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MIGRATION IN THE ARCTIC REGION

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Arctic is a hot topic due to ongoing climate change and new perspectives for extraction of natural resources. These changes lead to the new challenges of the people living in the Arctic, that are the key topic of our study. The study was conducted to determine the migration trends in the Arctic region.

This work observes the importance of migration for sustainable development and demonstrates the current population structure in the Arctic. The analysis of the Arctic migration patterns, the population change in the Arctic regions and settlements, life expectancy at birth, total fertility rate in the Arctic states are used to better understand the driving factors influencing Arctic population. This research also provides future projections concerning Arctic population and the effect of COVID-19 on Circumpolar peoples.

Understanding the size, composition, distribution and growth rates of the Arctic population is a necessary input to economic policy in the future.

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Introduction

The Arctic is a unique place with untouched terrain and impressive but breakable biodiversity. There are many natural resources from natural gas and oil to copper, iron and gold. Circumpolar peoples have been living in this territory for ages. Global economic, climate and environmental changes profoundly influence on arctic ecosystem and population. This sequentially has a notable and palpable footprint for the Earth as a whole. The Arctic has become a topic of global interest because of ongoing changes happening there (Charles, Andersen, 2012).

Economic and intergovernmental problems have been emerging all over the world remarkably changing the regular life of people over the last few years. In 2015 a migration crisis became a focus problem of the European Union. Historically migration was a common phenomenon. North Europe has been having quite a massive amount of migrants since the middle of 1980's, nevertheless hundreds of thousands of migrants looking for shelter was something that did not exist before there. Most of the refugees decided to settle in the Northern European countries, so the Arctic region needed to find the solutions to the new complicated upcoming problems besides the ones that had been already occurred there. Arctic Indigenous communities are also facing a tremendous (im)migration changes that happen all over the world. Saami in present Scandinavia and Russia and Alaska natives in the USA leave their natural habitat and lose their historical identity based on their personal perspectives. Russian Siberian cities are becoming abandoned with only elderly people and shift workers left there (Wilson, 2003). Cultural differentiations, assimilation into new neighborhoods, new customs and labour force integration are the current problems of migration. There is a need of partnership and cooperation to come up with the innovative outcomes (Arctic Governance, 2020).

Migration in the Arctic region is highly important and urgent topic, but at the same time quite complex and controversial. Migration in the Arctic territories is relevant for the economies of many countries. The research discusses different sides of human migration, provides the statistical data collected from various sources, divergent forms of cultural, environmental, and economic issues of the Arctic population are also acknowledged there. Understanding the size, composition, distribution and growth rates of the Arctic population is a necessary input to population policy. The projection of the Arctic populations' future is useful tool for policymakers to assess whether the expected demographic situation in their region differs from the desired situation.

Although the Arctic is in the North, it is a hot topic, and all the changes that happen there leave behind important outcomes for the future.

That calls into the question: *what is the future of the Arctic human population?*

The analysis provided in this research follows the following aims.

- to demonstrate the importance of migration for sustainable development in the world
- to present the current population structure in the Arctic
- to analyze the migration trends in the Arctic
- to project the possible future of Arctic migration

The work has 5 sections. Chapter 1 shows the general information about Arctic. Section 2 presents the data about migration and its relevance to UN sustainable development goals. In section 3 there is the information about current Arctic demography, Indigenous peoples and the analysis of migration trends in the Arctic (Russian Siberia, Alaska state in the USA and Scandinavia). The probable future of Arctic migration and the impact of COVID-19 on it, are introduced in chapter 4. Section 5 concludes.

Chapter 1: The Arctic

There are different approaches how to determine the Arctic region, depending on the framework of research (Arctic Centre, 2020).

1. The most common method is along the Arctic Circle. It is an imaginary line on the surface of the planet parallel to 66° 34 north latitude. This latitude was chosen because it is possible to experience polar day and polar night north in this area. This method is universal and is used in many fields of science.
2. The next method is founded on temperature regime. In the northern border of this area the average July temperature does not rise above 10° C (or 50° F). This method is used quite often but the temperature border is not as static and varies with climate change. This method is commonly used in economic, political and social studies.
3. Some scientists define the Arctic as an area where you cannot find any trees, the landscape is frozen and dotted with shrubs and lichens. In this case the border coincides with the tree growth line. This method is called biophysical, it is used by climate, ecology and environment researches and it is not used as often as the previous ones.

In this study the borders of the Arctic are the following – the union of borders along the Arctic Circle and the temperature regime so that the area of the region will be the largest. The Arctic is perceptive to the environmental changes happening all over the world. Global warming causes melting of Arctic ice and snow, this transforms the climate on the whole planet. This is the reason why the Arctic is an urgent issue of the international concern. Arctic territory extends over more than 30 million square kilometers, that is nearly 6% of the whole land on the Earth. The overall land zone is approximately 14 million square kilometers. The Arctic Ocean occupies about half of the region. Nearly 80% of it is the northern territories of Russia and Canada, 16% belong to Scandinavia and 4% to the USA (Fram Forum, 2018).

The following countries are included in the High North: Kingdom of Denmark (Greenland, which has autonomous and is not part of the EU; Iceland; Canada (Nunavut and Yucatan territories and the Northwest Territories, Canadian Arctic Archipelago, Nunavik region, part of the province of Quebec, Labrador, part of the province of Newfoundland and Labrador); Kingdom of Norway (Nordland, Troms and Finnmark provinces, Medvezhiy and Jan Mayen islands, as well as the Svalbard archipelago); Russian Federation (Nenets (as part of the Arkhangelsk region), Chukotsky and Yamalo-

Nenetsky Autonomous Okrugs, Murmansk Region, Franz Joseph Land, Novaya Zemlya Archipelagos, Novosibirsk Islands and Severnaya Zemlya, Wrangel Island, part of the Krasnoyarsk Territory); United States of America (Alaska, including the Aleutian Islands and Kruzshtern Island); Finland Republic (Lappi, Pohjois-Pohjanmaa and Kainuu provinces); Kingdom of Sweden (Västerbotten and Norrbotten) (AHDR II, 2015).

As a consequence of global warming the ice melts and the region changes. Therefore, the Arctic becomes more accessible for the economic development. It attracts more interest and attention than ever before. Analyzing migration in the Arctic region, few aspects are used including historical approaches to (im)migration, micro and macro factors for the analysis of the determinants of economic integration of immigrants, and the information from the national demographic statistics of the countries in the research. These issues are diverse, but they are interconnected. The historical community development, refugee flows and socioeconomic aspects directly influence the working conditions and the quality of life of people living in the Arctic.

Great resource potential of the Arctic and relatively small number of permanent inhabitants makes the territory more open to economic changes and development (Heikka, 2013).

Chapter 2: Migration

Migration as a process of worldwide human movements from one place to another, its modern tendencies and contribution to the sustainable development are examined in this chapter. It first reviews the definitions of migration and data about it, then there is an overview of UN sustainable development goals that include indicators and targets that refer to human mobility and migration to show the far-reaching meaning of migration for the future of the whole world including the Arctic region that encounters many alterations these days.

2.1. What is migration?

Generally speaking, migration is when people move from one location to another. If a person migrates it means that he/she moves either from a countryside to megapolis, from one district to another region in the same country or from one country to another. Certain action is expected for migration.

On the contrary, a “migrant” has different definitions depending on the situation. In many occasions, “migrants” do migrate changing their permanent location, but in some cases, people who have never moved from their habitat are thought to be migrants – children who were born overseas, for instance, are generally called second or third-generation migrants (UN Migration, 2020). There is also a situation called stateless, when people cannot get the citizenship despite the fact that they were born and raised in a particular country. In contrast, citizens who are returning home travelling for a long time, who have international migrant experience usually are not categorized as “migrants” when they arrive home (IOM World Migration Report, 2020).

According to IOM (the UN Migration Agency, 2020) migrant is an individual who moves across international borders or inside a country despite

1. the causes of the movement
2. the legality of the social status
3. the duration of the stay
4. whether the movement is voluntary or obligatory.

2.2. Migration data

Data on global migration flows is quite limited. The database of migration only holds within 45 countries (Migration Data Portal, 2020). It is tremendously tough to capture data on migration for a number of reasons.

First of all, regularly international migration is registered as inflows and outflows into and from the country, however some of the countries are more concerned about inflows. For instance, Australia and the USA record transboundary movements, but many other countries count only entries and do not register the departures.

Secondly, in some countries migration movement data is taken from official administration documents about immigration status changes such as issuance, withdrawal or renewal of a residence cards and permits.

Moreover, it is often complicated to dispartate migratory flows from tourism and business travels which are not migration. Fundamental IT resources and systems as well as notable infrastructure are needed to track migration. That is why developing countries have less migration data due to inability or limited facilities to collect and analyze it.

Finally, geographical positions of the borders of some countries create a number of obstacles for migration statistics collection. For example, in some regions the borders are situated in isolated mountain ranges or in the sea, so it is rather challenging to manage the border control there.

In this research the statistics and facts are used from the following organizations.

- IOM (international organization of migration)
- ArcticStat
- Nordregio
- UN population division
- Demoscope
- National statistical offices (U.S. Census Data and Statistics, Statistics Canada, Statistics Greenland, Statistics Faroe Islands, Statistics Iceland, Statistics Norway, Statistics Sweden, Statistics Finland, Rosstat).

2.3. International migration trends

There is an estimation of the global international migrants generated by UN DESA. In different countries the theories and concepts along with approaches to data collection and analysis vary a lot hence make it difficult to compare the national statistics on international migrants to the fullest extent.

According to UN DESA over the past 5 decades the evaluated number of international migrants has expanded. There were totally 272 million migrants in 2019 while there were only 153 million of them in 1990 and 84 million in 1970.

Evidently a greater majority of humans proceed living in the countries where they were born, however the proportion of migrants in the world has grown over the last decades (UN DESA 2019).

Table 1: International migrants 1970–2019

Year	Number of migrants	Migrants as a % of the world's population, %
1970	84,460,125	2,3
1975	90,368,010	2,2
1980	101,983,149	2,3
1985	113,206,691	2,3
1990	153,011,473	2,9
1995	161,316,895	2,8
2000	173,588,441	2,8
2005	191,615,574	2,9
2010	220,781,909	3,2
2015	248,861,296	3,4
2019	271,642,105	3,5

Source: UN DESA, 2019.

