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BY GUEST EDITOR EINI HAAJA



OLA ELVESTUEN
20 years of peaceful
cooperation in the Arctic



ALEKSI HÄRKÖNEN
The role of Finland in
Arctic cooperation

HANNELE POKKA
Clean technology brings
new prospects in the
north





BALTIC RIM ECONOMIES

The Pan-European Institute publishes the Baltic Rim Economies (BRE) review which deals with the development of the Baltic Sea region. In the BRE review, public and corporate decision makers, representatives of Academia, and several other experts contribute to the discussion.

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Guest Editor | Eini Haaja

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Technical Editor | Elisa Aro

University of Turku
Turku School of Economics
Pan-European Institute
Rehtorinpellonkatu 3
FI-20500 TURKU, Finland
Tel. +358 2 333 9567

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OLA ELVESTUEN

20 years of peaceful cooperation in the Arctic

Expert article • 1998

The international cooperation in the Arctic is a success. After many years as the heart of cold war, the Arctic region is today a region of peace, cooperation and stability. The eight Arctic states have through the Arctic Council established an innovative and ground breaking political cooperation. The indigenous peoples of the Arctic are sitting around the same table as the state representatives. The science community is providing the basis for the decisions through world class assessments.

As the Arctic Council is celebrating its 20th anniversary in 2016, we should be proud of what we have achieved. However, we should also look ahead: how should we further develop the international cooperation in the Arctic over the coming 20 years?

The melting ice

The warming climate is changing the Arctic dramatically, and the changes have global impacts. The melting sea ice will result in a new ocean opening up for parts of the year. The melting of the Greenland ice-sheet has profound consequences for the Inuit people in Greenland but will contribute to rising sea level globally as well. The Arctic countries need to strengthen their cooperation to prepare for the increasing activities following the melting ice. In addition, the cooperation with non-Arctic states must be improved as the causes for and impacts of the changes we see in the Arctic are global. The follow-up and implementation of the Paris-agreement to curb emissions of CO₂ is of paramount importance for the future of the Arctic region.

The increased activity in the Arctic is first and foremost connected to the Ocean. New commercial shipping routes are opening up, cruise ships are entering more remote areas in the Arctic, and fishing vessels are following the fish stocks straddling further north as the ocean is warming up. For instance, last winter the west coast of Svalbard was free of ice, and August 16 this coming summer, the cruise ship "Chrystal Serenity" with more than a 1000 passengers will start its 32 days journey from Alaska to New York through the Northwest Passage.

The Arctic cooperation is producing tangible results. Building on the existing legal framework, most notably the UN Convention on Law of the Seas, two legally binding agreements between the eight Arctic states have been negotiated: The first in 2011 on Search And Rescue, and the second in 2013 regarding marine pollution. Of great importance is also the establishment of the Arctic Coast Guard Forum in October 2015, as the Coast Guards are instrumental in implementing the legally binding agreements. Last year the five Arctic coastal states signed a declaration to prevent unregulated fishing in the Central Arctic Ocean until we have the sufficient science in place. All these are positive developments and in line with the precautionary approach we need to take in the Arctic. However, in each of these areas we need to go further and deepen the cooperation.

Economic development

The impact for small Arctic societies when new industry establishes itself is dramatic. This is becoming a reality in many locations around the Arctic. The social benefits and costs are potentially huge in many of these development projects, especially related to exploitation of natural resources. Local communities must gain from the new activity. Developing natural resources includes additional risks to the local environment and to the societies. To accept this risk as worthwhile, local people need to see clear benefits from the activity. We must make sure that the resources are not just shipped away without any gain for the people living in the Arctic. When the resources are exhausted, the company must be responsible for leaving the land in best possible shape for future generations who are still going to have the area as their home. Environmental protection, open, democratic and transparent processes must be core to any development in the Arctic.

Capacity building

Knowledge is the key to sustainable development. The use and development of science as well as traditional and local knowledge is essential for the people living in the Arctic to be able to build resilient communities and capitalize on the opportunities that come with greater economic activity.

Capacity building, particularly through education, is important to ensure that local communities will benefit from economic development. It is, however, vital that capacity development is rooted in, and relevant for, the people living in the Region, and that there is a link between the economic opportunities and the education system.

Student exchange is a way to increase knowledge sharing. Mobility and exchange programs involving students and young professionals in the Arctic need to be strengthened and expanded. Student exchange programs produce networks that become new partnerships in business and in life, and are an efficient use of northern education and training capacity resources. Student exchange is also an important factor for increasing innovation and ensuring common social, economic, and environmental high standards in doing business and accessing natural resources.

The indigenous peoples

The Arctic Council is the only circumpolar forum for political cooperation at government level, and it plays a crucial role in this regard. The indigenous peoples of the Arctic have been given their rightful place as "permanent participants". In my view it is of paramount importance to ensure strong participation of the indigenous peoples in future Arctic cooperation. As permanent participants they must have the financial and human resources to participate fully in the Arctic cooperation.

Expert article • 1998

Reindeer herding is important for indigenous peoples in the circumpolar area. It is a part of the culture and the way of living, and a source of income to sell the reindeer meat. To further strengthen the cooperation between reindeer herders is important to ensure a resilient reindeer herding culture facing the modern society and other industrial development.

Arctic differences

The Arctic is often portrayed as the last wilderness, with pristine nature and vast areas. However this is only a part of the picture. The Arctic is also the home to four million people, and 10% of the Norwegian population lives north of the Arctic Circle. Northern Scandinavia has well developed infrastructure for electricity and transport, with good universities and with a strong economic development. This is very different from the Arctic in North America where infrastructure tends to be limited and the communities are small and relatively isolated. Furthermore, the climate conditions along the ice free coast of Norway are very different from Northern Canada at the same parallel. This is important to understand when dealing with Arctic issues.

The Ocean and its resources are and will be important in the Arctic. We must be innovative in searching for new business areas to develop, and build capacity locally to make sure that the economies are locally anchored, diversified and solid. This needs to be the basis for future, prosperous societies where people live their lives. It is the responsibility of all the Arctic states to ensure that the Arctic continues to be an area of peaceful, international cooperation. ■



OLA ELVESTUEN

Member of the Norwegian Parliament
Norway

OSCE Parliamentary Assembly's
Special Representative for Arctic Issues

Pan-European Institute

BALTIC RIM ECONOMIES

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ALEKSI HÄRKÖNEN

The role of Finland in Arctic cooperation

Expert article • 1999

A quarter of a century ago the Arctic region opened up to international cooperation in a completely new way. Finland was spearheading efforts to bring Arctic cooperation to the international agenda and convened the first-ever Arctic ministerial meeting in 1991. The Rovaniemi process led to the adoption of the Arctic Environmental Protection Strategy. It also paved the way to the founding of the Arctic Council, which celebrates its 20th anniversary this year.

Arctic cooperation has invariably been regarded as beneficial to all Arctic countries. There is a growing interest also among non-Arctic countries, many of which have already joined as observers of the Arctic Council.

Finland sees multilateral Arctic cooperation as an essential part of its foreign policy, and emphasizes the growing strategic importance of the Arctic region as a whole.

A central objective of Finland's Arctic policy is to strengthen multilateral Arctic cooperation.

Finland successfully chaired the Barents Euro-Arctic Council in 2013-15 and is preparing to take over the chairmanship of the Arctic Council in 2017-19. Holding the chairmanship of the Nordic Council of Ministers in 2016, Finland emphasizes the role of the Nordic contribution to wider international cooperation in the Arctic.

The EU launched its third Arctic Communication in April 2016. Finland actively contributed to its contents and engaged in cooperation with the two other Nordic EU countries, Sweden and Denmark, to highlight issues important to Northern Europe.

Bilaterally, Arctic and Northern issues provide an important field for cooperation between Finland and its neighbors in the North - Sweden, Norway and Russia, but also with the other Arctic countries Denmark, Iceland, Canada and the United States.

In Finland's Arctic relations the sub-regional, regional and the circumpolar networks are very much present and equally important. Cross-border cooperation, European cooperation and wider international cooperation complement each other.

It is Finland's view that Arctic cooperation will need to be strengthened to take into account the processes that are underway. The main challenges in Arctic cooperation are obvious.

The Arctic region will join the globalizing world in many different ways. Climate change will greatly affect the region, even if global warming is limited to two degrees centigrade. Warming climate will provide new economic opportunities but also the challenges will be enormous.

