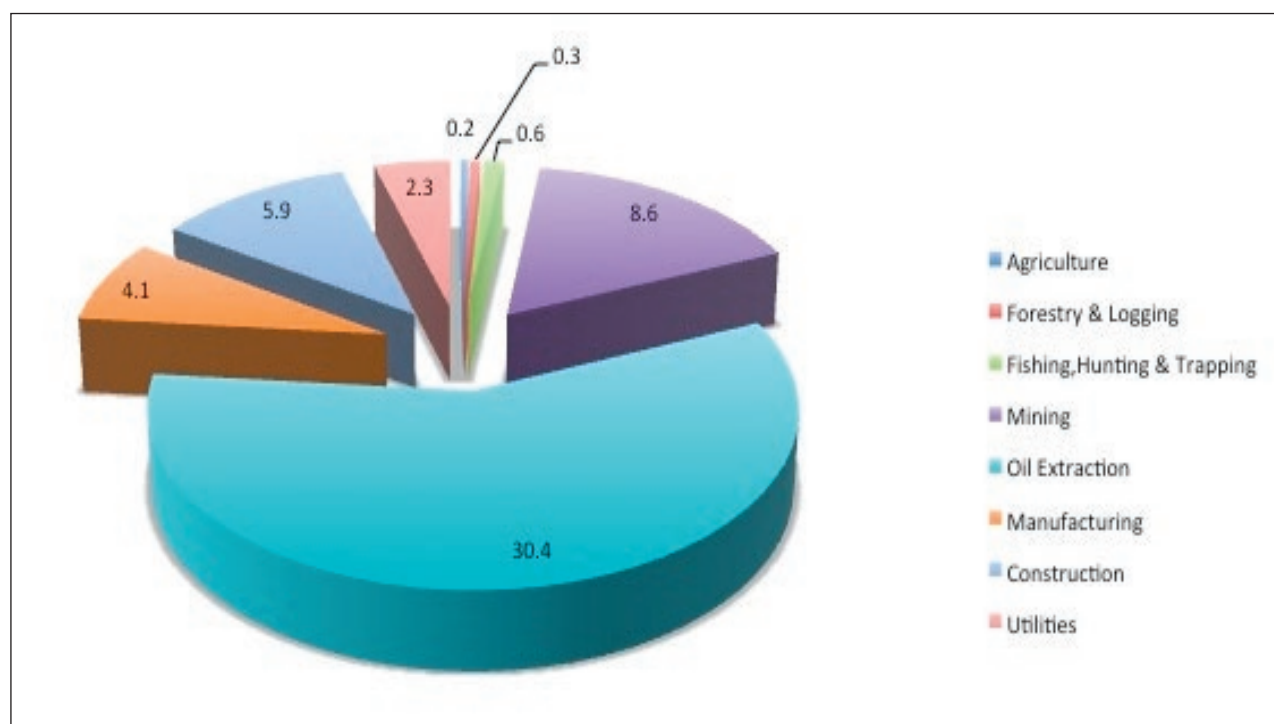


Figure 9 – GDP, Goods Producing Sector, Newfoundland and Labrador, 2000, 2011

Source: Based on http://www.stats.gov.nl.ca/Statistics/GDP/PDF/GDP_Industry.pdf

Figure 10 – Percentage of GDP, Goods Producing Sector, Newfoundland and Labrador 2011

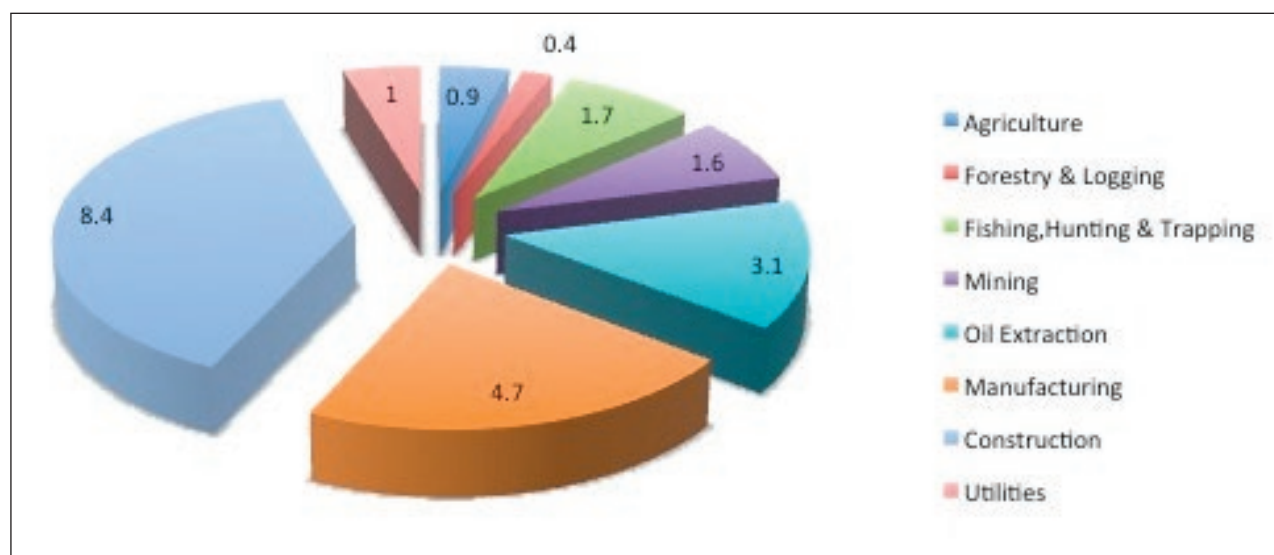


Source: NL, Dept. of Finance. *The Economy 2012*. <http://www.economics.gov.nl.ca/TheEconomy2012.asp>

At the same time oil and mining extraction, which are capital rather than labour intensive, account for less than 5 % of total employment (Figure 11). Manufactur-

ing, of which fish processing is the most important, accounts for just as large a share of employment.

Figure 11 – Percentage of Total Employment, Goods Producing Sector, Newfoundland and Labrador 2010



Source: NL, Dept. of Finance. *The Economy 2012*. <http://www.economics.gov.nl.ca/TheEconomy2012.asp>

Anticipated future growth is dominated by new resource projects. Of the total projected capital projects in 2012 (\$28 billion) three resource-related projects Hebron, Muskrat Falls, and the Long Harbour Nickel processing facility are expected to contribute \$18.1 billion (64 %) to the total (Figure 12). While much of the design phase and production administration of these

projects will be carried out in St. John's, construction and production activity associated with each of these projects will be in rural areas. Given the small labour forces in these areas, the implication is that the required number of workers will not be available locally and potentially not available provincially.

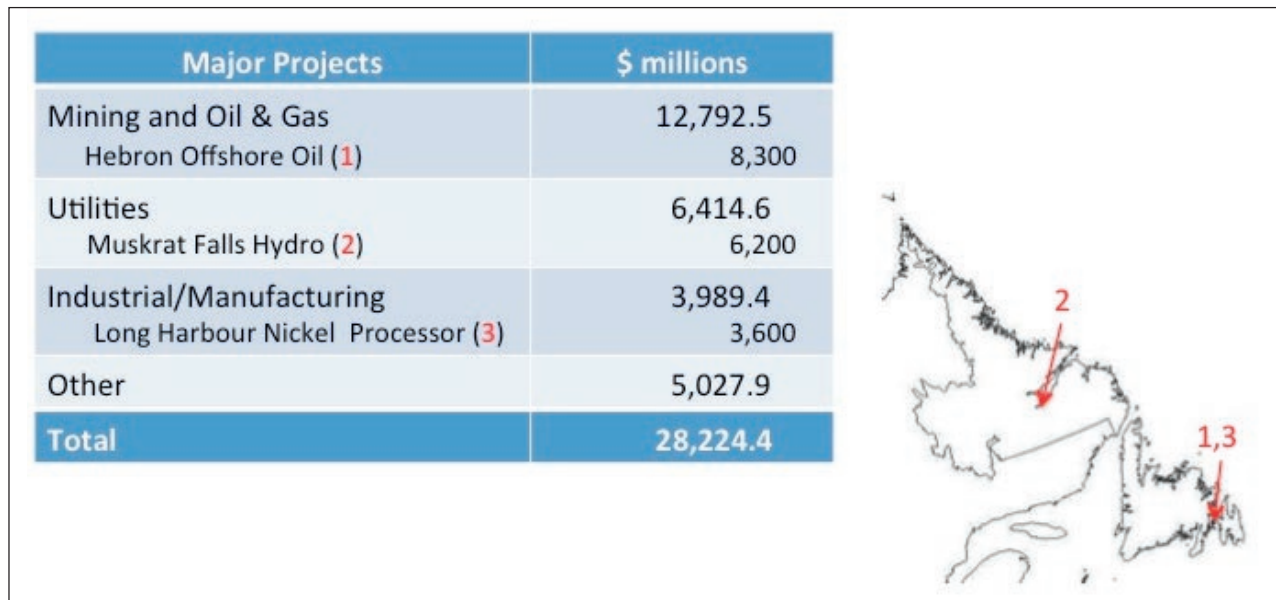


Figure 12 – Major Capital Projects, Newfoundland and Labrador, 2012

Source: NL, Dept. of Finance. *The Economy 2012*. <http://www.economics.gov.nl.ca/TheEconomy2012.asp>

Implications

The Newfoundland and Labrador economy is currently thriving like never before, albeit driven primarily by one activity, oil extraction. Dependency on a single resource raises issues of long-term economic stability given that there are few alternative sectors to fall back on that individually or in combination could generate comparable levels of GDP should oil revenues change. Diversification of the economy has long been a goal of Newfoundland and Labrador provincial governments, but beyond some encouraging developments in oil-related marine engineering activities, new sector developments have been limited and success with diversification can at best be described as fragile. Even though Newfoundland has a number of important oil projects, development of an oil industry in the Province is still in its infancy.

While the economy as a whole is thriving, most of the benefits have been concentrated in the St. John's metropolitan region. Here is the area with the single largest labour pool in the province, the offices of the

oil, mining and other major companies operating in the province, most of the province's industry service and support activity, and offices of both the provincial and federal governments.

In the rural areas depopulation and aging mean that there are skilled labour shortages even to meet local needs and per capita costs of providing infrastructure and services for those that remain are higher than in areas with greater populations. For those in the labour force in rural areas, occupational opportunities in traditional sectors such as the fishery and forestry are declining, and many older workers often do not have the education, skills or formal qualifications to find employment in other occupations. Overall unemployment rates, though they have decreased significantly in recent years, remain high relative to Canada as a whole (10.6 % [Newfoundland and Labrador 2012a]), while at the same time there is a shortage of skilled workers.

Most rural communities were originally established to take advantage of the inshore fishery. There are typically few other local economic opportunities that can substitute for the fishery. Economic diversification in

rural areas, while recognized as necessary, has thus been extremely difficult to achieve given the physical and human resource bases. Tourism is often seen as the panacea. However, while tourism is an important element of the economy¹⁵), employment opportunities in this sector are limited, the skills required not necessarily transferable from other sectors where there is surplus labour, and much of the work is low paying and seasonal.

Where there are opportunities for rural development entrepreneurs, as elsewhere, find it difficult to raise venture capital for projects, and governments, both federal and provincial, while publically advocating support for rural industry and rural communities, seem in actuality to have only a limited commitment to rural development policy and rural investment.

In the absence of economic opportunities rural residents have several options:

■ Stay in the community

Many may not have the formal education and skills to find work elsewhere. Fishing or forest work requires very particular skills that may not be easily transferable to other sectors and in many cases may have been learned informally. Lack of formal education and qualifications can make it difficult to find jobs that pay well enough to justify a move from a community where many people own their own homes and where living costs may be comparatively low.

■ Move to larger centres within the province

The St. John's metropolitan area has been the main recipient of intra-provincial migrants. Employment opportunities for those in the labour force are potentially greater here than elsewhere in the province, and for those who are retired there is the benefit of being closer to health care and other services relevant to seniors. Many may also move to larger centres to be closer to their children and grandchildren who have already moved.

■ Move to centres outside of the Province

Out-migration from the Province in search of work has always been a characteristic of Newfoundland and Labrador labour, from those involved in construction of skyscrapers in Boston and New York in the 19th century, to those involved in manufacturing activity in what is now Cambridge, Ontario in the 1960s and 1970s, and more recently to those that have moved to

western Canada, particularly Fort McMurray, Alberta, to take up employment in the oil sands sector. Once these migrants are established it is not unusual to see parents relocating to be near their children and grandchildren.

■ Continue to reside in the community, but work year-round on a roster system or seasonally outside of the Province.

Offshore and onshore oil workers, construction workers, marine crews and long-term care nurses are some examples of sectors involving mobile workers who live in the province but work outside of it. A 2010 survey of the Newfoundland and Labrador labour force determined that between 19,500 and 23,500 persons were or had been mobile workers in the period January 2009 to March 2010 (Newfoundland and Labrador 2011). This represents 7-8% of the provincial labour force and the 'repatriated' incomes allow workers and their families to remain in communities where they would otherwise be unable to find work. That said, for some mobile work also provides the opportunity to move away from rural areas to urban areas, their incomes now making homes in St. John's and other larger communities affordable.

While mobile work is important in helping to maintain rural life in some communities, the dominant pattern is one of movement out of the smaller, relatively more isolated communities – effectively a pattern of voluntary resettlement.

Resettlement is by no means a new process in Newfoundland and Labrador, but the rate at which it is now occurring does not bode well for the future of many smaller communities without good access to larger urban centres. Resettlement first occurred in 1954 and at that time it too was a voluntary process. However, between 1954 and 1975 some 143 communities and 20,000 people were resettled under a series of government programs that 'encouraged' people to relocate. While the majority of those that moved saw resettlement as an opportunity to gain better access to schools, health services and employment (Robb and Robb 1969), others saw it as a loss of identity and traditional ways of life (Iverson and Matthews 1973). Some communities resisted relocation and others who chose relocation became disillusioned by the lack of growth in the "growth centres" to which they moved. By 1975 when the official program ended, "resettlement" had become such a politically charged notion such that subsequent governments have since avoided both use of the term and any explicit promotion of the process.

That said, provincial government support for communities that wish to resettle is still available. Three

15) Tourism is not identified as a separate sector in estimates of provincial GDP in Newfoundland and Labrador. In 2010 GDP generated by the Accommodation and Food Services and Information, Culture and Recreation sectors combined represented 3.8% of the provincial total (Newfoundland and Labrador 2012).

communities have voluntarily been abandoned since 2000. More are bound to follow as the number of residents continues to decline and those remaining are unable to access the services that they need, or in cases where the economic base for the community (typically a fish plant) disappears and there are no alternative employment opportunities.¹⁶)

Demographically and industrially Newfoundland and Labrador presents some stark contrasts. The traditional rural economic sectors, the fishery and forestry, offer few employment opportunities for new entrants to the labour force and as a consequence outmigration of the young and better educated has left rural areas with an aging population and few with the education, skills and experience to take advantage of opportunities when they do arise. The St. John's metropolitan region is one of the few areas that offer opportunities for the young and educated in the 'new' economy – petroleum, mining companies all have their offices here, and the growing population provides spin-off opportunities in the retail, construction and personal services sectors.

At the same time growth in the resource and resource-related construction sectors has helped both to maintain some rural communities and added to economic growth in the St. John's and other urban areas through income earned from mobile work.

The key elements that seem likely to perpetuate these regional patterns in the province, at least over the next decade, can be summarized as follows:

Demographic change

- Low birth rates, rising death rates and limited permanent in-migration;
- Continued urban growth generally and in the St. John's metropolitan area in particular;
- Continued rural depopulation.

Industrial change

- Low birth rates, rising death rates and limited
- Continued dependence on the resource-based economy, particularly oil;
- Limited opportunities for industrial diversification.

For decision makers, in both government and the pri-

vate sector, the aging population and limited opportunities for economic growth and development in rural areas present significant challenges. For government those challenges are primarily associated with the cost of providing and the ability to staff services to an increasingly elderly population. For the private sector, markets are shrinking and shifting to a less consumer-oriented demographic, thereby increasing the likelihood of the withdrawal of those services in the future. For companies operating in the resource sectors it may well be that Newfoundland and Labrador will, in the future, become a host region for mobile workers rather than a source region as at present as workers in the trades age and retire.

Economic growth within the Province also seems likely to be concentrated in a few areas. The St. John's metropolitan region will remain the hub for offshore petroleum activity, other larger urban places will continue as regional retail, service and administrative centres (e.g. Corner Brook, Gander, Happy Valley-Goose Bay), while mining and mineral and petroleum processing will provide opportunities in a small number of other areas (e.g. Labrador West and the Isthmus of Avalon).

The net effect is that the future does not look bright for much of rural Newfoundland and Labrador. The long history of small, rural communities with their distinctive histories and cultures, populated by large families and extensive kinship relationships, appears to be becoming a thing of the past. Government appears to have accepted this future, perhaps even subtly encouraging it through service and infrastructure investment decisions, though not actively encouraging it, as has been the case in the past.

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¹⁶ Black Tickle, Labrador (population 201 [2006 Census of Canada]) has been dependent on a fish plant, which has closed several times in the past. The most recent closure in May 2012 may mean closure for good. The provincial government has provided "make-work" funding for a year while diversification development options are explored. After this no further aid will be available to the community.

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25. Climate and Demographic Change in Arctic Alaska

Lawrence C. Hamilton

Introduction

The impacts of future climate change present an important frontier of research, currently under study through a wide range of methods (Parry et al. 2007). In the Arctic, where climate changes already have been visible and rapid, residents are experiencing challenges to ecosystems, infrastructure, transportation, territorial claims, and both economic and subsistence activities. Pressures from environmental change are expected to have social effects up to the scale of community viability and people's commitment to stay. Net migration, a volatile flow shaping Arctic community demographics (Hamilton and Mitiguy 2009; Hamilton 2010), provides one sensitive but general indicator that could be monitored for possible impacts from climate or other changes (Hamilton, Bjerregaard and Poppel 2010).

The most imminent climate-related threats facing several Alaska communities involve erosion, which might be accelerated by increased runoff, thawing permafrost, and/or reduced sea ice giving less protection from waves and storms. This paper focuses on some of those threatened communities, comparing them with similar places that are not imminently threatened. The association between erosion-threatened status and net migration is examined by a statistical method, mixed-effects modeling, that could have broad applications in assessing climate impacts. In general terms the method involves community-level time series of social indicators, integrated with relevant climate indicators and dynamically modeled. The demonstration model in this paper employs a crude climate indicator, and re-

sults are not meant to be definitive. Rather, they test the practicality of a general approach that can be refined in future research. The results include a statistically significant effect from the climate indicator ("threatened" status) on net outmigration, across 43 towns and villages over a period of 22 years (1990–2011). The finding encourages future research that will test more sophisticated climate indicators and models, applied to more extensive data.

The following sections discuss general Arctic climate and demographic trends, including increased urbanization that has made communities more vulnerable to erosion problems. The place/year database framework, use of net migration as a key indicator, and mixed-effects modeling are introduced as extensions to previous research. These elements come together in a formal model, followed by graphical interpretation and diagnostic tests.

Arctic climate trends

While global average temperature rose over the past century, Arctic warming has been more pronounced. The "Arctic amplification" predicted by global climate models (Solomon et al. 2007; Richardson et al. 2009) is clearly visible in Figure 1, a graph of global and Arctic mean annual temperature anomalies from 1880 to 2011 (data from NASA 2012). The year 1975 marks a take-off point for many indexes of global warming. Since 1975, Arctic surface temperatures warmed at an average rate of 0.53 °C per decade, three times faster than the global average (0.17 °C per decade).

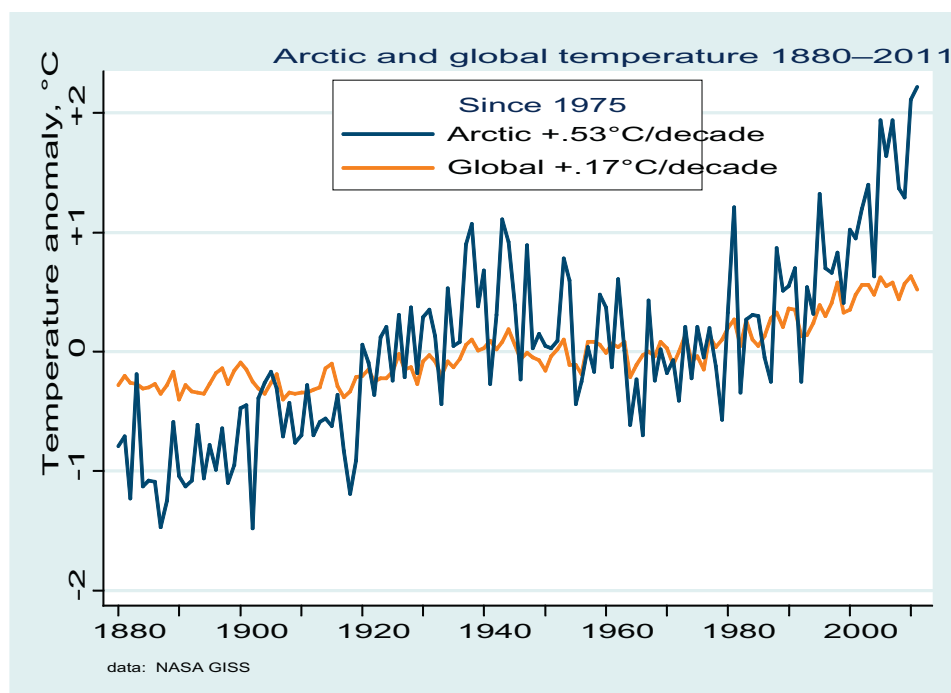


Figure 1: Arctic and global annual temperature anomalies from 1880 through 2011.

Surface and deeper ocean temperatures have warmed in many parts of the Arctic as well, influenced not only by air temperatures and albedo feedback (less ice allows more solar warming) but by the intrusion of warmer Atlantic waters (Spielhagen et al. 2011). Arctic sea ice cover has declined in all seasons, but most dramatically in late summer. Figure 2 graphs mean September sea ice extent from 1972 through 2012, when it reached a new historical low point. Sea ice data from

1979 to 2012 come from NSIDC (2012); I calculated values for earlier years by linear rescaling of data from Cavalieri et al. (2003). Lowess regression, a smoothing technique that makes no assumptions about shape of the curve (Hamilton 2013:217), depicts a steepening downward trend in Figure 2. If this trend continues, virtually ice-free summer conditions could occur within a few decades or less.

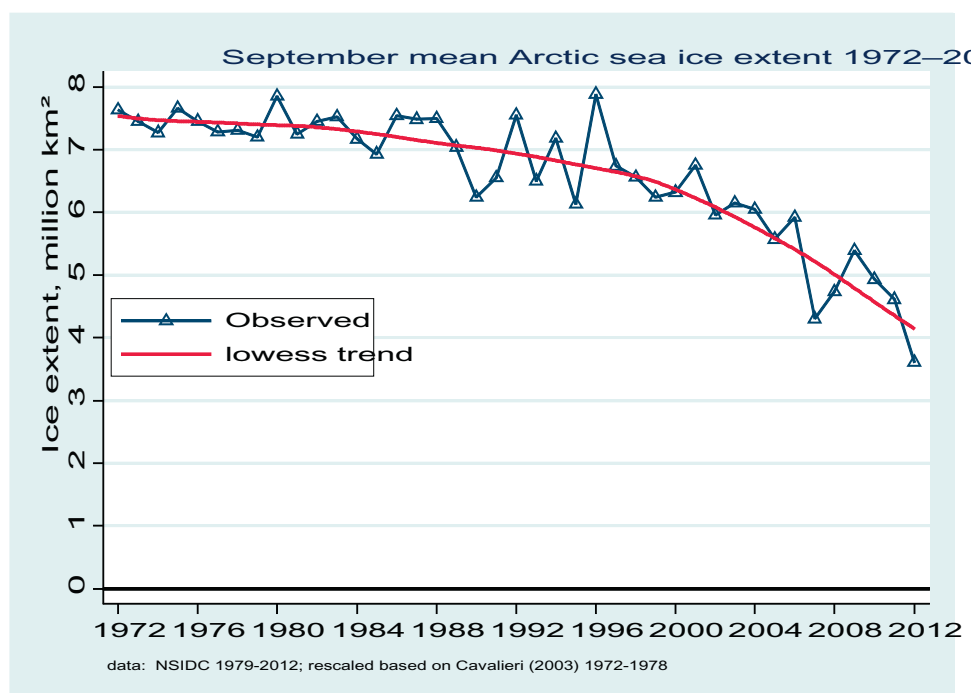


Figure 2: September mean Arctic sea ice extent 1972–2012, with lowess regression trend.

The figure consists of two side-by-side line graphs. The left graph is titled 'Kotzebue' and the right graph is titled 'Barrow'. Both graphs plot 'Temperature, °C' on the y-axis against years from 1950 to 2011 on the x-axis. The y-axis for Kotzebue ranges from -8 to -3, while for Barrow it ranges from -14 to -9. Both graphs show annual temperature data as a blue line with markers and a red trend line. The trend lines in both graphs show a clear upward trend, indicating warming over the period.

Kotzebue

Year	Temperature (°C)
1950	-4.5
1951	-6.5
1952	-6.8
1953	-8.5
1954	-7.8
1955	-4.5
1956	-5.5
1957	-6.5
1958	-5.5
1959	-6.5
1960	-5.5
1961	-6.5
1962	-7.5
1963	-6.5
1964	-7.5
1965	-6.5
1966	-7.5
1967	-6.5
1968	-7.5
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2003	-6.5
2004	-7.5
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2007	-6.5
2008	-7.5
2009	-6.5
2010	-7.5
2011	-6.5

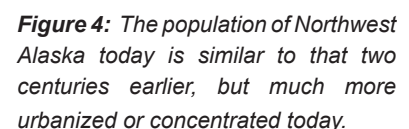
Barrow

Year	Temperature (°C)
1950	-10.2
1951	-11.2
1952	-12.2
1953	-11.2
1954	-12.2
1955	-11.2
1956	-12.2
1957	-11.2
1958	-12.2
1959	-11.2
1960	-12.2
1961	-11.2
1962	-12.2
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2003	-11.2
2004	-12.2
2005	-11.2
2006	-12.2
2007	-11.2
2008	-12.2
2009	-11.2
2010	-12.2
2011	-11.2

data: GISS surface temperature analysis

Figure 3: Mean annual temperature in Kotzebue and Barrow 1950–2011, Alaska, with lowess regression trends.

about the Inupiaq of Northwest Alaska, gives a population estimate of about 7,300 people in 1800 at the start of the contact era (Burch 2006). This aboriginal population, loosely organized into 13 social groups or nations, spread over a Northwest Alaska landscape of some 107,000 square kilometers. Individual nations ranged from about 300 to 1300 people, as graphed at left in Figure 4.