According to Global Migration Data Portal 48% of this international migrants are women. 164 million of migrants are workers (Global Migration Data Portal, 2020).

2.4. How do migrants have an effect on the society and economy?

There is a widespread opinion that international migrants are a primary source of working labor; however they play various economic roles (IOM World Migration Report 2020).

- Being workers migrants are an important part of the labor market and they influence country's investment and income distribution
- Being students migrants cause the growth of human capital
- Being entrepreneurs and investors migrants generate new workplaces, aspire new ideas, innovations and technologies
- Being consumers, they affect the price and production as they contribute to the demand for diverse goods and services
- Being taxpayers, migrants affect the governmental budget
- Being family members, they support others
- Being savers, they send remittances to their families to other countries and also indirectly, fostering bank systems.

As for remittances, migrants make notable economic contributions to different countries. Monetary transfers to their countries of origin of migrants are some of the most crucial economic contributions. Lately, the number of remittances sent has risen to a great extent, hence decision makers now understand the tremendous negative or positive contribution of remittances to recipient countries (OECD/ILO, 2018).

Global remittances raised up to 689\$ billion in 2018 (World Migration Report, 2020):

- The top 3 countries that are remittance recipients were Mexico (\$35.7 billion), China (\$67.4 billion) and India (\$78.6 billion)
- The USA continued to be the top country that sends remittances (\$68.0 billion), the second is the United Arab Emirates (\$44.4 billion) and top-third is Saudi Arabia (\$36.1 billion).

The remittances to the original countries are very important. For example, money transfers to low and middle-income countries surpassed direct foreign investments flows in 2018.

2.5. Migration and sustainable development

The Sustainable Development Goals (SDGs) are the projection to achieve more sustainable future for all by 2030 by forwarding the worldwide challenges such as poverty, inequality, environmental degradation, climate change, peace and justice. All 17 goals correlate with each other that is why global partnership is essential for achieving these goals (UN Sustainable Development Goals, 2020).

The program for SDGs acknowledges the considerable contribution of migration to sustainable development. Migration is a intersect point that is closely connected to all of the SDGs – 10 out of 17 goals include aims that are applicable to migration and mobility. The programs' fundamental is "leave no one behind". Here are some of the targets that are primarily connected to migration (Migration Data Portal – SDGs, 2020). SDG Goal 10 declares: "to reduce inequality within and among countries".

Target 10.7 has the concepts that refer to migration: "facilitate responsible, orderly, regular and safe mobility and migration of people, through implementing plans and competently-managed migration policies".

There are also other targets that direct to migration: trade, remittances, international student mobility etc.

Migration trends in the unique region of the Arctic are also very compound and the global migration changes that were covered in the next chapter will help to acknowledge and analyze arctic population shifts.

Chapter 3: Arctic demography and migration trend analysis

There are fast society-based and tangible shifts happening in the Arctic region. The most influential component to these shifts is climate change that modifies the accustomed life of circumpolar communities. Although, there are also other drivers of Arctic changes – geopolitical modifications, worldwide development, ethnic alterations. This section

introduces information about Arctic demography and the significant role of Indigenous peoples of the North, emphasizing on their land and resources rights, self-administration, and traditions. Then there will be the comparisons of migration across the Arctic regions. The possible causes of migration are also provided in this chapter.

3.1. People and cities of the Circumpolar North

The Arctic in its territory has more than 5 million residents. The population there varies in different parts of the Arctic. Contrasting regions have various levels of city expansion, rates of Indigenous peoples and level of fertility, mortality, and resettling. According to statistical data, northern communities are younger than people from other provinces, moreover from some regions people migrate much more than from others. Well-being and health appear to be noticeably poorer than the average in the countries (Heleniak, 2020).

The dominant official economic activity in the Arctic is mining and quarrying subsoil assets that are crucial for the national economic growth of the Arctic states. Inhabitants of the Arctic largely rely on government subventions because Arctic natural resource excavation business usually belongs to external organizations that are not based in the North. A small process of developing manufacturing is also happening in the Arctic, but it is not widespread. Informal business (hunting, tour organization for visitors) takes place there as well, it helps the Arctic citizens to earn for a living (AHDR, 2015).

This map below presents the population density. In the Arctic there are no municipalities with more than 1 million inhabitants. There are only 2 cities with more than 1 hundred thousand residents: Murmansk and Norilsk. Middle-size cities are situated near the Arctic border: Anchorage, Archangelsk and Oulu. The towns with a population size which is tens of thousands in most cases are the principal sites of the area: Rovaniemi (Finland), Tromso (Norway), Akureyri (Iceland), Fairbanks (Alaska), Salekhard and Yakutsk (Russia). There are also many spots on the map that represent tiny living districts which are the only settlements for many kilometers around them: Resolute Bay, Longyearbyen, Inuvik, Varandei, Tiksi. It is also important to mention that large zones of Siberia (Russia) and Canada are uninhabited (AHDR, 2015).



Figure 1: Population centres in the north

Source: Map by Mika Launis in the book “Arctic Calls”, Heikka, Laukkanen, 2013.

It is no great surprise that the High North is a peculiar part of the globe that has extraordinarily little amount of people comparing to more than 7 billion people living on our planet. These vast areas are indicated by an almost the total absence settlements and enterprises. Most part of the population is concentrated in the administrative centers and towns. Urbanization trend could be easily seen in sparsely populated areas. For examples, 20 percent of roughly 30000 people in Northern Canada live in the capital Iqaluit (Heikka, Laukkanen, 2013).

The map “Arctic administrative areas” displays the boundaries among the Arctic states. None of the capitals of 8 countries that have the territories lying in the Arctic are in the High North, the closest one is Reykjavik (Iceland), but it is a little bit more to the south. Arctic regions of all Arctic states are considered to be outlying territories. Russia and the USA have large parts of the Arctic, meanwhile the EU countries also highly extend to this cold place. All the Arctic states except Sweden and Finland have the coastal entry to Arctic ocean with the access to any resources that could be obtained there.



Figure 2: Arctic administrative areas

Source: Map by Mika Launis in the book “Arctic Calls”, Heikka, Laukkanen, 2013.

The overall population of the Arctic as it was mentioned before is relatively small, the sizes of the most populated settlements are quite little comparing to any other cities on the globe. Therefore, human movements out or into the arctic cities and communities have a strong effect on the structure and proportions of the populations and especially indigenous ones.

3.2. Indigenous people

3.2.1. Arctic’s Indigenous Peoples Society

Indigenous peoples have occupied the Circumpolar North centuries of years ago. In the process of inhabiting the Arctic, many Indigenous peoples, for instance the Nenets, Khanty, Evenk, Chukchi, Aleut, Yupik, Inuit and Saami created impressively well-adapted and resilient socioeconomic orders (Nuttall, 2012). They developed technologies of housing, clothing, transporting and harvesting. Typically, Arctic Earliest people hunted, gathered plants and herdered reindeers, they were highly dependent on agriculture

and working the land. They were protected from external interventions, in large measure, by the extreme cold, absence of agricultural potential (in most parts of the Arctic) and the inability of outsiders to identify commercial opportunities in what southerners typically saw as snow-covered, forbidding and unappealing lands. These historic societies were small, mobile and vulnerable to extreme weather events or changes in food supplies (Nutall, 2005).

Moving forward to the 21st century there has been a significant cultural loss, hastened by the substantial out-migration of people from their traditional territories and the cumulative effects of numerous government interventions and attempts to change or even sometimes destroy Indigenous cultures. After the World War II there was a spread of the resource development, so thousands of new people came into Indigenous homelands, such as Yukon, Northwest Territories, Alaska and Chukotka. Indigenous peoples being specified as minorities in the traditional lands often work hard to keep up with their traditional lifeways, although they are facing the effects of rapid cultural intrusion, modernization and a demographic wave that bring dramatic changes (Nutall, 2005).

In many parts of the High North Indigenous peoples feel many signs of social threat. Health conditions are usually extremely poor comparing to the southern urban populations. Suicide, drug addiction, alcoholism and teenage pregnancy, HIV/AIDs and other social pathologies are high among the Indigenous communities (Heleniak, 2009). Across the Russian Arctic, much of rural Alaska and northern Canada housing is typically poor and over-crowded and have deficiency in education and health services (Einarsson, 2014). The overall situation in Scandinavia seems to be better, but many of the Indigenous villages across the Arctic struggle to secure safe drinking water and social safety (Howkins, 2016). The situation is not totally bleak with Fennoscandinavia and with Greenland showing gains in Indigenous lifeways and standard of living. While many of the primary demographic and social markers among the Indigenous peoples are unfavorable, there have been significant improvements in some quarters. Some Indigenous communities send more young people to the high school and university. Cultural and language revitalization programs have had positive impacts as have the revival of traditional sports, musical, artistic, and harvesting activities (Einarsson, 2014). It would be misleading to perceive the Indigenous peoples of the Arctic being in constant crisis, it would therefore be incorrect to ignore the serious problems and sociocultural threats facing the High North.

3.2.2. Indigenous populations

Nowadays roughly 10 percent of the 5 million inhabitants of the Arctic are Indigenous. That proportion varies throughout the Arctic. For instance, Inuit cover about 85 % of the population of Nunavut, Canada, as well as the large proportion of people living Greenland are Indigenous too, whereas in Siberian Khanty-Mansi Autonomous Okrug Indigenous peoples constitute less than 2% of the whole population (AHDR, 2015).

That is why there is no surprise that native communities in the Arctic differ not only in population size but also culturally and linguistically. The Inuit live in the vast territory of the Arctic: in the Russian North, across Alaska and in Greenland.

