



# MEGATRENDS



# MEGATRENDS IN ARCTIC DEVELOPMENT

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# Introduction



- What are Megatrends?
- Which roles does Megatrends play in relation to future development in the Arctic?
- And how can Megatrends – and the method applied in determining them – be of use in other settings?

# Why Megatrends?

- The current pace of global change has already had a decisive impact on the Arctic.
- Some of these developments should be characterized 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.



# Why Megatrends

- 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.
- It is obvious that **social changes interacts with the environment**, and that environmental changes may be impacting future social changes.
- It is, however, also important to keep in mind that many – if not most - of the social changes are happening with increased pace and **independent of what happens in the environment**, and may become decisive in shaping the future for the inhabitants in the Arctic







# MEGATRENDS





# Urbanization

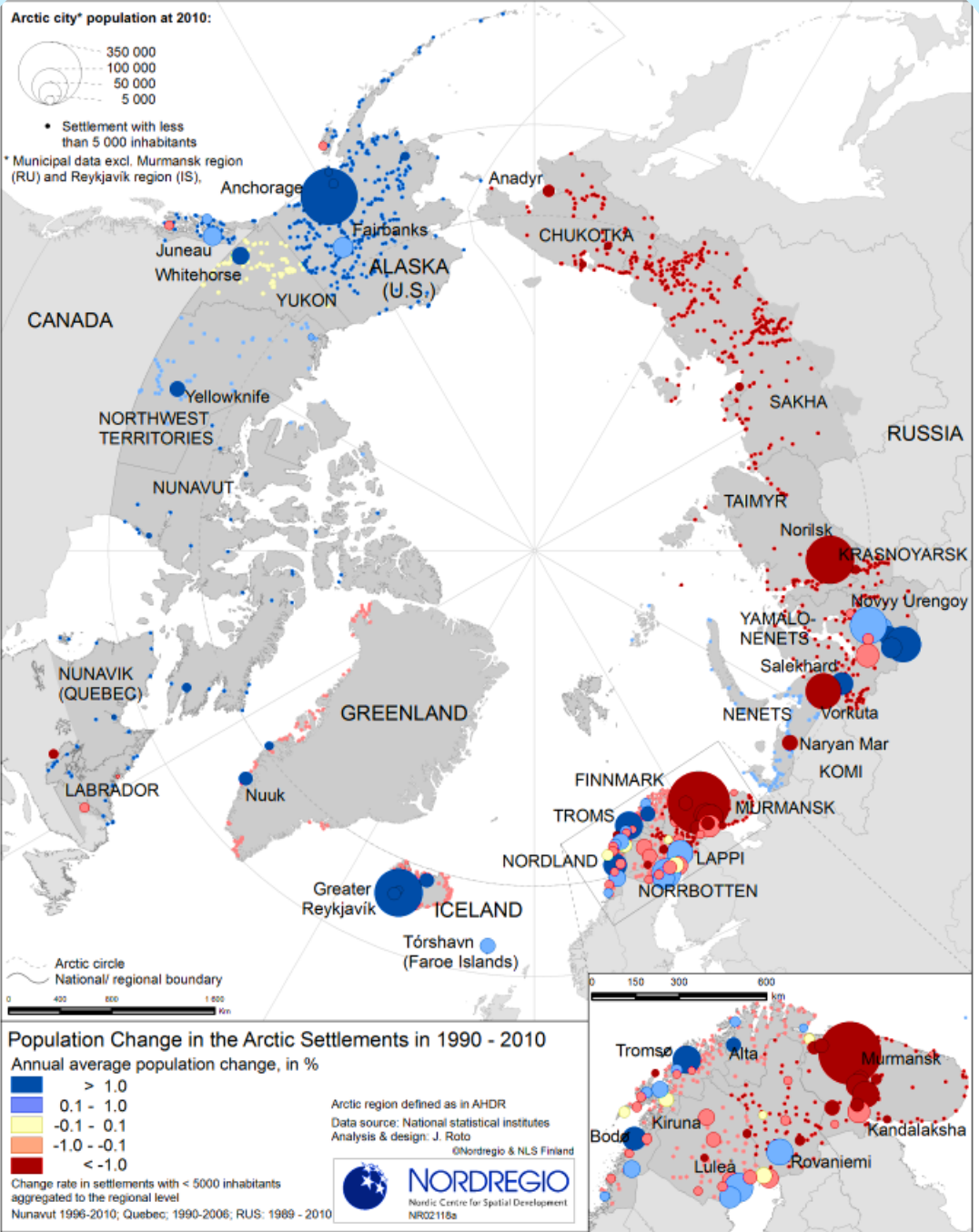






# Increased Urbanization – a trend also dominating the Arctic

- Urbanization is a process where **villages and small towns and their traditional economies and social relations are replaced by larger settlements with new sorts of economies and social organizations.**
- As a consequence the population are concentrated in fewer and larger settlements, representing larger economic varieties, and new social relations and cultural activities.
- It relates to a complex set of processes not only impacting where people are living and what they live off, but also who they are, how they live their lives, what they consider being “good lives”, how the distribution of power, democratic processes, social relations, and the political organization interact and takes place.