Northern and Arctic communities must be made resilient to changing conditions. Traditional livelihoods will have to be complemented by new ones. Education, training and capacity-building will be needed. Reconstruction, maybe on a large scale, will be required when permafrost melts.

The ice cover of the Arctic Ocean will retreat further, opening up northern sea routes. Also non-Arctic countries will navigate them.

On the basis of the norms of international law, new specific norms will be needed to regulate maritime transportation and fisheries and safeguard the previously intact fragile Arctic environment. Some of such processes are already well underway like the Polar Code.

The Paris Climate agreement is a most welcome step to mitigate climate change and it must be fully implemented. The United Nations Sustainable Development Goals – Agenda 2030 – provides important guidance also for the Arctic region.

In addition to global efforts, there are many steps that can be taken regionally and even locally in the Arctic to mitigate climate change. Limiting the emissions of black carbon and methane is a case in point.

Finland welcomes the uninterrupted cooperation between all the Arctic countries from the early 1990's. After the cold war, the Arctic has been a region where the risk of confrontation has been particularly low.

The present crisis in international relations as a result of the conflict between Russia and Ukraine has not led to a crisis in Arctic cooperation. Factors outside the region have not been allowed to spill over to the Arctic.

Finland agrees with those who point out that efficient Arctic cooperation makes sense only if all the Arctic countries participate. Arctic challenges need to be tackled together, and well-

functioning Arctic forums of cooperation should be used to re-build confidence also more widely.

The United States will chair the Arctic Council until 2017, and then hand over the chairmanship to Finland. Finland appreciates the close cooperation that successive chairmanships provide, contributing to continuity.

Chairing the Arctic Council will mean that Finland will be actively involved in shaping the future of Arctic cooperation together with the other Arctic other countries and the organizations representing Arctic indigenous peoples.

Strengthening Arctic cooperation is a goal that all Arctic countries share. In Finland's view Arctic activities require a longer-term perspective, which involves both circumpolar and other interested actors to better guide developments in the Arctic. ■

Finland sees multilateral Arctic cooperation as an essential part of its foreign policy, and emphasizes the growing strategic importance of the Arctic region as a whole.



ALEKSI HÄRKÖNEN
Ambassador for Arctic Affairs
Ministry for Foreign Affairs of Finland
Finland

HANNELE POKKA

Clean technology brings new prospects in the north

Expert article • 2000

In recent years the Arctic region has been highlighted as the place where climate change is proceeding the most rapidly. Images transmitted by satellites have shown that the ice is melting and northern sea routes are being opened. From Siberia we have heard that permafrost has started to melt, releasing methane into the atmosphere. Methane is considered the most complicated of the greenhouse gases.

In a hundred-year time frame methane accelerates climate change 35 times more than carbon dioxide, while in 20 years its climate impact may be 84 times that of carbon dioxide. However, we still know far too little of the impacts of melting permafrost. The earth may surprise us.

Black coal may also cause warming in the Arctic region. Black coal, or soot, is composed of small particles and because of its colour and surface properties it has a strong warming impact on the climate. It is generated when burning is incomplete, such as in brush, grass and forest fires, in industrial production and in vehicles.

Black coal stays in the atmosphere from a few days to weeks, during which time it may move thousands of kilometres from the emission source. Besides warming the atmosphere, it also has an impact on the formation of clouds.

Globally, black coal is considered the second most important cause of climate warming after carbon dioxide, that is, even more important than methane. The climate impacts of black coal are intensified in the Arctic region, where it falls on white snow and ice, reducing their reflective capacity and making them melt faster. In the Arctic region the impact of black coal is so great that it is considered an even more significant cause of the depleting of snow and ice cover than greenhouse gases. This means that global climate change could be slowed down by reducing black coal emissions. In the case of black coal the impacts of reducing emissions would also be seen without delay because, unlike carbon dioxide and methane, black coal stays in the atmosphere only for quite a short time.

According to the most drastic estimates, radical cuts in black coal emissions could mitigate climate change by 30 per cent or slow it down by 10 to 20 years. Restrictions on black coal emissions, as desired by the western countries, could also be combined with the objectives of the Asian countries to improve their air quality. One of the main objectives of the United States, which currently holds the presidency of the Arctic Council, is the reduction of black coal emissions. Starting next year, the presidency will be held by Finland.

In the past few years we have seen quite a dramatic change in attitudes towards opportunities in the Arctic region.

Not so long ago the Arctic was considered a new Eldorado, with almost unlimited opportunities. There was wide interest in projects and plans concerning the exploitation of especially the oil, gas and mineral resources.

However, the fall in oil prices made it unprofitable to drill oil in the Arctic Ocean. Oil prices may well start to rise again, but for now the oil drilling projects have been put on ice.

In the western hemisphere, Shell, for example, has removed its offshore drilling equipment from the marine waters of Alaska. While in the eastern hemisphere, the weakening of the Russian economy, the Ukrainian crisis and the consequent sanctions against Russia have put an end to large-scale Russian projects in the north.

The use of renewable energies and technologies challenges the traditional sources and methods.

The global trend where renewable energy sources are replacing the fossil ones offers great opportunities for the northern regions as well.

The world's countries reached an agreement on slowing down the progress of climate change in Paris. Even if the agreement will not be effective until 2020, the markets reacted immediately. In the past two years there has been a significant increase in investments in green energy all around the world. According to the latest analysis of Standard & Poor, the markets for renewable,

clean energies will grow to USD 16.5 billion over the next 15 years. The International Energy Agency (IEA) estimates that by 2040 the various ways to produce renewable energy will grow more than coal, gas, oil and nuclear power put together. Clean technologies that help save the climate and environment have already turned into a megatrend that is going to change the world.

The target set by Prime Minister Sipilä's Government is to raise the share of renewable, emission-free energy to 50 per cent. Biofuels have a key role in reaching this target. Another priority issue in the Government Programme is a circular economy. In Finland we have truly understood that what is waste for one may be business to another, and recycling brings benefits to both people and nature.

The global trend where renewable energy sources are replacing the fossil ones offers great opportunities for the northern regions as well. In Finland and Sweden the opportunities for renewable energy are strongly based on forests and trees, that is, the utilisation of biomass. Wind power and solar energy capacity has also grown. In these sectors the technology seems to be advancing in giant leaps.

Expert article • 2000

In the Arctic regions of Finland, forests have been cut and managed, as well as protected, for over 100 years. We have also successfully reconciled the various uses of forests. This is particularly important in Lapland where reindeer husbandry, tourism and forestry have specific needs and goals of their own with regard to using forests.

The Arctic Strategy of Finland is currently being updated and preparations are underway for the upcoming presidency of the Arctic Council. The European Commission has recently updated its Communication on the European Union and the Arctic region.

The leading idea in the Finnish Arctic Strategy is to turn Finland into a pioneer in sustainable development and in doing sustainable business in the Arctic region. When updating the strategy some years ago the vision for Finland was a country with a great deal of expertise in building icebreakers, in preventing and combating oil spills and in clean technologies. We should be proud of this expertise. However, instead of just focusing on oil drilling, seafaring and business

opportunities in the Arctic Ocean — as we used to — we should also see that clean technologies, the bioeconomy and a circular economy open up enormous development prospects in the northern areas within our own country as well. ■



HANNELE POKKA
Permanent Secretary
Ministry of the Environment
Finland

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hallinnon kuvapankki,
kuvaaja Pekka Hokkanen

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MARJA-LEENA VUORENPÄÄ

The role of Barents cooperation in the development of the European Arctic

Expert article • 2001

The Barents region is the most inhabited region in the Arctic area with a lot of economic activity and potential, for example in the field of mining, oil and gas industry, forestry, transport and logistics and tourism. The common challenge in all parts of the Barents regions is to keep the region inhabited and to find a balance between sometimes conflicting interests between different fields of economic activities, nature conservation and traditional livelihoods.

The Barents Euro-Arctic Council (BEAC) and the Barents Regional Council were established in 1993 to enhance stability and sustainable development in this northernmost part of Europe. The special feature of the Barents cooperation is the close cooperation between the national and regional levels. The cooperation involves 13 northern regions of the Barents area. Also Barents indigenous peoples, Saami, Nenets and Veps participate in the Barents cooperation. The European Union has been a full member of the BEAC from the beginning. For the EU, the BEAC gives an insight into the challenges and possibilities of the European Arctic.

Last year Finland handed the BEAC chairmanship over to Russia. Despite the tensions in international politics, Barents cooperation has been able to continue its work in a constructive atmosphere and keep up cooperation and contacts across borders between national and regional authorities, experts, indigenous peoples and other actors, including civil society.