Burch's Northwest Alaska region roughly corresponds to the modern Northwest Arctic Borough, an administrative area of 106,000 km² with 7,700 people in 2011. The right-hand chart in Figure 4 depicts the population of the Northwest Arctic Borough in 2011. Although the modern borough is not identical to Burch's Northwest Alaska region, they substantially overlap and have similar size: the borough covers 106,000 square kilometers, compared with 107,000 for Burch's region. The borough's 2011 population (7,700) likewise resembles that of the region in 1800 (7,300). Comparing the left and right panels of Figure 4, however, one great difference stands out: the 2011 population is far more concentrated, with about half living in the hub town of Kotzebue.

This trend toward urbanization is even more pronounced than it appears because the 11 modern towns and villages each are spatially compact, unlike the 13 nations of 1800. Contemporary housing and the need for electricity and water, as well as education and jobs, pull people closely together — a pattern unsuited for

the old hunting-gathering way of life. The concentration and infrastructure investments, however, make modern communities vulnerable to environmental changes like erosion. Relocating houses, schools, water systems and other infrastructure as a shoreline erodes incurs economic costs far beyond the resources of small communities, and daunting even to the much larger state government.

The geographical scope of this paper encompasses the 11 contemporary towns and villages of the Northwest Arctic Borough, along with 8 in the North Slope Borough, 16 in the Nome Census Area, 5 in the Dillingham Census Area, and 3 in the Bethel Census Area. This set of 43 predominantly Native communities has been the focus of previous analysis in Hamilton and Mitiguy (2009) and Hamilton et al. (2011). Figure 5 maps the town and village locations, and also of the larger regions (Northwest Arctic Borough, etc.) to which they belong.

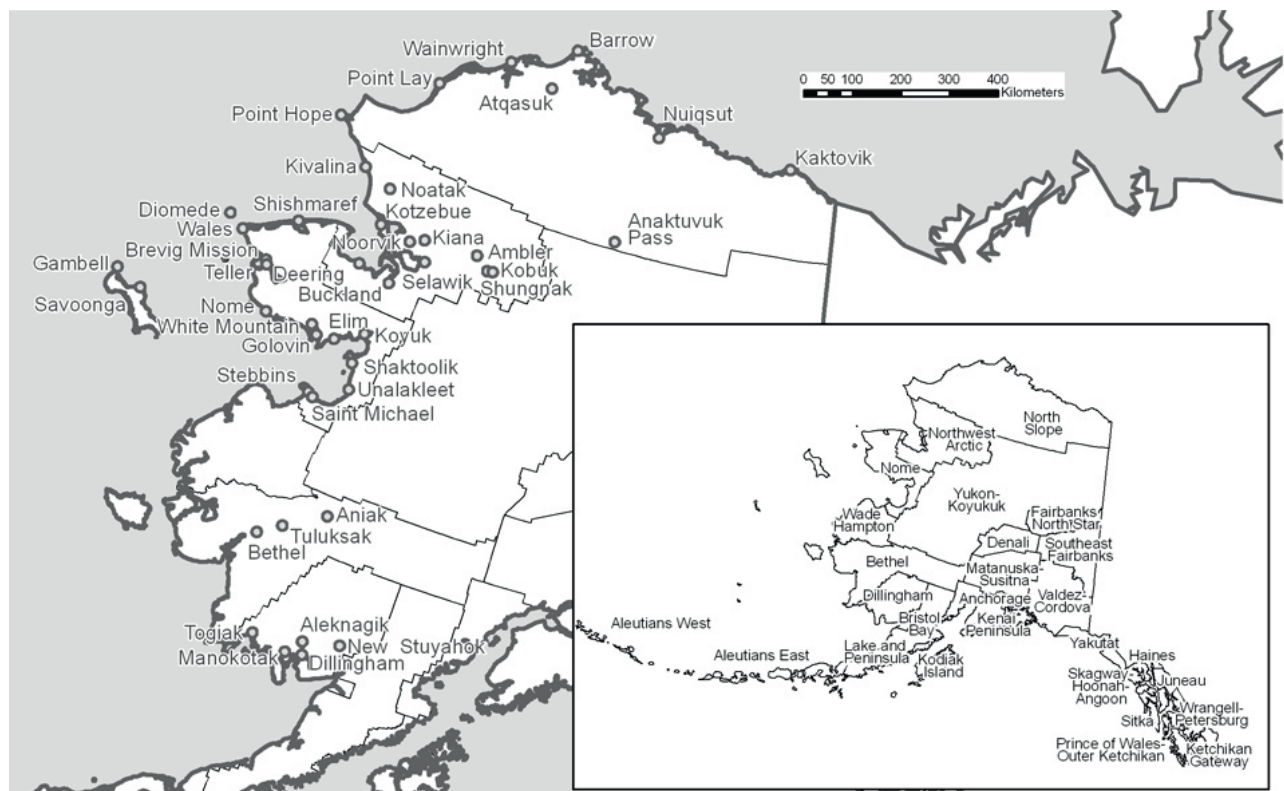


Figure 5: Forty-three selected Arctic Alaska towns and villages (larger map), and 27 county-equivalent entities (boroughs, census areas or municipalities) comprising all Alaska (inset). From Hamilton and Mitiguy (2009).

Although Northwest Alaska Native populations in 1800 and 2011 have similar size, this coincidence does not imply demographic stability. Like other indigenous peoples of the Americas, Alaska Natives experienced terrible mortality with exposure to European disease. Recovery from that disaster, the Northwest Arctic population as recently as 1971 was little more than half its

current level. Natural increase, with periods of positive net migration, drove the overall growth seen in Figure 6. Internal migration within regions drove the local urbanization seen earlier in Figure 5. The next section looks more closely at how the balance between net migration and natural increase affects variation in population of individual Arctic communities.

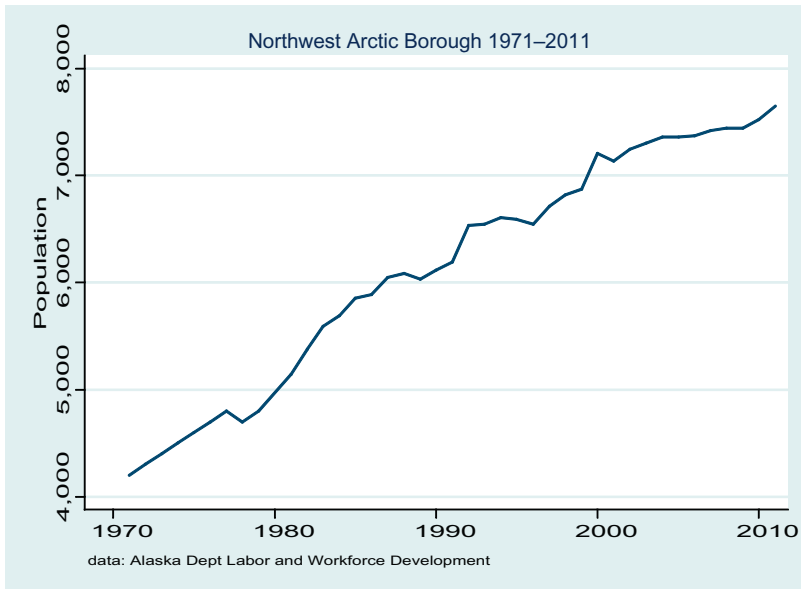


Figure 6: Although modern populations may resemble pre-contact levels, contact was followed by high mortality from disease. Modern populations have rebuilt from historically low levels.

Net migration and Arctic populations

Population change reflects the sum of four flows: births, deaths, in-migration and outmigration. Figure 7 employs a graphical style developed by Hamilton and Mitiguy (2009) to visualize population change and its components. This example describes recent changes in Kivalina, a coastal village in the Northwest Arctic Borough. Bars along the lower part of the graph indicate the number of deaths (dark bars) and births (lighter bars) for each year from 1990 to 2011. These data are

from the Alaska Bureau of Vital Statistics. We show births from July 1 2010 through June 30 2011 as “2011” and so forth, for consistency with the state’s midsummer population estimates. The number of deaths per year ranged from 0 to 8, and there were 5 to 18 children born to Kivalina residents each year. (The seemingly exact counts of births, deaths and population indicated by such graphs are of course subject to some errors.) On average, about 9.5 more births than deaths occurred each year.

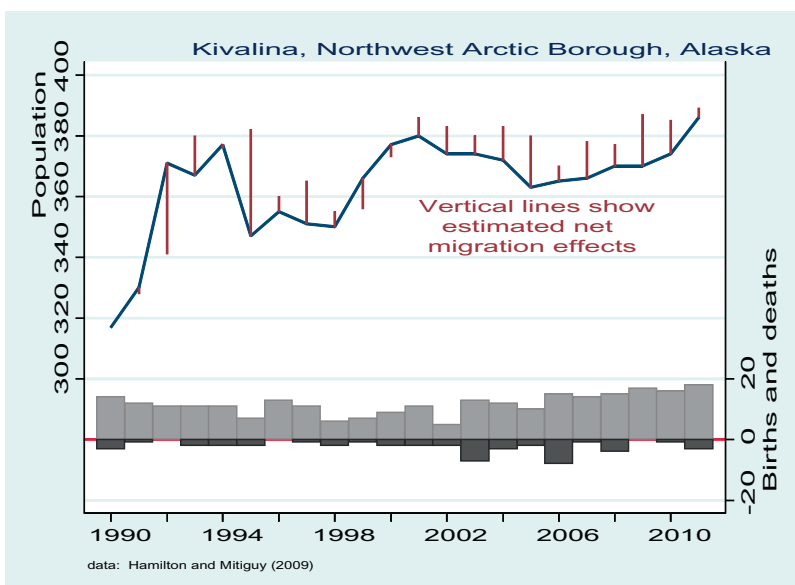


Figure 7: Population dynamics (total, births, deaths and net migration) of Kivalina, Alaska, 1990–2011.

Without migration, the population of this village would have continually increased. Due to outmigration, it has not actually done so. The scale for births and deaths appears at lower right in this graph. At upper left is a comparable vertical scale for population. The graph's main curve tracks total population, as estimated for most years by the Alaska Department of Labor and Workforce Development. For non-Census years (all but 1990, 2000 and 2010), the state provides estimates based on administrative data, notably Permanent Fund Dividend applications — a unique data resource that permits relatively accurate yearly estimates.

Short line segments that extend above the main curve in Figure 7 indicate net outmigration, inferred from a population estimate that is lower than would be expected due to natural increase alone. For example, Kivalina's estimated population for July 1, 2005 was 363. By June 30 the following year there had been 15 births and 8 deaths, resulting in a 2006 projection of $363 + 15 - 8 = 370$ people. The actual population estimate for 2006 is 365, leading to an estimated net migration of $365 - 370 = -5$, or five people leaving.

Consequently, the line segment extends down from 370 to the main population curve at 265. A line segment extending up to the main curve would indicate net in-migration, or population growth exceeding that expected from natural increase. Although a few years, such as 1992, experienced net in-migration, in most of these years, more people left than arrived. The average was a loss of about 6 people per year, largely offsetting natural increase.

Figure 8 displays similar graphs for four other Arctic Alaska communities. Net migration can be seen to have strong effects on the total population of each. The Health and Population chapter of the Arctic Social Indicators report (Hamilton, Bjerregaard and Poppel 2010) identifies net migration as an important indicator that integrates push and pull forces acting on Arctic communities. Net migration can change rapidly in response to a changing balance of forces including better or worse conditions in the community, and more or less attractive options elsewhere. Especially in small places, net migration can rapidly alter not both the size and composition of a population.

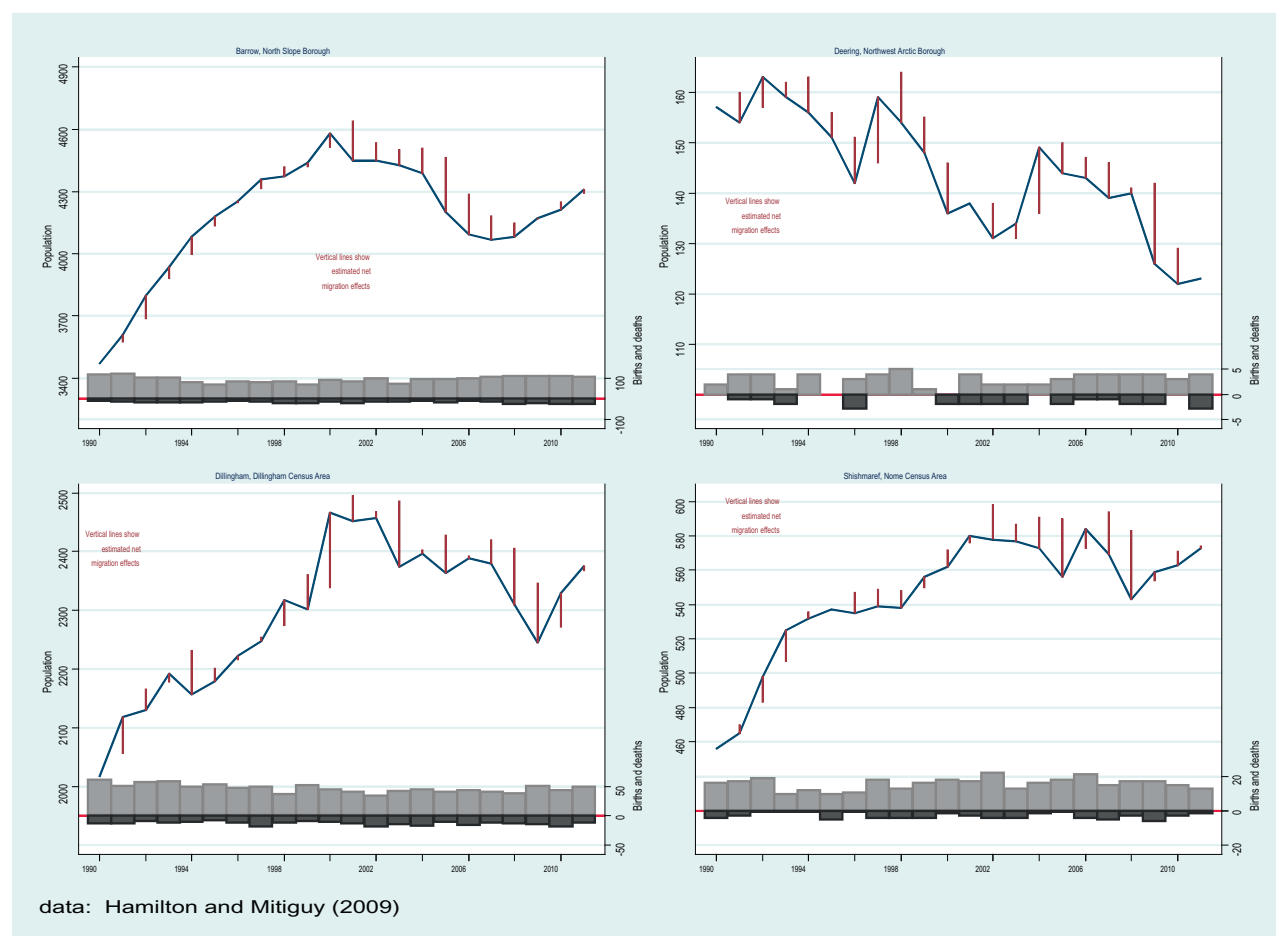


Figure 8: Population dynamics of four Arctic Alaska communities, 1990–2011.

Many Arctic Alaska communities today find themselves on the front lines of global change. Kivalina and Shishmaref, for example, are built along shorelines where the later formation of sea ice has reduced their protection from erosion by fall storms. Since 2003, 31 Alaska Native towns and villages — including those in Figures 7 and 8 — have been identified as facing “imminent threats” from flooding and erosion (GAO 2009). At least 12 are considering full or partial relocation. The problems often are climate-related, whether from changes in sea ice, permafrost, or intensification of Arctic hydrological cycles. Such changes are happening now, with potentially severe consequences for the communities affected.

The impacts of resource and economic changes are often reflected in net migration to or from northern places, as well documented in the case of fisheries-dependent communities (Hamilton et al. 2004a, 2004b, 2004c). Might climate change likewise have measurable effects on net migration? The next section takes an exploratory look at this question.

Modeling environmental effects on migration

Recent advances in mixed-effects modeling provide statistical tools for analyzing relationships among multiple time series, such as the Arctic community demographics in Figures 7 and 8. Mixed-effect models are regression models containing both fixed and random effects. Fixed effects resemble coefficients in an ordinary multiple regression: they characterize relationships for the data as a whole. Random effects can vary across clusters or subsets of the data. The inclusion of random effects offers advantages for representing clustered or panel data such as multiple years for each com-

munity (Rabe-Hesketh and Skrondal 2012; Hamilton 2013). Hamilton et al. (2012) adapt this approach to modeling annual electricity use by Arctic Alaska communities as a function of population, price, trend and weather.

The following example employs a crude indicator of environmental stress: whether a particular community has been classed as “imminently threatened” due to flooding or erosion, as described in the GAO (2009) report. Although crude, this indicator permits a practical trial of the modeling approach for detecting effects of environmental stress on net migration from small places. The analysis employs data on 43 Arctic Alaska towns and villages over the years 1990 through 2011, or more than 900 place-years.

Table 1 shows results from a mixed-effects model for net migration to or from the i th community in year t ($netmig_{it}$), predicted from a nonlinear time trend, population and an indicator coded as 1 for “imminently threatened” places after 2003, and 0 otherwise. Tests of alternative specifications support a simple model with the form

The β parameters in equation [1] represent fixed effects, common across all communities. The γ_i parameter represents random variations in the time trends exhibited by different communities. D in equation [2] is a first-order autoregression parameter, describing the correlation between error terms for successive years within communities. The u_{it} in equation [2] are assumed (and later confirmed by testing) to be white noise.

Fixed effects	Coef.	SE	p(z)
t (calendar year minus 2003)	-.075	.248	.763
t ² (t squared)	.093	.035	.008
pop (community population)	-.007	.001	.000
threat (1 since 2003 if “threatened”)	-8.586	4.110	.037
intercept	-5.113	1.937	.008
AR(1) D	.135	.036	.000
Community-level random effect	Std. dev.	SE	
t ²	.032	.074	

Residual standard deviation = 30.99

LR test vs. linear regression, $p = .0002$

Portmanteau Q tests of residuals (lag 5): 40 of 43 $p > .05$ (and 31 of 43 $p > .20$)

Table 1: Net migration to or from 43 Arctic Alaska communities over 1990–2011, as a function of “imminently threatened” status, population, and a quadratic time trend, with first-order autoregressive errors. Trends vary from place to place. Mixed-effects model estimated from 903 place-years of data, showing coefficients, standard errors and p-values.

Tests of alternative specifications including higher-order autoregressive or moving-average processes, and additional random effects, complicated the model without significantly improving the overall fit.

The maximum restricted likelihood (REML) estimates in Table 1 are based on 43 parallel time series: the years 1990 through 2011 in each of 43 communities. Substituting the estimated coefficients from Table 1 into equations [1] and [2] yields equation [3]:

Figure 9 shows some examples of the fit between

model and data. Yearly migration from these small places is erratic and difficult to predict. The model achieves only limited success, explaining about 10 % of the variance in net migration. Nonlinear time trend, population and threat status all have statistically significant coefficients, however. Moreover, the effect of threat status is negative as expected. Controlling for population and community-specific time trend, threat status increases predicted net outmigration by 8 or 9 people per year ($\beta_4 = -8.586$).

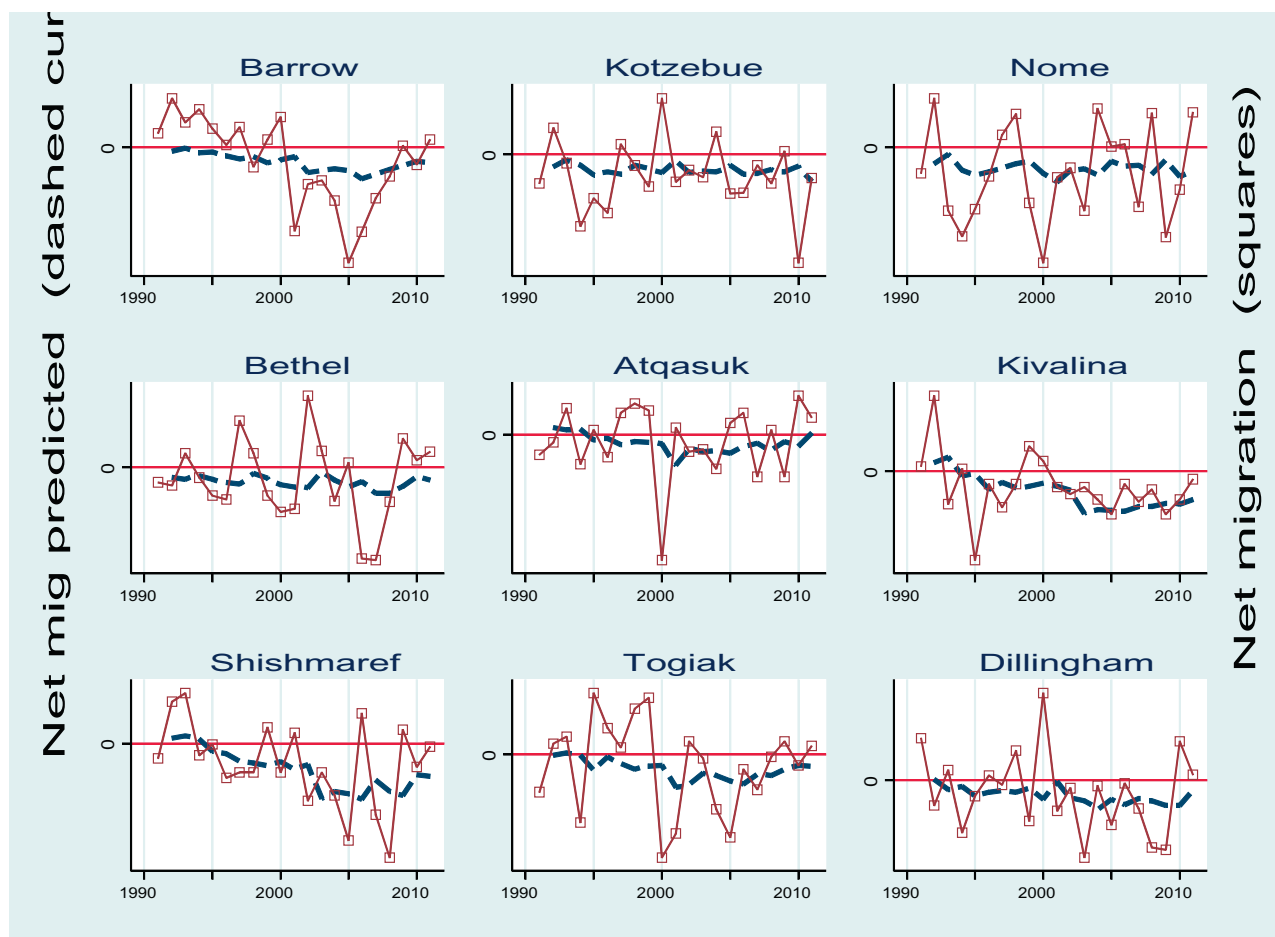


Figure 9: Observed yearly net migration from 9 example communities, shown with values predicted from the model in Table 1.

In their paper on electricity use, Hamilton et al. (2012) employ more detailed climatic data: monthly temperature and precipitation estimates from the University of Delaware Center for Climatic Research (Matsuura & Willmott 2009a, 2009b), projected to 25 km H 25 km grid cells within which each community is located. Similarly detailed climate variables, and better general indicators, are worth developing in future research. Despite the limitations of the Table 1 analysis, its finding of significant and plausible effects in the hypothesized direction provides encouragement for taking the next steps.

Conclusion

This paper presented the general research context and tried out a new statistical modeling approach that could prove broadly useful in testing for impacts from climate or any other change. For the first time, available data are becoming extensive enough to support such multivariate modeling, as the time series grow longer each year. As a next step, more sophisticated climate indicators, based on observational, reanalysis or modeled climate and hydrological information should

be developed.

Mixed modeling holds promise for studying impacts from non-climate forces too, such as changes in subsidies, resource development or the price of fuel. In principle, this method could help to untangle the influence of multiple factors that all affect migration (or are reflected in other social indicators) from Arctic communities. Statistical analysis cannot match the nuanced detail of ethnographic or community case-study work, but it complements such work with a broader step-back view that takes in several decades of change across dozens of different places. The regional to global scale of environmental changes being felt now in the Arctic, and also of the scientific research on such change, makes a broad perspective on social change important as well.

Acknowledgement

The research described here continues work begun under two projects (H3L and AON – SI) supported by grants from the Arctic Social Sciences and Arctic System Science programs at the U.S. National Science Foundation (OPP-0638413 and OPP-0531354).

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26. New Economic Activities and Urbanisation: Individual reasons for moving and for staying – Case Greenland

Klaus Georg Hansen and Ramus Ole Rasmussen

1.0 Introduction

It is generally recognized that the Arctic is a region of economic contrasts. While the international economy supports modern large scale activities involving capital intensive production at one end of the scale, the informal and traditional economy occurs through small individual or family groups at the other end, and in between there are mixes of modern and traditional methods of production. In this context the empirical evidence clearly shows the effects of changing local and global markets but also shows the importance of bringing forward the political norms on vulnerability that this may generate (Young 2002; Keskitalo 2008).

The Arctic economy basically contains three distinct but related parts: the international resource economy, the transfer economy, and the traditional economy. The international resource economy serves worldwide markets utilizing resources such as diamonds, gold, zinc, oil, natural gas, and fish. The traditional economy is also centred on resource utilization, but here the utilization, through fishing, hunting, herding and gathering, is primarily for local consumption. Finally, the transfer economy brings funds into the region from other levels of government. The transfer economy supports services, generate benefits and also contributes to income for many (Rasmussen 2010; Huskey and Southcott 2010).

When drawn into the globalisation process, the Arctic economies – including the economy of Greenland – are having important impacts. Fisheries, especially modern ones, generate systematic changes in the exploited marine ecosystems. There are expectations in relation to further expansion of potential exploitable fish stocks moving northward due to climate change. In this connection there will be impact and eventually

a reduction in the biomass of target species and other species taken as by-catch. This again will affect the benthic habitat and may lead towards a downward shift in the size distributions of caught fish as well as shift in the mean trophic level closer to primary production (Hamilton, Brown, and Rasmussen, 2003).