# Changes in settlement structure 1990-2010



# Demographic changes

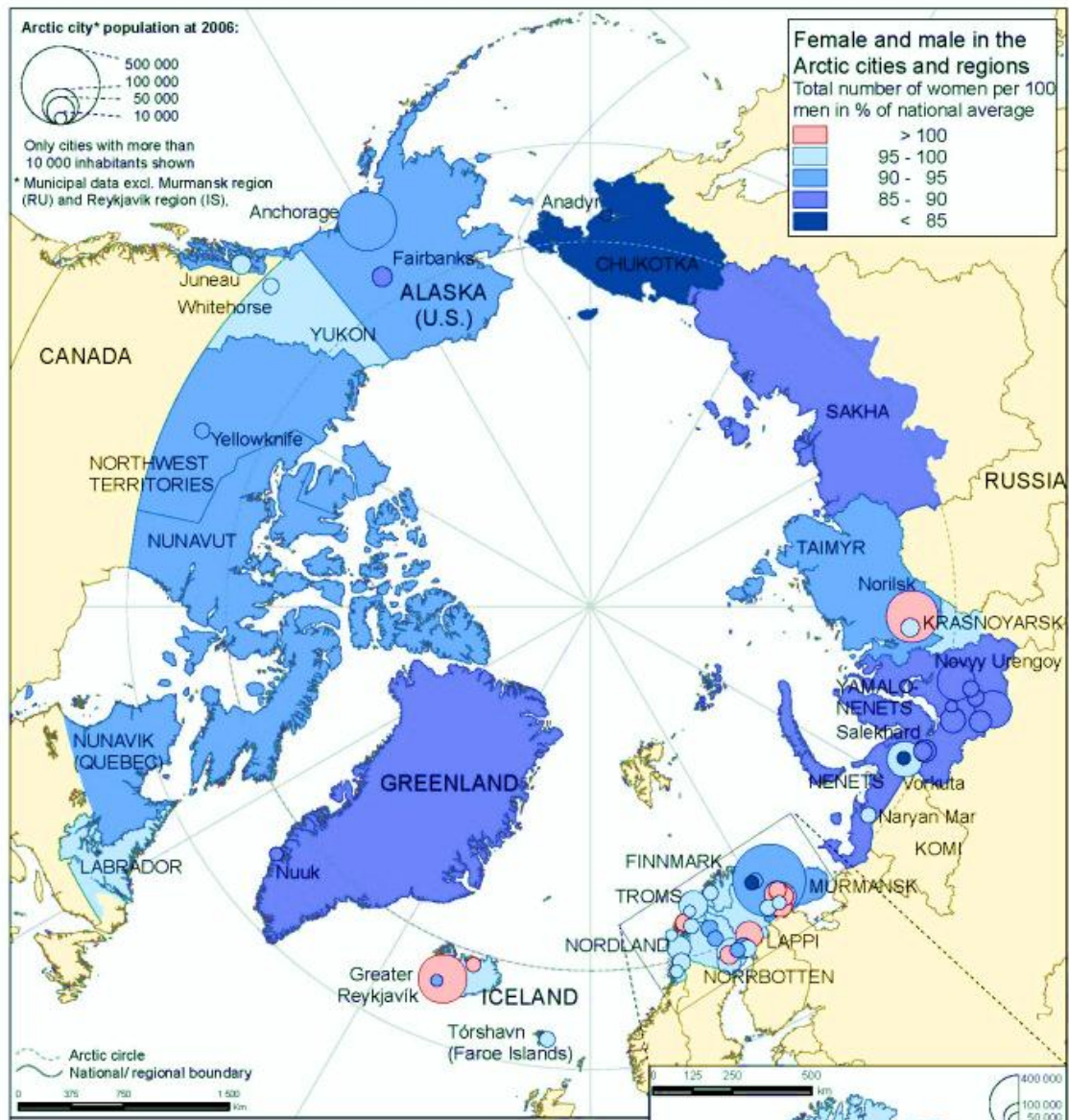






# Demographic challenges – the old are staying while the young (and women) are leaving

- A drastic **decline in birth rates** results in a decline in number of children, eventually leading to a reduced work force.
- In combination with a **prolonged living age** results in an increase in the dependency ratio.
- In addition an increased **out-migration** of young persons with qualifications contributes to a further distortion of the demographic structure.
- **More women than men are leaving** the Arctic, which contributes to an increased complexity in the development process.



**Cities and Regions in the Arctic 2006: Gender perspective**

Arctic region defined as in Arctic Human Development Report:  
Alaska (US); CA - Yukon, Northwest Territories, Nunavut, Nunavik (Quebec), Labrador  
Greenland, Iceland, the Faroe Islands; NO - Nordland, Troms, Finnmark; SE - Norrbotten;  
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(Krasnoyarsky Krai), Taymyr, Sakha (13 northernmost subregions), Chukotka

Data source: National statistical institutes  
©Nordregio & NLS Finland  
Gender data: 2006, RUS 2002 - For Chukotka, Krasnoyarskiy kray, Taymyr and Yamalo-Nenets only total number urban population in region available