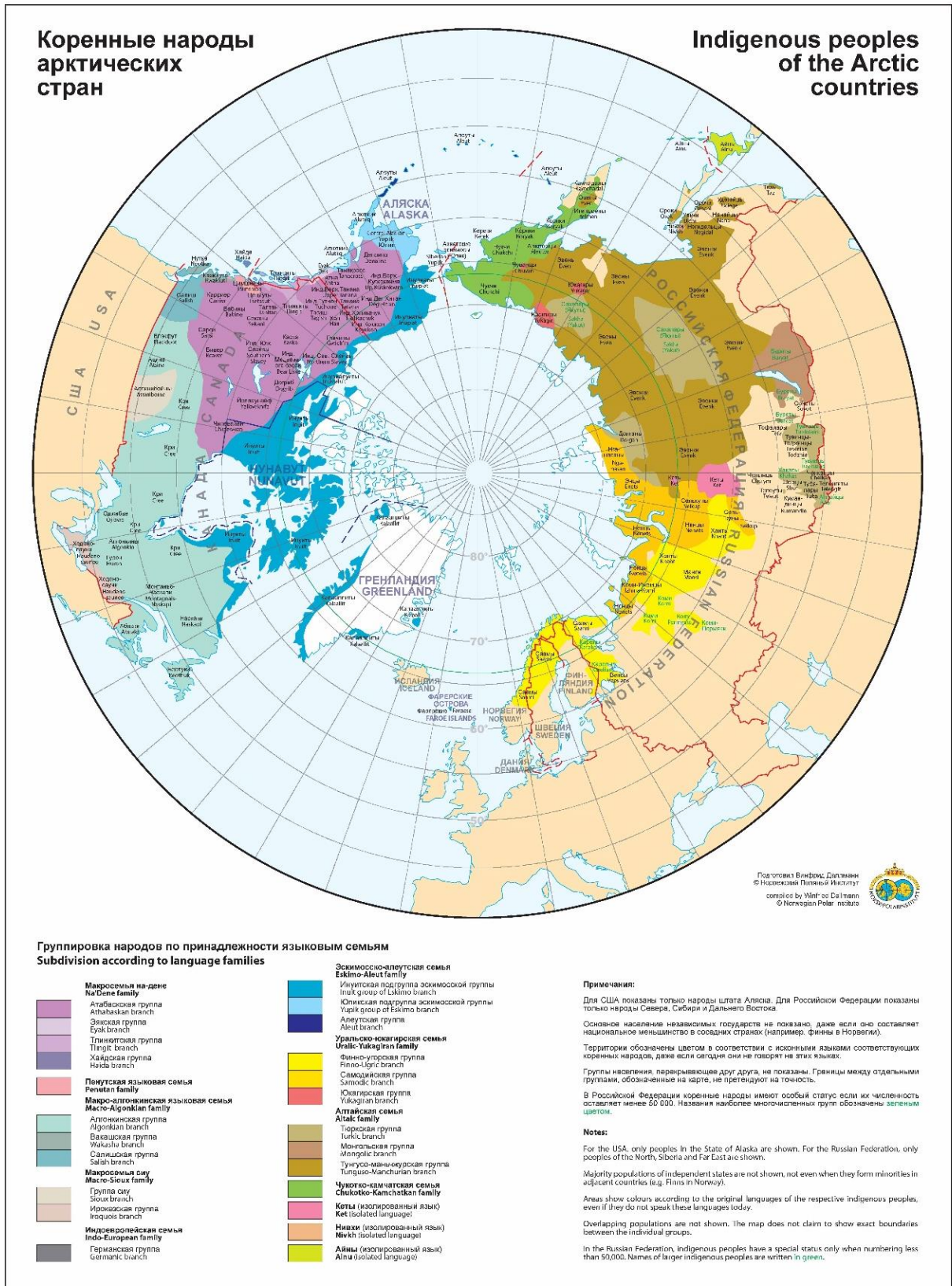


Figure 3: Indigenous peoples of the Arctic countries

Source: ANSIPRA, Norwegian Polar Institute, Arctic Council, 2020.

There are defined linguistic distinctions and differences in cultural and local environments inside this group as could be predicted across such a large area. The Sami

also residing across Russia, Sweden, Finland and Norway demonstrate cultural and linguistic variability as well as widely spread ethnic groups including the Evenki (Russia) and the Dene (Canada and Alaska). Alaska is a homeland to a wide variety non-Inuit native peoples such as Sevrak, Aleut, Tlingit, Yupik and others. Indigenous peoples of the Canadian Arctic encompass the Innu, Inuit, Kaska Cree peoples, Denesuline, Dunneza, Han and Sahtu. Russia is home to more than forty Indigenous communities in the North, along with the Sami and Eskimosy, Nentsy, Khanty, Mansi, Selkup, Evenks, Dolgan, Yukaghir, Chukchi, Aleut, Itelmen and many others. In terms of language and culture these groups differ considerably.

Table 2: Indigenous peoples of the Arctic countries

Northern territories of	Indigenous peoples
Russia	Saami, Karelians, Vepsians, Nenets, Komi, Khant, Mansi, Enets, Nga-nasan, Ket, Selkup, Dolgan, Evenk, Negiadal, Nanai, Udege, Taz, Nivkh, Yukagir, Chuvan, Chukchi, Koryak, Itelmen, Kerek, Yukagir
Sweden	Sami
Finland	Sami
Norway	Sami
Canada	Innu, Inuit, Kaska, Cree peoples, Denesuline, Dene-language peoples (Dehcho), Dunneza, Han, Sahtu, Dene, Yellowknife, Sarsi, Babine, Carrier, Han
USA (Alaska)	Yupik, Inupiat, Alutiiq, Aleut, Tlingit, Tanacross, Tanana, Eyak
Faroe Islands	Faroese
Greenland	Kalaallit

Source: ANSIPRA, Norwegian Polar Institute, Arctic Council, 2020.

The question “who is Indigenous” is not that straightforward to answer. In addition, valid status self-governance norms vary in different countries. International standards demand the right of self-identification, several methodologies are utilized in the Arctic states. In Alaska indigenization is dependent on blood quantum according to USA legitimate protocol and about 19% of the population identify themselves as Alaskan Native or American Indian. Canada classifies people on their ethnic origin, which includes three groups of aboriginal peoples: Inuit, Metis, and First Nations. In Yukon about 24% of the population belong to one of these groups. Nunavut is a predominantly Inuit region where 86% identify themselves as Inuit. In Greenland, every person who is born in Greenland considered to be a “Greenlander”, not taking into account his or her genetics. Most recently, 87% of the population are Inuit (Statistics Greenland, 2018). In Norway, Sweden and Finland speaking Sami or having a parent or grandparent that spoke it, is a prerequisite for deciding who is eligible to vote in the Sami Parliament. The current total number of Sami is estimated at between 80,000 and 110,000, including 60,000 in

Norway, 36,000 in Sweden, and 10,000 in Finland (Hassler, 2008). The Soviet Union created the concept of “natsional’nost” (ethnicity) to divide people into different groups, which is still used in Russia. Of these, 26 groups with population less than 50,000 were designated as “malonaseleennyie narody severa” (small numbered people of the North), a number which has since grown to 37 groups. Therefore, the Arctic and Siberia have both small numbered people of the North and larger groups such as Yakuts, Komi, and Karelians. Several of the northern or Arctic regions are designated homelands of these groups. In the Nenets okrug 28% of the population are Indigenous, in Yamal-Nenets 9%, in the Khanty-Mansi okrug 2%, in the Taymyr okrug 25%, in Sakha 54%, in the Koryak okrug 41%, and in the Chukotka okrug 35%. Iceland and the Faroe Islands were unpopulated until the 800s and that is why there are no Indigenous population (Coates, Ken, Holroyd, 2020).

Besides, there are also diverse approaches to numbering Indigenous groups throughout their territories. Scandinavian countries do not collect ethnicity information about ethnic minorities in their censuses. Russian national statistics has also recently stopped to request those materials (Coates, Ken, Holroyd, 2020).

Therefore, the question “how many Indigenous people are in the Arctic” cannot be resolved in absolute terms.

3.2.3. Indigenous administrative regulations

Indigenous peoples have used some lands for community livelihoods throughout their history, however the regulatory framework of land ownership was applied to their territories only with the development of the modern states. That means Indigenous people's claim to land has been politically charged and complex task. North America has experienced numerous long and complicated territory negotiation processes between the state and the Indigenous peoples, since the property rights and its natural deposits had to be returned back to Indigenous communities. As for Russia, there is no mechanism that resembles that problems (Arctic Council, 2019).

According to the UN Declaration on the Rights of Indigenous Peoples, Indigenous Peoples are entitled to the right to the resources and lands they historically own, occupy, use or obtain (UNDRIP, 2007).

Resource and land rights of Indigenous peoples are a central concern in the Arctic because land and natural resources are the core of Indigenous northerners' social and economic well-being. Most Indigenous peoples now rely heavily on nature and gathering its biological sources for their basic needs. Repeatedly, close links to the land are discussed as a central aspect of Arctic Native cultural identity (ASI, 2015). The Convention 169 (ILO 169) of the International Labor Organization, though also refers to Indigenous land rights, although it has been adopted only by Arctic countries: Norway and Denmark. Consequently, the deficiency of recognition and unresolved territorial rights issues were major hurdles to Indigenous peoples' economic and cultural well-being.

The Arctic is abundant with sources of petroleum products, mineral deposits, and fish. Thus, there is an increased interest in development due to both overall international demand for these resources and easier accessibility because of the global warming. It is also expected that Arctic tourism will rise in the next years.

On the one side, the activities and infrastructure related to them are in competition with traditional land use, increasing pressure on the territories used for traditional land activities of hunters and gatherers. This could result in the degradation of habitats, which is deleterious to Arctic fauna. It also might stimulate access by outsiders with associated rise in disruptive all-terrain vehicles activity and illegal sport hunting etc. On the other side, Indigenous peoples require for their rights to participate in the outcome-making process about their traditional territories since they want to benefit from these changes on the lands and establish their land and use priorities (Nordregio, 2019).

3.3. Migration trends of the Arctic

This section outlines the Arctic demographics at the end of the first decades of our 21st century, shifts in demographic variables (fertility, birth and death rates) across the Arctic region. This chapter documents the widely recognized trend for the entire Arctic region – ongoing rural-urban migration.

To examine population change the Arctic Demographic Transition framework is used (Weeks, 2008). It is gained from modernization theory and used to describe the shift that people experience throughout the process of adapting from traditional to more modern society. Demographically, in the past there were high rates of deaths and births and later there was a transition to better control of fertility and better managed mortality thanks to developed medicine that helps to cure and prevent many diseases and infections. Mortality decreases usually come before fertility declines leading to rapid population growth.