The consequences of the above described changes would probably benefit different groups with different capitalization, licenses and location, generating a link between ecosystem and social system change, while another link – competition from other global sources generating seafood produces and cheaper protein sources – will be adding to the complexity (Rasmussen 2010).

Since Home Rule was established in Greenland in 1979 a focus for economic development in Greenland has led to reduced dependence on Denmark. Suggested means and measures have been different through time. Industrialisation of fisheries and exploitation of valuable resources such as shrimp fisheries was in focus during the first decades. Realizing, however, how the world market has been dropping due to intensive development of aquaculture and with most of the renewable resources used close to its maximum – for some species even beyond this point – the need of alternatives in order just to maintain the living conditions has become obvious (Winther 2000). With ambitions of increased level of autonomy based on a reduced dependence of transfers the need of alternatives becomes still more urgent, with mineral and energy resources among the most obvious means of promoting this process. The success so far, however, seem to be limited. In spite of many known resources which eventually would serve as an economic base the interest among the multinational companies which are able to undertake the exploration has for many years been limited.

There has, however, been an important shift in the level of interest during the last decade and now not only in relation to minerals and energy resources, but also exploitation of the rich sources of hydro power available in Greenland. Hydro power has in Greenland been recognized as a substantial potential for decades. In 1983 an overview report on earlier reports on hydro power potentials in Greenland was published (Råstofferforvaltningen 1983). In spite of that the hydro power potential in Greenland has only recently begun to be recognized by the global industries. This has now happened, however, and the take-off for a proposal for a new economic initiative took off around 2006 in the shape of an inquiry from the company Alcoa.

2.0 Why, where, and how an aluminium smelter?

The idea of initiating an aluminium industry in Greenland is not new. In May 1979 – when the Greenland Home Rule was born – a report titled “Aluminiumsindustri ved Godthåb og Sisimiut” [Aluminium Industry at Godthåb and Holsteinsborg] (Hoff & Overgaard 1979) was published. The report describes socio-economic aspects of a potential, large industry in central West Greenland. Part of the inspiration to look into the possibilities of starting an aluminium industry in Greenland came from Iceland. In 1969 the Icelandic Aluminium Co. Ltd (Ísal), a sole subsidiary of the Switzerland-based Alusuisse, had started production at Iceland’s first aluminium smelter, the Straumsvík smelter, close to Reykjavik (Jonsson and Wiestner 2013).

In the late 20th century none of the identified potentials for an aluminium smelter in Greenland was realised. Caused by the economic downturn in the beginning of 1990’s partly due to the disappearance of the cod from the waters west of Greenland, planning for large scale industries was set on hold. Among other activities the continuous monitoring of hydro power resources stopped.

With the creation of the Home Rule and the joint ownership of mineral and hydrocarbon resources and the construction of the shared Danish-Greenlandic resource management (in Danish called “Råstofforvaltningen for Grønland” and from 1998 “Bureau of Minerals and Petroleum”) focus was on the extraction industry. Large scale production industries such as aluminium smelters were a Home Rule responsibility, but large scale production industries were not classified as a high priority in the economic development for the Home Rule.

It was not until the USA based aluminium com-

pany Alcoa approached the Government of Greenland in the beginning of 2006 that the idea of developing large scale industrial activities was initiated again. Alcoa wished to initiate preliminary surveys whose object was to assess the potential for establishing an aluminium smelter in the central West Greenland in the area between Sisimiut to the North and Nuuk to the South. The Government of Greenland was basically not prepared for such an inquiry but the administration responded positively, and a protracted – and still ongoing – process was started.

A short list of the most significant project milestones includes the following:

Spring 2006	First enquiry by Alcoa;
July 2006	Joint Action Plan (JAP) with Alcoa;
April 2007	First open political decision regarding the plans (Go on);
May 2007	Memorandum of Understanding (MoU) with Alcoa;
May 2008	Open political decision on placement (Maniitsoq);
2013?	Open political decision on ownership (partner/concession);
2013?	Final political discussion on project (start/not start);
2018?	Earliest possible commencement of production – if the project is approved.

The Government of Greenland has undertaken a number of significant administrative initiatives during the different project phases. One of the most important of these initiatives was the creation of Greenland Development. Greenland Development was formally incorporated on 1st November 2006 as a wholly owned subsidiary of Greenland Tourism and Business Council. In June 2007, the Government of Greenland decided to convert Greenland Development to a public limited company under the auspices of the Government of Greenland. Greenland Development A/S’s tasks included undertaking contact to Alcoa on behalf of the Government of Greenland. Greenland Development A/S also produced a number of surveys and reviews primarily in the financial and socio-economic area. In spring 2012 Greenland Development A/S was discontinued.

Since 2011 another and competing large scale project has developed quickly. It was the Chinese owned company London Mining’s interest in starting a huge iron ore mine north of Nuuk close to the hydro power station B (see the map).

It has not officially been fully recognised politically

but these two large scale projects obviously are competing for the same hydro power potentials and for the same – limited – potential Greenlandic work force just to mention a few of the potential conflict areas between the two projects. The slowing down of the process in the aluminium smelter project and the speeding up of the process of the iron mine project during especially 2012 indicates the probability of the iron mine project being completed first.

When it comes to the needs for basic elements like hydro power access and man power access the two projects are comparable. Here some of the considerations regarding the aluminium smelter will be discussed in greater detail.

Prior to the political decision in spring 2008 regarding the location of the potential aluminium smelter several parameters were analysed and based on an evaluation these parameters the Government of Greenland pointed to Maniitsoq as the most favourable place for a smelter (Government of Greenland 2008).

Analyses of the potential harbours recommended Maniitsoq because the other possible locations were expected to be more exposed to harsh weather conditions. Regarding the access to the hydro power potentials, focus was primarily on the lake Tasersiaq, located between the Hydro power station A and the Ice Cap (see the map). Tasersiaq represents the largest single hydro power potential in West Greenland. Here the report from the Government of Greenland concluded that Maniitsoq would be the best place to locate the smelter. If the smelter would be placed near Sisimiut or near Nuuk it would generate additional challenges in relation to the power transmission lines (Government of Greenland 2008).

The analysis was based on a traditional approach when analysing the access to manpower. The main part of the workforce was expected to live close to the smelter. If the smelter were to be placed near Nuuk the report pointed out that it would lead to enforcement of an even stronger mono centric societal development than already experienced with Nuuk as the single metropolis in Greenland. At the political level the majority did not want to strengthen that development (Government of Greenland 2008).

Analysing the potential consequences of the planned smelter an important issue has been the assumption that a positive consequence of the new activity would be bringing persons depending on transfer payments or on low income jobs into the group of middle and high income jobs at the smelter or at jobs associated with the smelter activities (NIRAS 2010). It would of course generate better economic conditions for the workers and their families, and it would also generate tax revenues for the involved communities and nationally reduce transfer payment costs.

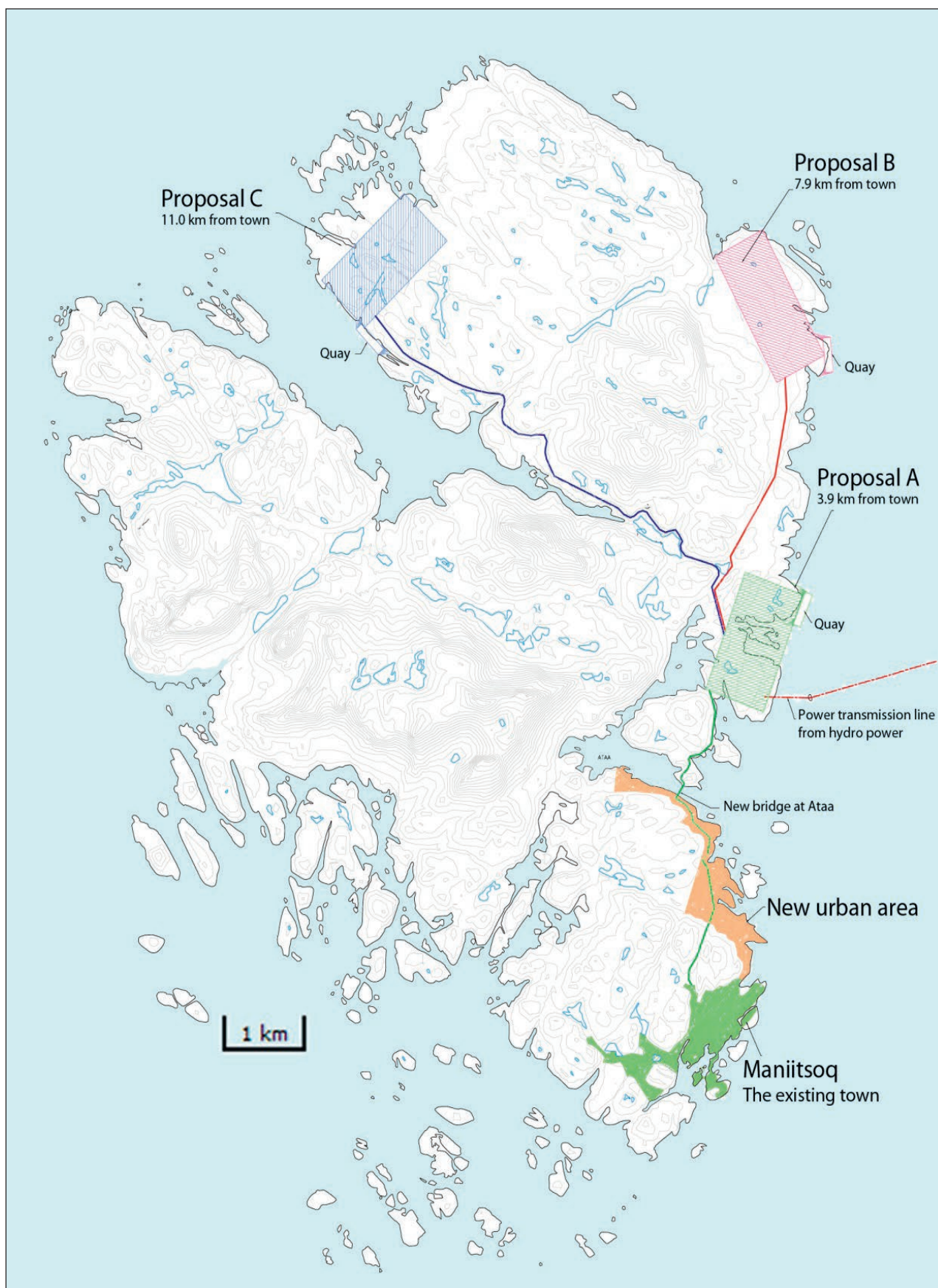
Consequently, it has been a vital argument for the project that it will create a significant number of jobs for the Greenlandic workforce. In addition that number of jobs should be fairly stable during the operational phase as the production is expected to be kept going at a high, stable level for many years. At some point in the early phase of the discussions in Greenland, it was predicted that the involved people from Greenland would be dominated by people who otherwise would be depending on social support or low incomes from for instance small scale fisheries.

Based on the assumption that a total of 1100-1200 workers would be employed, and they would be persons who otherwise would receive public assistance. Calculations show that the impact on the public finances on jobs would be around 300 million DKK per year, due only to improved job conditions. In a worst case scenario, i.e. a situation where all 1100-1200 positions are held by persons who would otherwise be middle-income recipients or even would come from outside of Greenland, the net revenue of the activity on the public finances would be zero or even negative (NIRAS 2010,14).

Critical for the option of generating positive results for the community is therefore a labour market policy preventing foreigners from getting involved, preventing skilled labour from other sectors to take the jobs, and ensure an upgrading of qualifications among people outside the labour market or in low income groups. All three criteria are debatable, based on the present job and educational situation in Greenland combined with the interests of Alcoa.



Map 1: The map shows Central West Greenland from Nuuk in the south to Sisimiut in the north. The green and yellow parts are the ice free areas of the coastal land.



Map 2: The town of Maniitsoq is situated to the south on an island. The island is approximately 10 km in diameter. If Alcoa builds an aluminium smelter near Maniitsoq the site for the smelter will be at "Proposal C". Today no infrastructure exists on the island outside the existing town of Maniitsoq. The "new urban area", the roads outside of the existing town, and so forth, will have to be constructed, if the aluminium smelter project becomes a reality.

3.0 The labour force requirements

Mining and energy extraction projects are normally progressing in five phases in which business and employment requirements have specific characteristic (Jensen and Rasmussen 1998; Jensen 1998).

In the first phase – feasibility studies – the main objective is to ascertain the extent, availability and size of commercial interest in the findings and the degree of present and future competition about the local energy resources. While some jobs may be established in conjunction with the analyses, the activities require special skills and are usually taking place primarily at the company headquarters.

The second phase – financing and establishment of economic conditions – will in practice often take place at the same time as the first phase, and with similarly limited impact on the local labour market. It also typically includes political discussions.

Third phase – building infrastructure and construction phase – includes planning and construction of physical facilities to perform directly or indirectly related activities such as construction of drilling rigs, transportation facilities at sea, port facilities, supply facilities, training and new education initiatives as well as the establishment of new residential areas, child care centres, etc. Since this phase will be labour intensive, the duration will usually be 2-5 years, and therefore needs to go beyond the local labour market to find the skills and hands needed.

Fourth phase – the short-term development perspective and production phase – includes the period with start-up of the activity and generates major change to existing business structure, resulting in large local population and employment effects on the new business activities. Depending on the size and lifetime of the resource and the technology, the duration of this phase may be from 30-50 years or more.

Then there is the fifth stage – the long development perspective – which may be analysed from two angles. It may either be through a *laissez-faire* attitude, which means not carrying out a thorough management of the development, and therefore with no or limited investment in new growth areas, or alternatively with focus on political control and on the basis of assessments of the size and lifetime of the mineral and energy resources aim at planning a stepwise downsizing and abandoning of the initial activity and instead move the gravity of activities toward other productions.

Large scale activities in the Arctic will be sought located close to the resources of raw materials or energy in order to reduce the energy and costs related to transport. The beauty of aluminium smelting is that this

activity is less dependent on where the raw materials are produced as long as there are proper harbour facilities and access to plenty of cheap power and labour force (Rasmussen et al. 2011). In the case of Greenland, cheap power means hydro power.

In the traditional approach – for instance in *Norway and Canada* – attempts have been made to establish new smelters in connection with places where all three components (harbour, power, labour) would be available, and typically therefore places with an existing labour market of a proper size, able to ensure the needed labour force during the production phase.

Sør-Norge Aluminium A/S (SØRAL) being one of Norway's seven aluminium smelters was established in the 1960's in the town of Husnes with proper harbour facilities, access to hydro power and a population of 5.500 inhabitants. Similar conditions were present when the aluminium smelter was established during and after WWII. In this case the town had a population of 5.600 inhabitants. In both cases, the need for labour during the construction phase was beyond the capacity of the towns, and attracted temporary workers from neighbouring towns and cities, and even from Denmark. (See Rasmussen 2009 for further discussion of the examples)

Since the first environmental policy objectives on Sustainable Development was established in Iceland in 1993 (Ministry of the Environment 2002,10) the focus has been on the use of renewable energy, and especially the exploitation of hydro power resources. This policy has encountered both positive and negative reactions in Iceland. Positive, not least in relation to the decentralisation of certain activities as hydro power and geothermal energy are decentralized energy resources. For many municipalities it is seen as an opportunity for local business, but the development of hydro power has met some resistance because of the potential adverse effect on the continued development of tourism potential and recreational fisheries exploiting the same rivers which would be used for hydro power (University of Iceland, Institute of Social Sciences, & Gallup 2003). Such questions were not important when the first smelter was established in Staumsvík at Hafnarfjörður just south of Reykjavík in 1969 and with energy supply from the in 1969 commissioned Búrfell 210 MW hydro power plant (Landsvirkjun 2007). Even situated with some distance from Reykjavík the localization could take advantage of accessible labour force within commuting distance to nearby populations' potential. The workers were transported to and from the smelter in company operated busses. The busses even brought the workers home for lunch.

The decision on the establishment of Fjarðál in East

Iceland situated in Reyðarfjörður which took place in 2002 was, however, in many ways deviating from the previous patterns. Neither a sufficiently large labour market, nor the needed energy resources and harbour facilities were available. Only blessed with a deep water fiord the Government of Iceland, Landsvirkjun and Alcoa signed a MoU between them, and together with the Fjarðarbyggð municipality in 2003 they signed a definitive agreement which included the building of the Kárahnjúkar hydropower station, the Fljotsdalur transmission line to the future smelter, the smelter itself, and the construction of a harbour.

The construction of the hydroelectric power plant initially comprised in the order of 120 people, of which 85 came from Iceland while 35 were foreign workers, but during the drilling of supply and drain channels the work involved about 700 workers and the total labour force was estimated to include over 3,300 man-years. In addition there were also the administrative staffs. It has been estimated that about 25 % of the construction was carried out by residents of eastern Iceland which meant about 100 to 200 jobs for residents of the region.

In the design and construction phase the involved local workforce was relatively limited. Three-quarters of the workforce came from elsewhere. The approximately 2,200 workers who remained in the workforce comprised between 20 and 25 % from Iceland, while about 75 % came from Poland, and thus constituted the largest single group. In addition staff came from elsewhere, for example, there were more than 80 Canadians involved the establishment phase of the smelter.

At one point in time, the population mix in Reyðarfjörður was characterized as covering the largest number of foreign labourers in Iceland. To accommodate the workforce a shantytown was established between Reyðarfjörður and the smelter. The city was provided with almost all facilities such as restaurants, recreation facilities, a gym, an internet café, and some shop facilities. Compared with Reyðarfjörður's population of approximately 700 inhabitants, one would assume that the shantytown would be the dominant trouble spot, but planning and cooperation between the city and the shantytown and the company meant that there was general agreement that the three communities were aiming at living smoothly side by side. A rumour often referred to tells that workers from the shantytown had limitations on visiting the city, such as the time limits which would mean that they were not welcome in the city in the evening. Other sources point out that the main problem was visits from the town to the shantytown, especially by young people at late hours. The reason for this was said to be the good facilities for

sports, internet café and the like. However, there is no systematic registration of conflicts and problems which should point to the shanty town's size and position as a real problem, and the general impression today seems to be that the process has developed rather flawlessly.

Alcoa Fjarðál had early on set the target of equal distribution of employment between women and men. In 2011, there were about 450 employees of which 28 % were women, approx. 50 % came from the local community or the region, 50 % came from the rest of the country, and of this group more than 75 % were from Reykjavik. Between 3-6 % were Icelanders who had returned to Iceland in search of jobs in the aluminium industry. There were in 2011 only a few foreigners, mostly Canadians and a few technicians who helped at the start of production, and whose expertise is still considered necessary. One of the factors that have been important in recruitment is the requirement that you speak Icelandic in the company. Among other things related to the security of the company, it is a requirement that there is an official language because the mixing of different languages when delivering commands can pose a security risk. At the same time there is also a desire that employees are reasonably familiar with English at a basic level, because employees may be exposed to different instructional materials in English.

Since 2008, the majority of workers in the shantytown have left the region, most of them for good, but some of them have chosen to establish themselves in the region. Some stay for work, in some cases they stay because there has been established a more lasting connection, such as marriage, between former employees and local people.

4.0 Debates in Greenland

The new economic and employment opportunities have been debated politically, publically and not least in the private sphere. The opinions are varied. It depends on which issues to debate and what opinion to have on single issues.

A study has analysed the public debate in Greenland regarding the aluminium project from April 2006 to November 2008. During that period of time the aluminium project was heavily debated and during the period 639 different opinions related to the debate about the aluminium project have been identified. A total of 225 written contributions have been analysed. Each written contribution typically contained several opinions related to the topic (Hansen, Sørensen and Jeppson 2009).

Topic	Number of opinions	Opinion index
Project process	121	3.33
Societal issues in general	121	3.18
CO2	110	2.67
Employment	97	2.92
Finance	96	3.13
Decision making process	86	3.17
Environment	84	3.18
Information process	48	3.14
Training	43	3.00
Regional changes	27	3.44
Social and health issues	25	3.04
Independence	19	3.00
Cultural and historical issues	17	3.06

List 1: Ranking of the 639 different opinions in 13 selected topics. Opinion index: < 3.00 = positive, 3.00 = neutral, > 3.00 negative. From (Hansen, Sørensen and Jeppson 2009,79).

List 1 shows a listing of the 639 different opinions on 13 selected topics. The topics are ranked according to the number of expressed opinions about the topic. This ranking indicates the relative interest given to each of the 13 topics in the public debate.

The primary topics, related to job opportunities and mobility are within the categories of 'Employment' and 'Regional changes'. The employment is the fourth most debated topic indicating a relatively high interest in the topic. Employment is furthermore one of only two topics which show a general positive opinion in the debate. As mentioned in the legend of the table an index of 3 indicate a balanced opinion while an index below 3 shows a positive attitude while an index above 3 shows a negative ditto.

The other topic related to job opportunities and mobility is 'Regional changes'. Here the interest has not been very high, but those who have discussed the topic are in general showing a negative opinion, 'Regional changes' is actually the topic which shows the most negative opinion in the debate. This could indicate a general and intense concern regarding a possible migration of the Greenlandic workforce towards areas with new industries.

From 2010 one of the most debated topics has been the possibility of the international companies operating in Greenland employing foreign workers and possibly even to a lower wage than normally paid in Greenland. In the debate this option has primarily been related to the construction phase of the proposed large scale industries, and there seems to have been a remarkable evolution towards a clear convergence of interests between employers' organisation (Grønlands Arbejdsgiverforening) and the employees' organisation (SIK). In March 2012 the two organisations delivered a joint response to the Government of Greenland in the hearing process for a new law for large scale industries which expressed their concerns regarding the possible consequences for the Greenlandic companies and workers (GA & SIK 2012).

The many years of debate especially regarding the aluminium smelter project has shown a wide spectrum of different opinions about the possibilities for the Greenlandic workforce to have access to the many new jobs which are expected to be created when these large scale industrial projects are realized. The possibilities have created awareness among citizens, organisations, politicians and other groups. Debates have brought varying points of view to light.

One of the mayor challenges is to transform all these different and fragmented opinions and thoughts into structured information which can be used as input in an informed political process where decisions have to be made on how to manage all the new opportunities to the best advantage of the workers, the investors and the Greenlandic communities.

5.0 The surveys

In order to provide a better understanding of the present mobility characteristics of the Greenland population as basis for analyses of the possible consequences of major interventions in the economic basis, such as establishing of an aluminium smelter, a series of mobility studies have been conducted (Rasmussen, 2010).

5.1 Register based data

The basis of the analysis has been a register-based analysis of population movements in Greenland from 1995 to 2008. The population registers, located on Statistics Greenland in Nuuk, provides information on each individual person, including information on wherefrom and whereto the persons move their addresses in case it is considered to be more permanent. "More permanent" means a move where their registration by the authority is changed from one

address to another, whether it is within the municipality or between municipalities, and to what extent it is from towns to towns, from villages to towns, from towns to village, or eventually leaving or entering the country. By means of these data, it is possible to see the more general patterns of mobility. In addition it is possible to connect the place based population registers with additional information, for instance in relation to gender, age, family situation, income and other social and economic factors which enables the creation of hypotheses about why and description of how they move. These statistical data do, however, not provide information about reasons or thoughts about moving which therefore requires additional approaches.

5.2 Thoughts about mobility

Added to the basic data a survey among a representative sample totalling 1,551 persons of the total labour force in Greenland has provided the requested information. The survey was carried out in 2008-2009. The individuals in the survey have been selected in such a way that they are representative of gender, place of birth (in Greenland, outside Greenland), settlement type (town, village), and place of residence. By means of the questionnaire, the respondents have been asked a series of basic questions in addition to the register information related primarily to issues such as qualifications and affiliations. In addition, emphasis has been placed on respondents' wishes, goals and interests in relation to a future in their present home community, or alternatively, the ability to move, and if so whether they were aiming at living alone or with family and relatives somewhere in Greenland. In addition, a series of questions looked into reflections in connection with a number of new activities, for instance whether or not they are perceived as being activities as attractive opportunities in the future. In this connection the information regarding gender, age, family situation, income and other factors are significant issues in the analysis of the responses.

5.3 Quantitative and qualitative approaches

Furthermore, a third level of analysis has focused on a specially selected group of 220 people for in-depth semi-structured interviews. The persons have been selected based on their responses to the questionnaire, and out of the group a total of 171 interviews have been concluded with answers to all the questions. In this connection questions have been asked about details re-

garding attitudes and wishes for the future. Through the interviews it has been possible to go in depth with many of the personal issues, which are often decisive for whether to choose one or the other solution in terms of future prospects – issues, which can not immediately be revealed through a questionnaire. Through the interviews issues such as belonging, places, personal preferences in relation to the future role of the family, local and regional networks etc. have been taken up as focal points.

5.4 Greenlanders in Denmark

Finally a survey among Greenlanders living in Denmark has been undertaken in close cooperation with the North Atlantic Group – consisting of the two politicians from Greenland and one of the two politicians from the Faroe Islands elected to the Danish Parliament by their respective constituencies. The purpose of this analysis was to look into the relationships between Greenlanders in Denmark and in Greenland in relation to issues such as belonging and attachment to a particular social group and their relations with Greenland and Greenlanders. Included in this survey were also questions about which role the new economic activities in Greenland might have in relation to this group's future mobility.

5.5 Triangulation

In addition to the questions related to individual interests and preferences all of the above mentioned surveys were aiming at clarifying the possible regional consequences of changes in business structures as a result of the introduction of new activities, looking into attitudes to mobility in relation to jobs, employment and the like. The surveys were at the same time aiming at providing data – as discussed above – in relation to gender, age and qualification structures in different settlement types.

Important in this context was the question of whether the respondents had heard about other forms of employment, including the possibility of staying with the family and then working as a migrant, what arrangements could be considered, what would be attractive work and workplaces, what would be of interest etc. in relation to wages, housing, transportation, social activities, etc. . In relation to the issue of relocation the focus of the survey was on what would be considered as a “good life” – types of work, wages, employment options for accompanying family members, quality in terms of types of housing, social infrastructure, environment, offers of public facilities, etc.

While a register-based analysis is able to say something about how people move, how long they stay in specific places, and also provide indications on possible connections between various socio-economic parameters and mobility, it is not able to say anything about the intension behind the movements. Questions on what determine choices regarding staying or moving, choosing between different places, or which thoughts are behind the choice etc. require other methods.