Analysis & design: J. Roto



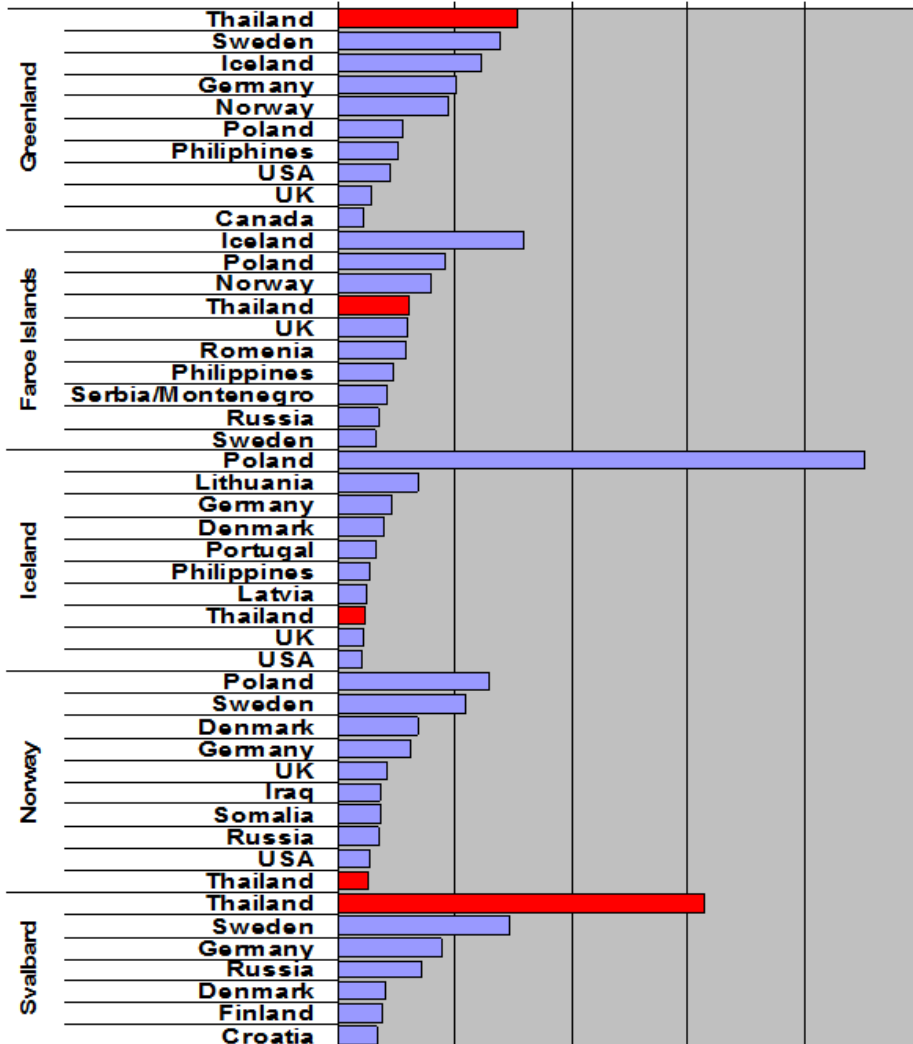
# Gender structure



**Top 10 (Svalbard: top 7) of foreign citizens with residential status in the North Atlantic region January 1. 2009**

Percentage

- 10.00 20.00 30.00 40.00 50.00



Newcomers

# Changes in the Arctic Economy



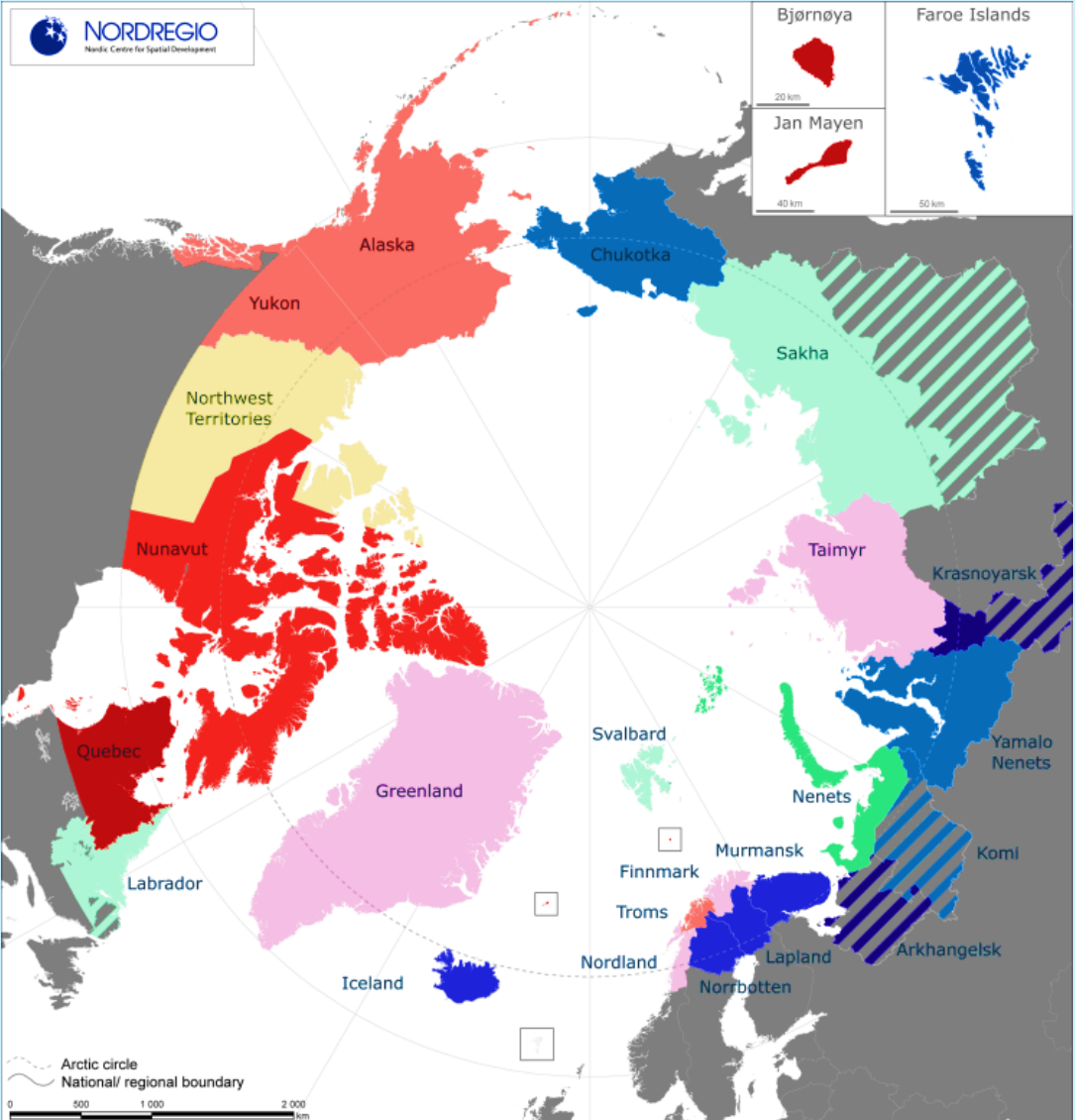


# Changes in the Arctic Economy

- The Arctic continues to be a region with **economic contrasts**.
- Many economies being dependent on **transfers and royalties** from extraction of renewable and non renewable resources.
- The international economy promotes modern large scale and capital intensive production. And the combination of global competition and over-exploitation of some resources has caused crisis in several Arctic countries.
- Many of the **“traditional” economic activities are declining**, just as international organizations such as Greenpeace causes further vulnerability to the challenged economies.
- New resource exploitation tend to become **“Company Towns”** with risks of being exposed to **“Boom and Bust”** cycles.