3.3.1. Migration trends analysis

Recent demographic trends in the Arctic and expected trends in the future are describes in this section. Demographic transitions usually go along with other transitions. For example, health and epidemiological mortality shifts occur from deaths to infants, children, and mothers, because communicable diseases are the most common for them. Irreversible deteriorations and loss of function in the organs due to the lifestyle cause deaths dominantly of elderly. This typically is followed by the fertility shift – the transition from uncontrolled and high to low and more controlled fertility. These 2 transitions cause age transition when there are relatively more older people than younger. This is often followed by a migration transition due to overpopulation in rural areas leading to out-migration to urban areas. This brings an urban shift when the increasing percentage of the population start living in urban areas therefore urban areas become the economic centers (Heleniak, Bogoyavlensky, 2017).

The area of research covers all communities that live in the natural habitats or have characteristics similar to Indigenous Arctic populations.

Population shift in the Arctic from natural increase and net migration population differs for any state or district is consists of two components.

1. Net migration – the difference between people migrating to a region and others leaving
2. Natural increase – the difference between the number of births and deaths.

The Arctic region is progressive from the demographic point of view: birth rates do not transcend mortality rate a lot; in some areas the deaths amounts exceed the amount of births. The population size is generally small as well as the structure of the economy, that is why migration plays a larger role than in any other region. The age structure of a region also plays a remarkable role in the change of population. A region with a comparatively younger population will have more people in the childbirth years and there will extent faster. Another region with more older people will have a higher mortality level and its growth would be slower (Heleniak, 2019).

The world population since 1990 has increased by 43,2 % (from 5,3 to 7,6 billion people) because of the natural increase (UN Population, 2020). The analysis of population changes from 1990 to 2018 in 8 Arctic States (the USA, Canada, Denmark, Iceland, Norway, Finland and Russia) is presented below.

Table 3: Total population and population change in the Arctic 1990–2018

Total population and population change in the Arctic 1990–2018	Total population		Population change 1990–2018		
	1990	2018	Total	Natural increase	Migration
<i>World</i>	<i>5 327 231 061</i>	<i>7 631 091 040</i>	<i>43,25</i>	<i>43,25</i>	<i>0,0</i>
The USA	252 529 950	322 179 605	27,58	16,6	10,9
Alaska	553 171	737 080	33,25	37,0	-3,8
Canada	27 692 680	36 624 199	32,25	31,2	1,05
Yukon	27 797	35 874	29,06	15,0	14,0
Northwest Territories	40 845	44 597	9,19	9,0	0,2
Nunavut	27 498	37 996	38,18	41,4	-6,1
Greenland	55 558	55 877	0,57	24,8	-23,1
Iceland	253 785	348 450	38	27,2	10,0
Faroe Islands	47 773	50 498	5,7	17,4	-11,6
Norway	4 233 116	5 295 619	25,1	10,7	14,4
Nordland	239 532	243 335	1,59	4,1	-2,5
Troms	146 591	166 500	13,58	11,9	1,6
Finnmark	74 148	76 167	2,72	12,2	-9,5
Svalbard	3 544	2 637	-25,59	N/A	N/A

Finland	4 974 383	5 513 130	10,83	52	5,5
Lappi	199 973	179 223	-10,38	2,1	-12,5
North Ostabortten	348 292	411 856	18,25	18,6	-0,3
Kainuu	92 458	73 960	-20,01	-2,9	-17,2
Sweden	8 527 036	10 120 242	18,68	4,8	13,9
Vasterbotten	250 134	268 465	7,33	2,7	4,7
Norrbotten	262 839	251 295	-4,39	-1,5	-2,9
Russia	148 041 641	146 880 431	-0,78	-8,7	6,5
Republic of Karelia	791 720	627 000	-20,81	-12,5	-8,3
Komi Republic	1 248 891	850 000	-31,94	-1,9	-30,1
Arkhangelsk Oblast	1 575 502	1 166 000	-25,99	-8,5	-17,5
Nenets Aut. Okrug	51 993	44 000	-15,37	8,8	-24,2
Murmansk Oblast	1 191 458	757 000	-36,46	-2,3	-34,1
Khanty-Mansi Aut. Okrug	1 267 030	1 646 000	29,91	23,1	6,8
Yamalo-Nenets Aut. Okrug	489 161	536 000	9,58	24,8	-15,2
Taymyr Aut. Okrug	51 867	34 432	-33,61	7,8	-41,4
Sakha Republic	1 111 480	963 000	-13,36	15,5	-28,8
Chukotka Aut. Okrug	162 135	50 000	-69,16	4,3	-73,5
Kamchatka Oblast	476 911	315 000	-33,95	0,5	-34,4
Magadan Oblast	390 276	146 000	-62,59	-0,3	-62,3

Sources: Norgregio, Census, Statistics Canada, Statistics Norway, Statistics Sweden, Statistics Finland, Rosstat, 2019.

The USA

The USA population has risen by 27 percent since 1990, that is faster than in most other developed countries. This happened because two factors were combined at the same time: natural increase and high rate of immigration. The population of Alaska grew by 33 percent due to the high natural increase and moderate out-migration. Migration to and from Alaska is quite inconsistent and changes relative to economic conditions in Alaska and elsewhere in the country, the same trends could be seen in other Arctic regions. Since 2012 there has been net out-migration from Alaska, in 2017, its population fell off for the first time over last decades (USA Census Bureau, 2018).

Canada

The overall population of Canadian Arctic continued to increase. Since 1990 its population has risen from natural increase. The Yukon population increased by 29 percent from 1991 to 2018, via almost equal contributions of natural increase and net migration. Nunavut increased the most of the three by 38 percent, owing to natural increase some out-migration. This high population growth occurred through higher fertility and the younger age structure of the Inuit population that is predominant in this region (Statistics Canada, 2018).

Denmark (Greenland and Faroe Islands)

Greenlandic population remained in general constant. Most of the time about 55000 citizens live there. Any surplus of births over deaths is balanced by approximately the same number of net out-migration. Greenland has a young age structure and higher fertility and grew by 24.8 percent between 1990 and 2018 from natural increase due to the high proportion of Indigenous population living there (Statistics Greenland, 2018).

The Faroe Islands since 1990 had mean population extension of 5.7 percent and a similar to Greenland pattern of natural increase, compensated by net out-migration. Net migration in the Faroe Islands fluctuates greatly. It was negative in the early 1990s following a banking crisis and later oscillated from periods of negative to positive net migration and again (Statistics Faroe Islands, 2018).

Iceland

As for Iceland there has been significant population growth of 38 percent since 1990: 75 percent of the increase happened due to the natural increase and another 25 percent from net immigration. Although in the past years population growth took place mostly from migration. Fertility has decreased to its lowest level in the whole history of Iceland. Like in other Arctic areas, migration in Iceland fluctuates to a high extent. From 2005 to 2008 before the world economic crisis there was a significant net migration into the country, however there was migration during the next 4 years. In 2013 net migration into Iceland became positive again. There was the highest ever recorded migration into the country of (14,929 individuals), that is 4 percent of the Icelandic population in 2017 (Statistics Iceland, 2018).

Norway

The population of Norway has risen by over 25 percent (1 million people) since 1990. Natural increase accounted for 40 percent of this increase, net migration 60 percent. However, in the past decade, net migration into Norway has been the main contributor to population growth. Norway's three Arctic region population rose to a less extent: Finnmark by 2.7 percent, Nordland by 1.6 percent and Troms by 13.6 percent. Nordland has had low natural increase and roughly the same size of net out-migration. Natural increase in Finnmark is about the national level, however it was the bias due to significant out-migration that kept the population increase low. Troms has grown through having natural increase at about the national level and moderate net in-migration. Population on Svalbard has decreased over from 3544 in 1990 to 2637 in 2018 mostly because of the out-migration (Statistics Norway 2018).

Sweden

Since 1990, Sweden's population has risen substantially by 18 per cent, with one-quarter of natural growth and three-quarters net immigration growth. Like other Nordic nations, a significant amount of the more recent population growth was driven by exceptionally high immigration rates. Since 1990, Västerbotten's population has risen by 7.3 percent considerably less than the national average, with approximately the same proportions of natural growth and net migration. Norrbotten's population has decreased by 4.4 percent as a result of both negative natural growth and out-migration (Statistics Sweden, 2018).

Finland

The population in Finland has risen by 10.8 percent since 1990: from less than 5 million to 5.5 million in 2018. The natural increase and net immigration have contributed equally to this change. Finland has 3 Arctic regions and only population of North Ostrobothnia grew throughout that time by 18 per cent, caused by natural growth. Lappi decreased by 10%, Kainuu by 20%. Nearly half of the decrease in both was attributed to out-migration (Statistics Finland, 2018).

Russia

There was a considerable demographic upheaval in Russia and its northern territories due to collapse of the USSR, conversion to a market economy and the liberal changes in society. As the result, life expectancy in Russia plummeted. Fertility declined to tremendously low levels. There was a major redistribution of the population for post-Soviet regions. The population of Russia has decreased by 0.8 percent since 1990 (Demoscope, 2018). The Russian North population altered to the new economy by decreasing by 20 percent due to slight natural increase and large-scale out-migration.

There was also a decline in the settlement structure since different of settlements across the Russian Arctic were abandoned or closed. In the Far East particularly in Indigenous settlements, people experienced greater out-migration and population decline. The population of Kamchatka decreased by one-third, the population of Chukotka declined by nearly 70 percent, Koryak okrug by half and Magadan oblast by nearly two-thirds as out-migration was the driving factor to the population declines. The Khanty-Mansi and Yamal-Nenets okrugs have emerged a lot from the demographic and economic points of view. These are the regions with oil and gas assets in west Siberia, growing in population size and receiving financing for exploitation development (Rosstat, 2019).

3.3.2. Life expectancy

There are significant differences in current mortality patterns and levels. All the Arctic regions presented in the table could be divided into 4 groups depending of life expectancy level.

Group 1. Iceland, the Faroe Islands, Arctic Norway and Sweden. There are high levels of life expectancy: about 80 for men and 84 for women. Life expectancy in these areas is one of the highest in the world, female-male differences are small. Also, in these regions, there are either mortality differences between Indigenous populations and others are minimal or no Indigenous populations at all.

Group 2. Alaska, Yukon and the Northwest Territories and Arctic territories of Finland. Life expectancy levels are slightly lower than in the Scandinavian Arctic regions.

Group 3. Greenland. Life expectancies are 75 for women and 70 for men. This is less than in the previous group.