In this case two approaches – questionnaires and interviews – have been chosen in addition to the register data as they provide overview and in-depth insight into what is behind the decisions. It does, however, not make the register data redundant because there is not always a clear link between what people think they will do and what they actually do in practice. All three approaches have their individual limitations and advantages (Bryman 2004), but by triangulation, most of these limitations are resolved. Triangulation is usually defined as the use of multiple – very often qualitative as well as quantitative – methods in studying the same phenomenon for the purpose of increasing study credibility (Ashatu 2009; Bryman 2004). As this – as described above – implies the combination of different methodological approaches and theoretical perspectives in the investigation of the same phenomenon it may on one hand enable a more precise data background for the analyses. This is on the other hand with the risk that using both qualitative and quantitative paradigms in the same study by some social scientists may be considered unacceptable as the two paradigms differ epistemologically and ontologically (Ashatu 2009; Creswell 2003). In this context, however, by having total coverage of the population through the register analysis, which ensures a clearly representative sample in the questionnaire and out of the latter providing in-depth interviews with coverage of variations reflected through the previous datasets it is very difficult to point to any potential limitations in the outcomes.

5.6 The main questions addressed in this paper

In the following presentation of a selection of highlights from the report with an analysis of mobility in Greenland analysis (Rasmussen 2010) the focus is on a number of issues related to mobility in connection with new economic activities in Greenland. In some cases, this means that the data presented here provide relatively unambiguous and straightforward answers, but in the discussions the emphasis is on the relationship

between the patterns of mobility as identified in the individual analyses in the original report, by combining register data with input from interviews or questionnaires which can help to explain the patterns observed. This paper therefore does not pretend to be complete, but focuses on key characteristics of mobility in Greenland, with focus on these characteristics' relations to the new economic activities related to large scale mining, energy production and industries, and as selected issues are the following:

- Who are interested in moving?
- From where would they come, and where would they go?
- What would be their interest in moving?
- What would be their requirements at the place they might move to?
- What may prevent them from moving?
- What impact might be the result at the site?
- What impact might be the result in other parts of Greenland? and
- Are Greenlanders outside Greenland interested in moving back to Greenland?

An important issue in this connection is to realise that the reasons for staying or moving are not static! There seems to be a tendency towards considering reasoning behind decisions on staying or leaving is stable over time. What has been proven time and again, however, is the fact that such decisions are dependent on the context. In Greenland a shift in economy from fisheries to fishing industries and to services and now probably towards a higher degree of dependency of large scale production of minerals and energy, has very different implications on people's everyday life. The questions asked through the surveys have had variations in their foci. Some of the questions have been addressing broader perspectives in relation to moving, while other questions have been addressing very specific conditions.

6.0 The findings

As emphasized above, the new economic conditions for Greenland have become crucial for many reasons. And in this connection the large scale activities may become important in the upcoming years. In the international media – and not the least the Danish – there are ongoing debates on what may happen, and on what impacts these new activities may cause. See for instance the series of articles from the Danish newspaper Berlingske (2012) where issues such as Chinese migrant workers, rare earth elements and economic investments in large

scale industrial projects in Greenland are discussed.

This is, however, just one out of several discussions related to the issue. During the last year a monthly average of around 85 articles related to the keywords “oil” and “mineral resources” combined with “Greenland” have been published in the Danish media (based on a search in Infomedia) indicating the high pitched discussion.

6.1 How many are interested, and in what?

In connection with the questionnaire, a question concerning the interest in Greenland regarding job-search within the different sectors of large scale activities has been presented, and the results are reflected in Table 1:

Within which of the following activities would you be interested in looking for job opportunities?	
Fields of activities	% responses
Oil exploration	9
Mineral exploration	11
Mining	12
Aluminium smelter	13
Don't know	21
None of them	34
Total	100
Note that the question allows for multiple responses	

Table 1: Distribution of responses to question 37 of the questionnaire: Within which of the following activities would you be interested in looking for job opportunities?

When reading Table 1 it is important to emphasize that multiple responses has been allowed, which of course impacts the response pattern. When looking into details in this connection the responses indicate that almost 72 % of all respondents show no interest in any of the new options. Either by not knowing whether they would seek employment or that they positively know that it does not interest them, but the reverse applies to 28 % of the respondents who actually expresses interest in the activities, and would like to be involved in one or more of them. When looking at the percentage distribution among the new activities they add up to more than 28 %, reflecting that many of them may be interested in more than one of the listed options, on an average responding to at least two of the options.

Even if the above table exaggerates the interests due to multiple responses the interests are obvious and it is interesting how the discussions about an aluminium

smelter are reflected in the response by being the activity with the highest number of responses. At the same time it is important to note that oil exploration is represented by the lowest number of responses. It is important to recognize, however, that the fact that the survey took place at a point in time when the focus in the media was on the potential construction of an aluminium smelter, while the question of oil exploration was more or less absent from the agenda. If a similar question had been addressed to the public today the distribution between the fields of activities might have been different. It would, however, not have changed much in the division between who might or might not be interested.

How the positive responses are regionally distributed in relation to the four options is presented by further detail in Table 2 below. As mentioned it is important to remember the time of the survey.

Looking at the differences between town and village it turns out that working at an aluminium smelter or at an offshore oil rig is – relatively speaking – more popular among those living in towns whereas working in mines is – again relatively speaking – more appealing to people in villages. The lower level of education in general among people from the villages might be part of the explanation for this difference. Mining activities like in the Black Angle might be better known than working at a smelter or on a rig, and that might also be part of the reason for mining to be more appealing to people in villages than to people in towns. They are perhaps more willing to try what is lesser known working situations – at least for Greenlanders – such as working at a smelter or on an oil rig.

People in the South (from town and from village) show the greatest interest in working at a smelter. On the other hand people from towns in the Middle show the least interest in working at a smelter. At least the last part can sound surprising as it is in one of the towns in the Middle the smelter is going to be placed. Instead people in the Middle show the greatest interest in working on an oil rig. At the time of the survey an oil rig was known to be under development west of the coast of North Greenland. No obvious reason for these patterns can be pointed out. Much more information will be needed to understand this pattern. Here it is important to stress that the further information which is needed has to show differences in the pattern over time. To be able to generate this kind of information the survey has to be repeated over time for instance every second, third or fourth year.

In this way the analysis can begin to relate changes in the different districts and settlements to specific events or changes in focus or plans and thus we can

begin to link changes in preferences to changes in the real activities in the society. Through this analysis it will most likely be possible to identify patterns between preferences and activities in the communities. This will

at best make it possible to come up with some predictions on what preferences people might have for being engaged in the new economic activities.

The distribution of positive responses to becoming engaged in the new economic activities. Percentage of responses on each of the four industry categories					
Region	South	Middle	Disco	North/East	Greenland
Towns					
Aluminum	33,2	27,2	28,4	30,8	29,0
Mining	26,4	23,1	26,3	29,7	25,3
Mineral production	20,6	25,8	24,3	20,9	23,9
Oil	19,8	23,9	21,0	18,6	21,8
	100,0	100,0	100,0	100,0	100,0
Villages					
Aluminum	36,8	30,9	29,8	23,8	28,2
Mining	29,7	26,2	26,1	30,1	28,8
Mineral production	15,8	23,8	26,3	27,9	24,7
Oil	17,6	19,1	17,8	18,2	18,3
	100,0	100,0	100,0	100,0	100,0
Note that the question allows for multiple responses					

Table 2: Regional distribution of responses to question 37 of the questionnaire: Within which of the following activities would you be interested in looking for job opportunities?

While the above reflections relate specifically to the new economic activities, the focus hereafter will be on the general trends in mobility. Both due to the importance of seeing the new activities in the perspective of general trends and concerns, and at the same time because these more general trends serve as a good starting point for the interpretation of which options may be generally available in connection with the specific activities.

6.2 Who moves, and who would be interested in moving in the near future?

Based on register data it is shown that on a yearly base around 1/5 of the population are moving either temporarily or permanently. Among those who have moved the survey shows that about 23 % have left villages in order to move to towns (15 %) or to other villages (8 %). In contrast, almost half of the movements that have the city as a starting point, a total of 18 %, have moved from cities to villages while the largest group of all, namely 29 %, has moved from one city to another. Movements from Denmark constitute a significant proportion with 27 % of which 21 % has been to cities while 6 % has been to a village. The final 30 % has moved from either villages or towns in Greenland to

Denmark.

For the vast majority (47 %) the reasons for moving have been related to own work while another substantial part (19 %) has been due to a partner's work. Another group includes people where education has been the main cause (18 %), either own education (14 %), partner's education (3 %), or children's education (1 %). In a third group family relations accounts as the major reason, for instance changes in the family structure (9 %) or relations to parents (6 %). And a fourth group (4 %) indicating that one or more of the family members have not felt at home at the previous place. The final group (19 %) indicates various reasons for moving. First and foremost the need for changes in life, the desire to try something new, and perhaps the hope that the new place might give experiences differing from those provided at the current location, or in some cases having bad experiences at a new place and therefore returning to the well-known conditions in their previous home town. A predominant pattern in relation to this last group is relationships with family – positive as well as negative – which in one way or another has been decisive.

The following tables can readily be seen in the above context by focusing on expectations for any movement within a five years' time horizon in relation to detail of the responses in relation to age and gender:

Age group response to the question: Do you expect to move within the next 5 years?						
	Number of persons			Percent		
Age group	Yes	No	Total	Yes	No	Total
0-15	223	496	719	0,6	1,3	1,9
16-25	3 174	4 222	7 396	8,5	11,3	19,8
26-40	4 301	6 595	10 896	11,5	17,7	29,2
41-60	3 749	14 509	18 258	10,1	38,9	49,0
Total	11 447	25 822	37 269	30,7	69,3	100,0

Table 3: Age distribution of responses to the question on whether or not one expects to move within the next 5 years.

Gender response to the question: Do you expect to move within the next 5 years?						
	Number of persons			Percent		
Sex	Yes	No	Total	Yes	No	Total
Men	6 098	13 977	20 075	16,4	37,5	53,8
Women	5 349	11 859	17 208	14,3	31,8	46,2
Total	11 447	25 836	37 283	30,7	69,3	100,0

Table 4: Gender distribution of responses to the question of whether or not one expects to move within the next 5 years.

As indicated by the tables there are about 1/3 of the respondents to the questionnaires that expect to move within the next five years. This number – when compared to the approximately 20 % accounted for in the overview over moving during previous years – is a relatively high percentage. It might very well be in keeping with the general trend towards greater mobility in society, and just as much in the fact that movement is increasingly included as part of many people's – especially the younger ones' – planning horizon.

As would have been expected, it is clearly the group aged 16-25 that is dominant in relative terms, with just under half of this group expecting to move. However, it is perhaps most noteworthy that in the group 26 to 40 years, nearly 40 % of the group are expecting to move. When digging into more details it is possible to see that especially the younger part of this group are ready to move, while the group of more established persons with family and with slightly older children makes the

group less mobile, a pattern, however, that changes when the children leave home. Not infrequently, it is the children's choice of residence, which is decisive on where to move, a finding which has been realized in connection with the interviews that have been made in conjunction with the questionnaires.

Regarding the question of gender, Table 4 shows that women are generally more mobile than men. The percentages shown in the table are based on the percentage of the total population in the working age 15-64, but calculated gender-wise 31 % of the women versus 30 % of the men are expecting to move. There is clearly not a large percentage difference but being a persistent difference during the last decades it is enough to make a substantial long-term difference. This is clearly substantiated in the absolute numbers where the labour active gender distribution shows a total of 54 % men and 46 % women for Greenland as a whole.

6.3 From where would they come, and where would they go?

Settlement group response to the question: Do you expect to move within the next 5 years?						
	Number of persons			Percent		
Settlement	Yes	No	Total	Yes	No	Total
Town	9 589	21 968	31 557	25,7	58,9	84,6
Village	1 858	3 867	5 725	5,0	10,4	15,4
Total	11 447	25 835	37 282	30,7	69,3	100,0

Table 5: Settlement group distribution of responses to the question of whether or not one expects to move within the next 5 years.

Regional response to the question: Do you expect to move within the next 5 years?						
	Number of persons			Percent		
Region	Yes	No	Total	Yes	No	Total
South	2,411	3,907	6,318	6.5	10.5	17.0
Mid	3,635	12,459	16,094	9.8	33.4	43.2
Disko	3,381	5,431	8,812	9.1	14.6	23.7
North/East	2,019	4,009	6,028	5.4	10.8	16.2
Total	11,446	25,806	37,252	30.7	69.3	100.0

Table 6: Regional response distribution of responses to the question of whether or not one expects to move within the next 5 years.

Table 5 and Table 6 show some important mobility characteristics related to place of residence, both in relation to residence in town or village and to residential region in Greenland.

Table 5 shows first of all that there are unexpected small differences in the response patterns between persons living in towns and in villages. In towns around 30 % express positive expectations regarding moving, while the situation in the villages shows a little higher percentage – 32 % – interest in moving within the next 5 years. As most of the population are living in towns around 26 % of the positive responses stem from persons with residence in towns while 5 % are living in villages. This part of the survey does not consider which type of moving has been considered. In other parts of the mobility analysis it has been shown that especially the male village residents tend to make use of short distance and short term moving, for instance for temporary jobs in nearby towns, while females from villages are looking for more permanent opportunities.

In the towns both men and women are aiming at more permanent opportunities, and usually in larger towns than the one they come from.

With regard to the regional differences it is interesting to see that there are marked differences between the responses in the four regions. In the Disko region 38 % of the work force express interests in moving, followed by region South just behind, and then region North/East a bit lower with 33 % showing interest in moving. The absolute lowest level is found in the Central region where only 23 % express interest in moving within the next 5 years.

The low number in the Central region is relatively simple to explain, as this is the region to which most of the intended movers are heading. In the Central region one of the major objectives in moving is to look for opportunities in Nuuk, or to leave the country, either temporarily in pursuit of education mainly in Denmark, or more permanently in search of jobs matching the skills of the persons responding to the questionnaire.

As the Central region is the region with most temporary workers from outside Greenland, primarily from Denmark, the objectives of moving are of course very much influenced by this group as many of them – if not most – eventually will return to Denmark. Another reason for the low number wanting to leave is of course that the Aluminium smelter – if it becomes a reality – is expected to be situated in this region!

The high numbers from the Disko region indicate that initiatives are being taken in this region for development of new activities, but also that the proposed site of the aluminium smelter in Maniitsoq is relatively close to the region. What may contribute further to the openness towards moving is the fact that the most recent large scale mineral resource exploitation has been taking place just north of Disko bay and with partici-

pation of workers from this region.

Among the reasons for lower interest in moving from the southern region may be the fact that the work force in this region is considerably older than in any of the other regions. As was shown in the table regarding age structure in relation to “willingness to move” the older age groups were less reluctant to pursue activities that would make it necessary for them to leave their region.

The very low percentages in North and East show that these regions to a considerable extent have been disconnected from many of the processes of change that have been influential on the west coast region in general induced by the modernisation processes in fisheries during the last half century or more.

Primary target for moving in accordance to both old and new municipalities			
Target, old municipal structure	Percent	Target, new municipal structure	Percent
Denmark	18,2	Denmark, Greenland outside municipalities or don't know	32,6
Don't know	13,6		
Greenland outside municipalities	0,8		
Nuuk	20,1	Sermersooq	24,1
Ammassalik	2,3		
Paamiut	1,1		
Ittoqqortoormiit	0,6		
Ivittuut	0,1		
Ilulissat	8,3	Qaasuitsup	18,5
Qaanaaq	2,3		
Qasigiannuguit	2,3		
Uummannaq	2,2		
Aasiaat	1,7		
Upernavik	0,9		
Qeqertarsuaq	0,5		
Kangaatsiaq	0,3		
Sisimiut	10,8	Qeqqata	14,5
Maniitsoq	3,7		
Qaqortoq	6,8	Kujalleq	10,3
Narsaq	2,3		
Nanortalik	1,2		
Total	100,0	Total	100,0

Table 7: Primary target for moving in accordance with both the old and the new municipal structure.

Responding to the question “Where are you interested in moving to?” made it possible for the respondent to choose between municipalities using the old municipal structure as well as a few targets outside Greenland. By using the old municipal structure much more detail became available, and it illustrates that the choice of target is actually very much focused.

As shown in Table 7 the municipality of Nuuk and Denmark are the most dominating targets for moving. With percentages of 20.1 and 18.2 respectively they are close to 40 % of all responses. At a lower level are municipalities with larger towns such as Sisimiut, Ilulissat and Qaqortoq, sought by 10.8 %, 8.3 % and 6.8 % respectively. A general characteristic of all of the above mentioned places is the access of different types of education which is an obvious attraction for the younger persons. For all other municipalities the numbers are low, from 3.7 % in Maniitsoq down to 0.1 % in Ivittuut and 0.3 % in Kangaatsiaq.

The image of a marked increased concentration of population appears very clear. It comes from the combination of a strong desire to move, the interest in education opportunities and the major cities in the middle of Greenland being the obvious attractive places to go to. Interesting is also the fact that the town of Maniitsoq – the expected location of an upcoming aluminium smelter – shows such a low level of attraction compared to for instance Qaqortoq in the South. Both places used to be regional centres for fisheries, but they have been affected by fisheries going off-shore. But in contrast to Qaqortoq where other business activities and education opportunities have been available for a long time, Maniitsoq has been defined as a place that relies on fisheries, and it has therefore also been exposed to a massive out-migration, and it has a very low attraction taking the size of the town into consideration.

Besides asking whether to move or not, additional questions have been focusing on the differences between whether one travels alone or together with others. As around one third expects to move alone – among them many young people pursuing education – by far the most dominant categories are expecting to travel with others, for instance spouse / partner is mentioned by 56 %, which is followed by the option of travelling with child / children by 40 %. It is a pat-

tern which has also been documented in the registry-based analysis. Movements are increasingly happening as collective actions including parts of or entire families or households. It is important information which needs to be included when the possible consequences of new activities – for instance an aluminium smelter established in Maniitsoq – are considered. The need to think in family context is much more demanding than finding individual relocation solutions. Jobs for spouses, kindergartens, education, public services etc. need to be included.

6.4 What would be their interests?

Table 8 presents an overview of some of the most important wishes and aspirations Greenlanders have regarding work related to large scale activities. In the table there is a sub-division of responses according to settlement type and gender.

The table encompasses a wide range of activities and at the same time it indicates that the respondents are open to a wider field of options. As a consequence there are no individual activities which actually account for the lion's share of all the activities.

One of the things that are remarkable with regard to the distribution of responses is the differences within the gender based and settlement based issues. The darker versus the lighter colours highlight the main differences, and it is clear that precisely the qualification issue and its position relative to future labour markets are recurring themes. Women have the absolute major group with 18.2 % responses in relation to administration, book-keeping etc., but also with a higher representation in the group with academic work compared to men, and in both types of work the respondents from towns are clearly dominant compared to the inhabitants of villages.

Female over-representation compared to that of males is found in what is often characterized as being female work. For instance catering which shows up in one third of all female responses, a number which is ten times the responses from males. Also nursing, hospital work and related activities are dominated by women. Both types of work are mostly wanted by representatives from villages.

Wishes/aspirations in relation to work connected to large scale industries.				
Percent of responses from types of settlements and gender.				
Activity	Settlement		Sex	
	Town	Village	Men	Women
Administration (office work such as book-keeping, travel arrangements)	8.5	6.7	4.6	18.2
Academic work (Engineer, Biologist, Geologist, Law, Economy etc..)	8.2	3.5	6.0	6.8
Drilling and blasting	6.6	8.9	9.2	2.0
Catering (cleaning, cooking)	8.8	13.1	3.8	33.8
Skilled work (electrician, carpenter etc..)	15.7	12.1	17.8	1.4
Harbor work	5.8	9.9	9.2	2.0
Management responsibilities (shop-steward etc..)	9.3	5.3	9.0	3.4
Working with machinery (caterpillars, dumpers etc..)	11.3	7.8	12.0	2.0
Nursing, hospital work etc.	1.6	3.5	1.0	7.4
Transport and logistics	11.0	4.6	9.8	3.4
Unskilled work	13.2	24.5	17.6	19.6
Total	100.0	100.0	100.0	100.0

Table 8: Wishes and aspirations among Greenlanders in relation to work connected with large scale industries.

The major male choices are typical “male” vocations, for instance drilling and blasting, skilled jobs such as electricians, carpenters, working with machinery, transport and logistics, harbour work and similar activities. The divide between towns and villages in these groups show that basically most jobs requiring training of longer duration such as management responsibilities, working with machinery, skilled work and transport and logistics are dominated by respondents from towns. In contrast to this the unskilled jobs are the absolute dominating group sought by the inhabitants of villages.

One thing is the option of adjusting the work force to the specific job types within the mining and industrial sector. As indicated above there are clearly interests in basically all major groups of work, and in that sense the labour market may be considered ready for these challenges.

In addition to this, however, is the adjustment to the specific working conditions. The vast majority of experiences from the labour market in Greenland show that the workforce is accustomed to working within normal office or shop opening hours and to some extent also

with shift work. For many with these experiences the new challenges in relation to mining, manufacturing and hydrocarbon production may come as a surprise.

But by taking part in such activities as fishing one is also a part of the workforce, with experience of being on the job for a long time and then being home for a similar period. Similarly, the special insular nature of the Greenlandic labour market has added a higher degree of flexibility and increased local and regional mobility, an issue which has been recognized in the register-based analysis. There is no doubt that these experiences may play a significant role in a more open and integrated labour market in which different forms of commuting can be crucial. In other parts of the survey it has been shown that there is relatively much interest in various alternative forms of employment, such as the type of work where you may be working on weekly or monthly shifts. What role such interest may have on future activities will depend on the precise conditions established around the large scale activities. The problem may, however, be that those with experience in labour market flexibility don't have the qualifications, while those with qualifications have limited flexibility.

6.5 What would be their requirements?

In relation to this question which is asked in the questionnaire, there are marked differences in the responses from women and men, as shown in Table 9. The table has been organised to enhance the gender based differences in the responses. While many women are pointing to education – their own and their children's – as well as family relations and recreational opportunities as primary causes, more men than women point to issues of career, work and employment, and also to partner's education as reasons to look elsewhere. Of similar

importance are the issues of the opportunities the site offers, for example, public transport, housing and more. Thus one can to some extent determine the gender characteristics when it comes to the specific causes of a desire to move.

From a close reading of the table's background data it can be seen that there are difference between the genders when it comes to the number of different reasons for moving. The men indicate an average of 20-30 % more different reasons than women. The women in this context are thus more focused on individual reasons while the men spread over a wider spectrum.

Most important issues in relation to moving				
Gender distribution and differences of answers				
	Percent of responses		Differences in responses	Gender characteristic
	Men	Women		
Carreer opportunities	9,9	7,5	2,4	Clearly male dominans
Partner's education	4,9	2,8	2,0	
Withdrawing from labor market	2,9	1,3	1,6	
The option of getting a job	9,9	8,4	1,4	
The option of getting better working conditions	7,4	6,4	1,1	
The option of getting another (better) job	12,3	11,2	1,1	
Improved public transport options	2,9	2,1	0,9	Equal importance
Does not feel "at home" where I'm living now	3,4	2,6	0,8	
Public service options	4,7	3,9	0,8	
Better salaries	8,6	7,9	0,7	
(Better) housing options	5,2	4,5	0,7	
Improved health conditions	2,1	1,5	0,6	
Improved leisure time options	7,0	8,1	1,1	Clearly female dominance
Better education options for children	6,0	9,0	3,0	
Family matters	5,7	10,5	4,8	
Better own education options	7,3	12,4	5,1	
Total	100,2	100,1		

Table 9: Most important issues in relation to moving.

6.6 What impact might be the result at both sites?

What may happen in case new activities are introduced in Greenland is extremely difficult to provide a more precise insight into. But when characterizing the impact of new activities it is important to focus on which character the new activities have in relation to the settlement structure. As discussed by Rasmussen (2003) there are basically three typical forms of involvement, each with dynamics of their own:

Enclave economies,

■ Adjacent activities, and

■ Community Integrated activities.

In order to get an idea of the potential consequences a number of examples from Greenland and other Arctic regions could provide some input to a discussion.

Enclave economies are characterized by situations where all activities at the mine and energy production site are isolated from the surrounding communities, so that the only interaction is through the royalties paid by the mining companies, and possible short or long term employment of persons from the communities is on an on/off basis, for example two weeks on and two weeks off. This situation has been the case in sparsely populated areas with limited accessibility – a situation characterizing Greenland – and further elaborated on in the discussion of the Josva copper mine and the Amitsoq graphite mine in South Greenland as well as the mining activities at Mestersvig in East Greenland. There are many similar sites in the Circumpolar North, accounted for among other things, by the dispersed population and the character of the mineral and energy resources as being both dispersed and of such size that it would be too costly to develop a more permanent settlement. Therefore a substantial part of the on-going activities can be characterized as enclaves.

The fact that the activity is considered an enclave does not prevent positive interaction with settlements in a specific area. For instance in connection with the establishing of the “Red Dog” lead and zinc mine close to Kotzebue in NW Alaska one of the requirements by the NANA development corporation was, that the workforce should include a substantial number of workers from nearby settlements, and that the mining activity should contribute to the economy of the remote settlements (Rasmussen 2000; Rasmussen 2003; Storey and Hamilton 2003). In spite of the objectives,

however, the reality has been that the economic opportunities created by the mine instead have led to an out-migration to larger communities such as Anchorage.

There are, however, cases where enclaves, after they have been discontinued instead of being abandoned as originally planned eventually have been turned into more permanent settlements. It is the case with the iron ore mine at Schefferville in Northern Quebec where the production officially started in 1950. At its peak the settlement had a total population of around 4.500. But when the mining activity halted and the equipment was dismantled 1982 the place was in principle closed. The situation, however, has been that parts of the place have been taken over by indigenous groups in the area, primarily the Montagnais and Naskapis and the town has become an important centre for tourism in the region.

Adjacent activities emerge when the mining activities have developed a certain degree of interacting with nearby communities, for instance through the involvement of local workers. This could be as employees of the mining company, or it could be occasional provision of local food for the miners. It could also include services rendered for the miners and the mining company when miners visit the communities in connection with leisure time activities, or it could be the larger settlements acting as major communication and administration centre for the mining company.

Among the cases from Greenland the situation of “The Black Angel” mine in Uummannaq as well as the mine in Ivittuut both show this characteristic pattern of relationship with the communities, the latter even developed characteristics that also could be characterized as those of an integrated community. Similarly there are many larger settlements in the North situated relatively close to mines and energy producers which have been enjoying similar positive relationships. In the case of Prudhoe Bay oil development in Alaska, Fairbanks is an important link to the activities, and not only to this single resource development, but also to a number of placer mining sites in the adjacent areas, or in NWT where Yellowknife, which was partly developed on local gold mines and administrative activities related to the NWT, which presently is in a process of developing adjacent activities related to the wave of diamond mining activities within a radius of a few hundred kilometres (Rasmussen 2000).