In the framework of Barents cooperation the member states and regions can jointly address issues that are of regional relevance. The focus of Barents cooperation is on the exchange of information and best practices and on the identification of development needs. The practical work takes place in sectoral working groups among national and regional experts. At its best, the cooperation promotes regional development and benefits all partners. Cooperation in the field of cross-border transport connections, nature protection and climate change, culture and health can be mentioned as examples.

The working groups serve as platforms for the planning of concrete development projects, including joint studies and workshops. Project cooperation helps to achieve tangible results and involves more people in the cooperation from experts to grass root level actors.

The financing of Barents projects comes mainly from the participating states and the EU programmes. The EU territorial cooperation programmes such as the Northern Periphery and Arctic as well as the EU-Russia cross-border cooperation programmes (CBC), Kolarctic and Karelia have become important sources of financing for Barents projects. The CBC programmes have raised the cooperation to a new level enabling the implementation of sizable joint projects. Since the previous programming period, the Kolarctic programme has now been reshaped to fit better the Barents geographic area. The next call for CBC project proposals is expected to be launched in the autumn 2016.

During the Finnish chairmanship of the Barents Euro-Arctic Council 2013-2015, a joint expert study was conducted of the Financing of Barents Cooperation. The process involved different actors in the Barents region, including national and regional authorities and non-governmental organizations as well as representatives of the CBC funding programmes, international financial institutions and Northern Dimension Partnerships. The study concludes that on the whole there are enough financing instruments available, but capacity building and information dissemination of the existing financial resources should be improved. Some Barents working groups and civil society actors considered it difficult to find funding for small-scale projects and project preparation. The study also took note of a missing link between the EU funded projects and the international financial institutions. Such a link could help turning territorial and cross-border cooperation projects into investments.

The abundance of stakeholders and instruments in regional and cross-border cooperation poses challenges to coordination. The EU Arctic Communication published in May this year takes note of this. The EU plans to set up a European Arctic stakeholder forum and an annual Arctic Stakeholder conference with the aim of enhancing coordination, collaboration and networking between stakeholders. This could promote capacity building in project development and better awareness of different financing sources and lead to a more effective use of the available resources and so benefit the development of the European Arctic. ■



MARJA-LEENA VUORENPÄÄ

Senior Adviser
Former chair of the BEAC CSO
Ministry for Foreign Affairs of Finland
Finland

FUJIO OHNISHI

The Arctic concert system and its challenges

Expert article • 2002

After the end of the Cold War, Arctic international politics was in a politically stable stage for twenty-five years. More specifically, the Arctic eight countries (Canada, Denmark, Finland, Norway, Iceland, Russia, Sweden, the United States) built a concert system based on political agreements on regional membership (Arctic eight states) and issue areas (environmental protection and sustainable development), which provided a foundation for promotion of international cooperation in the Arctic region. The Arctic eight states established the Arctic Council in 1996 as an institutional pillar for the Arctic concert system. Now, however, it is being forced to navigate various and difficult challenges that have arisen, including a new stage in the security environment due to geopolitical shifts resulting from climate change, economic advances by non-Arctic states, and the effects of worsening relations between the West and Russia on global international politics. The deteriorating relations between the West and Russia are especially worrying, casting dark shadows onto the Arctic concert system itself.

1. A new stage in the security environment due to geopolitical shifts resulting from climate change

Faced with a new geopolitical reality caused by the drastic retreat of Arctic sea ice resulting from climate change, the Arctic coastal states or Arctic five states (Canada, Denmark, Norway, Russia, the United States) were forced to address the need to improve their capability to defend their sovereign rights and jurisdiction in the exclusive economic zones in the Arctic Ocean; they have responded by increasing operability of their coast guards accordingly. The most concerning threats were possible accidents caused by ships transiting the Arctic Ocean, offshore plants obtaining oil from the seabed, and possible oil spills resulting from these activities. In 2008, the Arctic five states endorsed the Ilulissat declaration in which they agreed to strengthen search and rescue capabilities and capacity around the Arctic Ocean to ensure an appropriate response to any accidents. However, due to strong opposition from the United States against the Arctic five states forming a new institutional pillar different from the Arctic Council, the responsibility for securing marine safety was handed over to the current Arctic concert system. As a result, the Arctic eight states strengthened their collaboration under the current Arctic concert system through adopting the 2011 Arctic Search and Rescue agreement and the 2013 Arctic Oil Spill Agreement. These two agreements provided frameworks for international collaboration among the coast guards of the Arctic eight, but left aside practical issues such as communication and training, both of which are indispensable for their effective operations under the harsh natural conditions of the Arctic Ocean. A step forward was taken when the Arctic eight launched the "Arctic Coast Guard forum (ACGF)" in October 2015. The question of whether ACGF plays an effective role will be one of the touchstones for determining the future resilience of the current Arctic concert system.

2. Economic advances by non-Arctic states

The Arctic region is undergoing a gradual integration into the market economy, resulting in economic advances by non-Arctic states in the region. This situation implies the emergence of new players in the current Arctic concert system and brings to the fore the political issue

of how to position the non-Arctic players within the concert system. As a result, the Arctic eight states succeeded in incorporating the new players within its framework through giving them observer status at the Arctic Council in 2013 (China, India, Italy, Japan, Singapore and South Korea). However, their political positions as observers are severely restricted and they will not likely be satisfied with their restricted political influence when the Arctic economy becomes more dependent on investments from non-Arctic states. This issue centers on China. Although she did not reveal her policy toward the Arctic, China's strategy on future economic advance in the region constitutes the most important factor deciding long-term relations between the Arctic eight states and non-Arctic states and thus affects prospects for maintenance of the current Arctic concert system.

3. Impacts of deteriorating relations between the West and Russia

Among others, the most serious challenge to the current Arctic concert system is a consequence of the deteriorating relationship between the West and Russia in global politics. To borrow a phrase from a NATO officer, what Russia is doing now is building an arc of steel from the Mediterranean to the Arctic. On its Arctic flank, Russia has made rapid investments in military preparedness over the last few years. It launched the Arctic brigades in 2011, and started operation of its fifth integrated command based on the Northern fleet from December 2014. Several sources have also pointed out that a series of missile defense systems from short- and long-range are installed in a broad area spreading over the Russian Arctic (S-300, Pantsir-S1 and Bastion-P). Russia's rapid military build-up will result not only in heightened political tensions between the NATO members of the Arctic region and Russia but inevitably in the return of hard security in the region, thus encroaching on the very foundation of the current Arctic concert system in which the security issue was carefully opted out. The fall or *de facto* non-functioning of the current Arctic concert system would significantly damage political stability in the region.

In this article, three challenges to the current Arctic concert system are briefly examined. Although we should not hold too optimistic a view, the Arctic eight states have successfully negotiated and addressed the former two challenges within the current Arctic concert system. In contrast, the Arctic eight states have not yet found an effective solution to the third challenge, since the issue of military preparedness lies deep in national interests. Therefore, the third challenge constitutes the most formidable issue for the maintenance of the Arctic concert system and future stability in the region. ■



FUJIO OHNISHI

Assistant Professor, Ph.D
College of International Relations
Nihon University
Japan

LIU XU

China-Russian Arctic cooperation: black gold and beyond

Expert article • 2003

China, with no territorial right in the Arctic area, has been deeply involving in the negotiation and cooperation of the regional issues. In May 2013, China became one of the observer states of Arctic Council, after which the interest in the Arctic issues unprecedentedly upsurged on both state and public levels. China's governmental engagement into the Arctic feast is put forward through two channels – multilateral and bilateral. There is no doubt that Russia is one of the most promising bilateral partners for China from the perspective of geography, politics and economics. The two countries' high profile politicians have been confirming their cooperation on Russia's Arctic at almost all the bilateral meetings. Thanks to the efforts of both state and business sides, significant progress on China-Russia Arctic cooperation has already been achieved. Further positive outcomes could be only improved in case of accurate assessing challenges and risks the cooperation may have, however.