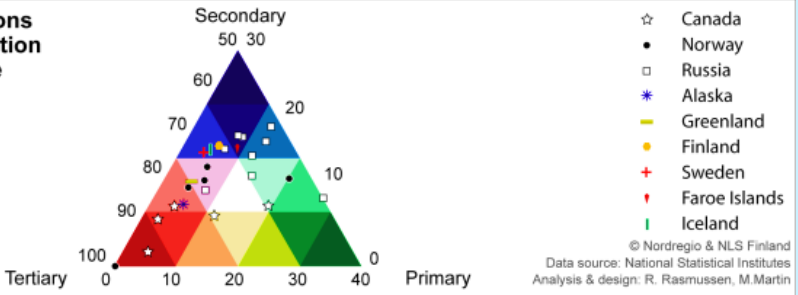






# Primary, Secondary and Tertiary activities in the Arctic

**Classification of the regions according to their proportion of employees in the three main sectors in 2006, %**





# Reactions on Societies' Impact on the Environment



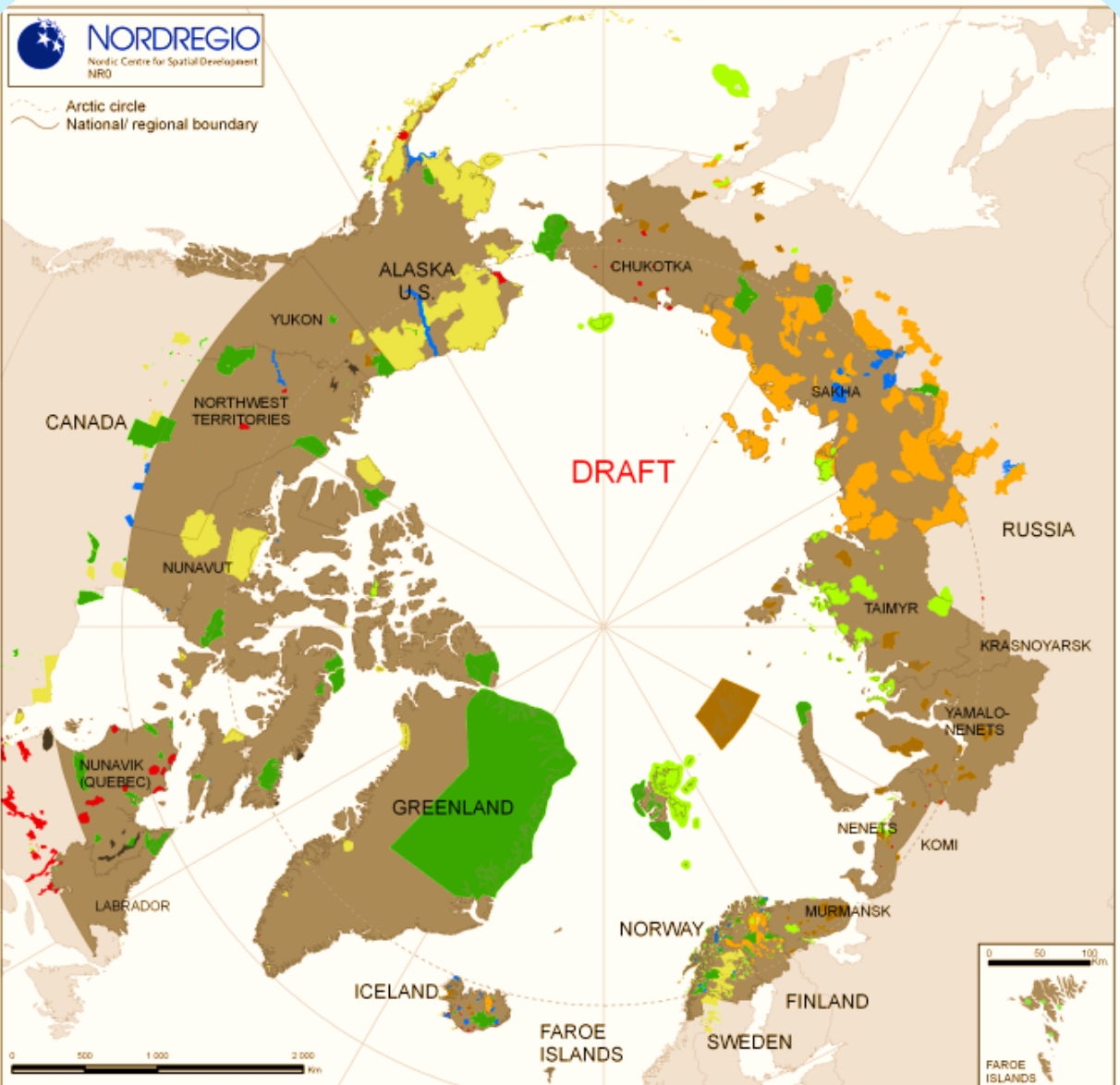


## Ongoing pollution, resource depravation and changes in climate has substantial impact on the living conditions

- Changes in Climate – **increasing temperatures, melting of ice, raising of sea level** – will be impacting the livelihood in the Arctic. In addition human activities both outside and inside the Arctic are influencing the options for interaction with the environment in the future.
- Not the least the **biological diversity** becomes affected, for instance through **invasive species** due to increased activities in the Arctic.
- The management of the biological resources becomes still more complex, requiring the involvement and cooperation by individuals and organizations at different levels.



Arctic circle  
National/ regional boundary



**Protected areas in the Arctic**

Classed after IUCN Protected Area Management Categories

- Ia - Strict Nature Reserve
- Ib - Wilderness Area
- II - National Park
- III - Natural Monument
- IV - Habitat/Species Management Area
- V - Protected Landscape/Seascape
- VI - Protected area with sustainable use of natural resources
- NA

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(Krasnoyarsky Krai), Taimyr, Sakha (13 northernmost subregions), Chukotka

Source: Arctic Data Portal accessed March 2011  
IUCN Categories available at <http://www.iucn.org>

Analysis & design: J. Sterling

# Protected areas in the Arctic

**Need for more  
human resources**





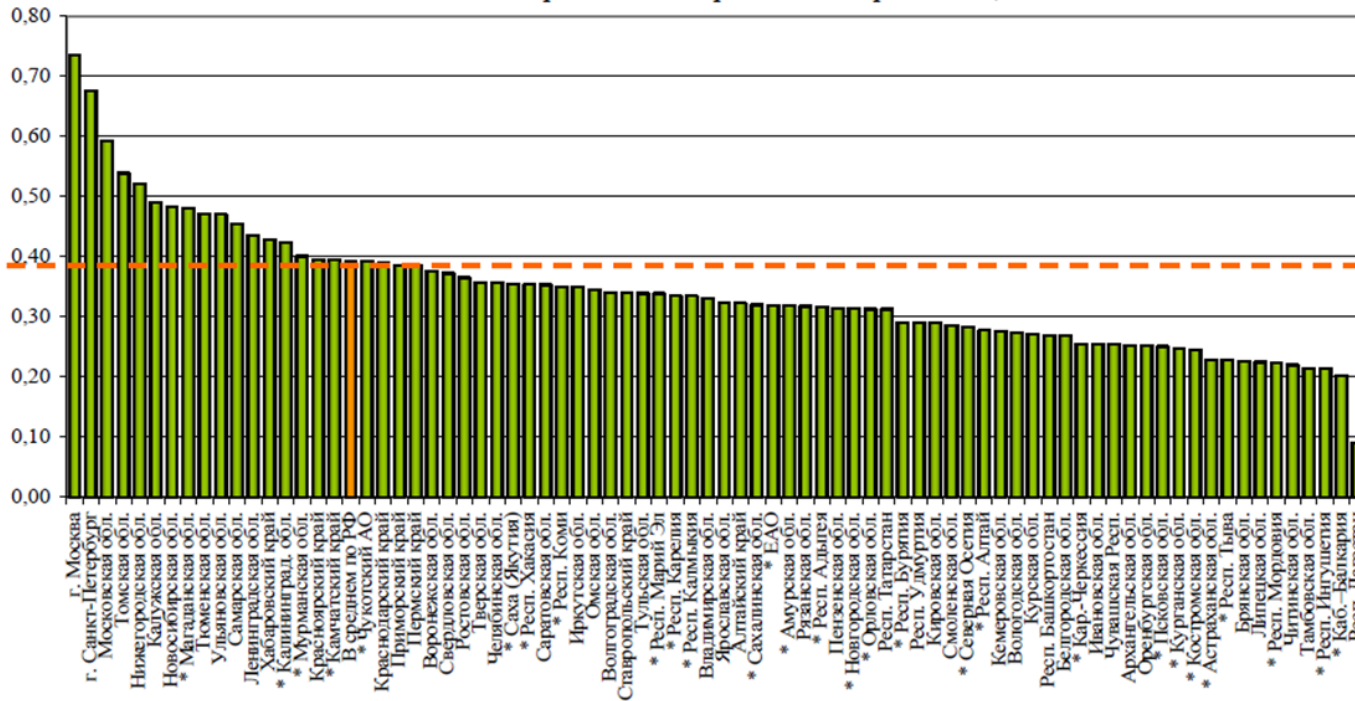
# There is an urgent need for further investments in the Human Resources!