Community integrated activities have been developed in situations where the mining and energy production have become an integral part of the life of the community. It means that the community includes many other activities which relate to the general characteristics of a community, such as shops, schools, oth-

er types of industries, renewable resource exploitation etc., and at the same time it interacts with the mine through labour exchange and rendering of services to the company etc.

While many settlements in the South throughout history have been known through their economic base in mining, this type of settlement is relatively rare in the North. The explanation for this is the same as the reason for the existence of many enclave mines, namely the dispersed character and the short life span of the resource. In Greenland, however, the town of Qullissat was more or less a role model for that type of relationship. Even though it could be characterized as a mono-economy due to the dominance of one single activity, namely coal mining, the economy was nevertheless multifaceted involving many other types of businesses. In the Russian North this type of settlement is more common than in other parts of the Arctic. That is the situation with settlements such as Nikel, Zapolyarne, Norilsk, and others. Longyearbyen on Svalbard is also an example of a place, where the town originally was based on coal mining, while today the mining activity is of minor importance, while administration, research, and education have become the major activities – and not the least tourism!

In Canada Dawson City used to be a major city with its activities integrated with gold mining activities, and gold mining still plays a certain role, in fact its present existence is primarily due to the continuous flow of tourists. In the case of the iron mining in Fermont in northern Quebec where production started in 1974 and was supposed to have gone through the same process as Schefferville, i.e. abandoned by 2000 after the iron ore resource had been depleted, and the inhabitants (peak employment 860 persons, total population around 3.500) eventually relocated. But in contrast to Qullissat and Schefferville, the citizens have fought for their town, and this public resistance seems so far to have been successful. With no more iron ore, the inhabitants are considering turning the town into a regional centre primarily based on tourism.

Among examples in Canada regarding a successful creation of integrated activities there has been the recent development of the oil and gas activities in Atlantic Canada where the integration of local communities in the development process has been crucial. The key factor in this process has been The Atlantic Accord which has acted as an important tool for the promotion of a clear focus on the potentials of a positive interaction between the project and the surrounding communities, which has been a vital part of the process (Rasmussen 2000; Canada – Nova Scotia Offshore Petroleum Board 1999; Department of Industry Trade and Technology

1998; Storey and Hamilton 2003).

7.0 Conclusions and Perspectives

As outlined above, there is not a simple answer to the questions raised above of what may happen in case new activities are introduced in Greenland. Basically it is a situation placed somewhere between two dimensions: On the one hand there is the choice of approach regarding settlement type:

- Enclaves, which would imply some kind of FiFo – Fly in, Fly out – arrangement;
- Adjacent activities where a combination of FiFo and involvement of population from adjacent communities may become the solution;
- Community Integrated activities where direct impact on the community is obvious, but may just as well include FiFo involvement.

On the other hand the development is depending on the choices and preferences made by the population regarding interests and abilities in involvement.

The answer may be seen as reasonable and straight forward in the sense that the first dimension would be depending on a political decision, while the second dimension will depend on the preferences and abilities in the population and may be read out of the results from a number of surveys as the ones described above. Both dimensions will, however, be impacted by some level of uncertainty.

To illustrate the complexity of the answer an example is presented in the next section.

7.1 Micro-simulating the future based on survey responses

A micro-simulation of the potential consequences of introducing an aluminium smelter in Maniitsoq has been developed in order to give a forecast of what demographic results as such might be the outcome in Greenland (Rasmussen, 2000).

In the simulation a division of the population in 6 ten-year age groups has been applied, i.e. the age groups 0-9, 10-19, 20-29, 30-44, 45-64 and 65 years and above. In order to manage the regional structure four regional units have been used, encompassing: Centre towns, Centre villages, Peripheral towns and Peripheral villages. The Centre towns include the large towns around Maniitsoq, i.e. Maniitsoq itself, Nuuk and Sisimiut, and also the towns in the Disko Bay. Centre villages are the villages adjacent to the centre towns, while the Peripheral towns and Peripheral villages basically encompass all other towns and villages in Greenland.

In addition the gender parameter has been included, as well as the major demographic parameters, such as the natural reproduction parameters, as well as national and international migration parameters. In order to trace details on the latter parameters, all internal mobility has been based on mobility patterns between the mentioned types of towns and villages during the last 20 years.

The micro simulation has been outlined like this:

A large scale industry – in the example an aluminium smelter – is expected to be introduced in Greenland at its earliest in 2014. In the construction phase an unknown number of persons but probably around 5,000 will be involved, but the company is supposed to ensure a substantial part if not all of this number.

During the construction phase with an expected duration of five years a total of 800 permanent jobs will be established. It is expected in the forecast that the vast majority of these jobs will be taken by workers from Greenland and that the necessary training for these jobs will be done in Greenland.

In the planning of the future development the following was assumed:

- The company is established in a city centre area in the middle of West-central Greenland.
- Half of the jobs will be held by members of the local labour force, the other half will be held by labour com-

ing from villages in the centre area or towns and villages in peripheral areas.

■ Two thirds of the jobs are considered to be jobs primarily aiming at and mainly attracting male workers, while the remaining jobs will be jobs that are more appealing to women.

■ Half of the jobs will be filled by people who come as singles, and half the workforce will be one or two persons from existing families going to the place leaving the rest of the family at home.

■ In the group of families two out of three would be families without children while one out of three families will be families with two children on average.

Besides the direct attraction of new employment opportunities, a significant side effect would be brought about by the accompanying spouses or partners as well as the accompanying children which would become important parameters in the demographic consequences. In some cases two persons in the same family may be looking for jobs in the new industry but for many of the accompanying persons the situation would be an additional contribution to the local labour market in the town with the new industry.

Using the model under these constraints will result in an output which is shown in Figure 1.

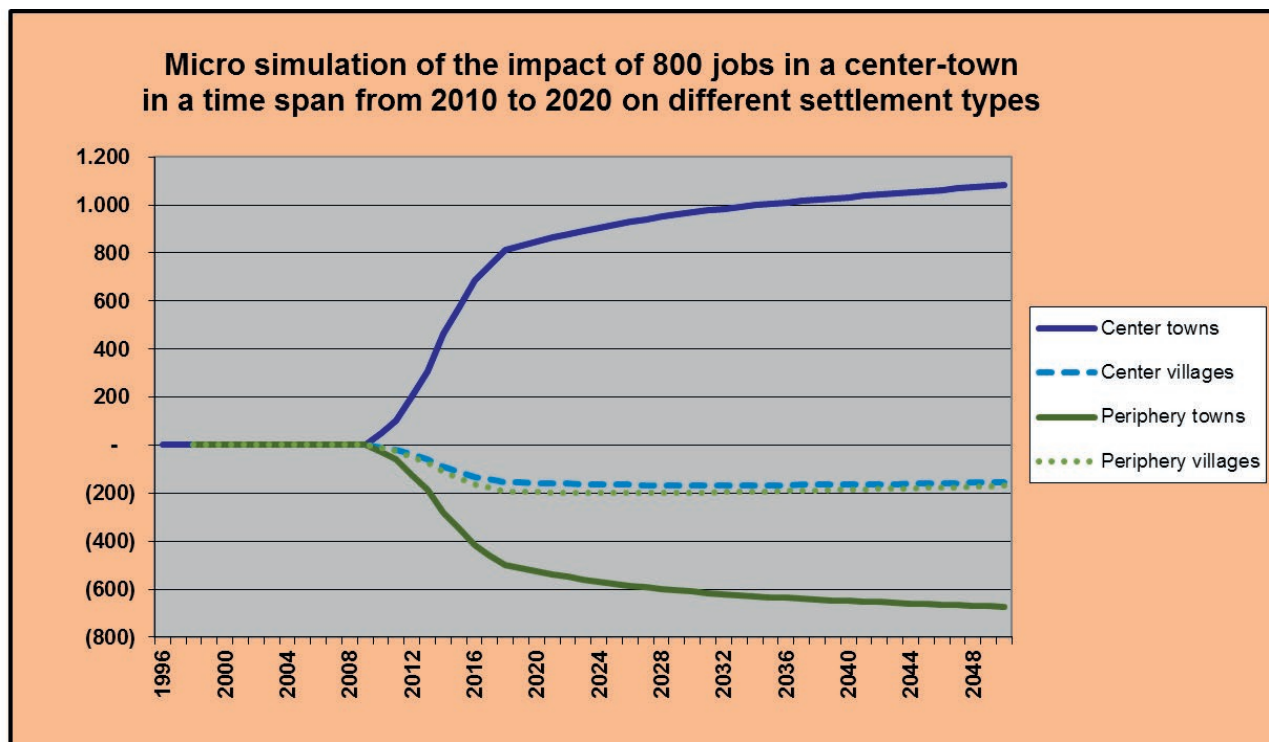


Figure 1: Micro-simulation of the potential impact of the introduction of 800 jobs in a Centre-town in a time span from 2010 to 2020.

While the jobs are offered in one of the centre towns both the lack of qualifications and available persons leads to an influx of persons from other towns and villages. The lowest numbers of people will come from the villages in the Centre region because the job opportunities in the Centre towns have already been exploited, leaving the Centre villages either with a lack of people in the relevant age groups because they already have moved, or the villages are in such a strong position job-wise that only a limited number of persons will be tempted by the new opportunities.

The situation is much different when it comes to what are characterized as “periphery towns”. These towns have marked limitations in what kind of jobs are offered, so a substantial number of persons will make use of the new opportunities and choose to move. A similar situation characterizes the villages in the periphery. So from these regions a substantial number of persons would also choose to move.

The moving of several hundred persons from towns in the periphery and around a hundred or so persons from the peripheral village is in itself a problem for these places. What is the most challenging problem, however, is the fact that those choosing the option of moving will be the part of the population who are

among the best trained and most skilled persons, leaving both towns and villages with voids in these fields, which it may be extremely difficult to compensate for because these places may be much less able to attract replacements from other towns and villages.

The potential long term consequences mentioned in the above example have been generated by means of the model; and the results are shown on the graph. The direct effects of the introduction of the new activity are seen just before and after the introduction date. But it is quite clear that the long term consequences are much more substantial than the immediate effects. While the introduction of a new group of young well-qualified workers in the Centre town has a continuous positive multiplication effect throughout the whole period; and eventually it results in a situation where 600 jobs bring about a population increase of around 1200 persons. The exact opposite process has been the result in the case with both towns and villages in the periphery. A continued state of flux and decline in the population in both settings has been the consequences; and embedded in these changes is at the same time a general loss of qualification in the population due to the attraction of qualified persons away from these places.

7.2 An alternative to the micro-simulation – lessons learned from “The Black Angel”

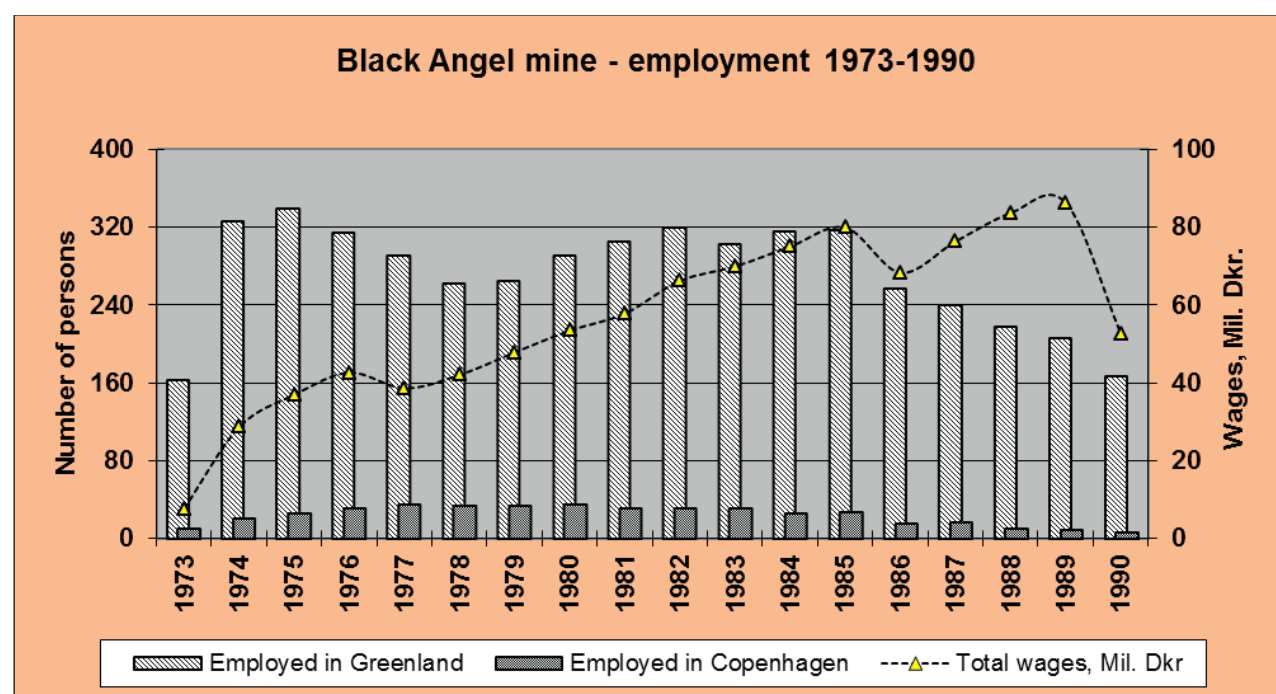


Figure 2: Development in employment at the Black Angel mine from 1973 to 1990.

Lessons learned about “The Black Angel” mine in Uummannaq, which was active from 1972 to 1990 are interesting in this context. First because it was the first major private mine which employed Greenlanders, and secondly because analyses (Rasmussen 2000) made it possible to identify which persons from Greenland were involved, and what impact they had on the communities in Greenland during and after the mining activities took place. The analysis has been based on registries since 1977 which have made it possible to establish a comprehensive list of persons who have been registered residents in the mining area.

Figure 2 show the development in employment in the mine and at the headquarters in Copenhagen from 1973 till production ceased in 1990.

In the construction phase, all construction work was based on imported workers and encompassed around 400 persons. After the involvement of Greenlandic employees in the early 1970s there was a gradually increasing involvement of Greenlanders in the mine. Figure 3 shows the birthplace of the Greenlandic workers who were employed by the mine.

Place of birth in the unicipalities (prior to the reform in 2009)	Percent
Uummannaq	51,3
Aasiaat	11,8
Nuuk	6,7
Ilulissat	6,7
Unknown	5,0
Qaqortoq	3,4
Maniitsoq	3,4
Qeqertarsuaq	3,4
Narssaq	2,5
Sisimiut	2,5
Qasigiannnguit	0,8
Avanersuaq	0,8
Tasiilaq	0,8
Ittoqqortoormiit	0,8
Total	100,0

Figure 3: Overview of the place of birth of the Greenlandic workers involved in the mining activities.

As shown, a considerable proportion – over 50 % of the total group – came from Uummannaq municipality. The remaining half came, with a relatively even proportion, from a large number of other municipalities.

A relatively larger proportion – almost 12 % – came from Aasiaat, but also a somewhat higher figure – almost 7 % – came from Nuuk and Ilulissat respectively.

The adaptation of the Greenlandic labour force to work in “The Black Angel” was in many ways quite successful. The salaries from the jobs at the mine became an important augmentation to the household economies, and also to the development of a more efficient fishing fleet in the settlements. When the mine closed one consequence was a marked decline in average income for the people who were involved, as shown in Figure 4:

Year	Number of persons	Average Income	Indexed values, 1988=100
1988	308	259.174	100
1989	286	317.867	123
1990	254	301.113	116
1991	138	202.822	78
1992	129	182.984	71
1993	122	179.733	69
1994	120	194.277	75
1995	117	216.825	84
1996	115	223.328	86
1997	111	242.131	93

Figure 4: Average income level among employees in the mine before and after the mine was closed. The personal incomes have been traced for the 308 workers identified in 1988 and the following years up till 1997. The decline in the number of employees is due to permanent or temporary out-migration, death and other reasons that no longer were noted in the registry.

Average income while the mine was active clearly was higher than after the mine was closed. Immediately after the mine was closed, there was a fall in the average income to a level that was less than 2/3 of the previous level; and this lower level seems to have continued for several years, after which the general income increases took off again. Part of the explanation for the decline is partly due to the fact that the former miners have had difficulty finding jobs in their area of qualifications. Another part of the explanation has to do with the generally higher wages in mining and production, among other things, on the basis of a greater number of hours worked.

Then after a couple of years a slow rise in income levels appears again, however, without reaching the level it was at when the mine was active. The last increase is

partly due to the general wage and price increases, but this cannot explain the whole increase. According to reports from a survey conducted among former miners an important part of the explanation was that almost all of them have returned to the type of job they had before they started working in the mine; and in that connection they used some of their surplus income as investment capital in better boat and fisheries equipment. Only a few have made it a career to work in mines and sought employment in this industry after the closure of the mine. But the general impression is that the trajectory that was established initially was followed, and that working in the mine has been just a short or prolonged interruption of another business career.

Virtually all respondents to a survey, which was conducted after the mine closed, were positive about getting an equivalent job or going back if the mine reopened. Working in the mine was remembered not only as a means to earn a good salary and financing major purchases such as fishing boats, but also remembered as an interesting experience.

7.3 And what could be foreseen?

... when looking at the present situation in Greenland. Probably none of the above examples!

The micro simulation reflects the present on-going demographic changes combined with the population's choices as the situation is today. When reflecting on future situations it is important also to include the visions that have been central in the discourse in Greenland during the last decade. This also implies adding large scale mining activities as a factor affecting future mobility. This may cause changes in overall mobility patterns within a relatively short period of time. Similarly the political focus may shift when negotiations with a company about such things as salaries, royalties, use of local versus foreign labour etc.

Taking an example from the 1970ies and 1980ies where important positive impacts have been identified should not lure the reader into believing that history might be repeated. The period during which the Black Angel mine provided jobs was also characterised by a major increase in fisheries where small boats and village based fisheries was an important contributor to an advance in the Greenlandic economy. Neither small boats nor small scale fisheries are major players in the fisheries "game" anymore, so private investments in boats and equipment which is fundable by excess incomes from mining activities can no longer be considered a major push towards competitive fisheries investments when the competitor is the large scale offshore

fisheries, and the world market price is constantly declining.

The examples may serve as illustrations of potential consequences, and they may be used as an inspirational basis for further analyses. But it is important to keep in mind that such examples are time specific, and only to a limited extent able to cast light on the present and future situation:

- Increasing mobility has become an issue of both political and economic importance. It generally raises the questions of reasons why some people move while others choose to stay.

- Concerning to economic development and urbanisation focusing on new types of industrial activities opens up the important question of who may be interested in participating in these activities, and of what the geographical implications are of people moving in order to look for new opportunities.

- Even such opportunities do not necessarily lead to permanent relocation, as migrant workers come in various forms, for instance 2-4 weeks on the job followed by a corresponding number of weeks at home from which it nevertheless has impact on both the receiving community and the community the migrants originate.

- A key issue has furthermore been what would be considered a "good life" – types of work, wages, employment options for accompanying family members, quality in terms of types of housing, social infrastructure, environment, offers of public facilities, etc., and how these considerations would have significant impact on tendencies in relation to both mobility and demographic characteristics in the near future.

The above analyses have been initiated because of the possible intentions of establishing an aluminium smelter in West Greenland. The survey was conducted in order to get a more in-depth understanding of the potential regional consequences of such an activity. It was focused on clarifying the possible regional consequences of changes in business structures as a result of the introduction of new activities, looking into attitudes to mobility in relation to employment and the like. At the same time it was aiming at providing data in relation to gender, age and qualification structures in different settlement types, and furthermore the survey was also contributing responses to the respondent's reflections on other forms of employment, including the possibility of staying with the family and then working as a migrant, what arrangements could be considered, as well as questions of what would be attractive work and workplaces, what would be of inter-

est etc. in relation to wages, housing, transportation, social activities, etc.

It is obvious that such surveys and analyses provide not only a concerned but also an educated basis for the upcoming discussions that are going to help shape the future of Greenland. But it should also be emphasized that such mappings and surveys have to be repeated frequently in order make it possible to reflect on the new challenges that are due to the pace of the on-going changes!

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27. Aftermath of growth in Reykjavik

Capital region – land-use and values inherent in Icelandic urbanization

Anna Karlsdóttir

Introduction

Reykjavík is a young urban capital and has many of the characteristics associated with urbanisation in the Arctic. Before the independence of the Icelandic republic in 1944 Copenhagen was the 'functioning' capital of the nation. After the invasion of the British Army during WWII and later in the postwar period, the build-up

effects of the American NATO military base, real urban cluster was formed in the south-west corner of the country, Reykjavík capital region. Though the city in its outlook and interior has changed significantly since then it can be claimed that in this respect, Iceland thus shares some of the characteristics of the Arctic neighbours in being a former colony in more than one sense and experiencing relatively recent urban development.



Picture 1. Camp Skipton in Reykjavík around 1941 (Stofnun Árna Magnússonar).

All along since beginning of the 50's Reykjavík has grown and its surrounding municipalities have grown exponentially. The capital area covers an area of 1062 km², ten times larger the size of Paris (105km²) (National land survey 2011). Since then a decade before independence of the Icelandic republic in 1944, the Capital has incrementally grown in several different phases. The growth of the urban structure has led to considerable urban sprawl.

The main focus of this article is describing some of the processes of planning and boosterism tendencies happening until and after the fall of 2008 when the Icelandic economy collapsed. Simultaneously the focus is on housing issues in terms of identifying shifting values. In this article I define values from a range of interconnected fields making up the physical structures the city inhabits, its buildings, the current and future homes and workplaces of people, the social and economic aspects shaping the city and its city life. Without claiming that I capture the city in its totality, I am emphasising that many strings of interconnected and varied values make up what a city is (traditions and institutions, entrepreneurialism versus social institutions and aesthetic and financial values).

The asymmetrical processes of urbanisation and housing development in Reykjavík

As mentioned, urban development in Iceland can be claimed to have accumulated from the 1930's where 56,5 % of Icelandic citizens had settled in urban com-

munities (Sveinsson, 2011, Sveinsson 2007). Today Reykjavík and its surrounding municipalities in the South West region make up a high degree of the total population making Iceland a predominantly urban nation.

That development has not always been favored in politics however. Strong political currents following independence and movements all along the 20th century till this day advocated that the „Icelandic farmer culture“ was the „haute couture“, or interpreted in Carl Sauer sense, meanings were infused with a normative orthodoxy describing the essence of the country (or the national culture) (Entrikin, 1984). These same political movements evolving around primarily the progress party and the independence party, verbally and politically, treated the town or the urban structure as a threat to the „idyll“ in similar manner as the anti-urban, anti-industrialisation discourse in Europe (Burchardt 2002). Famous were the ironic writings of a nationally known fictional author Þórbergur Þórðarson (1924) earlier in 20th century – where growing bad culture was traced to the origins of the urban structure and urban life that was in its embryonic forming at that time in Reykjavík. Prominent political figure in early 20th century Icelandic politics, Jónas Jónsson always connoted with the farm Hrifla (NE Iceland) was deeply convinced that urban settlements like Reykjavík was a wrong place for human beings. Though this was the peak of the anti-urban campaign in Iceland, contemporary political agendas are still influenced by grains of this belief till this day (Hall et.al.2004).

Year	Total Iceland No. inhabitants	Annual increase%	Reykjavík	Annual increase%	Akureyri	Annual increase%
1930	108.861	1,5	28.304	6,0	4.286	5,6
1940	121.474	1,2	38.196	3,5	5.813	3,6
1950	143.973	1,9	56.251	4,7	7.188	2,4
1960	175.680	2,2	71.926	2,8	8.835	2,3
1970	204.578	1,6	81.693	1,4	10.755	2,2
1980	229.187	1,2	83.766	0,3	13.420	2,5
1990	255.708	1,2	98.038	1,7	14.174	0,6
2000	282.849	1,1	111.345	1,4	15.385	0,9
2011	318.452		198.393		17.559	

Table 1. Development of population in Iceland, main population centers Reykjavík and Akureyri 1930-2011. (Hagstofa Íslands 2012 and Hermann Óskarsson 2010).

The subject of a city or the rural from a dichotomic perspective, as if it were totally opposite phenomena, has been and is still a popular subject in politics. It lays beneath many political discourses, even in contemporary political debates in the special antagonism between the capital and the rest of the country (Óskarsson, 2010, Bjarnason 2009). As times have gone by a more varied view on the urban culture has evolved and is being understood both in terms of being a way of life and a range of cultural practices, not any one particular version (Nelson et.al 1992:5). For an investigation of planning cultures, there are elements which can be easily recognised and understood because they refer to 'planning artefacts' such as urban structures and urban master plans, or to planning institutions and further public or private actors involved in planning processes. At the same time there are cultural values, traditions, attitudes and habits which have a significant influence on planning structures, processes and outcomes but are not obvious immediately. These cultural assumptions and values can be divided into two dimensions; the 'planning environment' and the 'societal environment'. The 'planning environment' refers to assumptions and values that are specific for actors being involved in structures, processes and products of spatial planning (Knieling & Othengrafen 2009).

The population policy debate on the large urban centre limited to the regional capital has evolved around how to manage growth particularly related to housing and the extent to which the concentration of development in the city deprives other settlements from a 'fair share' of resources. In that respect the growth of Reykjavík has like in other remote regions been informed by notions of the 'frontier' (Carson 2011). It also represents a societal and demographic development with increased hierarchization between urban settlements (Dybbroe et.al 2010) with one predominant largest city and only one another larger urban structure as the alternative, Akureyri in the North of Iceland (see table above). Urban space can thus be viewed as a 'container' for economic and social processes and as a result of social relation among people living in a certain area or region where culture and cultural influences play a crucial role (Knieling & Othengrafen 2009).

The academic tradition or discipline that usually defines the urban as an independent subject is strong in architecture and planning, sub or sister disciplines to geography, in that they focus on spatial assets, shapes, forms and relations in a society on a variety of geographic scales.