Black gold cares

Energy cooperation, especially oil and gas, is placed in the center of bilateral collaboration in Arctic. China has been seeking Black Gold all over the world for decade to still her increasing appetite, while Russia has abundant oil and gas resource even in the Arctic. This made it very rational for the two countries to find the chance for energy cooperation in order to pursue the "synergy" effect. Yamal LNG project is generally supposed to be a breakthrough in the region. In fact, this project could be anticipated as a leading and typical one, but far less with a pioneer meaning. Before CNPC took over 20% share of Yamal LNG project, Chinese companies already started to import Russian oil through the East Siberia – Pacific Ocean (ESPO) pipeline. More than half of the oil transported in the pipeline comes from the Vankor oil field, which is owned by Rosneft and located inside the Arctic Circle. Yamal project' LNG is supposed to be produced from 2017 and a big slice will be grabbed by Asian countries, mainly China. Considering the oil trade continuing, China will take a significant share of the export of oil and gas extracted from the Russian Arctic.

No money no way

China's financial institutions play a very important role in China-Russian Arctic energy cooperation. China EXIM Bank (CEB) and China Development Bank (CDB) are the major lenders to China-Russian energy projects. Now, China Silk Road Fund (CSRFF) has newly joined the parade with its purchase of 9.9% share of Yamal LNG

project. These banks and fund are policy institutions, whose money comes from the government budget. Their involvement in the Arctic projects implies the strong support and deep concern of the Chinese government. Chinese money doesn't always work, however. It needs

In May 2013, China became
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"the right time" to function well. The oil and gas deposits in the Arctic are registered as strategic ones by the Russian legislation, foreign investment to which is strictly monitored. The unprecedented plummet of oil price and US-EU-led sanction blew the Russian economy heavily, and therefore caused the serious fiscal imbalance. Ironically, the difficulty Russia is encountering is creating a favor – "the right time" – to

China as Russian top politicians made political guarantee to Chinese investment. According to my calculation, total direct investment and financing from China to Russia's Arctic oil and gas project has reached to roughly \$16 billion.

Made in China

As China became the leading financier for the Yamal LNG project, Chinese manufacturing and engineering companies are looking into the profitable return from the lending. The general contractor of Yamal LNG site construction is Yamgaz, jointly set up by France's Technip, Japan's JGC and Chiyoda. But still a large part of the liquefaction facilities and their transporting vehicles are subcontracted to Chinese companies. This could be a golden chance for Chinese companies to develop the LNG engineering technology and sharpen their competitiveness both in Russian and Global market.

Beyond black gold

Energy is not the whole of China-Russian Arctic cooperation. Since it contradicts with the principle of "non-interference in the affairs of other nations" and may deteriorate bilateral relation in the region, China is reluctant to be deeply involved in the territory disputes among the Arctic nations, although some countries' claim may damage China's interest such as in use of Arctic waterways. China's primary interest in the Arctic is scientific research. China organized its first Arctic scientific survey in 1999, which fell behind to the Antarctic one by more than two decades. It doesn't mean the Arctic survey is less important, however. Since then the survey has been consistently carried out by six times. Chinese and Russian authorities have already jointly carried out some scientific research within the related international framework. The two countries scientific cooperation could strength the understanding of the natural characteristics of the Arctic and contribute to the control and solution of global climate change problem.

Expert article • 2003

China's another interest in the Arctic lies in the sea route. In the summer of 2013 and 2015, Chinese leading shipping company, COSCO, sent the container-ship Yong Sheng twice to voyage on the Arctic sea route on Russian side. The second voyage resulted in better economic benefit than the former. According to the publication of one attendant, the total cost for Yong Sheng's sailing through Russian Arctic sea route is \$185 thousand less than traditional Suez route. COSCO has planned to organize the Arctic voyage annually no less than twice from 2016.

Still many challenges

First, Deepening the energy cooperation with Russia may harm the China-Western Relation. US and EU-led sanction aims to weaken the capability of Russia's energy production in the Arctic and offshore area. China's companies' involvement and financial support seem to carve out a niche to undermine the western "effort". Secondly, the low oil price, the glut of global oil and gas resource and the decelerated growth of China's energy consumption could negatively influence the profitability of energy projects in Russian Arctic. Thirdly, insufficient

and outdated infrastructure, incompetent sailing service and less reliable navigational devices and information will raise the risks of the voyage on Russian Arctic waterway. Finally, the development of energy resource and the voyage in the Arctic will stress the delicate environment of the region and indigenous people's way of life. The challenges mentioned above should be accurately addressed in order to further implement the China-Russia Arctic cooperation. ■



LIU XU

Research Fellow
National Academy of Development
and Strategy

Assistant Professor
School of International Studies
Renmin University of China
China

Pan-European Institute

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TIMO LAUKKANEN

Action to enable more sustainable business in the Arctic

Expert article • 2004

“A safe, stable, sustainable and prosperous Arctic is important not just for the region itself, but for the European Union and for the world.” This is the first sentence in the recent joint Communication to the European Parliament and the Council “An integrated European policy for the Arctic”.

Because of the fragile environment sustainable economic development is challenging but possible in the Arctic region. New investments in infrastructure, production and services lay a solid foundation for sustainable business and minimize the risks to people and environment. Equally important is that new investments bring prosperity and jobs with major benefits for the people in the region and for the world.

Cross-border connections and networks

Good connections are crucial everywhere and the Arctic region is no exception. There are great opportunities for oil and gas, mining, maritime industries, transportation, tourism as well as for many other manufacturing and service industries.

Long distances, harsh climate and sparse population make investments expensive. Arctic networks should meet not only national but cross-border needs as well. Good air, road, railroad, energy and data connections as well as satellite-based earth observation systems and smart power grids are a prerequisite for continued success of all businesses.

In electricity and heat production and distribution, transition to wider use of renewable energy and smart power grids will increase sustainable energy production and consumption. In addition to hydro power there is potential for instance in wave and tidal power, geothermal energy, heat pumps and arctic wind power. In addition to that liquefied natural gas (LNG) is a potential low-emission fuel for the Arctic region outside gas pipelines when LNG terminals are built.

Climate change challenge could be tackled also by innovative technologies like carbon capture and storage, low-carbon fuels (gas, LNG, renewables), and by increasing energy and resource efficiency in energy production and consumption as well as in industrial production.

Safe and viable exploitation of natural reserves

The perception of the Arctic region as risky and unsafe to exploit is an impediment for many operations in the area, though there are big differences between various parts of the region as regards climatic and ice conditions. Oil and gas companies plan carefully their investments and operate with minimal amount of risk in the arctic region.

Mining as an industry is vulnerable to changes in prices and economic trends. Many deposits have at one point been economically viable, but are no longer, or could become viable again.

Because of the fragile nature all risks to the environment must be carefully studied prior to the decision on investment. This should, however, not lead to overly lengthy process from discovery of a mineral deposit to the start of the investment. Long processing times of applications for permissions to open a mine can too easily delay and also end up with cancelling projects when economic trends change.

Land-based services for maritime transport

Growing maritime traffic together with the vast distances in the Arctic region is not possible without major investments in harbour, weather, search and rescue services. The increasing shipping in the Arctic region requires more investments in supporting infrastructure and development of Arctic harbours to serve not only transportation but as supply and service centres as well.

To maintain and improve safety to correspond with the projected increase in transport, the surveillance, search and rescue infrastructure must be improved. They must be able to cope with both the increased volume and the longer distances that will have to be covered as ships take advantage of the larger ice-free and ice-breaker assisted areas and adjust their shipping routes accordingly. Wider use of the Northern Sea Route requires also adequate advance information on terms and costs of all necessary services.

Deeper cross-border cooperation in weather, search and rescue, medical and other services will also enable higher level of services without increasing costs for the local population and businesses.

Easy access for visitors

Tourism has an important role for the local economy and being labour intensive it plays a crucial role for employment in the Arctic area. Tourists seek out new destinations and new forms of experiences and the Arctic region is therefore well suited for tourism.

Europe, USA and Canada remain important as the closest market with wealthy consumers, but tourists will increasingly come from further away. Approximately 60 percent of the growth in international tourism is expected to come from the BRIC and other fast developing economies.

Existing connections and infrastructure do not always take into account their role as an important component for tourism. Too often tourism operators face also major difficulties in planning ahead since the timetables of public transport, like planes, ferries, trains and buses are published only a few months in advance.

Because of the fragile environment sustainable economic development is challenging but possible in the Arctic region.

Expert article • 2004

A better exchange of information is needed to learn on the needs of the visitors and the hospitality industry when planning of new infrastructure and other investments and services is launched. As air travel is the most feasible way to attract tourists to the Arctic region there is a need for more direct flights to all directions.

Wider use of local and/or regional tickets would allow tourists visit several attractions/museums on the same ticket within a given period of time and would make attraction/museum visits more hassle-free both for tourists and the personnel.