- The development of the **"Knowledge Economy"** requires a stronger focus on the human resources, including knowledge, skills, talent and education.
- Especially in relation to education the transforming of the economy from a low productive and low large scale production to a more labor force intensive and knowledge based production.
- Access to **good education enables young people to stay** due to their choices of places to stay and jobs to get.
- In that connection the creation of jobs for an increasing group of **women with good educational qualifications** one of the most important drivers in the development process.



# General creativity index for the Russian regions

Сводный индекс креативности российских регионов, 2006

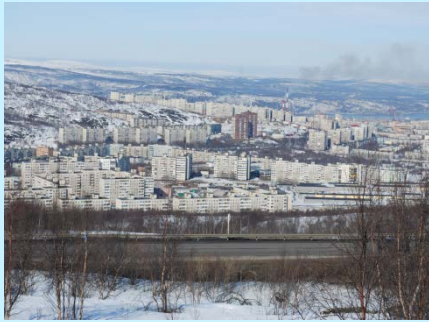


Creativity index of Russian regions



# Relations between the private and the public sector





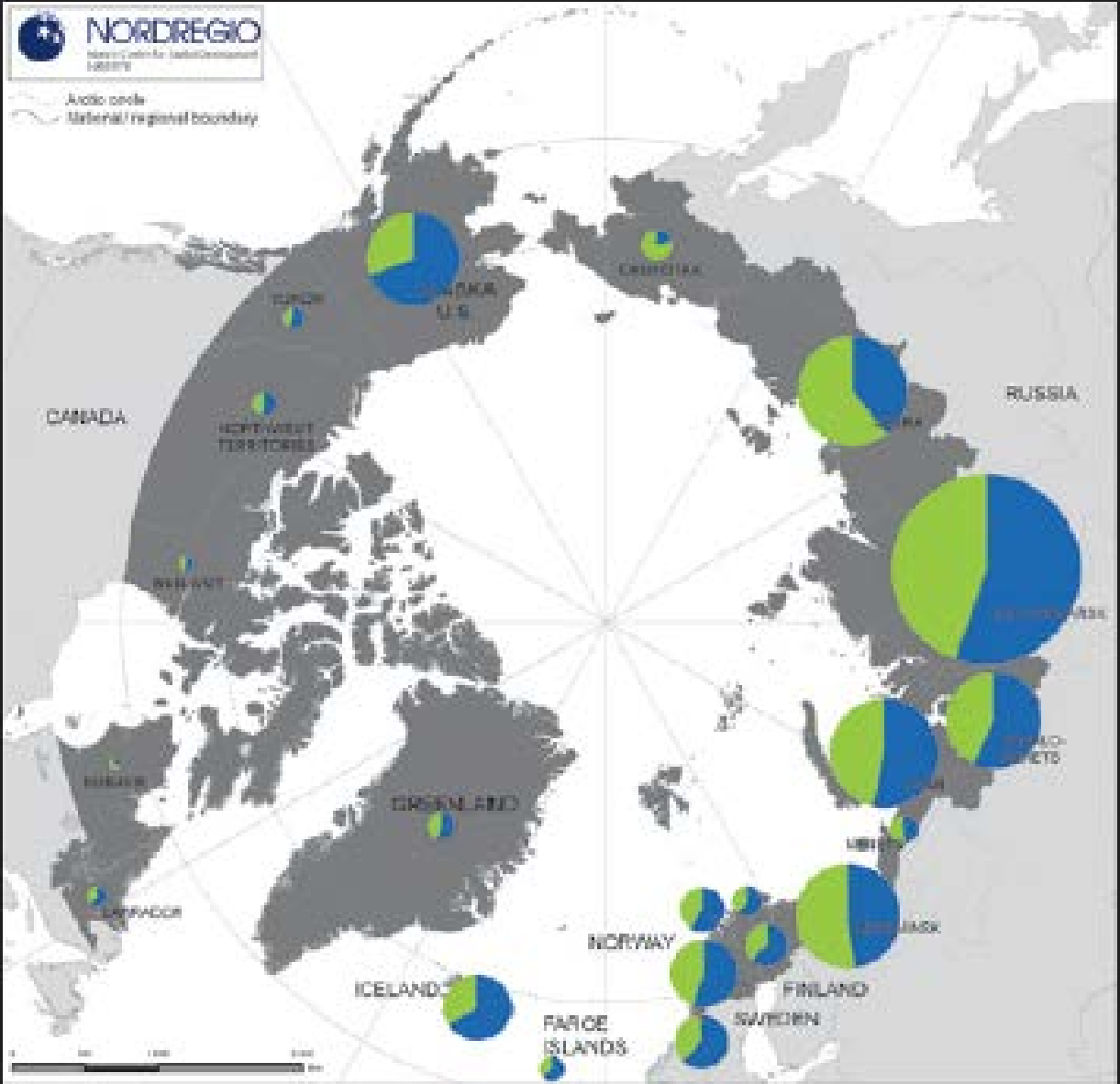
# The relations between the private and the public sectors are changing rapidly

- The development in **the Arctic have always been influenced by the Public Sector and its involvement in economy, infrastructure, and social relations.**
- Increasingly, however, the responsibility for planning and management is diverted towards regional planning and the private sector.
- It does not take away the need of public interference, however, because the levels of costs are high, and living conditions much more costly than outside the Arctic.
- An increasing privatization at the same time results in the building up of local wealth which is important in the creation of new industries and jobs.





Arctic circle  
 National regional boundary



**Public-private employment in the Arctic \***



Arctic region defined as in Arctic Human Development Report

\* PU: public (state, governmental, municipal, publicly owned by private and religious organizations, stock exchanges & joint Russian foreign, PQ: ILO: education, health & social work included as public.