Group 4. The northern regions of Russia. Life expectancy in these regions much lower than the national average. Life expectancy of males in the Arctic regions is approximately 63 years which is less than in other countries. Average life expectancy for women in the Russian North is about 74 years. Females in Russia much have higher levels of life expectancy than males. All Russian northern regions have life expectancy levels below the national average, except of Khanty-Mansi and Yamalo-Nenets regions. Life expectancy in Chukotka for men remains below 60 years which is 8 years less than the national level.

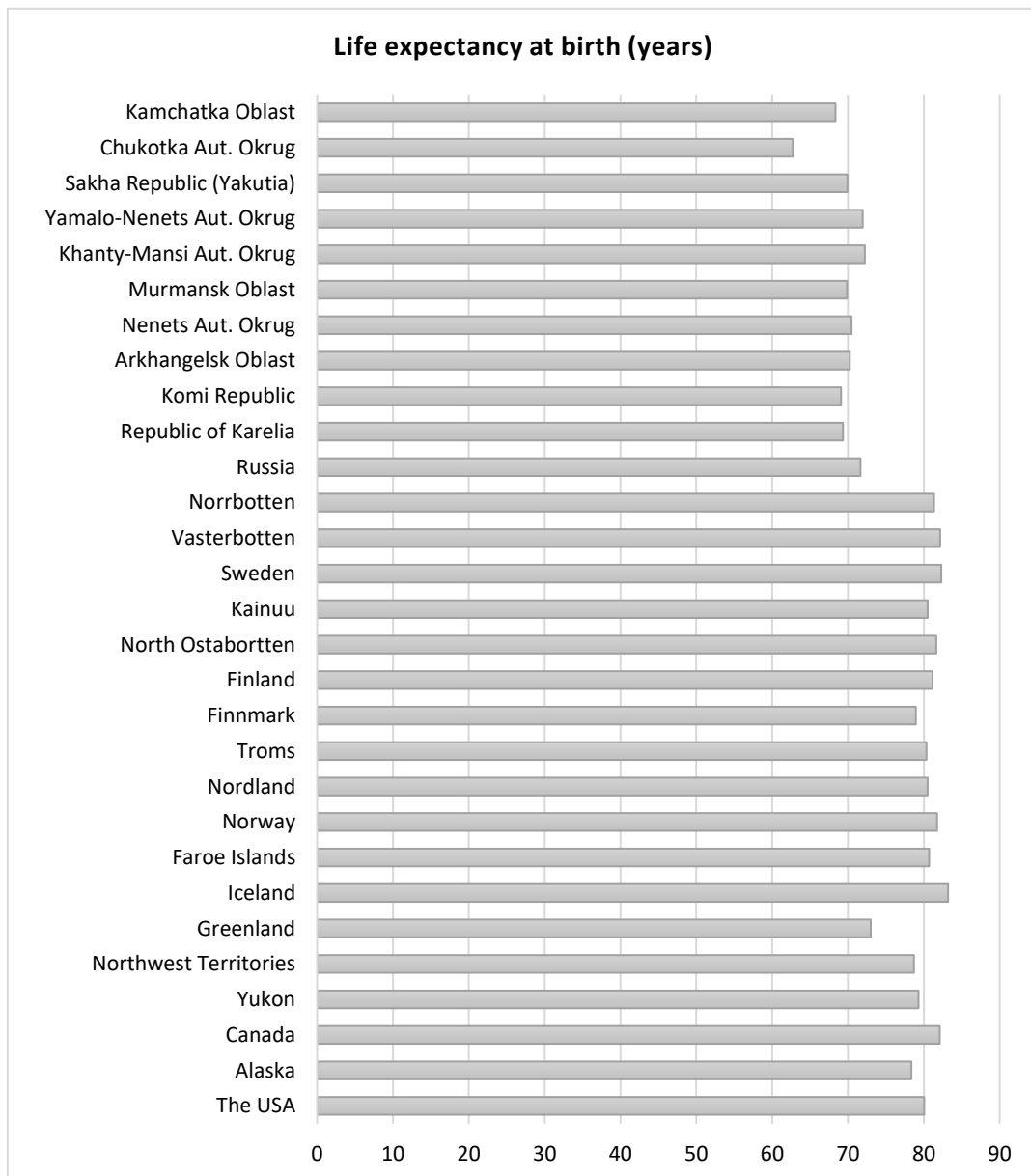


Figure 4: Life expectancy at birth (years) in the Arctic regions, 2014–2019

Sources: Statista, Statistics Finland, Statistics Norway, Rosstat, Statistics Canada, 2014–

2019

Table 4: Life expectancy at birth (years) in the Arctic regions, 2014–2019

Life expectancy at birth (years)			
Country	Female	Male	Total fertility rate
The USA	82,3	77,8	80,05
Alaska	80,39	76,34	78,37
Canada	84,8	79,4	82,10
Yukon	81,2	77,4	79,30
Northwest Territories	80,5	76,9	78,70
Greenland	75,8	70,2	73,00
Iceland	85,5	80,9	83,20
Faroe Islands	83,3	78,1	80,70
Norway	83,7	79,8	81,75
Nordland	82,7	78,3	80,50
Troms	82,7	78	80,35
Finnmark	81,6	76,3	78,95
Finland	84,2	78,1	81,15
North Ostabortten	84,37	78,92	81,65
Kainuu	84,22	76,79	80,51
Sweden	84,3	80,3	82,30
Vasterbotten	83,8	80,5	82,15
Norrbotten	83,2	79,5	81,35
Russia	77,2	66,1	71,65
Republic of Karelia	75,69	62,99	69,34
Komi Republic	75,12	63,05	69,09
Arkhangelsk Oblast	76,32	64,16	70,24
Nenets Aut. Okrug	76,21	64,72	70,47
Murmansk Oblast	75,72	64,02	69,87
Khanty-Mansi Aut. Okrug	77,13	67,32	72,23
Yamalo-Nenets Aut. Okrug	76,86	67,02	71,94
Sakha Republic (Yakutia)	75,5	64,34	69,92
Chukotka Aut. Okrug	66,62	58,84	62,73
Kamchatka Oblast	73,88	62,82	68,35

Source: Statista, Statistics Finland, Statistics Norway, Rosstat, Statistics Canada, 2014–2019.

3.3.3. Fertility Transition in the Arctic

Another transition is the fertility transition to lower birth rates. Most of the Arctic countries and regions have low fertility rates. This happens due to delayed marriage and childbearing or increasing childlessness. The total fertility rate is the hypothetical one: it is how many children a woman would likely have if she would have her pregnancy in the specific fertility ages.

Table 5: Total fertility rate in the Arctic regions, 2014–2019

Total fertility rate in selected Arctic regions (2014–2018)	
Region	Fertility rate (children born per woman)
The USA	1,73
Alaska	1,97
Canada	1,61
Yukon	1,73
Northwest Territories	1,97
Nunavut	2,97
Greenland	1,97
Iceland	1,99
Faroe Islands	2,34
Norway	1,85
Nordland	1,5
Troms	1,45
Finnmark	1,56
Finland	1,57
North Ostaborten	1,91
Kainuu	1,79
Sweden	1,71
Vasterbotten	1,68
Norrbottn	1,61
Russia	1,58
Republic of Karelia	1,52
Komi Republic	1,63
Arkhangelsk Oblast	1,56
Nenets Aut. Okrug	2,24
Murmansk Oblast	1,52
Khanty-Mansi Aut. Okrug	1,87
Yamalo-Nenets Aut. Okrug	1,9
Sakha Republic (Yakutia)	1,85
Chukotka Aut. Okrug	2,02
Kamchatka Oblast	1,65

Sources: Statista, Statistics Finland, Statistics Norway, Statistics Sweden, Rosstat, Statistics Canada, 2014–2019.

Allowing for some mortality, a rate of 2.1 children per woman is the level when population would just replace itself over the long term. Deviations from this level have a large influence on population growth, positive or negative.

The fertility rates in nearly all Arctic countries and regions have been declining over the past few decades. Most of the countries have fertility rates below the level when it could be replaced. Arctic regions with high shares of Indigenous populations such as Nunavut, Greenland, the Nenets okrug, and Chukotka tend to have higher fertility rates.

The Arctic regions of Norway (Nordland, Troms and Finnmark) have incredibly low fertility rates due to trend of delaying childbirth until women are older. Russia is well-known for its “demographic crisis” which started in the mid-1990s and it includes the northern territories as well. The average fertility rate in Russia is quite low, Republic of Karelia, Murmansk Oblast and Arkhangelsk Oblast show fertility rates that are even below Russian average.