Internationalized demand for labour and information

Education and research in the Arctic region is mainly planned and executed on national basis and terms for national needs, but demand for skilled labour and information based on research is increasingly international.

Different national educational and qualification standards hamper free movement of labour and complicate access to qualified work force. Information on research programs and their results is scattered, which too often means costly duplication and difficulties in access to information.

A more integrated educational and labour market would help attract skilled labour force for modern extracting and manufacturing industries as well as hospitality, healthcare and other service industries. Close cooperation in research could save costs and enable more profound studies.

The list of what could be done to support sustainable business in the Arctic region is inexhaustible and offers huge opportunities to enable more sustainable business in the Arctic for the benefit of all people in the region and for the world. ■



TIMO LAUKKANEN

Senior Adviser
Confederation of Finnish Industries EK
Finland

GUNN-BRITT RETTER

Challenges and opportunities in the development of the Arctic region from the perspective of the Saami

Expert article • 2005

The 20th Saami Conference in Murmansk in 2013 discussed the future prospect for the Saami culture and what visions the Saami people has for itself. Questions such as how the Saami people shall maintain and develop its identity and culture through steadily increasing focus on the Arctic, expressed through increased industrial development and exploitation of non-renewable resources, efforts of making up for the CO₂ emissions by investing in green energy, as well as growing interest in tourism and demand for recreation activities through ski-resorts and cabins - a great part of these initiatives is planned on traditional Saami land - all causing fragmentation of land and immense change in land and water use. Meanwhile, the Saami people experience changes in the natural environment due to pollution, and changes both in climate and environment. Part of the discussion focused on how the Saami people could benefit from the expected development and utilize it as an opportunity also for the Saami people? The conference could of course not provide all the answers but generated good discussions and provided food for thought for continuous deliberations.

We witness an immense increase in constructions and infrastructure in the Arctic from 2001 and until today. Changes from today until 2045, will continue to be immense, much due to increased industrial development. This will certainly represent the challenges to our communities.

To prepare for the future, we need to recognize the past. The Saami people has a long history in the Arctic. The Fennoscandic Arctic has been inhabited since the ice started to retreat 13.000 years ago. Some of these locations are thoroughly investigated by archaeologists. Like the cultural heritage site of Ceavccageadgi/Mortensnes, by the Varangerfjord, in northeast Norway.

The Ceavccageadgi site, being very interesting for historical reasons, is in fact also a walk through a history of climate adaptation and a demonstration of people's ability to survive in what others would call harsh Arctic conditions. Archaeologists can tell a lot about the diet at a certain time in history by investigating domestic waste. Remains of fish, sea mammals and birds tell us what kind of species our ancestors depended on during different periods, at this particular site. We believe that people caught and utilized the resources that were available at the time, without thinking about strategies to adapt to gradually changing environment, knowing that no year is equal to the other, and to not take more than they could handle and process (dry, smoke, dig down etc.). As with the contemporary fjord fisheries, the past taught us not to simply rely on one species for survival, but rather to depend on the diversity of species available throughout the year and let the

resource that seems to get sparse, to rest to enable it to recover. Some kind of self-management and governance system must have been in place, as both we and similar resources are still around, and we still depend on similar resources. We also know that people lived at different sites during the year, to access a variety of resources. On the Varanger peninsula, adjacent to the fjord, is an old fence system for trapping reindeer, demonstrating the presence of mixed economy.

The traditional Saami livelihoods, such as reindeer herding, fishing, hunting and gathering are essential and remain the foundation for the Saami culture. While many Saami individuals seek an academic or other kind of career, for quite many people the traditional activities stay important source for food and nutrition. In particular reindeer herding and small scale fisheries is fundamental for the Saami people's economy and represent the foundation for business development for our people in the Arctic. The livelihoods also represent the traditional knowledge system. Over the millennia of living in the area, a considerable knowledge has been built up and developed, and has been transferred from generation to generation. Knowledge that is unique for the circumstances and surroundings and closely connected to beliefs and cultural practice.

This knowledge should be a natural part of the knowledge production and decision-making in the Arctic. Knowledge develops the societies in which they are developed. Western or mainstream science and research do that for the mainstream societies. The Saami society have to be build and developed based on the traditional knowledge. To face the expected challenges, the indigenous knowledge production institutions, have to be strengthened to develop knowledge for our societies, and be equipped to be able to be strong and equal partners with other science institutions to co-produce knowledge that can prepare and develop the mainstream and indigenous societies for changes to come.

Regarding the economic development, there should be no reason for outside actors to believe that the Arctic is an empty space with some scattered people waiting for economic development to be brought to the communities. The traditional livelihoods represent Arctic sustainable economies that has outlasted the Stone Age, the Vikings, medieval area, early industrialization and still flourish in the present times, and should of course also represent future development of the Arctic region. While seeing an increasing interest in the Arctic, we need to be innovative within the traditional livelihoods, to develop them and then also promoting sustainable use of the living and renewable resources as a trademark for the Arctic into the future. But the challenges are lining up ahead.

Expert article • 2005

With less space to conduct the Saami economies or livelihood (fisheries and reindeer herding), what opportunities are there? Saami communities are now looking into how to make better economy out of the existing product, both in sea and on land. A young reindeer herder, Jan Ivvar Smuk, said in a speech to an Arctic Council event that more than half of every reindeer he delivers for the market, goes to waste in the processing. The utilisation of the whole resource (the reindeer, the fish) is embedded in our practice, beliefs and knowledge system; the indigenous peoples' traditional knowledge. To turn it around: the regulations, practice and belief that you cannot utilize more than 40 % of the deer, and that the fillet is the only delicacy, and 60 % of the reindeer is considered waste - is based on science and beliefs on what the market wants and what might be risky for your health, without properly investigating the traditional methods for food preservation. That is simply ridiculous.

Based on this, I would say that part of the challenges, or rather what limits our opportunities, is not merely environmental changes, but also rigid regulations in place impacting and limiting the opportunities in our existing economies. There is a need to change regulations and laws that limit the utilization of the products. If we prepare for less space for our economy, we need to make more value of the

products we produce. Can the miners also rather make more value out of the mines, while taking up less space and ruining less of the nature? Or are the Arctic opportunities seen from the outside, merely the industries' wet dreams about more space to conduct their destructive activities on? In that way the call from the Saami society, that the opportunities referred to in the Arctic can become an opportunity for all, and the Saami people will not be left with an uneven share of the disadvantages, can be realised. ■

**GUNN-BRITT RETTER**Head of Arctic and Environmental Unit
Saami CouncilPhotograph by:
Bjarni Eiriksson

Pan-European Institute

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SATU MIETTINEN

Arctic design: creating innovation and competitive edge in the north

Expert article • 2006

Arctic design is a new approach for increasing innovation in the circumpolar area. Arctic design is about using design methods to increase innovation, improve livelihoods and develop new solutions to the societal challenges in the arctic region. Arctic design is about co-design and collaboration. It uses design and service design methods to include users in the design processes. This enables new kind of value co-creation where the users are participating both in designing new solutions and sometimes also in the delivery and implementation of them.

University of Lapland is leading several projects in the area of arctic design. These include Arctic Design Lab, which is a research and development initiative to solve arctic social challenges. Arctic Design Lab is part of global DESIS¹ (Design for Social Innovation and Sustainability) network. Faculty of Art and Design is leading ASAD (Arctic Sustainable Art and Design) thematic network of the University of the Arctic. ASAD² thematic network has members from Finland, Sweden, Norway, Canada, USA, Russia, Iceland and Scotland. This network connects both educational and research institutions around the questions of arctic sustainability, design and art. Arctic design and service design are in the core of the university strategy. University offers Master's studies in Arctic Art and Design³ and doctoral studies in service design. In practical level, the Faculty of Art and Design works as a competence centre for arctic design.

These projects create an international research and development network that enables and add to the both high-level research and education in the areas of arctic and service design. University of Lapland is leading a number of research projects that investigate service design as means for new innovation and creativity.

Need for Speed in the arctic

One of the service design research projects looks at the use of service design methods to speed up and facilitate innovations into the market. The research project is called "Need for Speed⁴" (N4S). This is a research program run by national centre of scientific excellence DIGILE⁵. One of the aims of this research program is to speed up innovation process in companies. It takes too long time to get the idea into a launched product in the market. In N4S project service design research group has worked closely with number of companies that are developing digital content and services.