Sources: ILO for GL, IS, MC, RM, SS, Canada: MCI for Provinces, Bureau of Statistics & Community profile, Canada 2006; FC: NORA & RSI; Alaska: ArcticNet, State of Alaska: Dept. of Labour & Workforce Development; Data for 2006 (except Norway 2005 and Labrador & Nunavut, 2005)

# Public-Private employment in the Arctic

# Renewable energy and Green Economy

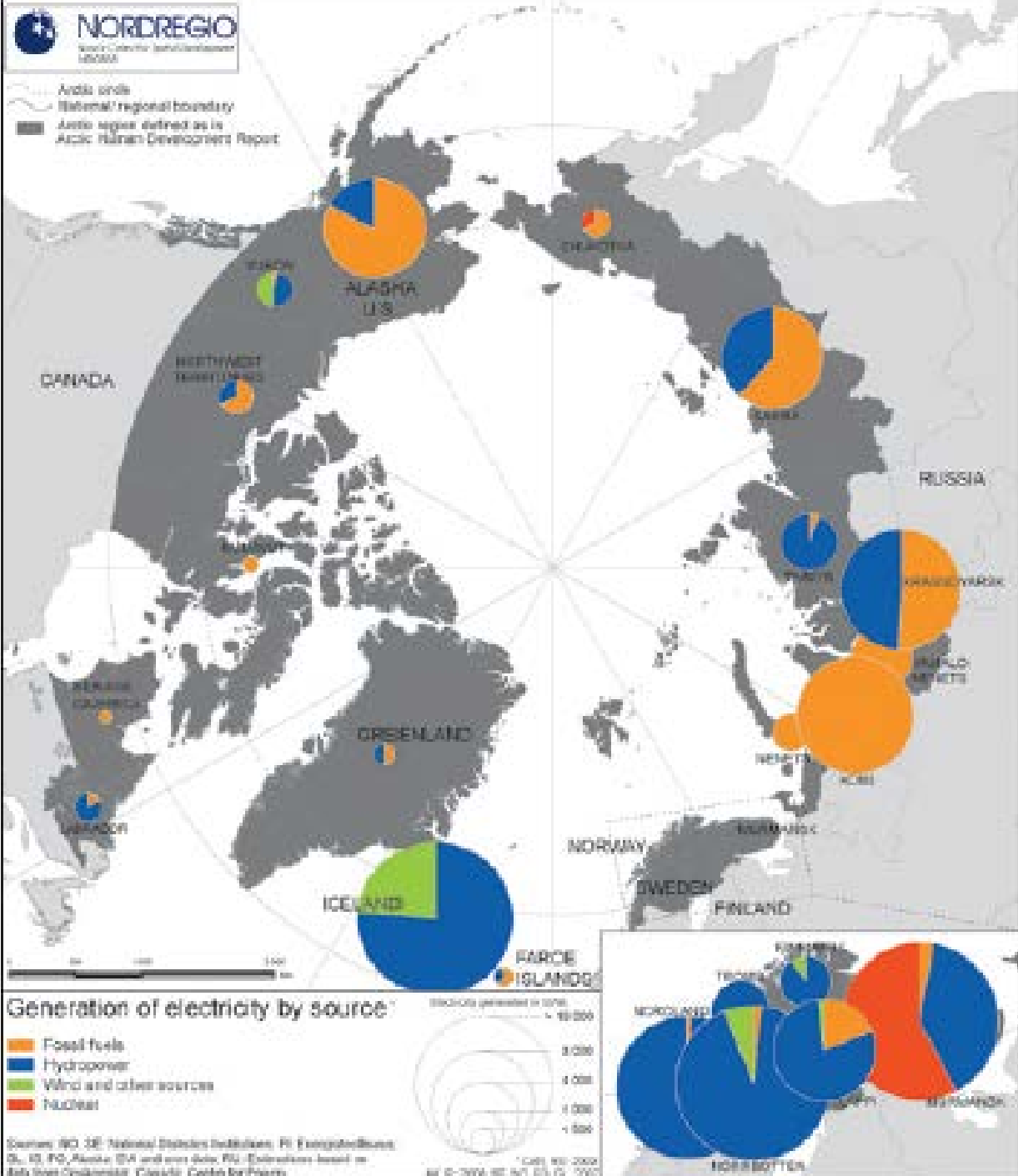




# Renewable Energy and Green Economy are providing an important input into the development in the Arctic

- In the Arctic a large supply of renewable energy sources are at hand, and in the future these resources are becoming the energy background for future development.
- The increased focus on **"Green Economy"** provides the Arctic with a number of possibilities:
  - New perspectives in relation to upcoming climate changes,
  - The need for new ways of exploiting the renewable resources,
  - And thereby options for new economic activities and jobs.
- The massive flow of consumer goods to the Arctic opens up the question of finding ways of recycle and converting for instance **packing materials, household waste etc. into local energy through industrial symbioses and district heating energy supply.**