The French philosopher Henri Lefebvre was a strong supporter for looking at the city and the urban as an independent phenomena (Lefebvre 2003). He applied

the term 'urban society' referring to it as a society that results from industrialization, which he characterized as a process of domination that absorbs agricultural production. He claimed this was the way urban society would take shape first at the end of a process during which the old forms were burst apart as end result of a series of discontinuous transformations. Manuel Castells, who has written extensively on cities, globalisation and ICTs means the historical relativity of the term "urban" makes the urban field one without a rigorously defined object (Castells 2005). Spatial transformation is a fundamental dimension of the overall process of structural change in his making of an outline of his theory of urbanisation in the information age. According to it, many cities are sites of areas, small and large that are included in these global networks, at different levels. From a structural point of view, the role of cities in the global economy depends on their connectivity in transportation and telecommunication networks and on their ability to mobilize effectively human resources in the process of globalization. Nodal areas of the city will receive the highest priority in terms of investment and management, because they are the sources of value creation from which an urban node and its surrounding area will make their livelihood. Thus the fate of metropolitan economies depends on their ability to subordinate urban functions and forms to the dynamic of certain places that ensure their competitive articulation in the global space of flows (Castells 2005).

Iceland is as a subarctic nation obviously headed this way in that Reykjavík, the main urban structure and capital of the nation now inhabits around 80% of the population with Akureyri being the next largest urban settlement as its only real urban alternative and in surrounding urban clusters in the polarized spectrum of the Icelandic settlement structure.

Urban growth development and planning issues in Reykjavík capital region on the brink to and in 21st century

Urban concentration in Iceland is characterised by significant dominance of one concentrated population centre, The metropolitan region of Reykjavík and its surrounding municipalities, where approximately 199 thousand of the total population of 319 thousand live. The asymmetrical population distribution in terms of land-use has few other similarities (maybe Alaska, Australia and Newfoundland). In this respect the population distribution has some similarities to 'urban at the edge'.

According to McTurk and Teixeira (2011) research on housing and demography in small and medium-sized cities is not well advanced. Their studies on housing in remote cities in Canada and Australia reflect some of the challenges associated with being fast growing cities in recent times and subject to substantial housing pressures – both in terms of availability and affordability (McTurk & Teixeira 2011). In those terms Reykjavík greater capital area shares some similarities to the recent growing cities on the edge.

Opinions on architecture in the short story of the urban planning of Reykjavík metropolitan region is mixed. Strong convictions meet usually in the debate over conflicted planned areas. This is vividly described by the author Hallgrímur Helgason who uses the metaphor of acne for architectural mishaps in Reykjavík.

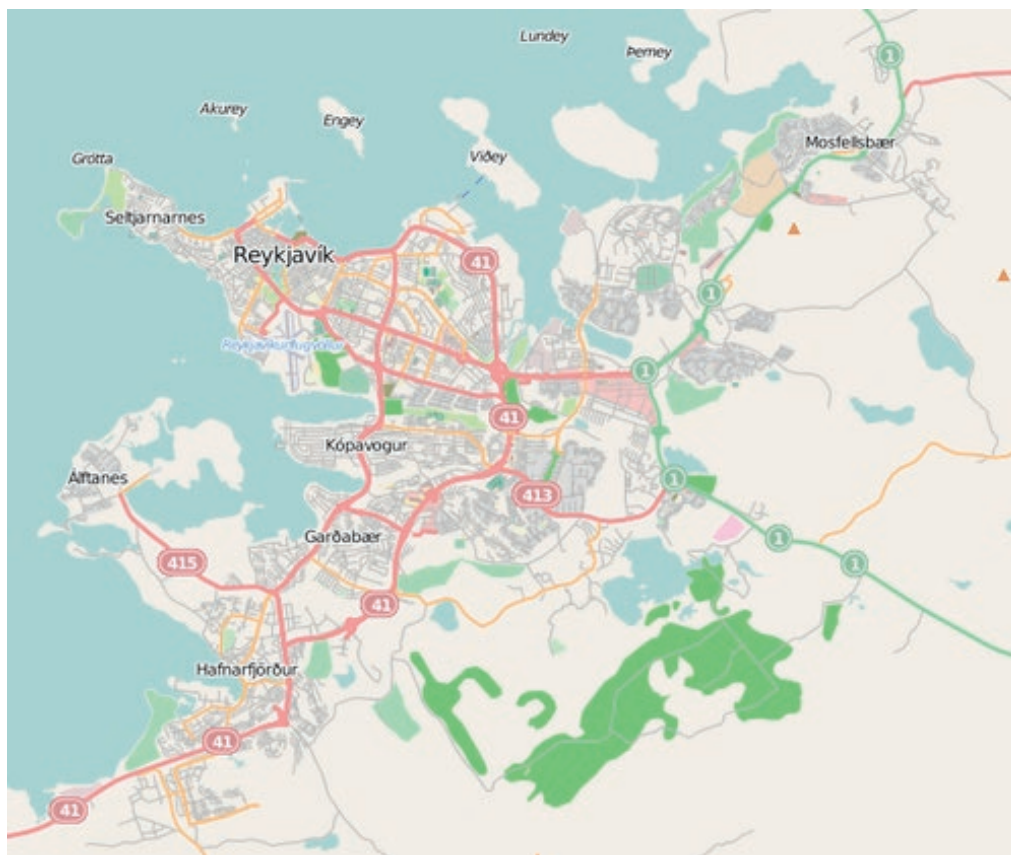
„...the worst symptoms of our skin disease were the way we developed our only big city. In only fifty years it went from being a lovely little harbour town to becoming a concrete monster tied up by motorways. Copenhagen was based on Paris and still looks sort of like a Paris of red bricks, while Reykjavík looks like Rönne in Bornholm surrounded by Los Angeles. I'm not kidding. Reykjavík is the most spread out city on the planet. It's one of the major achievements of modern city planning how they managed to make people who live in a city

of 100,000 spend on average one hour per day in their cars.“ (Helgason 2012)

Though the initial growth of Reykjavík was an incentive from outside military forces, building barrack camps in numerous neighbourhoods in and around the administrative centre of Reykjavík, there has been continuous pressure addressing housing shortages onwards. The continuous inflow of new inhabitants from the rural to the urban became a base for building more permanent housing and neighbourhoods from the mid 20th century and onwards.

„[The urban sprawl] ..happened because for the latter part of the twentieth century we made it a rule: There had to be a space of 30 metres between houses and 30 metres from door to street, 30 parking spaces for each apartment, and every neighborhood surrounded by a freeway. Reykjavík is like one big car festival. It has more gas stations than cafés.“ (Helgason 2012).

To counteract the development of extended and escalating growth and expansion, a strategy of city densification became a key issue within Reykjavík city planning office. Some of the high-rise buildings designed for those purposes have however attracted significant criticism because of its lack of contextual integration with the existing endowment of low-rise historical buildings (Birgisdóttir 2010).



Picture 2. Main municipalities making up the Reykjavík capital region in the urban metropolitan area.
Source: (Open StreetMap)

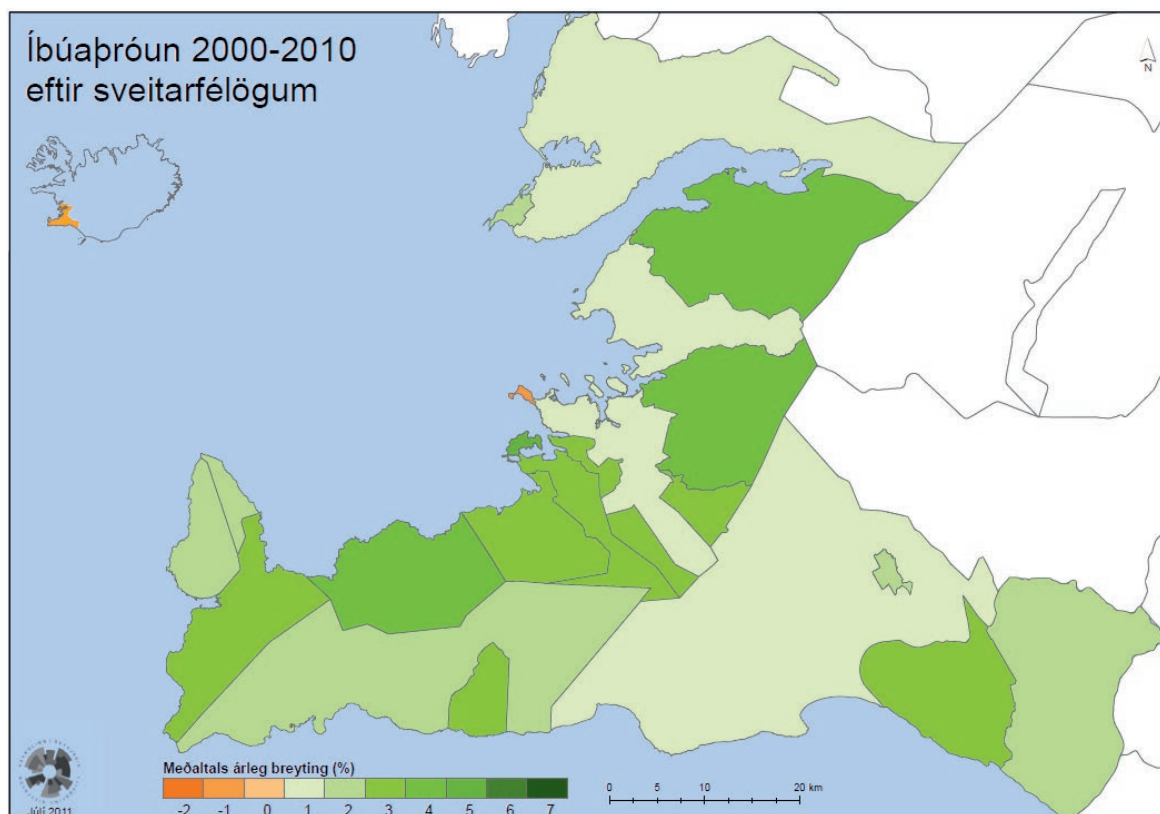
Focusing on homes and housing for families, individual ownership policy has been the dominating trend in housing development not only in the rural but also in the rapidly growing urban areas where around 94 % of the population lives (National land survey 2011). Housing is large part of the families monthly costs and for many represents a security. Living in a boom and bust economy has generated a firm belief among the majority, that owning/owning own housing is a form of security for pension. In Iceland housing solution after WWII were characterised by strong selfsufficiency and individual ownership policy. Already in 1979 around 85 % of the housing mass in Reykjavík was privately owned, 91 % in the neighbouring municipalities in the greater capital region – this situation has all along made rental housing a fringe phenomenon.

Population growth and housing expectations

During the nineties most of the urban population growth was delimited to the adjacent municipalities to Reykjavík, the municipalities that had grown together and had become part of the same urban structure, Reykjavík capital region, these were primarily Kópavogur,

Hafnarförður, Garðabær, Mosfellsbær, and new suburbs of Reykjavík municipality.

It is interesting to explore what role the municipal planning has played in the construction boom experienced in the first century and how municipal plans for the greater capital region guided and supported a balance and sustainable development of the region. As illustrated from the map below, the average annual change in population development by municipality after millenium to 2010 – in this map compared to the development from 1990-2000 (see Theodórsdóttir, Jónsdóttir, Guðmundsson & Hreggviðsson 2012) - a shift can be identified with a broader range of municipalities ranging around 80 km radius around Reykjavík took off in population growth in this period. This map is a product of a study group from University of Reykjavík trying to identify planning and development in the greater capital region of Iceland from a planning development approach. The report made from the research raised critical questions about what needs to be addressed or changed in the current planning system. It was furthermore the first research report ever on Reykjavík planning issues that conceptualized planning as a regional development process (Theodórsdóttir et.al 2012).



Picture 3. Average population development in municipalities around the Capital 2000-2010, annual change in percentage (source: Theodórsdóttir et.al 2012).

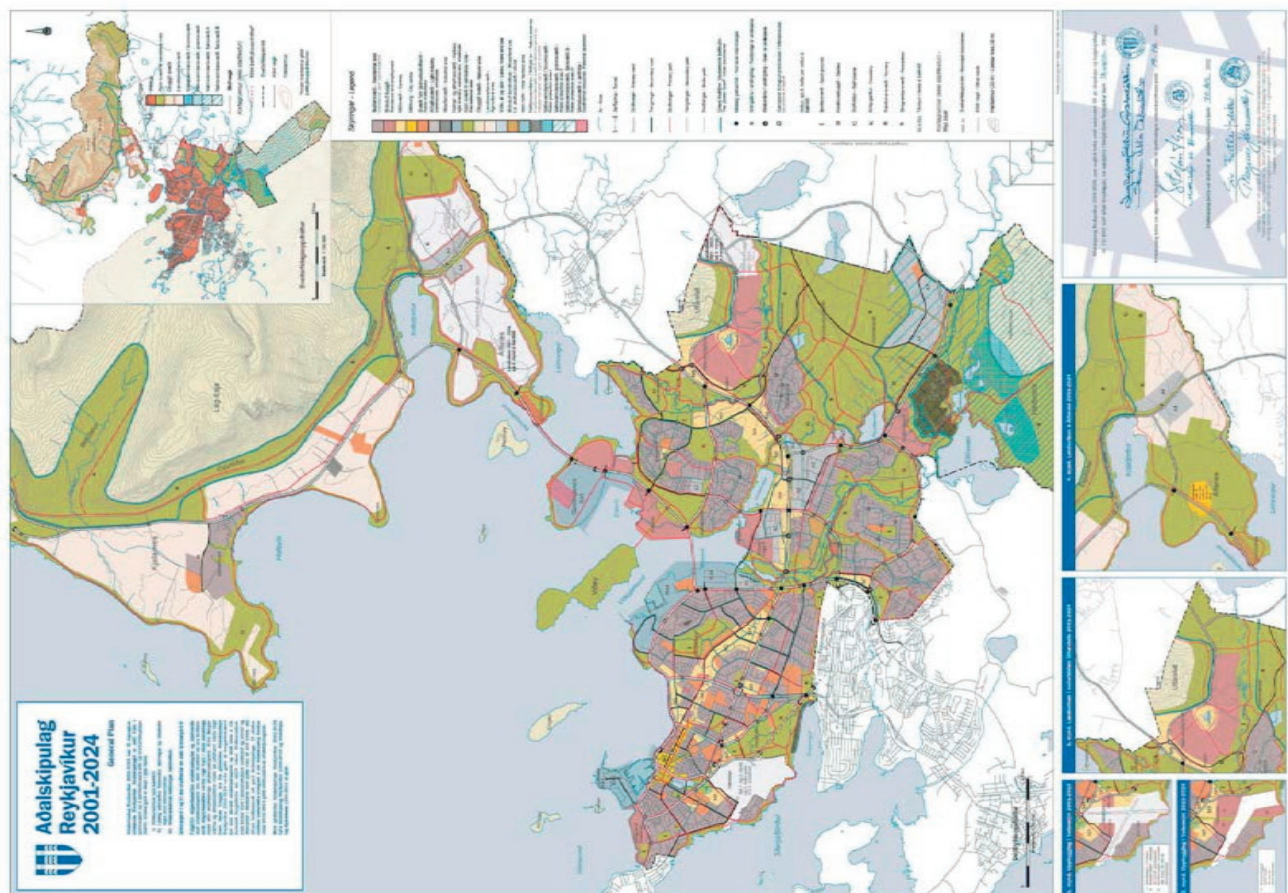
One could claim that this presented a shift in the essence of urbanisation not only involving significant urban sprawl as more and more people accepted commuting as way of lifestyle of the urban, but this development also extended several municipal borders and involved a growth to around 11 other municipalities in around 80 km driving distance radius to Reykjavik, the urban S-W region.

According to the before mentioned study conducted by a team of planners and geographers at the university of Reykjavik, municipalities were competing for residents and construction development during the construction boom from around 2004-2008. Furthermore the municipal plans generally overestimated population growth and future residential development. This does however vary between municipalities, both within the capital region itself and between it and the smaller and more rural communities on the fringe of the greater capital region. Though densification became the leading topic in the current urban discourse the almost limitless land available for new buildings, the increasingly acute need to address existing urban

problems tended to get overlooked (Birgisdóttir 2010).

No one saw the financial crisis coming in the construction business in order to stop emerging over supply of housing. Population projections failed. They formed the base for land allocation for residential and commercial development and therefore address a need to reevaluate plans for urbanization in Reykjavik and surrounding municipalities.. Same goes for the allocation for development in existing municipal plans. Also, the study of the spatial growth of urban areas shows new trends of low density urban sprawl which raise questions about long term sustainability. The findings further raise questions about the need for regional allocation of housing units, by a regional planning authority or the national government, as well as a need for regional and/or national policy on urban growth boundaries and sustainable land use (Theodórsdóttir et.al 2012).

The south west region was therefore truly characterised by a construction boom happening after millennium, accelerating after 2004 and ending in the autumn of 2008.



Picture 4. An example of a master plan. The Master plan of Reykjavik 2001-2024.

Origins and development of boosterism in Reykjavík capital region planning

Tracing boosterism in Reykjavík planning is easy. The origins of boosterism have to be linked with an economic approach to development and planning, where it is primarily linked to expectations of economic growth with certain assumptions taken for granted among planners (Boothroyd & Davis, 1993). Boosterism in greater Reykjavík can definitely be traced to the municipal competition on land bids and inter municipal competing for residents and construction development during the construction boom in the first decade of the century. As one of the implications of growth expectations to the urban setting was that the municipal plans generally overestimated population growth and future residential development. Though this varied between municipalities both within the capital region itself and between it and the smaller and more rural communities on the fringe of the greater capital region, it was an evident impact of boosterism.

One of the aims of University of Reykjavík planning-study group was analyzing the sustainability of master plans of 19 municipalities in the greater capital region. It turned out that all of the master plans had built premises on unrealistic population development projection (Theodórsdóttir et.al 2012). This proved not only to be an expensive affair, but also one involving a lot of waste in many senses of the term. However as influential as master plans usually are, other as significant aspects of practices and decision making on other levels played a significant role in blowing power into an emerging boosterism in the region.

Many co-evolving influences affected the formation of Reykjavík capital region as an urban structure. Besides favourisation of one family housing, low housing structures and roadscapes connecting the mushroomed urban clusters and different planning phases of social housing mixed with residential housing and occupational housing.

Americanisation of the building mass was maybe an inherited value from the military barack legacy?. During the rapid history of progress of an industrialised economy and gradual increase in urbanization older buildings, dilapidated and worn from weather and less adequate in building materials than the next generation of buildings made turning down buildings an ongoing process in the constantly changing urban landscape in Reykjavík. However 2006 and 2007 were record years

in the planning history of Reykjavík for torned down houses, building new, higher and denser constructions.

„We like to do things overnight and tear them down the day after. The Swiss artist Dieter Roth said of Reykjavík, where he lived for a while: „It looks like a temporary town. It looks like people only want to stay here for a couple of years.“ He was spot on. Icelanders are always ready to leave. That is why we don't like beautiful and complete towns, careful buildings and brick walls.“ (Helgason 2012).

Financial Before 2004 the HFF and pension funds were sole lenders to people and businesses buying housing. The LTV ratio was at highest 65 % but after 2004 banks started offering lucrative housing loans with LTV ratio 100% - HFF soon followed the banks practices.

As an example of the shifts involved in the housing situation in Iceland following the financial collapse, the annual report of the FSEI reported that loans with collaterals in residences were 303 billion ISK in mid 2010. 1/3 had over 90 % loan to value (LTV ratio) and thereof around 85 billions ISK where the LTV ratio is 100%.

But people were hurt by the sudden financial crash in Iceland and when the value of the local currency went down, the debt made in foreign currency skyrocketed and the infamous inflation index (that secures creditors the value of loans) made indebted families situation more complicated. These conditions were depicted by Halldór Baldursson the cartoonist for fréttablaðið (see below). The leaders of the government stand at a cliff saying: Oh My, this will be costly. How can we finance the rescue operations? The indebted citizens hang barely to the cliff and in the next picture there has been placed a parkometer presumably to count for how long they stay firm to the cliff.

The growing number of empty and half built properties immediately and more than three years into the financial crisis made the link between territory, the economy and politics more bluntly embarrassing as the development of whole neighbourhoods had been put on hold.

The effects for the citizens involved in buying homes was (post crash) rising numbers of families dealing with economic insolvency. In 2009 a special state institution was therefore established in order to offer free assistance to individuals who had serious difficulties meeting their financial obligations in order to find a balance between financial capacities and financial obligations (The debtors' ombudsman 2012). However it has proven complicated and deferred process.



Mynd 5. The homes debt situation.

In some areas characterised by half empty neighbourhoods one of the rescue schemes of the government from 2009 was giving the housing financing fund a mandate to rent out properties that were not occupied or occupied by former bankrupt owners, in order to solve some of the financial havoc (Karlsdóttir and Brunn forthcoming).

The insatiable enthusiasm for construction affected the political behaviour of the municipalities in the capital region significantly for people and politicians alike. In that case the process of planning on houses that never became homes because of financial difficulties in the midst of the construction process is a case of wasted values in several aspects of the meaning of the terms waste and value.

According to statistics Iceland the housing cost for indebted home owners in 2011 was 18.7 % of the disposable income of Icelandic citizens on average compared to 17.5 % of disposable income in year 2010. Comparison between renters and indebted home owners shows that renters are on average paying 24.9 % of their disposable income for housing (statistics Iceland).

11.3 % of Icelandic homes were dealing with over 40

% of the disposable monthly income going mortgages. 18.6 % of renters have real problems paying rent. According to The debtors' ombudsman the ratio of people facing problems decreases with rising age and rising income. 32 % of citizens in the lowest income category (when income spectrum is divided to five levels) face difficulties in paying for a roof to shelter (The debtors' ombudsman 2012).

The housing financing problem has though been far from solved yet. Four years into the aftermath of the collapse, the housing financing fund is facing insolvency due to forced take-overs of homes gone bankrupt and money wasted. Therefore yet another bill of rescuing the fund temporarily with finance injection from public money is being launched in Alþingi (Heimild).

The banks were aggressive in marketing their newly gained status as primary motor of the new property regime. Along with a chain of events described earlier competition on land bids fuelling competition between municipalities – contributed to fast rise in lot prices bids – to make a long story short it can be concluded that not only did this cause a very optimistic, say reckless planning on the urban extension, but is also

created an environment of entrepreneurial race in construction of both office buildings and home constructions. A poisonous cocktail of more liberal legislation of control of construction survey and total lack of overview among public planning authorities of the extent of activities also had its effects.

Land use perspectives of urban planning in the capital region reveals a sore need to re-vise and re-evaluate urban values. Extended region of Reykjavík inhabits many problematic aspects of earlier real estate boom ...

Conclusion

Urbanisation in Iceland bears some resemblance to a generalised movement that has gained momentum in all the Arctic regions where towns have grown at a rapid pace, and people settle down in urban centres. The urban way of life fulfils specialised function in a complex division of labour and interacts with many different kinds of people. Though young of age, Reykjavík has a certain palimpsest.

However the Reykjavík urbanization and planning has been characterised by a bumpy road path in terms of financial aspects and construction phases frequently evoking tensions of value behind architectural forms, and a tendency to tore down buildings instead of conserving heritage values in older parts of the city. The boosterism involved in planning was an effect of the interrelationship of planners, municipalities and financial institutions causing oversupply of man-made structures within the urban environment.

The financial aspects of funding housing, the costs associated with raising a roof over the family and the problem stricken family economy coupled to housing issues in the period 2008 reveals an atmosphere at unease with dreams and visions of urban boosterism flourishing during the economic boom.

Uncomprehensive planning and its social and economic costs adress the question of values, wasted values, Structural values, Social value, Financial values, Aestetical values and last but not least environmental values of the recent and growing city on the edge. Last but not least, the overestimated population projection, the escalating extension and urban sprawl are as much as earlier a reminder of a sore need to reevaluate and prioritise densification of the city. Economic & structural transformation with its imminent booms and busts affect the city in its making and function. This reflects a rapid progress of urbanization in the region. In Reykjavík, as in other Northern contexts, further description of how, for what and under what circumstances urbanization emerges, develops and proceeds, is needed.

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28. Gender dynamics in the “oilopolis”: consequences of boomtown growth for women in Yuzhno-Sakhalinsk, Russia

Jessica K. Graybill

Abstract

Yuzhno-Sakhalinsk is a site of rapid transformation of built and social urban environments due to transnational oil and gas investment in the post-Soviet era. While not the site of oil extraction, Yuzhno-Sakhalinsk acts as an urban gateway and hub for Far Eastern and Northern resource development and attracts men and women for work and leisure purposes. In this city, rapid demographic changes, new housing construction in urban and suburban environments and the rise of the automobile have transformed how people experience public and private spaces in the city. Here, I discuss how the highly masculine and transnational nature of

resource-based development shapes women's paths and spaces in this gateway city.

I describe how women in different stages of life and from different cultural and socioeconomic backgrounds navigate public and private spaces in everyday life. I place this qualitative research in relation to prior studies of gender in the oil industry and in post-socialist places to understand the gendered implications of continued resource-based urbanization in the North. I suggest future directions for gender studies of urban hubs for mineral and oil resource development in the North. Finally, I introduce a plan for comparative study of the gendered impacts of resource-based urbanization across the North.

29. Sociological perspectives on Canadian Arctic urbanization – What is a town?

Thibault Martin

Abstract

For classical sociology, urbanization of rural or traditional society is associated with modernization. Urbanization is taking place in several stages, in each stage various modern institutions set up. Once established, these modern/associative institutions complement, or even supplant the traditional/ communal institutions, leading to the transformation of the nature of the social relations.

In this paper we will, through a discussion focused on the “urbanization” of the Inuit of Nunavik, discuss this theory. We first present the different stages of urbanization (from the hamlet to the metropolis, through the village, town, and city) that transform a community into society. We will see that this evolution of the spatial organization (from hamlet to city) applies in Nunavik, and indeed is accompanied by a redefinition of social relations. However, this social evolution only partially corresponds to what theory predicts.

30. Diasporas in the Arctic Urbanization

Rasmus Ole Rasmussen

1.0 Introduction

The Arctic has been exposed to both substantial in- and out-migration of people during the last century. Historically, in-migrants have been part of policies aimed at providing national presence in the Arctic. This presence has often been connected to development strategies where new economic activities have required – according to the policies – newcomers with special skills and knowledge. Typically, the source of people with these assets has been the southern parts of the respective nations. Many of these newcomers have only been involved in the Arctic communities for a few years, while others have become more permanent settlers. For many of the permanent settlers, ties back to their place of origin – their “homelands” – have been maintained; for instance, through cultural characteristics such as food habits and regular visits back to their communities of origin.

The reverse process – i.e., people with origin in the Arctic moving south and settling there for longer periods of time, or permanently – has taken off since WWII and intensified so much so during the last decades that it has a potential to become a major characteristic of Indigenous peoples with relations to the Arctic. Usually they are settling in southern urban settlements in their respective countries. In spite of the geographical distance to their traditional homelands they have, in many cases, chosen to maintain personal, cultural, and economic ties back to their families and communities of origin.