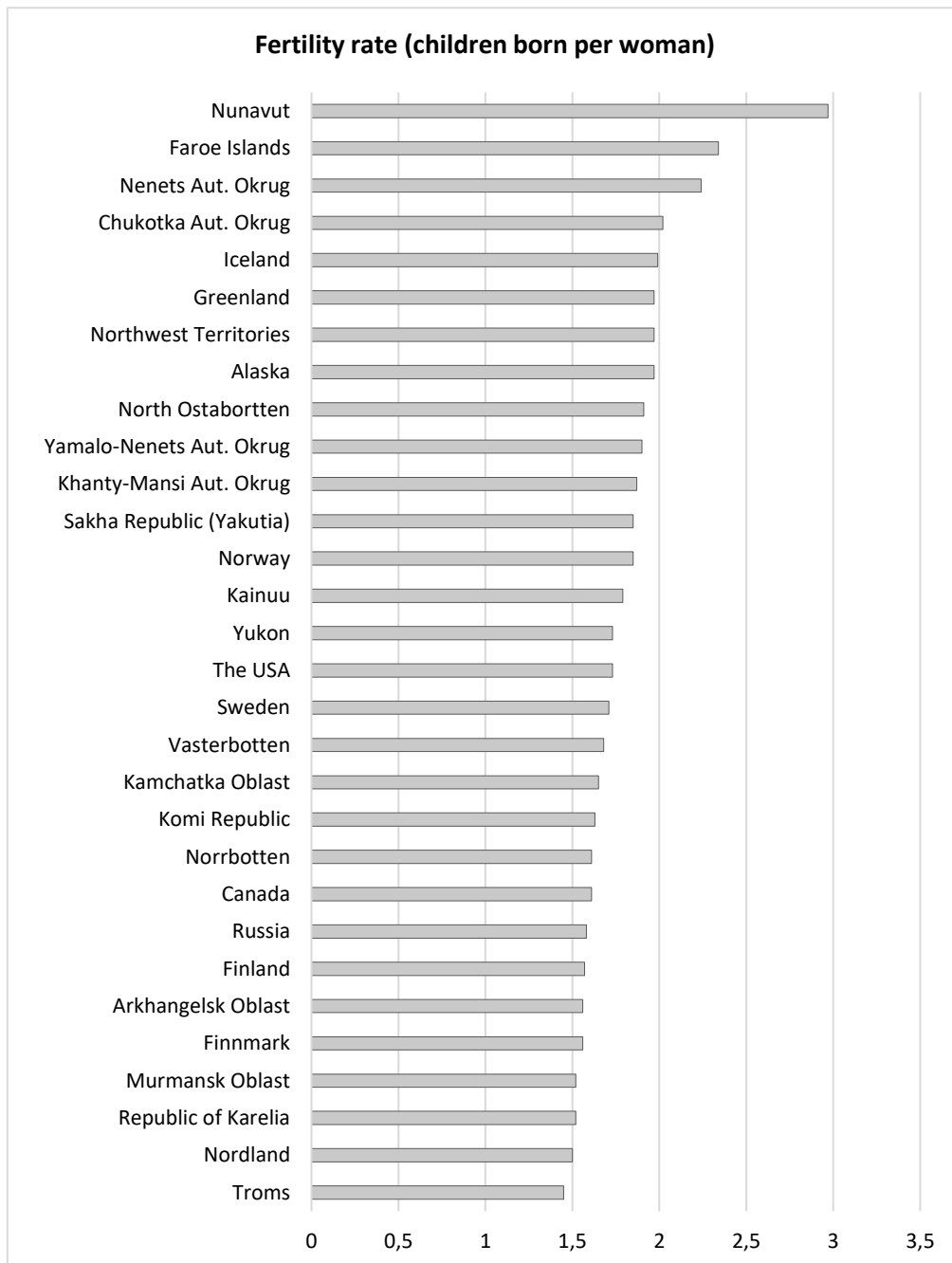


Figure 5: Total fertility rate in the Arctic regions, 2014–2019

Sources: Statista, Statistics Finland, Statistics Norway, Statistics Sweden, Rosstat, Statistics Canada, 2014–2019.

3.3.4. Demographic Change in the Arctic settlements

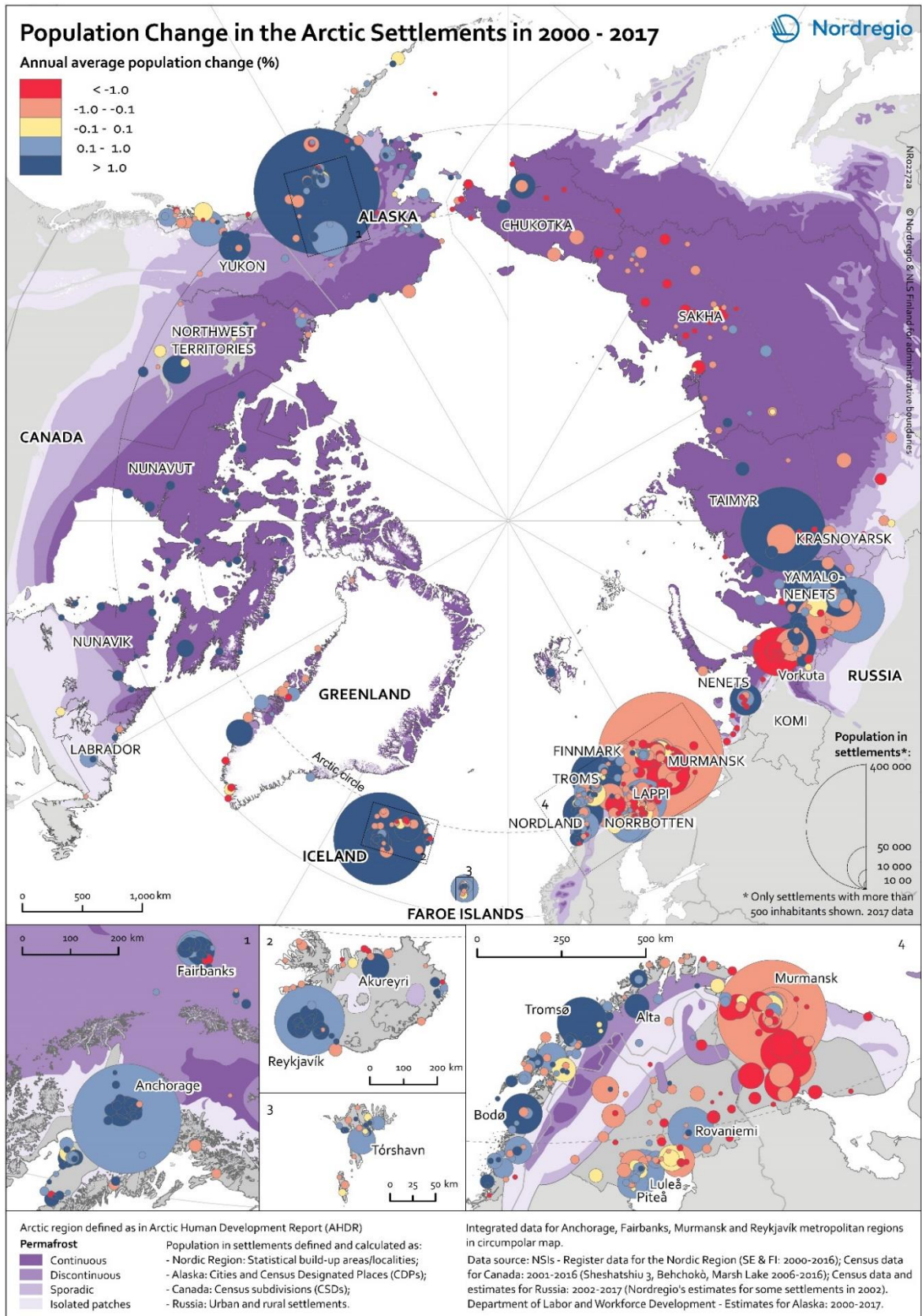


Figure 6: Population Change in the Arctic Settlement 2000–2017

Source: Cartographer Shinan Wang, Nordregio, 2019.

Various factors determine size, spatial distribution, and composition of the settlements in the Arctic regions: the political status of the region, the history of development, climatic conditions, natural resources and transport connections. Physical geography, economic situation, and population distribution are crucial to understand the population changes in different levels. The map gives the overview of population change from 2000 to 2017 for settlements with more than 500 residents.

The settlements are presented as circles with an area that corresponds to their total population. The colors show the changes: yellow presents the places with little changes, blue indicates the rise in population, red shows settlements with declining population. Moreover, there are also four zoomed maps for the regions where the settlement density is high: Fennoscandia, Alaska, Iceland and Faroe Islands.

Alaska

Alaska is the largest state in terms of land area in the USA. The first waves of migration to Alaska took place during the Alaska Gold Rush in 1897. Influx of immigrants of people from other 48 states is mostly connected with the development of natural resources mining. Also, military centers were established there during World War II. Currently, Alaska's economy is largely petroleum based, focused on the large oil field on the North Slope in Prudhoe Bay (Glomsrød, 2017).

The total population of Alaska today is 737625, more than half of it is in Anchorage and the nearby Matanuska Susitna Valley surrounding areas. Because of their colder climates including substantial permafrost coverage, the three counties of North Slope, Nome and Northwest Arctic are considered more surely Arctic. Most of these and other peripheral smaller settlements are primarily made up of Alaskan Natives and are unconnected to the state-wide transport system. The cause for decreasing population is out-migration that happens due to the fact that smaller settlements are far from the major large cities Anchorage and Fairbanks. Roughly all of the settlements within the two city centers have seen population increase, and their expansion becomes even greater than in the two cities. Accessibility matters when it comes to people migrating out of the densely populated urban centres (Heleniak, 2009).

Canadian Arctic

The Arctic territories of Canada: Yukon, Northwest Territories, and Nunavut are currently dominated by mining activities (Glomsrød, 2017). The Yukon Gold Rush in the late 1890s brought large numbers of people to the northern Canada. Nowadays, 95 percent of the value of diamonds in Canada originates from the Northwest Territories. Nunavut is the largest producer of gold among all Northern Territories.

The populations of the three Northern Territories are inhabited in actually quite few number of settlements. There are large areas of uninhabited lands. Yukon's has 25 settlements; however 70 percent of the population resides in Whitehorse. Northwest Territories has 33 communities with 48% living in Yellowknife. Nunavut's population resides in 25 settlements and this region has a special policy of giving jobs to smaller communities outside the capital, therefore only 21 percent of the population live in the

Iqaluit (the capital). The Canadian territories in general have high birth rates resulting in positive natural growth. The phenomenon has resulted in population flow from small peripheral settlements to large centered settlements such as Yellowknife and Whitehorse (2017).

Iceland

Iceland is a completely sovereign state, became independent from Denmark in 1945. The economy highly dependent on fisheries. The country started to promote tourism after the crisis of 2008. There was small immigration into the country over its history, although there is a notable rise in the past few decades. Iceland has high rates of modernization and economy. That somehow caused the increase in the percentage of foreign-born from 4 to 11 since 1990 (Heleniak, Sigurjonsdottir, 2018).

Greenland

Greenland is a self-governing region of the Kingdom of Denmark. Fishing industries are the leading sectors of its economy. There has been some oil and minerals exploration, although at present there is no significant production. The population of Greenland has 55877 residents, almost one-third of the population lives in the Nuuk which is the capital. The remaining people live in 89 localities: 17 towns, 54 settlements, 5 farms, and 5 stations (Glomsrød, 2017).

Faroe Islands

The Faroe Islands is the autonomous country within the Kingdom of Denmark as well. Like Iceland, the Faroes were completely uninhabited until the 800s. Its economy is based on fishing, marine engineering, fish farming and recently tourism.

The rise and fall of the seafood industry drive all other sectors as well as migration to and from the country. Approximately 40 percent of the population live in the cities. The rest inhabit in small coastal settlements. The government of Faroe Islands has a policy to link all settlements via a series of bridges, the national road system and tunnels under the sea to connect all population and to reduce population decline in remote villages (Glomsrød, 2017).