# Generation of energy by source

# The question of accessibility

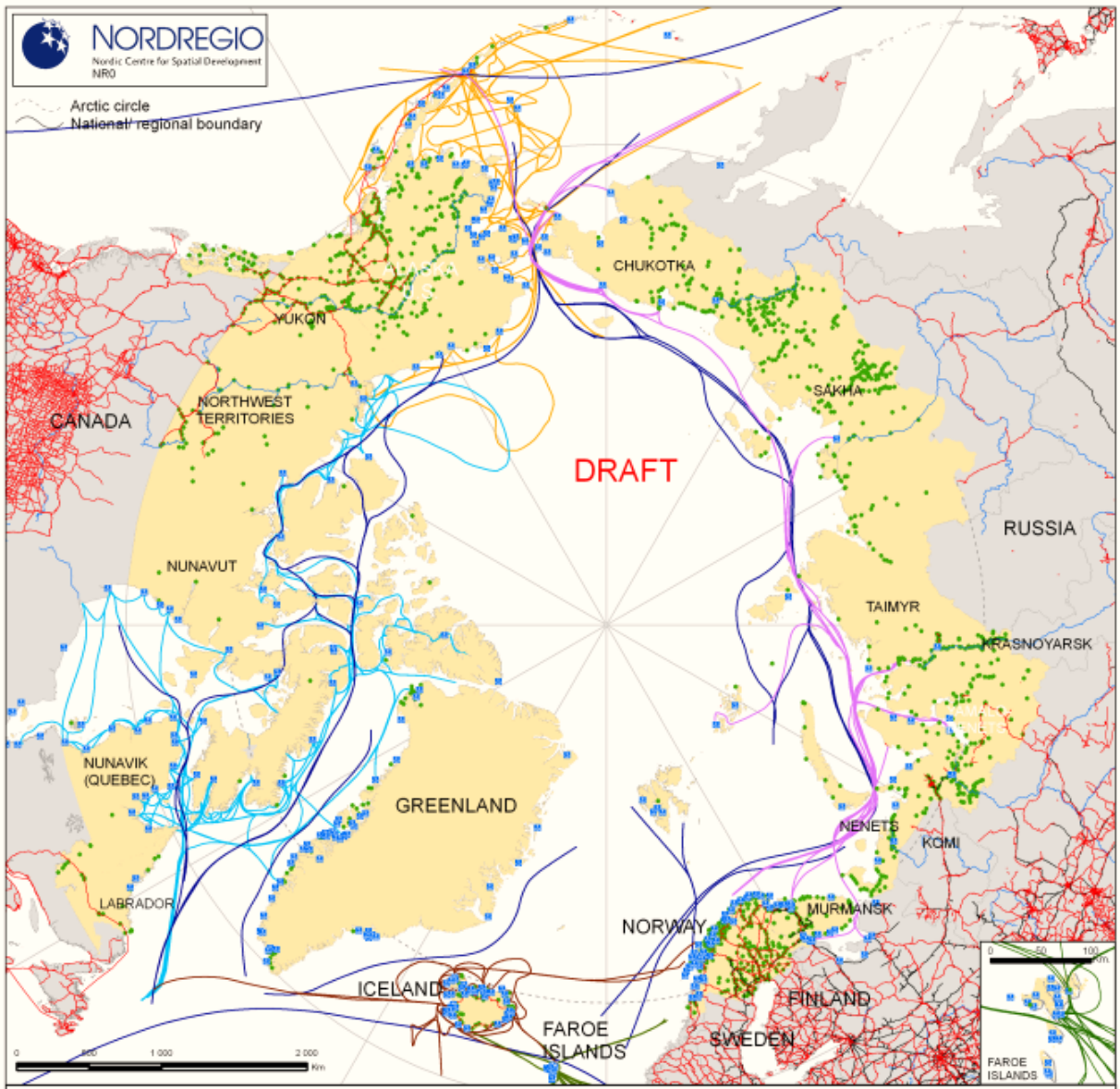




# Increased accessibility creates opportunities and risks

- A reduction in the ice cover provides **new transport opportunities and access** to so far un-accessible resources..
- This, however, generated increased risks as more intensive transport generates additional pollution, spread of **invasive species**, and increased risk for accidents.
- And new activities does **not necessarily result in new opportunities for the Arctic communities**.
- Increased transport also opens up for further tourism in large scale which is not necessarily a boon for many small settlements.





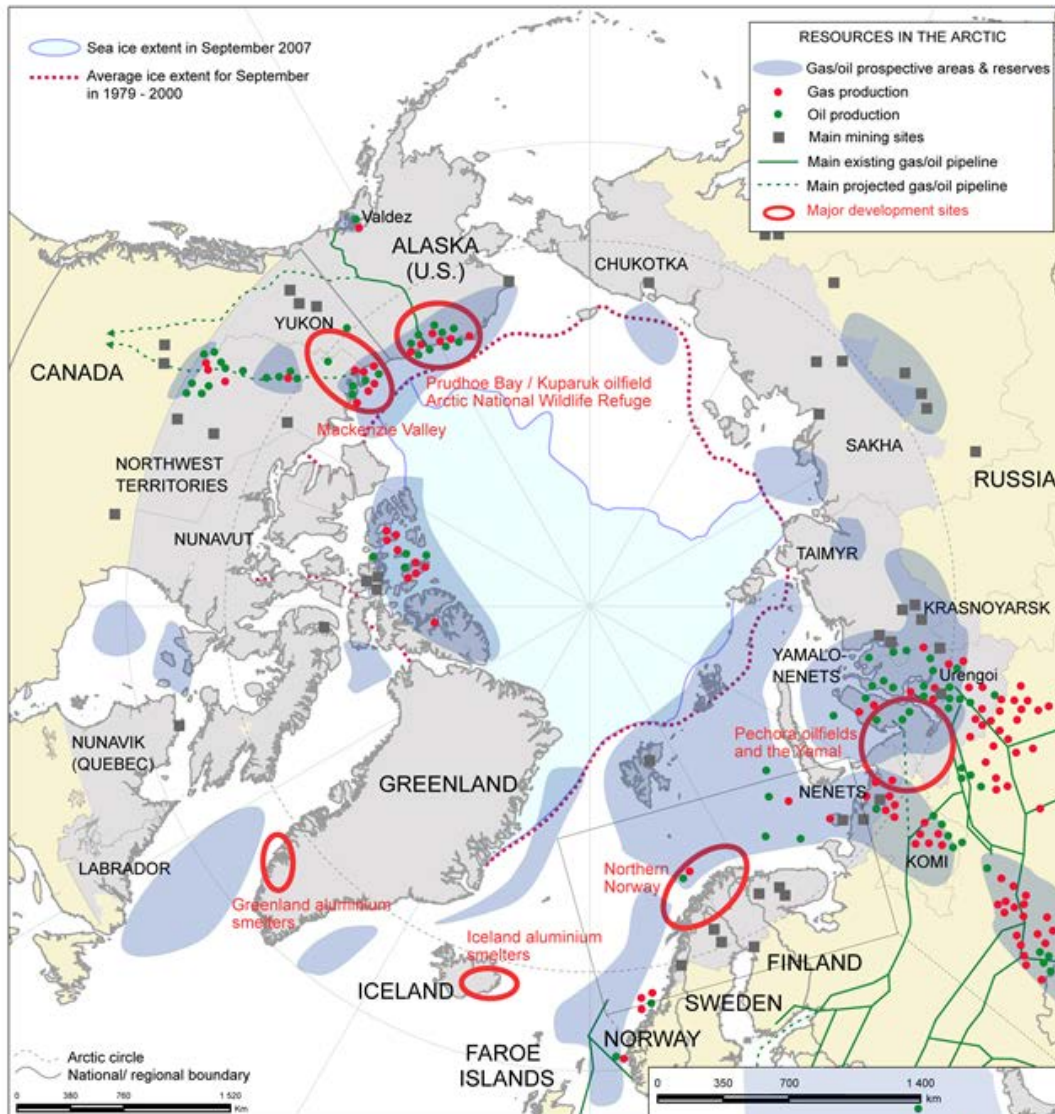
# Transport routes in and out of the Arctic

## Transport routes in the Arctic

Arctic region defined as in Arctic Human Development Report

- Iceland shipping routes
- Faroes shipping routes
- Russian shipping routes
- NSR NWP shipping routes
- Canadian shipping routes
- US shipping routes
- Ports
- Roads
- Main railways
- Main rivers
- Populated places

Source: ArcticData Portal, ESRI Data  
Nordregio calculations  
Analysis & design: J. Sterling



### Resources in the Arctic

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 (Krasnoyarsky Krai), Taimyr, Sakha (13 northernmost subregions), Chukotka