¹ <http://www.desis-network.org/>

² <http://www.asadnetwork.org/>

³ <http://ulapland.fi/aad>

⁴ <http://www.n4s.fi/en/>

⁵ <http://digile.fi/en/>

Arctic design is about using design methods to increase innovation, improve livelihoods and develop new solutions to the societal challenges in the arctic region.

Especially important co-operation has developed between two northern players: Bittium and SINCO⁶ (service innovation corner). SINCO enables service prototyping and promotes agile development. Co-operation with SINCO has enabled Bittium to find ways to include end users into the development process. This is a challenge to many

companies that work in business-to-business development mode. The end user perspective not direct but often mediated through several levels of communication. Service design methods can help in discovering in depth user insights and integrating them into the development process. This opens up new design and business opportunities for the companies.

Bittium has been able work with service prototyping in SINCO environment. This enables the use of agile methods and iteration during the development process. Stakeholders and product teams are

able to simulate how the mock-ups or prototypes would work. SINCO environment gives tools and methods for testing and evaluating products and services before they are in the market.

SINCO – an arctic innovation hub

Service design and prototyping are resources that bring new innovation to the arctic circle. SINCO environment has become a crucial resource that enables this new innovation. The value of service prototyping has been also noticed in an international level. For example international companies like Volkswagen and KONE are collaborating with SINCO and visiting this arctic innovation hub. SINCO environments are also being developed also in Chile and Brazil in addition to Finnish sites.

SINCO laboratory is a concrete example how to do service design. SINCO consists of the environment and a set of tools for co-design and service prototyping. In SINCO technological equipment and digital material such as photos, videos, and sounds are used to create the atmosphere of actual service moments for prototyping and re-enactment. As the set-up for prototyping services, SINCO has two 117" background projection screens perpendicular to each other, to provide the background scenery and enable partial, yet immersive, spatiality. This helps to concretize different aspects of service concepts and ideas for participating users by giving them a better idea of what the service experience might contain and feel like. In SINCO, it is possible to simulate all kind of services, processes, and practices.

⁶ <http://sinco.fi/>

Expert article • 2006

SINCO environment enables hands on development work where both the companies and public stakeholders can easily develop and test new service solutions. SINCO also represents a holistic approach to service prototyping and an introduction to a new working culture for designing services.

Innovation for the Arctic

Service design for the arctic region is crucial as there are number of big societal problems. Sparsely populated Lapland, aging and number of small communities trying to figure out solution to service delivery are looking forward to new kind of approach and solutions. Service design offers this with participatory approach that engages stakeholders to not only service design but sometimes also to service delivery. In some European communities service co-creation where community member participate in service delivery are applied.

Service design is looking at not only private sector but also service design in the public sector and ways to transfer innovation from one sector to another. One of the big roles for service design is to facilitate and create new partnerships in addition to new service offerings. The new service offering for the arctic could be developed around simplifying customer journey in health care or developing community centred services for the small villages of Lapland. One of the main things is that these solutions is that they are developed with the community member rather than for them.

University of Lapland is running currently several service design research projects that aim to new innovation for the companies and for the communities. The projects are funded by Horizon 2020 program and TEKES. Service design is a new approach that can be valuable to the arctic. ■



SATU MIETTINEN
Professor
University of Lapland
Finland

RAUNO POSIO

Visit Arctic Europe: making cross-border cooperation

Expert article • 2007

On the global scale, the supply of tourism products are basking in sunshine – and overflowing with city break destinations. In global tourism forums, the visibility of nature – in particular the visibility of Arctic nature holiday destinations – represents a miniscule share of the whole picture. At the same time, global urbanisation has reached the limit whereby the majority of the world's population lives in cities.

Thanks to climate warming, energy and mineral clusters, as well as the potential new maritime routes, the knowledge people currently have about the Arctic and its issues has quickly increased. Over the past few years, the interest travellers have shown in the attractions of the Arctic travel destinations has seen positive development. The global level of safety and security has changed and enhanced the interest of European tour operators and airlines into northern tourist regions.

The time is right for working together

A working group appointed by the prime ministers of Norway, Sweden and Finland published a report in January 2015 named "Growth from the North". The report describes precisely cross-border cooperation in tourism as the joint driver of growth for our nations in the Arctic region. The working group encourages tourism operators in the region to combine forces and to initiate cross-border projects for the development of tourism in the region and tourism marketing. The working group also hoped governments would support wide-reaching cross-border cooperation in the tourism sector.

As an indication on how topical this matter is, in spring 2014 the Finnish Lapland Tourist commissioned a preliminary study project to investigate the potential commencement of a joint project of cooperation between northern Norwegian, Swedish and Finnish Lappish tourism operators. In a groundbreaking meeting of the region's tourism sector and potential financiers convened in August 2014, discussions focused on commencing wide-ranging cross-border cooperation. The willingness to enter into cooperation was intensely evident in the event. As the outcome of the meeting, the operators decided to initiate a project of cooperation covering the three northernmost counties of Norway, the County of Norrbotten, the eastern part of Västerbotten County in Sweden, and the region of Finnish Lapland. This was how the idea of the *Visit Arctic Europe* (VAE) project was born. The competing tourism destinations established that cooperation provides opportunities to develop the sector – its prerequisites for success, the creation of a unified Arctic travel destination, increasing awareness of the region in the markets, and to grow income received from tourism.

Common challenges for tourism in Arctic Europe

In general, the challenges posed for the tourism industry in Europe's Arctic region are similar, regardless of its national borders. Tourism businesses here in the north are usually small in size, so-called micro enterprises, with very limited marketing resources. Combining resources facilitates greater visibility and awareness for the joint attractions of the region. It is unlikely that, for instance, a family in China

differentiates between Finnish Lapland, Swedish Lapland and northern Norway when planning a trip. They see the North as a whole and that is how it should be marketed to them. On their own, none of the providers of specialized tourism services can hope to attract a year-round flow of customers from Europe, let alone from places further afield, but with joint cross-border cooperation scheme the entire region would have a chance to compete against its global competitors in the field of tourism.

It is the opinion of the tourism enterprises of the VAE project area and tour operators that alongside joint marketing efforts the improvement of accessibility is one of the most important keys for success. Despite the North Calotte airports recently receiving an increase in the number of direct incoming flights, particularly from Great Britain, the Benelux nations and German market regions, more flights are still needed especially for boosting low seasons. In addition to the lack of flight seats, tour operators also regard high flight ticket prices and connecting flight timetables as being problematic, as the waiting times for connecting flights in national hubs are often too long for travellers.

There is also a great need for improving the region's internal accessibility, which is indeed just as important as receiving more direct flights to the region. Well-functioning travel chains from airports to travel destinations are services that travellers of today and the future will want, and this includes fluent travel between destinations, also crossing national borders. In order to achieve success, a common platform is required with easily available information about the travel chain where travellers can book and purchase suitable alternatives for themselves.

The global challenge for the tourist industry is its emphasis on seasons – an issue that is emphasised in Europe's Arctic region. The short seasons are disadvantageous for the feasibility of investments and employment. On the other hand, the difference between the high seasons in the region is a fascinating phenomenon in this geographically small area and acts as a great possibility for evening out seasonal fluctuations. In northern Norway the high season is summer, but in Finnish and Swedish Lapland the greatest numbers of tourists arrive in the winter.

Captivating Arctic nature

The Arctic region of Europe holds common attractions and plenty to offer tourists. Of these common attractions, the most popular is the Arctic nature and its phenomena. The Northern Lights light up the skies during the polar night period and the Midnight Sun provides summertime wonder. Our entire northern area covers Europe's last existing wilderness, clean air and a wide range of pure natural produce. Indeed, our culture and way of life are also attractions that appeal to tourists. The most significant of these is the homeland of the indigenous Sámi and its rich culture, covering the area of all three nations.

Expert article • 2007

The Arctic area of each nation also holds its own strengths: Norway has its fjords, king crab and whale safaris, Finland has a highly developed infrastructure at its holiday resorts, a diverse range of nature activities, not to mention Santa Claus, and Sweden has its unique hotel concepts; Icehotel and Treehotel.

Despite tourism becoming a significant source of income in northern Norway and northern Sweden, northern Finland with its successful winter holiday destinations and Santa Claus has more effectively been successful in attracting tourists from all over the world. Nevertheless, all three nations have to tackle the same issues: how to maintain a steady flow of tourists throughout the year, how to get visitors to stay longer, and how to encourage them to return.