Thereby both in-migrants and out-migrants have established what is generally referred to as a Diaspora, i.e. “the movement, migration, or scattering of people away from an established or ancestral homeland” or “people dispersed by whatever cause to more than one location”, or “people settled far from their ancestral homelands”.

The relations between Greenland and Denmark provide a good illustration of such a situation in the Arctic. While details on both processes and outcomes in other

Arctic cases are difficult to access, research on this topic is easier to substantiate due to both quantitative and qualitative information that has become available due to methods of population registration in both Greenland and Denmark, combined with a number of recent surveys and series of interviews.

2.0 The concept of Diaspora

In its original meaning ‘diaspora’ has emerged as a concept describing the scattering of a population, caused by some forced or traumatic historical event (Cohen 1997a).

A broadening of the concept has, however, developed in recognition of the fact that the processes of scattering connects to other characteristics of causes and effects of mobility (Mitchell 1997; Skeldon 2001). The widening of the definition of Diasporas includes other historical processes, and Cohen describes a five-fold typology illustrated by typical examples:

- Victim diasporas (Jews, Armenians, slave diasporas),
- Labour diasporas (Indian indentured labour, Italians and Filipinos),
- Imperial/colonial diasporas (Ancient Greek, British, Portuguese),
- Trade diasporas (Lebanese, Chinese) and cultural diasporas (Caribbean).

This broadened approach does not provide a mutually exclusive typology as certain migrant peoples fit the characteristics of two or more diaspora types, either simultaneously or at different points in time. In relation to Greenland, the issue of “Imperial/colonial diasporas” is clearly most important, but other of the above examples definitely apply as well.

Furthermore, increasing mobility combined with the process of scattering is no longer seen as one-directional (Brubaker 2005). Here, evidence of return has become fairly abundant in the literature on diasporas,

and the recently introduction of the notion of counter-diasporic migration attempts to rectify this (King 2002 and Christou, 2008). As will be stressed later in the text, the question of counter-diasporic migration has become a critical issue in the former Danish colonies of Greenland and the Faroe Islands (and partly also Iceland). The main issue in this connection regards options of “well-educated returners” as a means to cope with what is considered to be a stability-threatening high out-migration rate.

However, the question is of course the importance of a concept when it becomes “fluffy”; for instance, when it mixes and overlaps with the meaning of more descriptive words such as transnational community, expatriates, refugees, exile, etc. Several attempts have been made to analytically disentangle the concepts and such descriptions (for instance Brah 1996: 178–210; van Hear 1998: 1–12; Clifford 1994: 303), but it is clear that the definition is clearly embedded in the specific context of how the concept is used.

A focus on population relations between Greenland and Denmark in this paper means that the following definition adequately grasps both the territorial as well as the mobility characteristics:

“What distinguishes the diasporic condition from contemporary international migration and transnational communities are the historical continuity across at least two generations, a sense of possible permanence of exile and the broad spread and stability of the distribution of populations within the diaspora. In other words, ‘time has to pass’ before a migration becomes a diaspora” (Cohen 1997b: 185).

This formulation enables us to distinguish between straightforward return migration (of first-generation migrants) and counter-diasporic return, which only applies to second- or subsequent-generation migrants. As mentioned above, this is an issue which has become important in today’s Greenland, with the focus on the options for attracting skilled and especially educated Greenlandic workforce back to Greenland.

2.1 Community and Diasporas

As already indicated above, the matter of Diasporas is not only related to the spatial and chronological relations to migration. The ideas of diaspora and migration are of course spatial, but it is not merely about moving or moving in random patterns, which the concept of space may indicate. In contrast, it is related to particular places and their inter-connection, diachronically and synchronically, discursively and socially with others. Migration denotes movement from one place to

another, but in contrast to the concept of territory within postmodern geography -emphasizing the more speculative and abstract socio-spatial theories of Lefebvre, Foucault and others - the key issue is about places, defined as territories where differences between space and territory becomes crucial.

While spatial is defined as the distribution of people, objects (resources) and activities in space where the spatial scale does not relate to other than (physical) distances and the thereby generated topologies, territorial is furthermore defined as the distribution of people, objects (resources) and activities in space, structured through a pattern of boundaries imposed by individuals or groups. This mainly relates to the political sphere in terms of institutional or administrative boundaries that are agreed upon in order to manage people, objects (resources) and activities in space (Rasmussen, Weber and Lindberg, 2013). But in this context also to the cultural sphere where the important issues are concrete networks, social activities and cultural order being situated (Lave & Wenger), both in principle and in practice, such as “האבה הנשל מילשורייב” (Leshana haba’ah b’Yerushalayim - Next year in Jerusalem)” – the Jewish diaspora pronouncing the wishful prayer at the end of every Passover Seder. In addition to the sum of its physical parts and biological processes, it is ‘the place where the most minute and local social practices are linked up with the large scale organisation of power’ (Dreyfus and Rabinow 1983, xxvi) and the place where a cultural order plays itself out.

Increased mobility is fundamentally enabling the spatial distribution of social activity as it both causes and enables great changes in place performances around settlements. For many persons, local habitat does not necessarily determine daily routines. But for others, however, it is at the core in determining daily activities, with places elsewhere just being “elsewhere” attractions. A place is not only a place in the physical sense, but also the setting for dreams and feelings which can be crucial for the attachment to a particular place. Applying rationales to “sense of place” may therefore become independent of time and space and become applicable for the residents whether living in Greenlandic towns and villages or as absentees living outside but still relating to Greenland!

Means of communication such as TV and radio often fulfils many functions in relation to Diasporas. It provides news and information, links homeland and host country, serves as a vehicle for community continuity, expresses cultural traditions and diasporic identity, and provides a way to negotiate reconciliation. Such complexities involve broadcasters in a continuous struggle with competing and sometimes contradictory

demands, which leads to different programs “speaking” distinct community slang. For instance, the influence of “North American” culture on Inuit communities in Arctic Canada has been of marked concern (Stenbaek 1987). And the risk of “loosing cultural characteristics” when moving south in search for jobs and education has for several decades been influential by limited support to young women seeking education outside the opportunities available within Arctic Canada. It is clear that the private and the public are linked in more than just symbolic ways.

In recognition of the necessity for dialogue in an ever-changing diasporic space, King and Christou (2008) introduced the notion of ‘counter-diasporic migration’ as the process whereby the second generation relocates to the ancestral homeland – basically the birthplace of their parents. Even though not much has been discussed about this issue because of the attractions of the new place – in most of the research cases being the USA – has limited the relevance, the question has become important in a North Atlantic setting, and very clearly in Greenland, due to a marked and seemingly unending outgoing migration.

3.0 Case Greenland

For many outsiders Greenland is synonymous with hunting, kayaks, and sled-dogs. These used to be the mainstays of traditional lifestyle of the Inuit in Greenland, and also the focus of the colonial economic policy for Greenland well into the 20th century. However, while a dramatic increase in sea temperature along West Greenland during the 1910s-20s resulted in a decrease in the hunting of sea mammals it also caused an increase in the fish stock. Cod became the dominating species and grew increasingly fundamental for the economy. Another shift occurred during the 1980s; this time a cooling that caused a drastic decline in the cod stock and instead a marked increase in the shrimp stock. This moved the economy from cod to shrimp fisheries, a process facilitated by a shift from inshore to offshore fisheries (Rasmussen 2007). In both cases the changes have had profound impacts on the communities in the region, in the first instance with the establishment of a more permanent settlement structure, and in the second through an increased urbanization of the population.

Following World War II a development process was initiated to reduce the “backwardness” of the economy and bring a modern standard of living to the population. The G50-plan emphasized the need for new private initiatives to stimulate economic development (Nielsen et al. 1970). After 10 years, however, it became

obvious that the privatization had not succeeded with respect to production, as there were virtually no private initiatives on which to build the economy. By 1964, the G60-plan was ready, stressing that public activities were necessary to kick-start the economy. For such a process, public investments in infrastructure, including housing, was considered crucial (Nielsen et al. 1970). In addition, private access to public funding was seen as a way of invigorating the private sector development.

Yet, the attempts to expand and industrialize fisheries during the 1950s and 1960s had only a relative level of success in creating a commercial and self-contained economic activity. Even as the capacity of the fleet was doubled from 1965 to 1975 the total volume of fish caught remained more or less the same. Even more importantly, there was also limited success in involving Greenlanders in commercial fishing activities, and a reduction in water temperature that began to influence the cod reproduction.

Thus, a combination of a massive over-exploitation and a reduction in sea temperature practically wiped out the cod stock, leading to the need for a revised approach to the renewable resource exploitation. Until the 1950s, shrimp were pursued chiefly by inshore vessels on inshore banks. But the combination of the cooling of water and a reduced cod stock led to a massive expansion of the shrimp stock. In turn, this led to a massive investment in new fishing gear and offshore vessels. With the expansion of shrimp fishing to the outer parts of banks of coastal Greenland, broader regulation became necessary.

3.1 From resource extraction to third sector activities

Renewable resources such as fisheries and hunting have been the economic basis for many northern communities. With an increase in the scale of production, however, fewer persons are involved. And due to harsh competition on the world market, prices – and thereby incomes – have been reduced considerably. Adding to this decline has been the fact that previous temporary jobs in local fish processing industries have been replaced by processing on-board the offshore trawlers, or have been moved to Asia or other low-wage regions (Motos and Wilson 2006). The production of customary food continues to be of significant economic, social, cultural, and symbolic importance, and some commercial initiatives are inspired by the customary models, such as the local informal market in Greenland, and programs that support hunting and fishing

activities in the Canadian Arctic (UNDP 2004). In many cases, however, these activities tend to be reduced to leisure time pursuits.

Increasingly the third sector – the services provided by health care, education, old age care, municipal services, administration, and so on – has become the key set of activities characterizing the economy in both Greenland and the whole circumpolar north. In most of the circumpolar north, the third sector generates more than 70 % of the economy and creates jobs for 80 % or more of the employed persons. Although based on transfers either from outside the region or from royalties in connection with resource extraction, the sector is ensuring good income in northern communities by providing stable jobs (UNDP 2004). This holds true especially for women, who seem to be more open to the new activities, not only accepting jobs outside the traditional primary sector but also ready to accomplish the training and educational requirements necessary for new types of jobs. In these communities an increasingly large number of households are depending on the incomes generated by females. In Greenland, not only do more than 70 % of the professional hunters and fishermen have income from second jobs, but in more than 50 % of the hunting- and fishing-dependent households, the major part of the income is generated by the wives (Rasmussen 2008). These incomes provide highly needed investments in hunting and fishing and ensure an acceptable household income. Single men without these income sources, however, are confronted with severe economic problems.

3.2 Out-migration as a response to unacceptable options

Research from northern regions (Sweden, Norway, Finland, Alaska, Greenland, the Faroe Islands, Newfoundland, Iceland, and Russia) seems to indicate very similar gender patterns regarding affinity for rural community life. Compared to males, more females tend to migrate permanently away from their home community and region. Further, this is not only a northern issue; the restructure and decline of primary and secondary activities in rural areas, coupled with the growth of the service sector, fundamentally affects women who are looking for job opportunities that better fit their qualifications and provide opportunities outside traditional economic activities (Hamilton and Seyfrit 1994). These jobs are found only to a limited extent in the rural setting, but are abundant in urban areas.

The question of better opportunities has very much

to do with the difference in gendered approaches to education and responses to issues such as globalization and knowledge societies. Already in the 1990s, women had become a majority group in relation to higher education in many parts of the Arctic (except in parts of northern Canada, where the level of education in a circumpolar comparison turns out to be remarkably low). Today, the general pattern shows that 55 to 70 % of persons with tertiary education are women, while men tend to finish their educational careers with primary or secondary education, or vocational training. This contrasts the situation ten to fifteen years ago, when men were dominating the higher education sector and women's opportunities were limited to vocational training (Rauhut et al. 2008).

The concept of better opportunities also applies to availability of services and a broader spectrum of cultural activities. While males seem content with a single shop where they are able to buy the most needed things, such as the latest action films on video, or a burger and pizza; females tend to be much more demanding when it comes to diversity in social and cultural offerings. They often require more varied shopping opportunities, different café options, theatres, art exhibitions, and the like, in order to comply with contemporary ideals. The Internet may provide some of these opportunities, but the cultural and social activities available in the villages typically do not appeal to younger women (Rauhut et al. 2008).

These different responses to changes of course affect the options of staying or leaving. When their home communities provide neither educational nor job opportunities, young persons who consider this to be an important option simply have to leave in order to pursue a future for themselves. It is especially women in the age group from sixteen to thirty-five who are leaving, the youngest seeking education and the older seeking jobs. Many northern communities are therefore experiencing a situation where there are only six or seven females to ten males. This gender imbalance has a marked impact, affecting both social life and the economy, through fewer opportunities for marriage, for the maintenance of family life and family structures, for natural reproduction, as well as for influencing cultural activities (Rauhut et al. 2008).

One of these more uncertain factors relates to the notion of "sense of place"; that is, the feeling and attachment to place. In some contexts it may be about feeling attached to a common destiny, for instance in and ancestral village; yet it can also be about an individual's interaction with habitat, i.e., addressing why families choose to settle and the interactions between the family's everyday life and habitat. At the same time,

it is often about balancing the qualities associated with different places.

4.0 The research focus and methods

A series of mobility studies have been conducted in order to provide a better understanding of present mobility characteristics in the Greenland population. This is used as basis for analyses of the possible consequences of major interventions in the basis of Greenland's economy.

4.1 Register based data

The analysis conducted by a register-based analysis of population movements in Greenland from 1995 to 2008. The population register is located in Statistics Greenland, in Nuuk, and provides information on each individual person, including information on where-from and where-to the persons move their permanent addresses. Here, "permanent" means a move where their registration by the authority is changed from one address to another, whether it is within the municipality or between municipalities, and to what extent it is from towns to towns, from villages to towns, from towns to villages, or leaving the country. By means of these data, it is possible to see general patterns of mobility. But in addition, it is also possible to connect the place-based population registers with additional information - in relation to gender, age, family situation, income and other social and economic factors. In turn, this enables the formulation of hypotheses about reasons why and descriptions of how this mobility takes place. It does not, however, provide specific information on reasons or thoughts on moving which therefore requires additional approaches.

4.2 Thoughts on mobility

Complimenting the basic data, and in response to the need for qualitative interpretations of mobility, a survey among a representative sampling 1,551 persons in Greenland has provided the requested information. These individuals have been selected in such a way that they are representative of gender, place of birth (in Greenland, outside Greenland), settlement type (town, village), and place of residence. By means of the questionnaire that compliments the basic data, they have been asked a series questions related primarily to issues such as qualifications and affiliations. In addition, emphasis has been placed on respondents' wishes, goals

and interests in relation to a future in their present home community; or alternatively, the ability to move, and if so whether they were aiming at living alone or with family and relatives somewhere in Greenland. In addition, a series of questions looked into reflections in connection with a number of new activities; for instance, whether or not they are perceived as being activities as attractive opportunities in the future. In this connection the information regarding gender, age, family situation, income and other factors are significant issues in the analysis of the responses.

4.3 Quantitative and qualitative approaches

A third level of analysis has focused on a specially selected group of 220 people for in-depth semi-structured interviews. The persons have been selected based on their responses to the questionnaire, and out of the group a total of 171 interviews have been concluded with answering all the questions. In this connection, questions have been asked about details regarding attitudes and wishes for the future. Through the interviews, it has been possible to go in-depth with many of the personal issues, which are often decisive for whether to choose one or the other solution in terms of future prospects. Through the interviews issues such as belonging, places and personal preferences in relation to the future role of the family, local and regional networks etc. are highlighted as focal points.

4.4 Youth's perspectives

In order to have a closer look into thoughts on future mobility among the youth in Greenland a combined questionnaire and interview survey was also arranged in Southern Greenland. This involved 80 % of the youth in the age group 14-18 years.

4.5 Greenlanders in Denmark

Finally, a survey among Greenlanders living in Denmark was undertaken in close cooperation with the North Atlantic Group – two politicians from Greenland and two from Faroe Islands been elected to the Danish Parliament by their respective constituencies. The purpose of this analysis was to look into the relationships between Greenlanders in Denmark and Greenland in relation to issues such as belonging and attachment to a particular social group and their relations with Greenland. Included in this survey were also questions in relation to which role the new economic

activities in Greenland might have in relation to this group's future mobility.

4.6 Triangulation

By looking into attitudes to mobility in relation to jobs, employment and the like the aforementioned aimed at clarifying the possible regional consequences of changes in business structures as a result of the introduction of new activities. At the same time, it attempted to provide data – as discussed above – both in relation to gender, age and qualification structures in different settlement types.

Important in this context was whether the respondents had heard about other forms of employment, including the ability to stay with the family and then work as a migrant, what possible arrangements could be considered, what would be attractive work and workplaces, or what would be of interest in relation to wages, housing, transportation, social activities, etc. And in relation to the issue of relocation, the focus of the survey was on what would be considered as a “good life” – that is, types of work, wages, employment options for accompanying family members, quality in terms of types of housing, social infrastructure, environment, offers of public facilities, etc.

While a register-based analysis is able to say indicate about how people move, how long they stay in specific places, and also providing indications on possible connections between various socio-economic parameters and mobility, it is not able to say anything about the intension behind the movements. Questions on what determine choices on staying or moving, choosing between different places, which thoughts are behind the choice etc. requires other methods.

In this case two approaches – questionnaires and interviews – have been chosen in addition to the register data as they provide both an overview and in-depth insight into rationales behind personal decisions. It does, however, not make the register data redundant because there is not always a clear link between what one thinks that they will do and what they do in practice. Therefore, while all three approaches have their individual limitations and advantages (Bryman 2004), the triangulation of the three approaches resolved these limitations.

Triangulation is usually defined as the use of multiple – very often both qualitative and quantitative – methods in studying the same phenomenon for the purpose of increasing study credibility (Ashatu 2009; Bryman 2004). As this implies the combination of different methodological approaches and theoretical perspectives in an investigation of the same phenomenon

it may enable a more precise data background for the analyses. This, however, comes with the risk that using both qualitative and quantitative approaches in the same study may be considered by some social scientists as being unacceptable, as the two approaches differ epistemologically and ontologically (Ashatu 2009; Creswell 2003). In this context, however, by having total coverage of the population through the register analysis, ensuring a clearly representative sample in the questionnaire and, out of the latter, providing in-depth interviews with coverage of variations reflected through the previous datasets it is very difficult to point to any potential limitations in the outcomes.

4.7 The main questions addressed in Greenland

The main questions addressed in the survey relate to mobility in connection with new economic activities in Greenland. In some cases, this means that the data presented here provide relatively unambiguous and straightforward answers. In the discussions, however, the emphasis is on the relationship between the patterns of mobility as identified in the individual analyses in the original report, by combining register data with input from interviews or questionnaires that can help to explain the patterns observed. Therefore, this paper therefore does not pretend to be complete, but focuses on key characteristics of mobility in Greenland, with focus on the relations to the new economic activities related to large scale mining, energy production and industries. Selected issues include the following:

- Who are interested in moving?
- From where would they come, and where would they go?
- What would be their interest in moving?
- What would be their requirements at the place they might move to?
- What may prevent them from moving?
- What impact might be the result at the targeted place?
- What impact might result in other parts of Greenland? and
- To what extent would there be any interests among Greenlanders outside Greenland to move back to Greenland?

Most of the questions are related to the on-going development in Greenland with focus on traditional and new types of economic activities, perceptions of places,

etc. But several of them have a focus on relations to the world outside Greenland, especially to Denmark. As the origin of the persons has been available both for the register data, the questionnaires and the interviews the analysis enables both access to information regarding Greenlanders and Danes – whether or not being permanent residents in Greenland at the point of data collection.

An important issue in this connection is to realise that the reasons for staying or moving are not static! There seems to be a tendency towards considering reasoning behind decisions on staying or leaving to be relatively stable over time. What has been proven time and again, however, is the fact that such decisions are dependent on the context. In Greenland an economic shift from fisheries to services, and now probably towards a higher degree of dependency of large scale production of minerals and energy, has very different implications on people's addressed broader perspectives in relation to moving, while other questions have addressed very specific conditions.

The analysis distinguishes between different key parameters. On the quantitative side between economic characteristics, such as production, labour, seafood buyer, informal economy, transfers, social characteristics, broken family relationships, education, income distribution, dependency, and demographic characteristics (such as age distribution, gender and mobility). On the qualitative side, the focus is on the question of the relationship, partly through the experienced relationships with family, relatives and friends, community life and social structures, and partly to spatial characteristics such as landscape, natural elements, the physical characteristics, the "sense of place" etc. Last but not least, the degree of awareness of place-attachment and its impact on decision-making processes.

5.0 Greenlanders in Denmark

As outlined above, mobility between Greenland and Denmark has been substantial since the 1960s, when the modernization process led to a large influx of Danish labour and subsequently a large outflux of Greenlanders; not least Greenlandic women who entered marriage with the Danish craftsmen. Since the 1970s, and especially in the last decades, mobility has been very closely related to education. Consequently, a second wave of outmigration has been driven by the pursuit of education and the fact that many relationships between young Greenlanders and Danes have been established in connection with training in Denmark.

It is assumed that a Diaspora has developed due to the fact that around one fifth of persons of Greenlandic

descendant are living permanently in Denmark, and that it continues to develop as the share of Greenlanders in Denmark continues to increase. In order to gain insight into this group's present and future perspectives the study has included five groups of questions. The first group deals with fundamentals such as gender, age, immediate family relationships (i.e., composition, children, housing, place of origin and the like). The second group deals with issues of immediate relations with Denmark, and this include questions such as: reasons for moving to Denmark, employment, education, networks and personal relationships, prior education from Greenland, education in Denmark, vocational training, etc. The third group of questions deals with family relationships and social networks in both Greenland and Denmark, including questions about frequency of visits to Greenland and participation in Greenlandic activities in Denmark. The fourth group is about the respondent's feelings and attitudes in relation to Greenland and Denmark. It includes a group of questions focused on the qualitative characteristics of respondents' relationships to the community. Finally, a fifth group of questions look at options for moving back to Greenland, including in relation to the planned new economic activities such as mining and oil production. Just as in the implementation of the survey in Greenland, the survey among Greenlanders in Denmark involved a combination of telephone interviews and Internet reports. The total number of valid reports has been 1833 responses, of which 1,165 were telephone interviews and 668 were Internet based reports.

5.1 The demographics of the survey in Denmark

Details on the demographic structure of the survey data – and thereby the general characteristics of Greenlanders living in Denmark – are shown on figure 1. There are four groups included in the survey, and the total survey conducted by Statistics Greenland and Statistics Denmark include representative samples for all groups.

The first group is first generation Greenlanders (Greenlanders who have moved to Denmark from Greenland and have settled at some point of time). The age structure of this group shows that a considerable part of the members were moving to Denmark in connection with the economic activities during the 1960s and the 1970s, but also that there is an on-going influx of newcomers to the group.

Greenlanders in Denmark and the distribution of the survey conducted in 2010				
	1. generation	2. generation	Newcomers	Total
1.st survey				
Number of persons	3.333	6.227	197	9.757
Sample	499	374	81	954
2nd survey				
Number of persons	2.008	2.196	-	4.204
Sample	405	413	61	879
Total				
Number of persons	5.341	8.423	197	13.961
Sample	904	787	142	1.833
The group "New comers" include persons arriving to Denmark in in 2007 and 2008. In the analysis this group is subdivided in group 3 w hich include persons aged 40 years and below w hile group 4 consists of new comers above 40 years of age				
Gender and age structure of Greenlanders in Denmark				
	TOTAL	First generation	Second generation	Newcomers
Gender distribution: % men and women				
Men	41,9	32,3	47,8	39,5
Women	58,1	67,7	52,2	60,5
Age distribution: % of population in major age groups				
75+	1,7	4,4	-	-
65-74	4,1	10,8	0,1	-
55-64	9,4	23,7	0,7	16,1
45-54	20,8	29,8	15,3	32,2
35-44	20,8	16,2	23,6	19,5
25-34	18,2	8,5	24,1	16,1
18-24	11,0	3,9	15,4	9,8
-17	13,9	2,8	20,8	6,3
1st generation Greenlanders in Denmark consists of persons bom in Greenland but registred as living in Denmark at the time of the survey. 2nd generation consists of children of 1st generation Greenlanders in Denmark living in Denmark at the time of the survey. Newcomers consists of persons who have moved to Denmark in 2007-2008 and living in Denmark when the survey was conducted.				

Figure 6: Overview of the structure of the survey data regarding Greenlanders in Denmark.

Furthermore, there is a clear dominance of women due to the fact that many from this group were married to Danes who came to Greenland on temporary assignments, and during their stay got married to Greenlandic women.

The second group is the 2nd generation Greenlanders (children of first generation Greenlanders living in Denmark). It is reflected in the age structure dominated by younger persons. And the gender structure reflects the general gender birth and survival characteristics.

The third group – “The Newcomers” consists of persons who have moved to Denmark in 2007-2008 and

living in Denmark when the survey was conducted. It consists – as seen on the demographic parameters – of a larger group of mid-aged persons, and less persons from the younger group - showing the typical out-migration gender pattern with considerable more women than men.

In order to see how age groups differ in their responses when arriving to Denmark the “newcomers” group has been subdivided in two – the young group aged 40 years and below is group 3, while “newcomers” above 40 years of age is group 4. The four groups are numbered accordingly on the Y-axis in the graphs.

5.2 Do you like to live in Denmark and do you consider moving to Greenland?

An obvious starting point is the question whether respondents like to live in Denmark. And as shown in the following table, first- and second-generation respondents' answers are abundantly "always" or "mostly" as the answers to the question: "Do you like to live in

Denmark". The differences in the responses are particularly weak, with variations within a few per cent in each response category.

Only within the group of newcomers is there a marked difference to the first and second generation groups, with a significantly lower percentage having an overwhelming interest of living in Denmark. Still, however, with a very high majority showing positive responses to the question.