Fennoscandia

The Arctic regions of Finland, Sweden and Norway have much milder climates than some of the other Arctic regions and have better transport connections to the southern regions of these countries.

In Swedish Arctic the manufacturing sectors, consisting of wood and metals processing are significant, there are also several large universities which contribute to production development. The population of Arctic Sweden estimated 520000 inhabitants in 2018. Two regional centers Umea and Lulea located on the coastline have the population of 85000 and 77000 respectively (Glomsrød, 2017).

In Norwegian Arctic fishing, fish processing, and aquaculture are the most important sectors (Glomsrød, 2017). The population of Arctic Norway was 487000 in 2018 with 65000 people living in Tromsø and 51000 in Bodø (Statistics Norway, 2018).

Arctic Finland differs from many Arctic regions because it has a large manufacturing electronics centers as well as universities and research centers. The overall population of Arctic population in Finland was 660000 in 2018 (Statistics Finland, 2018).

Most of the smaller settlements in Fennoscandia went through population decrease from 2000 to 2017, except the northern Norway where the majority of the settlement's population of Norland, Troms and Finnmark has increased. The migration inflow since 2010 has played a major role despite the fact that natural population growth has been negative for most of the small and medium-sized settlements. There is quite high population growth in Tromsø, Bodø and Alta because of the higher birth rates happening there.

There is a clearly seen pattern in Fennoscandia with the growth of large settlements. The similar pattern is observed in Iceland, Greenland and Faroe Islands. The capitals Reykjavik, Nuuk, Torshavn, and regional centers have been receiving new inhabitants both domestic and international. At the same time the settlements located in sparsely populated areas lose their attractiveness. There is an interesting phenomenon in Reykjavik – the settlements just outside the capital city are becoming more attractive than the capital city itself because of the crowdedness and expensive housing inside the city (Heleniak, 2009).

Russian Arctic

The way the Soviet Union developed its Arctic and Siberian regions contrasts sharply with other Arctic countries due to the different economic structure (Heleniak, 2009). Large-scale natural resource exploitation in the Arctic and Siberia started after the Bolshevik Revolution in 1917. The Soviet Union implemented the first 5-year plan in 1926 and the industrialization was based on gold, oil, timber, and other resources found in the Arctic and northern peripheries. Planning decisions about economic development were made centrally by “Gosplan” (the State Planning Committee) rather than by the market. This resulted in a non-market distribution of labor and economic activity.

Development of Siberia, the North, and the Arctic was made in several overlapping phases. The first was through GULAG labor force: large numbers of people were sent to establish labor camps and later to cities to extract industrial resources necessary for the country. Secondly, the system of wage incentives and other bonuses was established to attract people to the Arctic. The Soviet economy became very closed: very few goods and information as well as people could come from its borders. The northern wage increments, which often paid double or more for the same job in central Russia, were one way in which people could legitimately earn a high salary. Many people were inspired by these incentives and migrated to the north. At the end of Soviet Union period there were a number of quite sizable cities in the Arctic: Murmansk (468039), Arkhangelsk (415921), Petropavlovsk-Kamchatskiy (268747), Norilsk (174673), Magadan (151652) and Vorkuta (115646) (Demoscope, 2019). Later there was a shift to a market economy with price liberalization, so the working wages and incentives in the Arctic became valueless. Therefore, wide-ranging out-migration from the north of one-

quarter of the population occurred. The population declined at a high speed – during the 1990s, Chukotka Autonomous Okrug and Magadan Oblast lost half of the population, Kamchatka Oblast 19%, Sakhalin 15%, Murmansk 14%, Komi Republic 11% (Demoscope, 2001).

Two northern areas were important for oil and gas development in the post-Soviet Russia: Khanty-Mansi and Yamal-Nenets okrugs. The influx of population to them was unstable, at the same time mining activities from these two developing areas complete more than half the northern economy (Glomsrød, 2017).

Demographic change on the map was analyzed in 177 Russian Arctic settlements and only in 41 of them the population was increasing (Heleniak, 2019). Consequently, over 75% of analyzed settlements were shrinking during the 21st century mainly due to out-migration. Nenets Autonomous okrug and Yamal-Nenets Autonomous okrug had the strongest positive natural growth due to relatively low death rates and younger populations. Also, they were the only regions within the analyzed territory where the population was gradually increasing. The population grew in Khanty Mansiyski with about 14% during the analyzed time. The population of Sakha Republic has been growing slightly due to high birth rates. The most dramatic demographic shift happened in the Komi region where the sub-region of Vorkuta lost almost 40% of its inhabitants. In the more east side of Russian Arctic territory the population was also decreasing. Magadan Oblast and Kamchatka had a remarkable population decline, both regions experienced negative net migration and negative natural population change. In contrast, the continental region of Khanty-Mansi Autonomous okrug had positive net migration and natural population growth. Nevertheless, in the regions of the Far North there is a large constantly living population – 8.9 million people, or 6.2% of the population of Russia (Demoscope, 2001).

Chapter 4: Arctic Population in the Future

4.1. Future projections

Demographic trends, the probable future distribution and size of the population of the Arctic is needed for governmental planning since governments are able to diminish some negative consequences of socioeconomic changes. All Arctic states make projections about their future populations at the regional and national levels on a regular basis (Heleniak, 2019).

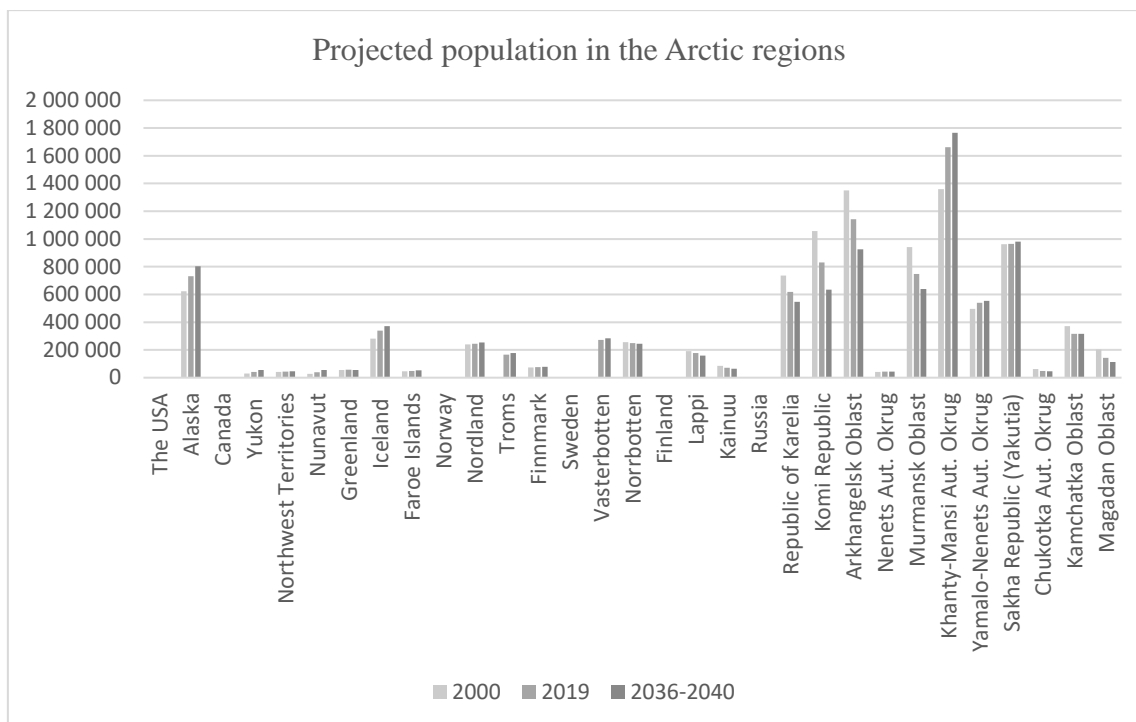


Figure 8: Projected population in the Arctic regions

Sources: Statista, Statistics Finland, Statistics Norway, Statistics Sweden, Rosstat, Statistics Canada, 2000–2020.

Global population will continue to grow because of the global age structure. This trend is especially correct for less developed societies. According to UN estimations, the global population will reach 9 billion in 2037, 10 billion in 2055. In the past worldwide population growth has already had a far-reaching effect on the Arctic and will continue to do so in the future.

Alaska’s population increased by 17 percent from 2000 to 2019. The middle scenario, which calls for 0 percent net migration, projects a population increase to 804138 in 2040 (Statista, 2019). In the past worldwide population growth has already had a far-reaching effect on the Arctic and will continue to do so in the future.

According to the projections done by Statistics Canada Yukon population would increase from 40854 to 55570 between 2019 and 2040 in the middle scenario. In some other scenarios, Yukon’s population in 2038 would be sharply lower than now due to interprovincial migration declines. The population of the Northwest Territories was 40480 in 2000 and there is the predicted increase to 55570 in 2040. A lower scenario projects the population decline. Population shifts would mostly depend on the nature of migratory exchanges with other parts of Canada. The population of Nunavut was 27498 in 2000 with the increase to 38780 and is predicted to rise in all scenarios. The key drivers of population growth in Nunavut are fertility and the young age structure (Statistics Canada, 2019).

There has been very slight change in the population size of Greenland. It changed from 56200 and to 56992 between 2000 and 2019. The projection by Statistics Greenland

goes to 2040 when the population of Greenland is expected to decrease slightly to 55627 (Statistics Greenland, 2019).

Iceland had a continuous population growth in the past decades. This trend is expected to remain the same. The population is currently 339031. The medium scenario shows that the population of Iceland will grow to 371746 by 2040 (Statistics Iceland, 2019).

The Faroe Islands is very small and has also had a slow population increase over the past 20 years. The middle scenario project a slowly rise to 52680 in 2040. The size of the population of Faroe Island is expected to shift slightly in some years, mostly reflecting the economic capacity (Statistics Faroe Islands, 2019).

Norway's population is going to grow by 16 percent till 2040 according to scenario. Troms regions society will enlarge by 6 percent, Norland and Finnmark population will rise slightly (Statistics Norway, 2018).

The population of Sweden is projected to grow by 11 percent till 2040. Swedish Arctic regions will stay at approximately the same population level. There is going to be a small 4 percent increase for Västerbotten and a 2 percent decline for Norrbotten in 2040 comparing to 2019 (Statistics Sweden, 2019).