A sustainable, responsible future

Above I have described the points of departure for the Visit Arctic Europe project I am leading. The project partners are the Finnish Lapland Tourist Board, Swedish Lapland Visitors Board and Northern Norway Tourist Board. The main funder for the project is the Interreg Nord programme, in addition to which the public sector operators of the region and member enterprises have also funded the project. The project duration is through to the end of 2017.

Utilising the outstanding tourism possibilities of the region, the project workers and project partners together with 90 tourism enterprises are creating a joint Arctic travel destination. We are marketing cross-border travel packages in cooperation with international tour operators with the intention of increasing the turnover and profitability of SMEs in North Scandinavia. We are developing cross-border networking and we are improving accessibility to the region and within the region itself.

Tourism is a globally expanding industry that is believed to continue growth at least through to 2050 – a time that is estimated to have up to twice the number of tourists compared to today. Growth will be best concentrated in areas that take care of their competitiveness. Forecasts also indicate positive trends for tourism in Europe's Arctic region. However, this is by no means something that can be taken for granted in the long run. The competitiveness of our region means increasing operations in line with sustainable development. Particularly here in the north, where our greatest attractions are once-in-a-lifetime experiences related to nature, we need to take very good care of our "diamond", sensitive nature and the quality experiences experienced by customers buying our services.

With reference to the above, it is especially important to take care of the customer volume capacities of our holiday destinations and to spread out tourist flows to the quieter seasons. Achieving success in these efforts will create feasibility for investments, new jobs and generally improve wellbeing in the region.

Once-in-a-lifetime European Arctic experiences welcome you! ■



RAUNO POSIO

Visit Arctic Europe, Project Leader
Arctic Economic Council, Representative
for Finland



SUSAN CHATWOOD & GREG POELZER

Social determinants of health in Arctic regions

Expert article • 2008

Introduction

National and regional governments around the world seek the best health and well-being outcomes for their respective citizens. Governments have enshrined the right to the highest attainable level of health in the charter of WHO and many international treaties, underscoring the central importance governments attach to this policy goal. This formal recognition obliges governments and others to act and to take steps that increase every individual's chance of obtaining good health. These steps include not only access to health care, but also action on the social determinants of health (SDOH) which impact the health of Arctic peoples.

Although governments have made significant strides in implementing health services, they can make much greater gains by also addressing the SDOH. This is especially true in Arctic regions which face complex and interrelated challenges involving overcoming geographic remoteness, addressing specific Indigenous health needs, responding to Indigenous values, promoting health equity, and addressing the relationship between environment, climate change, diet and corresponding mental effects impacts. Many international and Arctic forums have highlighted the need to further understand the impacts of the unique aspects of Arctic regions on health and wellness, and implement appropriate measures to respond. Here we suggest the national and regional governments in the circumpolar north need to take into account the evidence on social determinants of health in the "Arctic context", and to implement the interventions and policies that will address them.

Social determinants of health

Social determinants of health include a number of interrelated factors including, "income and social status; social support networks; education; employment/working conditions; social environments; physical environments; personal health practices and coping skills; healthy child development; gender; and culture". The Commission on Social Determinants of Health (CSDH) recognizes three ways in which inequalities in health can be addressed. These include effort into the control of major diseases, to improve health systems, the reduction of poverty, and complimentary to these two approaches, the need to take action on the SDOH with the broader aim of improving the circumstances in which people live and work¹.

¹ Marmot M. Social determinants of health inequalities. *The Lancet*. 2005;365:1099-104.

Social determinants of health and the Arctic

Although the common social determinants of health identified by different international commissions apply to the circumpolar north, there are SDOH within circumpolar regions that are accentuated, including the impacts of climate change and health disparities among indigenous populations. For Inuit and First Nations in Canada, elements that play a significant role include balance, life control, education, material resources, social resources and environmental/cultural connection². In a study on SDOH, the national Inuit organization in Canada, Inuit Tapiriit Kanatami (ITK), recognizes the influences of quality of early childhood development, culture and language, livelihoods, income distribution, housing, personal safety and security, education, food security, availability of health services, mental wellness, and the environment³.

While the impacts of SDOH in relation to health systems have not been explicitly explored in Arctic regions, there is significant evidence of a disproportionate burden of disease and under-utilization of services in many regions. In addition to the health system itself being a determinant of health, the health system is tightly interwoven with other determinants. Health sectors often take a leadership role in addressing these determinants, either through health promotion and prevention services, or initiatives that support health in all policies approaches, and work across sectors. The influences of other sectors on the social determinants of health need greater recognition, especially those that are relevant to the Arctic context. These determinants include climate change, self-determination, indigenous culture and language, early childhood development, personal safety, food security, environmental exposures, and access to quality and culturally responsive health care. The broad scope of health determinants at play in Arctic regions captures the complexities of the environment and multitude of factors influencing health that extend beyond the health system.

² Richmond CA, Ross NA. The determinants of First Nation and Inuit health: a critical population health approach. *Health Place*. 2009;15(2):403-11.

³ Inuit Tapiriit Kanatami. *Social determinants of Inuit health in Canada*. Ottawa, Canada: 2014.

Many international and Arctic forums have highlighted the need to further understand the impacts of the unique aspects of Arctic regions on health and wellness, and implement appropriate measures to respond.

Expert article • 2008

Current models

The circumpolar north offers at least two distinct models that currently aim to address SDOH: the Nordic countries have good equity - health in all policies approaches, that recognize the determinants of health, and the need to work across sectors. However, within these initiatives there are few policy approaches that are adapted to the Arctic regions in general, or to the indigenous peoples of the region. By contrast, North American systems do not have much alignment at the national level that directly targets health equity, or health in all policy approaches, but is active in areas of indigenous self-determination, and recognition of the needs related to indigenous peoples' engagement in decision making related to health care.

Where improving health and well-being outcomes in Arctic regions is a shared policy goal, there is a need to build on what is currently working, share best practices, and develop policy instruments that address SDOH with specific attention to the Arctic context. Through international forums opportunities exist among circumpolar nations to work together and develop an evidence base that informs more holistic approaches to health services, and action on SDOH in Arctic regions. Through such processes we can begin to collectively target shared challenges and improve health and wellbeing in Arctic populations. ■

**SUSAN CHATWOOD**

Executive and Scientific Director
Institute for Circumpolar Health Research
Assistant Professor
Dalla Lana School of Public Health
University of Toronto
Canada

**GREG POELZER**

Professor
School of Environment and Sustainability
University of Saskatchewan
Canada

Susan Chatwood and Greg Poelzer are Fulbright Arctic Initiative Scholars.

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ILONA METTIÄINEN

There is no “one-size-fits-all” in Arctic climate change adaptation

Expert article • 2009

In the global discourse on climate change the Arctic is often presented as one uniform region. Often the focus is on business opportunities opening up as the Arctic sea ice melts, or on vanishing glaciers and the fate of polar bears. What is often missing from the discussion are the Arctic inhabitants' and communities' viewpoints. However, lately some Arctic organizations' leaders and experts as well as academics have increasingly pronounced that the ways in which climate change will affect Arctic communities differ from one part of the Arctic to another: what works in one place may not work in another one.

Climate change adaptation and mitigation work is conducted on multiple geographic and administrative levels for instance by making climate change strategies. As the national and global levels can be too far away and even insensitive to regional needs or differences within one country, also regional (e.g. county or province level) and local level climate change strategies are needed for as a means of planned adaptation. In the strategies, adaptation and mitigation may be addressed in different proportions.

The purpose of climate strategies is to reduce uncertainty on the regionally specific socio-economic impacts of climate change and to direct action towards common climate mitigation and adaptation goals. In climate strategies, regions can plan and find out how greenhouse gas emissions could best be reduced in the region and how the region-specific negative impacts could be best avoided. Climate strategies are also needed for setting common goals concerning how to best utilize the opportunities opening from climate change in order to bounce forward with regional development in climate change aware ways. The best adaptation actions can be called “adaptigation”, i.e. adaptive actions that also contribute to climate change mitigation.

As climate strategies gain increasing interest and are formulated in different parts of the Arctic, also the question of learning from one region to another has been raised. For instance the Barents Euro-Arctic Council launched an action plan on climate change in 2013, in which an over-arching goal is to support the formulation of regional climate strategies to all Barents member regions. The Nordic member regions of the Barents Euro-Arctic Council have already formulated regional climate strategies. Also some cities within the member regions have made local climate strategies or programs. The work continues currently with the support of the Nordic Council of Ministers.