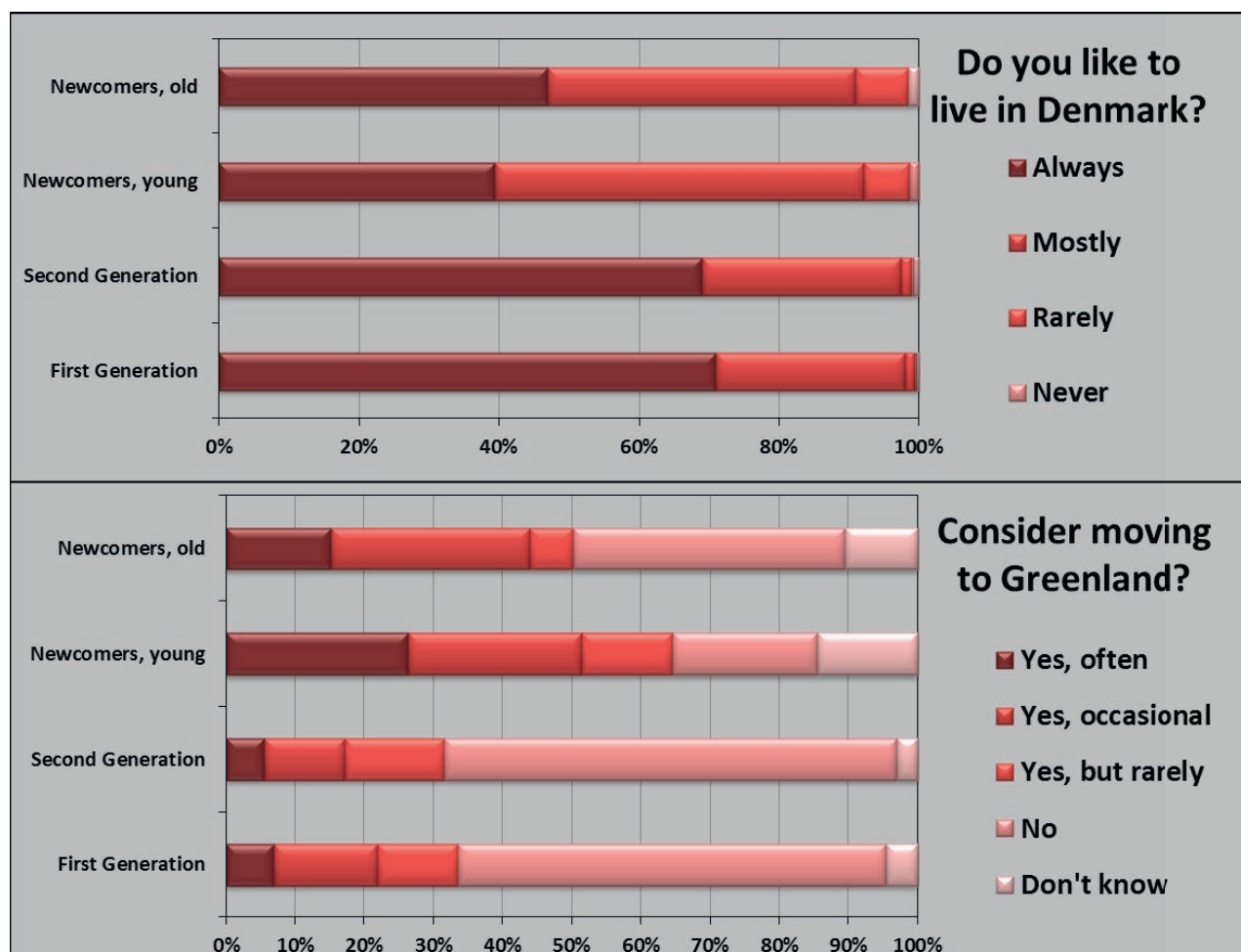


Figure 7: Staying or leaving – relations to Denmark and attractions of Greenland.

However, it is one thing to care for Denmark, but another is the question of to what extent this feeling also reflects a relationship. This issue will be taken up at a later point with a focus on the attachment to Denmark.

The precise meaning of the individual elements included in the overall pattern that determines whether one might prefer one over the other place is not further discussed. But the final image – reflections on whether you wish to move to Greenland or not indicates some reflections. As shown the second graph there are again some significant differences between the group of newcomers and both first and second generation Greenlanders. More than half of the newcomers have regular

and frequent reflection on moving back to Greenland, especially the younger group who may be in Denmark for education, and see themselves eventually returning to Greenland. The older group, however, may have moved to Denmark to be with their families and relatives who have settled there, and as such they tend to be more reluctant to move back. Therefore, in contrast to newcomers, only about 35 % of the first and second generation Greenlanders show such considerations. And it is less than 5 % who often consider moving back to Greenland. For the first generation group most of them have been living in Denmark for long time, and may perceive it as the framework for their present and

future lives in spite of any ties back to Greenland. For the second-generation group most of them have been born and raised in Denmark, and are likely to see themselves more as Danes than as Greenlanders.

5.3 Is it important with friends and relatives in Greenland, and is it important for children to learn Greenlandic?

The first question on relationships with family and friends in Greenland has a rather diverse pattern of re-

sponses. The response categories range from “totally disagree” to “totally agree”, with an additional option is “not relevant”. Yet, it is particularly the second generation Greenlanders who chose “not relevant”, while about 60 % of the newcomers emphasize the need to maintain and maybe develop networks to family and friends in Greenland.

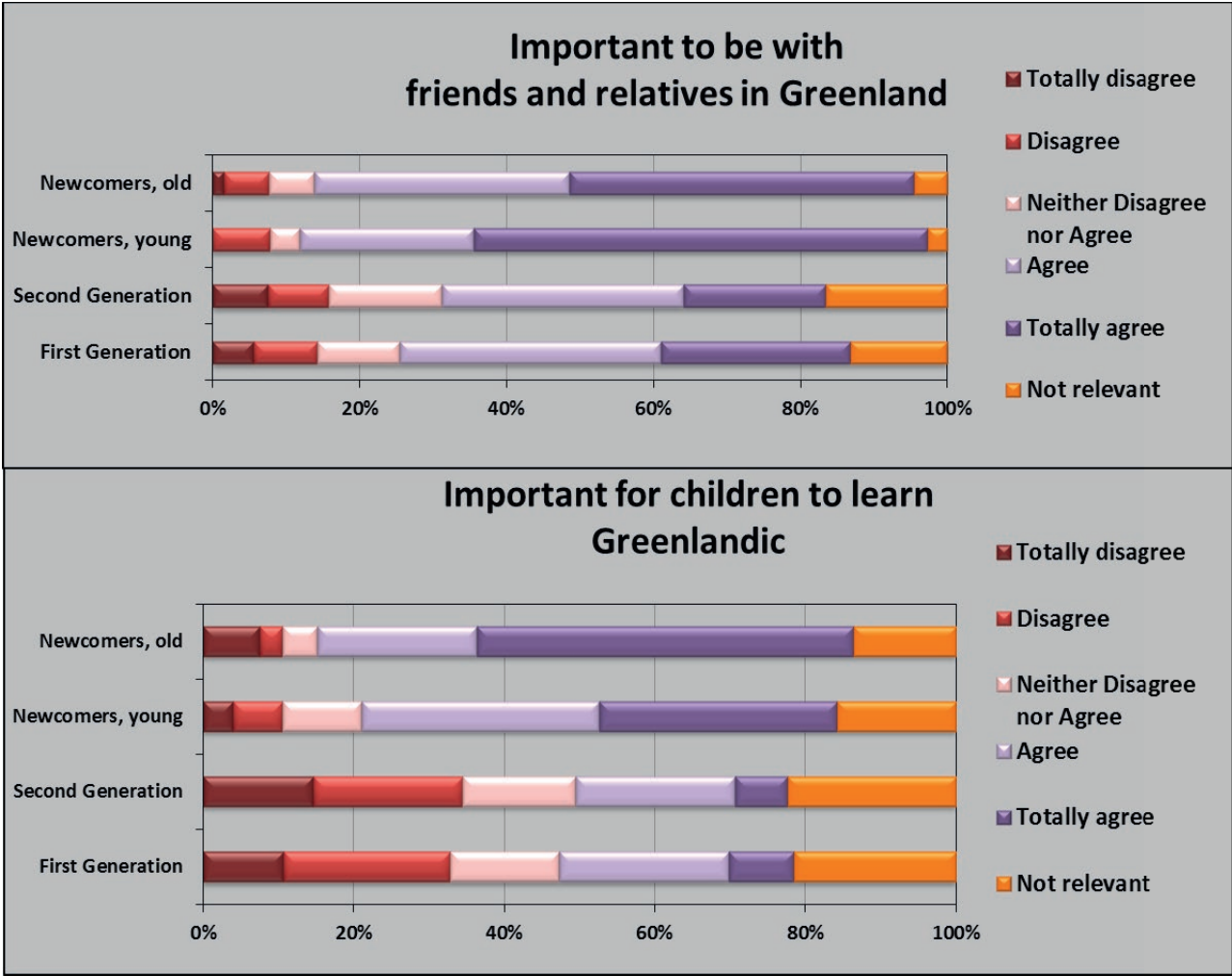


Figure 8: Connections to Greenland: The importance of keeping connections to friends and relatives in Greenland, and the role of children learning Greenlandic.

Another indication of a positive attitude to engage in the Greenlandic society is the question of the use of the Greenlandic language. There are two dimensions which could be considered in this context. First the question of the persons own relationship to the language and their ability to handle the Greenlandic language. The second dimension is about whether chil-

dren should learn Greenlandic. In this connection with this presentation the focus is on the Greenlandic language as a skill for the children to acquire. And as shown in the table above, there is a large group of respondents who consider the question not relevant, which may reflect that many of the respondents are single, and thus not directly confronted with the ques-

tion.

Compared to the previous question is a much larger group who disagree and completely disagree with the question among the first and second generation, so for both groups around 30-35 % agree or strongly agree. However, while the variations between the first and second generation groups are very small, the response pattern is significantly different from the group of newcomers. For this group, the vast majority agree or strongly agree with the view that children should learn Greenlandic. For the younger group because they consider returning to Greenland an option, and there-

fore show interest in ensuring this skills in preparation for their children to return. For the older group the considerations may have similar aspects included, but would first and foremost be interpreted as being a crucial skill in maintaining the Greenland culture for the younger generations. Embedded in this question lies an indication of interest in becoming involved in the Greenlandic society, and as such being part of an overall assessment of how the group of Greenlanders in Denmark are involved and related to a future development in Greenland.

5.4 Ties to Greenland and to Denmark

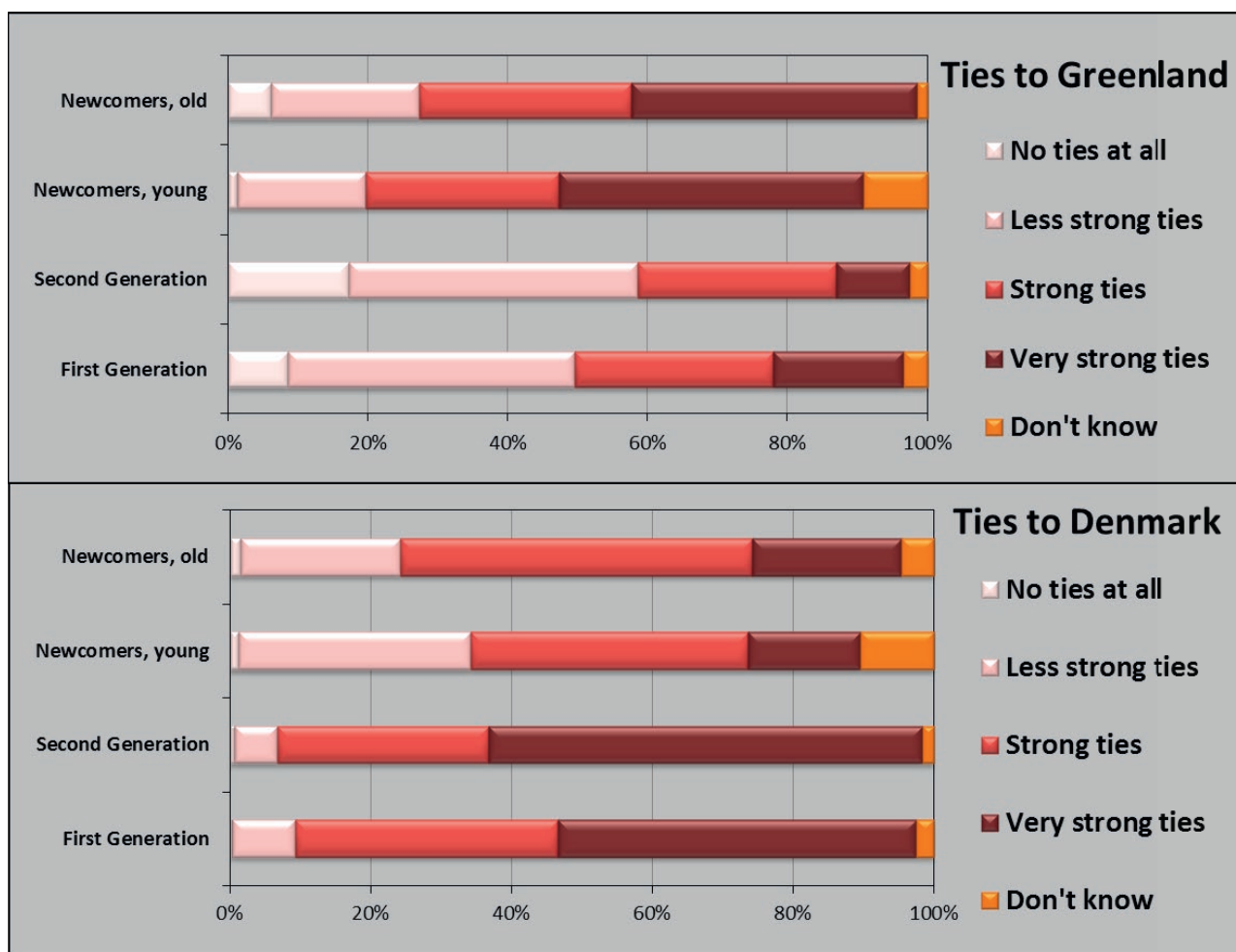


Figure 9: Ties to Greenland and Denmark.

One issue is to care for Denmark, another is the question of to what extent this feeling also reflects a relationship. And as seen in the chart below it is very clear that there is a very strong attachment to Denmark for all respondents.

As can be seen, it applies to both first and second generation Greenlanders as almost 90 % of the respond-

ents express strong or very strong ties with Denmark. Of the 90 %, over half states very strong ties while between 35 and 40 % indicate a strong attachment. For both groups, the respondents have been spending most – if not all – of their lives in Denmark which of course create these strong ties because their networks, local connections to schools, kindergartens etc. are situated

in Denmark.

For the group of newcomers however, the picture is somewhat different; those with very strong ties is significantly lower – around 20 % for the older newcomers while the young group is down to around 15 %. Similarly, around 30 % of the young newcomers indicate less strong ties to Denmark while the older newcomers shows around 20 % with these feelings. As mentioned earlier, the newcomers consists of a mixed group of persons, some being first-comers, others returners, some without networks in Denmark, and others with networks and existing ties. This is especially reflected in the group “Don’t know” for the younger group.

Yet, the image of the attachment is markedly different when it comes to Greenland, especially in terms of the differences between the groups of respondents. For newcomers, the association is predominantly strong and very strong, with about 65 % of respondents located in these categories. But it is significant that a relatively large group are undecided, and almost a quarter mentions that they have a less strong or no connection to Greenland. For the first generation Greenlanders it is remarkable that almost half of the respondents have no ties at all or have less strong ties to Greenland. Further, just over 5 % have no opinion on the question. So in spite of an identity as a Greenlander the attachment to Greenland is perceived to be relatively weak. And this pattern becomes even clearer when it comes to second Generations Greenlanders, as nearly 20 % indicate to have either no affiliation or no opinion, while 45 % perceive that they have less strong ties to Greenland. Only around 10 % indicate that they have a very strong connection, and further between 25 and 30 % have a strong attachment to Greenland.

There is a clear picture of a group of people who for various reasons have chosen to live or stay in Denmark and for the same reason show a dominant relationship here. Consequently, while their attachment to Greenland remains important, it is clearly secondary to the attachment to Denmark for the majority of the group.

5.5 Spouse's nationality and “feeling like...”

A significant factor in the above context is that the partner's nationality for both first-and second-generation Greenlanders is Danish in 90 % of the cases. The close ties with Denmark are undoubtedly connected to his or her partner and the network of family relations and circle of friends that are affiliated. Only about 7 % of first-generation Greenlanders have a Greenlandic partner, while just over 5 % are of other nationalities. For the second Generation Greenlanders, the percentage of Greenlandic partners is even lower, only about 3 %, while the group with other nationalities is also around 5 %.

For the newcomers group, the picture is markedly different; where just above half of the young newcomers have a Greenlandic spouse and just below half have Danish partners. Filling the remainder, roughly 10 % have partners of different nationalities. For the older newcomers, substantially more have Danish partners than Greenlandic ones, while the other nationalities are only represented with a few per cent.

Partner relationship has very great influence on attachment to place, which is most often generated through networks of family and friends that, in turn, help to build social relations with local communities. This is not the least the case for families with children, where community attachment becomes even more obvious.

The importance of links to Denmark and Greenland respectively is very much reflected in the sense of whether one feels as they are a Dane or a Greenlander, and the patterns are to some extent predictable. Those in the first generation group mostly feel Danish, or as both Dane and Greenlander. The second generation group feeling mostly Greenlander only encompasses around 12 % of the respondents; while around 20 % feel both as Greenlander and Dane and the vast majority feels mostly as Dane. For newcomers however, most still feel Greenlandic in both age groups, as exactly 50 % of both the young and the old group have shown this indication. Yet feeling as a Dane is somewhat higher in the old group compared to the young group.

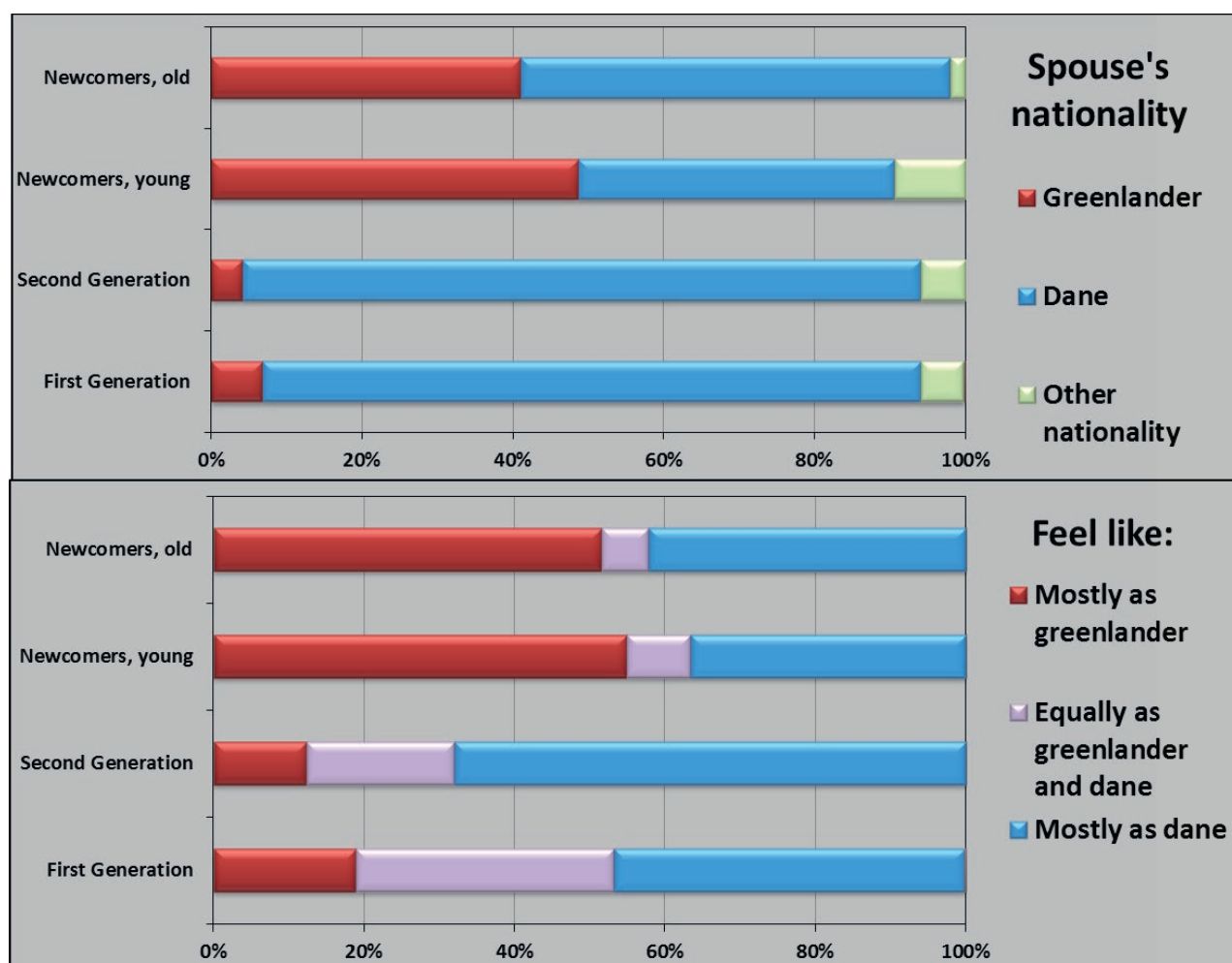


Figure 10: Spouse's nationality and sense of belonging.

6.0 Conclusions

The above findings from the survey among Greenlanders in Denmark basically substantiates the fact that the two communities in Greenland and in Denmark are interrelated and comply with the definition elaborated on by Cohen (1997a) emphasizing that the diasporic condition differs from contemporary international migration by being a historical continuity across at least two generations, a sense of possible permanence of exile and the broad spread and stability of the distribution of populations within the diaspora.

The sum of the responses clearly shows a dual relationship to both Greenland and Denmark. The colonial past has been responsible for a situation where a larger population group has two "homelands" and acts and interacts accordingly. Furthermore, the results show that increasing mobility combined with the process of scattering means that the situation in Greenland is no longer one-directional, but, as Brubaker (2005) emphasizes, that the notion of counter-diasporic migration is an important elaboration of the concept in the case of Greenland.

Migration has become a critical issue in the former Danish colonies Greenland and Faroe Islands (and partly also Iceland) as the options of "well-educated returners" have been an important issue for all three countries. At the same time, the recognition of diasporic conditions may become important for Greenlanders in Denmark because such recognition means that language questions and other means of support should be made available. Today Greenlanders are recognized as regular Danish citizens and moving between Greenland and Denmark is basically a process of internal mobility.

Recognizing Greenlanders as Danish citizens AND as members of a diasporic community (as the outcome of colonialism) ought to ensure support for enabling Greenlanders in Denmark to be granted rights equal to other citizens, and to be provided with appropriate opportunities to maintain their language skills in order to be able to migrate within the diaspora!

6.1 Manifestations

האבה הנשל מילשוריב - Leshana haba'ah b'Yerushalayim
- Next year in Jerusalem!

This is the Jewish diaspora pronouncing the wishful prayer at the end of every Passover Seder. It is a manifestation that unity within the diasporic community also has a material focus. A similar situation exists actually within the Greenlandic diaspora, and with the material focus situated in Copenhagen. Since Home Rule was established in Greenland 1979 Thursday 30th July to 1st August has become the world's largest Greenlandic cultural event outside Greenland.

It takes place in the amusement park Tivoli, and besides meeting with friends and relatives the

arrangement includes cultural events such as kayak-turning, ritual mask dance and a lot of music events with both traditional and contemporary artists. And Greenlandic country-food is available, just as a number of products from Greenland sold in booths.

The last years the event has been visited by around 100.000 participants yearly encompassing a mixed group of Greenlanders from Greenland, Greenlanders from Denmark, but also Danes who are married to Greenlanders and Danes who have been employees and still feeling attachment to Greenland.

So similar to the Jewish hopes for the future, the Greenlanders have promoted their own wishful thinking:

VI SES NÆSTE ÅR I TIVOLI
(See you next year in Tivoli)



Photo: Karen Marie Nathansen

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31. Recommendations from the conference

During the first two days of the conference a number of researchers and politicians gave presentations. In each session the program allowed for a plenary discussion based on the presentations on that specific session. These discussions raised a series of themes regarding the urbanisation process in general and in the Arctic in particular.

On the third and last day of the conference, the scene was changed. Focus was on a direct dialogue between researchers, politicians and administrators. During the day there were sessions with panel discussions between politicians and researchers and there were sessions with working groups. The assignment for the discussion groups was to “identify the five most important recommendations to the politicians in the Arctic societies regarding the urbanisation process”.

The recommendations from the working groups were presented in plenum. Based on the following discussion and the recommendations five main recommendations can be extracted. Each of the five main recommendations is followed by quotations from the recommendations by the working groups as they were presented in plenum.

The main recommendations from the conference:

Recommendation 1

Urbanisation is a global trend which is also taking place in the Arctic.

It is important to identify the drivers of the urbanisation process and be realistic about the process.

- History is important and it matters in its context and time.

Recommendation 2

Many researchers are looking at the urbanisation process in the Arctic

Politicians can learn from research results. Learning from others' experiences is important.

- Work under certain known parameters.
- Commission comparative research. Draw on experiences, expertise regarding governance, SIA.
- Specify role of urbanization in reaching independence. Avoid romanticism, core-periphery tensions, newcomers to towns.
- Exercise proactive approach to research. Define the terms of research and dissemination.
- Local environmental research. EIA.

Recommendation 3

Urbanisation must be addressed explicitly, and public inclusion in the debate is very important.

Politicians must be open and transparent about the opportunities and the challenges with the urbanisation process.

- Have a serious public process. Competition for ideas from the public, be participatory, collaborative governance, communicate in open and various forms.
- Treat research as part of the democratic process.

Recommendation 4

The citizens who decide to move or to stay are in control of the urbanisations process.

Facilitate the urbanisations process by paying attention both to the growing places and to the shrinking places.

- Drive the process; don't follow it (social policy is very complex).
- Focus on human development.
- More and better options and diversity in urbanization.

Recommendation 5

Economic resources are limited.

Based on knowledge about the urbanisation process politicians must prioritize and be visionary.

- Focus on education, language, transferable skills.
- Attention to public services – health and education.
- Realize existing inequalities. Plan to mitigate equity issues.
- Don't rush. Create a vision. Deal with urbanisation by creating opportunities and choices (well-being / happiness).

In the concluding session a few politician and researchers each supplied with a one-liner:

The politicians to the researchers:

- Researchers should not only think inside the box.

- We need better communication skills among the scientists.
- We need also to involve the NGO's.
- Do not only focus on the economy.
- We must all be clear in our messages in the public debate.
- It is important to be relevant in the way we deal with urbanisation.

The researchers to the politicians:

- Do not let the huge companies screw you.
- It is important you legitimise your decisions.
- It is about taking responsibility.
- We must realize it is both a physical urbanisation process and a mental urbanisation process.
- Utilizing the resources demands choosing and prioritizing.

32. Participant list from the conference

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ISSN 1403-2511
ISBN 978-91-87295-07-2

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