Data source: Grid-Arendal, ACIA, AMAP, Gaz de France, East European Gas Analysis, NSIDC, United States Geological Survey.  
 Analysis & design: J. Roto / J. Sterling



# Ressource Access



# New positions in the Global system

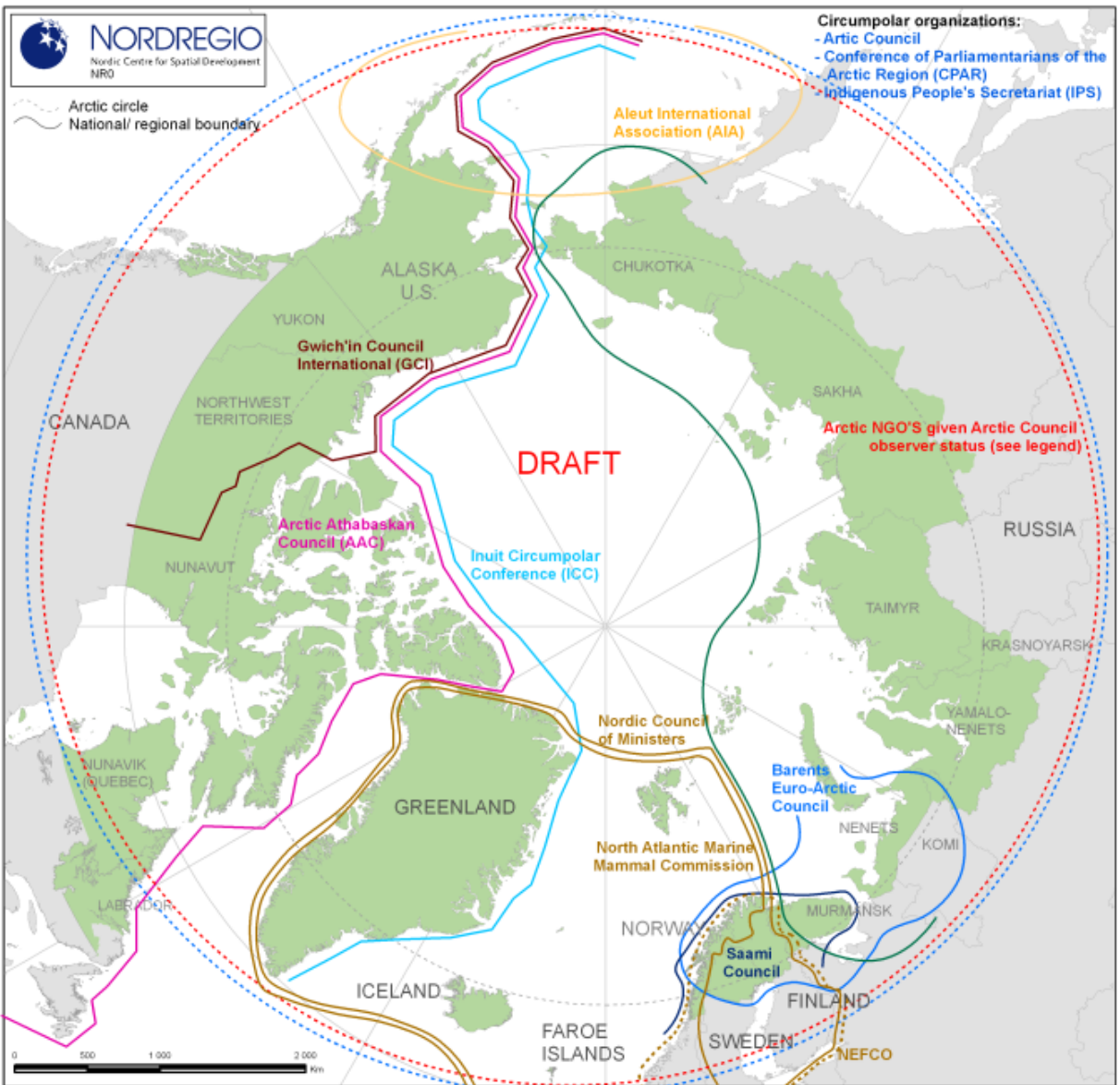




# The Arctic as a player in the Global game

- The Arctic is no longer an isolated and inaccessible part of the globe. The Arctic is a member of the Global Society – and presently also an important part of the global discourse!
- The increased level of interest also causes potential conflicts, and therefore the need of means and measures in handling these conflicts.
- The involvement of the Arctic communities in this development is decisive for a continued peaceful development of the Arctic.





**Circumpolar organizations:**  
 - Arctic Council  
 - Conference of Parliamentarians of the Arctic Region (CPAR)  
 - Indigenous People's Secretariat (IPS)

**Arctic NGO'S given Arctic Council observer status (see legend)**

# Institutions and organizations involved in Arctic development

**International cooperation institutions in the Arctic\***

- Circumpolar organizations:**
- Arctic Council
  - Conference of Parliamentarians of the Arctic Region (CPAR)
  - Indigenous People's Secretariat (IPS)
- Arctic organizations given Arctic Council observer status:**
- Nordic Council of Ministers
  - North Atlantic Marine Mammal Commission
  - NEFCO - Nordic Environment Finance Corporation

- Arctic Council Permanent Organisations:**
- Gwich'in Council International (GCI)
  - Arctic Athabaskan Council (AAC)
  - Inuit Circumpolar Conference (ICC)
  - Aleut International Association (AIA)
  - Saami Council
  - Association of Peoples of the North (RAIPON)

- Arctic NGO'S given Arctic Council observer status**
- Arctic Circumpolar Gateway
  - Association of World Reindeer Herders (AWRH)
  - Circumpolar Conservation Union (CCU)
  - International Arctic Science Committee (IASC)
  - International Arctic Social Sciences Association (IASSA)
  - International Union for Circumpolar Health (IUCH)
  - University of the Arctic (UArctic)
  - World Wide Fund for Nature-Global Arctic Program (WWF)

Arctic region defined as in Arctic Human Development Report  
 \* Approximated areas

Source: Institutions websites, Arctic Council





# Perspectives



A wide-angle photograph of a frozen body of water, likely a bay or fjord, covered in numerous ice floes. The ice floes are irregular in shape and size, ranging from small chunks to large, flat sheets. The water between the floes is a dark, deep blue. In the foreground, a steep, dark, rocky cliffside slopes down towards the water. Several people, dressed in dark winter clothing, are walking across the ice floes. In the background, a small blue building with a white roof is visible on a rocky shore, with a sign that reads "ARCTICA". Several small boats are docked along the shore in the distance. The overall scene is a stark, cold, and desolate landscape.

**Thank you for your  
attention**