The population of Finland until 2040 is predicted to stay almost at the same level. There is going to be a decline of 1 percent from out-migration in Lappi region. Kainuu is predicted to continue to decline by 10 percent until 2040 (Statistics Finland, 2019).

The latest Russian human change prediction has recently changed. According to the Rosstat average scenario, the population of Russia will decline from the current 146.7 million to 143 million until 2036. In the forecast published a year ago, this number one million higher. The “demographic failures” of the 40s, 80s and 90s will be strongly seen from 2022 to 2028. As a result, in 2027 the natural population decline will peak at 583500 people and will begin to decline gradually from 2028. The high scenario of Rosstat suggests population growth by the beginning of 2036 to 150.1 million people. According to the low scenario, the population will drop to 134.3 million people (Rosstat, 2020). The similar demographic trends are predicted to occur in the Russian Arctic territories. The population of all Arctic regions except Khanty-Mansi Aut. Okrug and Sakha Republic is projected to decline.

All in all, there are some demographic trends that are projected to be common and will occur in the Arctic (Nordregio, 2020).

Firstly, it is becoming older: Arctic populations are projected to age in the future like elsewhere in the world. The relative percentage of the elderly and retired are projected to grow in all the Arctic regions.

Secondly, sex ratios: originally Arctic populations had a higher ratio of men to women; however, it is projected to decline. For example, in Alaska, there were 108.5 males to 100 females in 2010, in 2045 this ratio will decline to 104.8 males. Greenland in 1977 had 118 males to 100 females. Now this ratio is 112 males per 100 females, and in the future, it is projected to decrease slightly.

And lastly, urbanization: there is an evident trend of people moving from small settlements to urban centers. This happened because of better educational and job prospects in larger towns. So, there is a projection that the population size in many small Arctic settlements will go down or even become abandoned. At the same time large settlements will continue to grow.

All of these trends are important for the future population picture and needed to be taken into consideration of the Arctic officials to be able to adapt to new realities and plan them on regional and national levels.

4.2. The effect of COVID-19 on the Arctic

COVID-19 is greatly connected by international and regional population movements. This affected not only our daily routines like going to university or work by transport, moving to see your friends or family, but also influenced the global business that is based on movement: tourism, airlines, international enterprises. And at the same time, this was the key reason for the fast global spread of the virus. Migrants and their economic, cultural, and social presence have an impact for societies and communities worldwide (UN Population Fund, 2020).

The Arctic is no exception in the international outbreak, but luckily it is not influenced by it to a high extent. According to Johns Hopkins University world statistics, totally in the Arctic, there are 17584 cases and 194 deaths (23.05.20). No cases of coronavirus were found on Svalbard, only 11 confirmed cases in Greenland, 18 in Canadian Northern Territories, 373 in Norway, 401 in Alaska, 434 in Finland, 824 in Sweden, 1804 cases in Iceland and more than 13 thousand cases in the Russian Arctic (Johns Hopkins university, 2020).



Figure 9: Arctic areas affected by COVID-19

Source: Arctic Centre COVID confirmed cases in the Arctic, 2020.

COVID-19 causes with new challenges to human life and economic well-being in the Arctic region. Ongoing environmental and climate changes compound the challenges that Arctic societies are facing. There was a shutdown to research expeditions, shipping routes, tourism activities and many scientific conferences. Indigenous communities experience housing and mental problems.

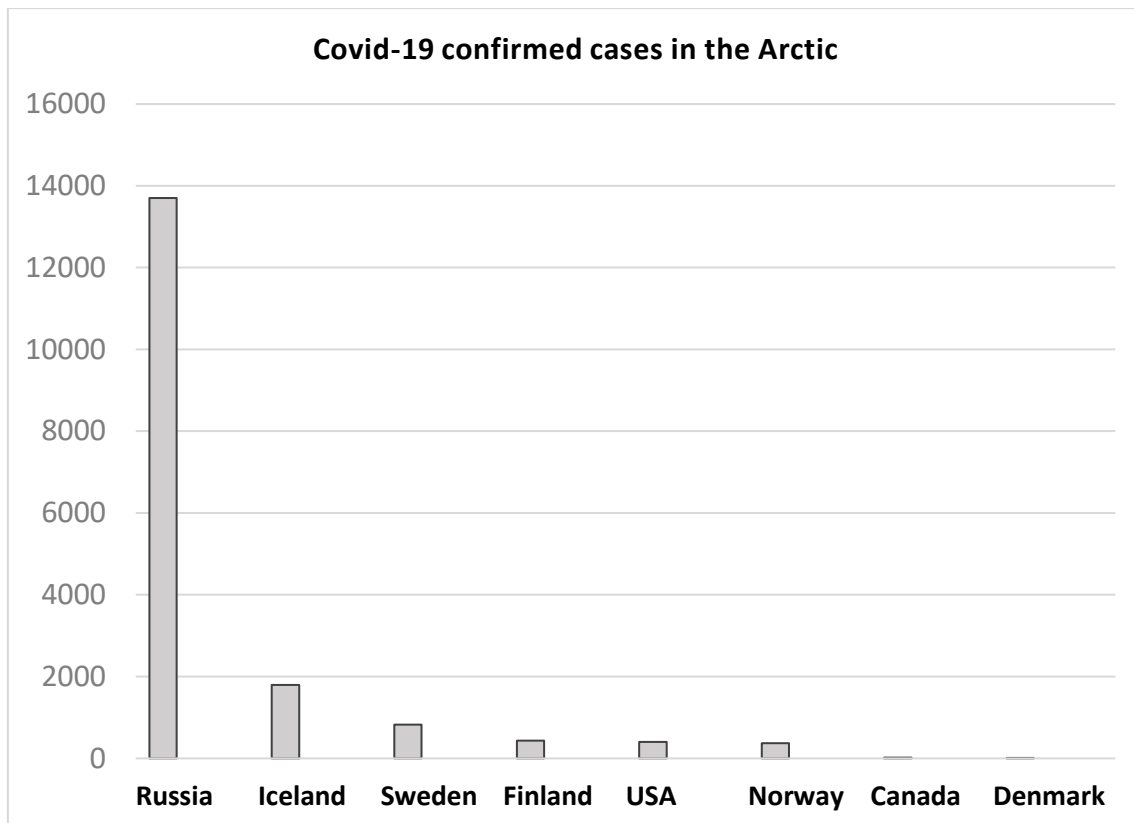


Figure 10: Covid-19 confirmed cases in the Arctic

Source: Arctic Centre COVID confirmed cases in the Arctic.

For Inuit and other Arctic Indigenous peoples, the consequences of the coronavirus shutdown are sharpened by housing conditions and crowded homes. Many households are without drinking water and a flush toilet. There are also problems with pipe and transportation networks because there are ageing and worsening. And overcrowding in households has numerous adverse effects linked to each other. Such disorders lead to severe and numerous diseases and interconnected adverse effects from psychological well-being to overall physical health (Arctic Council, 2020).

Overall, the coronavirus effects showed the most vulnerable problems of the Arctic Indigenous communities and also has led to the temporary stop of economic activities there. Hopefully, this will lead to the faster actions with decisions for these issues from the local Arctic administrations.

Conclusion

It is clear that migrants make significant contributions to both the host and home countries. Migration is an expanding global reality, since 2000 the number of migrants has grown from 2.8% to 3.4% of the world's population. International cooperation is essential as migration will most likely continue to increase. Moreover, migrants significantly contribute to economic growth in both the countries of their origin and their states of destination. Also, migrants significantly add to the economies of their host

countries since they contribute more in taxes and social funds than they get via individual benefits. Migration changes the composition of the population.

If we look into the future, there are both exogenous and endogenous demographic issues based on the current trends and future projections. Some of the problems have already been addressed through different population policies in the Arctic. Nunavut, Greenland and the Faroe Islands have specific programs to prevent the increase of urbanization and the depopulation of small settlements.

The demographic problem of ageing occurs globally, and the Arctic region is not an exception. High rate of out-migration of young population is a trend of many small Arctic settlements. The Arctic migration fairly depends on the international migration which challenges aging and population decrease.

Climate change and the thaw of permafrost are the exogenous factors that impact the population of the High North. Sea ice is declining, and this causes the need of coastal settlement relocation in Alaska. Thawing permafrost is affecting the infrastructure of settlements all around the Arctic. Less ice in the ocean across the Arctic opens new shipping and mining opportunities and it brings both positive and negative consequences on port arctic cities.

The primary factors about the Arctic are uncertain: the demand and price for Arctic resources, entire regional impact of the global warming, innovations and societal acceptance of new technologies, the future of Indigenous communities. That is why it becomes nearly impossible to deduce demographic directions, employment in the Arctic, the destiny of villages, and the most effective administrative politics for the High North.

The coronavirus outbreak showed us that we face the uncertain future. The challenges the Arctic is facing are among the most drastic in the world. After all, if the meaningful and beneficial changes would continue and policy innovations could provide the basis for even more successful reforms, the region opportunities and issues will seem to be more manageable. There is no reason to expect the straight road to 2050, the speed of externally driven changes would rise rather than fall. Proactive political action and effective policymaking will be necessary to resolve the socioeconomic, climatic, and migration challenges of the Arctic region.

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Миграция в арктических регионах мира [Электронный ресурс] : препринт WP7/2020/02 / Ю. Скрупская ; Нац. исслед. ун-т «Высшая школа экономики». – М. : Изд. дом Высшей школы экономики, 2020. – 41 с. – (Серия WP7 «Математические методы анализа решений в экономике, бизнесе и политике»). (На англ. яз.)

Изменение климата и появление новых перспектив для добычи природных ресурсов в Арктике приводят к новым вызовам для людей, живущих там. Они являются ключевой темой нашего исследования. Исследование проводилось с целью установить миграционные тренды в арктических регионах мира.

Показана важность миграции для устойчивого развития, а также продемонстрирована текущая структура населения Арктики. Для лучшего понимания основных факторов, влияющих на население Арктики, проведен анализ миграции в Арктике, изменения численности населения в арктических регионах и городах, ожидаемой продолжительности жизни при рождении, общего коэффициента рождаемости в приарктических государствах. В работе также рассматриваются прогнозы о населении Арктики в будущем и влияние COVID-19 на коренные народы региона.

Понимание размера, состава, распределения и темпов роста населения Арктики необходимо для будущей экономической политики.

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