Within the Barents region there are similarities in the climatic and other natural conditions, as well as in the projected climatic changes. Also the importance of extractive industries for regional economies unites the Barents region. While there are many useful lessons to be learned from one member region to another in terms of adaptation and mitigation actions, adaptation is also a highly region specific issue. Hence, all best practices identified in one region cannot be merely copy-pasted to other regions even within the Barents region, but differences in community, livelihood and land-use structures as well as planning and administrative cultures must be considered. Yet, some recommendations for regional climate strategy work are supported both by practitioners and scientific literature.

For instance, intensive and wide collaboration with regional stakeholders throughout the planning process of regional climate strategies can be recommended. Local and regional stakeholders should be welcomed to join the climate strategy work from the very beginning in order to ensure sufficient knowledge base, best outcomes and support to the climate strategy. Collaborative planning processes of climate strategies may result as bottom-up climate adaptation approaches as well as informal networks of the participants. Wide collaboration also ensures the inclusion of indigenous and other local and traditional knowledge such as reindeer herders', tourism entrepreneurs' and other practitioners' knowledge into the climate strategies, as regionalized climate projections are elaborated by the participants within the planning process. This may bring climate work closer to Arctic communities' everyday life, which can also encourage people to take action.

A crucial part of climate strategy implementation is mainstreaming the climate viewpoints into other regional development and land-use related planning and decision-making. Climate change is, after all, only one of the drivers of change and interacts with other trends and factors. Particularly land-use planning can help to reduce the growth of greenhouse gas emissions from commuting and other transport and to restrict dwelling areas from expanding to flood prone areas. In the implementation phase also the timing of the climate strategy work in relation to the formulation processes of other strategies and land-use planning projects may prove significant.

To conclude, regional and local level climate strategies are advisable for planning mitigation and adaptation to climate change in the Arctic. It is important to acknowledge the diversity in climate change impacts and hence also adaptation needs and solutions between different parts of the Arctic – there is no “one-size-fits-all” in climate adaptation. ■



ILONA METTIÄINEN

Researcher
Arctic Centre
University of Lapland
Finland

VELI-PEKKA TYNKKYENEN

Russia's Arctic paradoxes

Expert article • 2010

The Arctic arouses many associations and emotions. For elderly people, it appears as a Cold War battlefield with submarine chases, closed military compounds and local environmental problems. Due to the development that we experienced in the 1990s and 2000s, among younger generations, the Arctic primarily evokes thoughts on 'soft' topics, such as cooperation between inter-governmental institutions, non-governmental organisations and Northern indigenous people.

During the last decade, the Arctic cooperation agenda emphasising the grass-roots level has witnessed the revival of so-called 'hard' issues. There are high hopes that environmental change will open new resources for extraction, and in the tow of economic ambitions, geopolitics is once again taking a more pivotal role in defining the Arctic. The 'Arctic Paradox', i.e. the fact that climate change enables the exploitation of new Northern energy resources that then further intensify the climate change, seems to be being ignored as the great power discourse becomes stronger. In addition, X-factors related to the Northern cryosphere – the 'Sphere of the Ice' – under a changing climate, such as the direct and indirect societal and environmental effects of melting permafrost, are being papered over while the economic prospects are exaggerated. This seems to be particularly true in Russia, where the Arctic is actively being turned into a geopolitically more central area that is interwoven in a novel way with nation-building and Russia's identity construction as a great power.

Russia's great-power ambitions coalesce in the Arctic at least in three ways. Via the Arctic, Russia is staking out and palisading a new territory that emphasises traditional sovereignty. Moreover, it aims to become an economic great power with the help of the region's natural resources and sea routes, and to strengthen the image that Russia is a global energy superpower. Despite all this Russian blustering *Lebensraum*-thinking, the Arctic policy of the future will also be defined by cooperation. Without external technical knowledge and skills, Russia's Arctic rush cannot succeed.

At the moment – characterised with low price of oil and Western sanctions that hit hard on Russia's future Arctic energy developments – Russia faces not one but three Arctic paradoxes that need to be confronted in a way or another. The global Arctic paradox, i.e. the ethical problem related to the greenhouse gasses released from hydrocarbon extraction and use that warms especially the Arctic climate enabling wider exploitation of Arctic hydrocarbons, has to be reflected upon, if not domestically then for the international community.

The national Arctic paradox is of less profound nature, as it is linked to the fluctuating global price of oil and potentially changing ideas about Russia as a Great Power. The national Arctic paradox is caused by the need for Russia to be visibly present in the Arctic and along the Northern Sea Route (Great-Power ambitions), as well as the fact that Russia has become economically, politically and even culturally chronically dependent on hydrocarbons. These factors push the Russian state to promote and finance unviable oil projects in the Arctic.

Finally, on the grass-root level, in the territories occupied by the Russian extractive industries, we see the local Arctic paradox in function: Hydrocarbon-based workers' towns are well maintained and even indigenous communities are 'subsidised', i.e. compensated for the economic losses the industries produce, but the long term economic and sociocultural strategies that reach beyond the time-frame of hydrocarbon industries are missing. This local Arctic paradox 'discusses' well with the general paradox facing the Russian society – how to prosper after oil?

Therefore, more knowledge is needed on how Russia's energy policies are forming in the riptide of domestic factors, global companies and international politics, and how environmental and social responsibilities are being taken care of.

It is very likely that we will see a balance between emphasising 'hard' and 'soft' topics in Russia's Arctic policies. That is why it is possible to understand Russia's age-old tendencies to both open itself to the world and to huddle within and shut itself away through the Arctic. Because of the 'bases-loaded' situation delineating Russia's Arctic policies, and the compelling nature of the three Arctic paradoxes facing Russia, the course of action that is taken in the near future will reflect more generally Russia's policy choices. ■



VELI-PEKKA TYNKKYENEN

Professor of Russian energy policy
University of Helsinki
Finland

DARIA GRITSENKO

What does the case of Sabetta tell us about the relationship between energy and regional development?

Expert article • 2011

Economic development in the Russian Arctic is primarily associated with maritime activities, oil and gas exploration, fisheries, and shipping. In parallel with the receding icecaps that hold a promise of an easier access to the Arctic resources, the global economic landscape has been extending towards the High North. During the past fifteen years, there was a revival of Russia's commercial activity in the Arctic. Rich natural resource deposits located on- and offshore, as well as the commercial potential of the Northern Sea Route (NSR), were declared as a guarantee of Russia's future economic prosperity and influence in world affairs. Yet, the large-scale industrialization of the Russian Arctic may have both positive and negative economic, social, cultural, and environmental implications on local societies.

In the research project "Russia's final energy frontier – Sustainability challenges of the Russian Far North" a team of leading scholars from Finland and Japan heads to explain how energy policy in the Russian Far North affects socioeconomic development and the environmental situation in the area. During September 2015, the team went on a trip to the Yamalo-Nenets Autonomous Area to conduct fieldwork on the case of Yamal LNG – one of the most significant ongoing Russian Arctic projects. It includes a large LNG (liquefied natural gas) plant, capable of producing 16.5 million tons of LNG per year, the international airport Sabetta (operational since 2014), and a port Sabetta constructed on the western shore of the Ob estuary. The port is a joint venture between Novatek - a large producer of natural gas - and the Russian government.

Sabetta is a key to success of Yamal LNG project. The absence of adequate onshore infrastructure, primarily ports and terminals, is an obstacle to furthering prospects of the Arctic energy development. Sabetta was initially conceived as a specialized LNG port; but already in the planning stage, the public partners emphasized benefits that would be acquired from developing Sabetta as a multifunctional deep-water port. Port Sabetta is considered equally well-positioned to serve the trade flows to/from Europe, America and Asia, and in addition sea-going vessels traversing the NSR is can receive 'river-sea' vessels from the Ob river. Sabetta, thus, has a potential to serve as a node in the NSR structure.

Sabetta is a case in point when pondering the relationship between energy and regional sustainability. In order to understand how a construction of a major port will affect Yamal's nature and society, it is crucial to assess the balance between economic, social and environmental aspects of port development. Sustainable development means creating long-term benefits, thus, achieving a balance between investments and income (economic sustainability), resource base and exploitation rate (environmental sustainability), opportunities created and lost for the local population (social sustainability) on a time horizon covering several decades.

To provide for sustainable regional development, energy companies, policy-makers and other actors involved in the development of Sabetta port will have to seize the enabling opportunities and minimize the negative impact of the constraints. Three major factors that

condition success of Sabetta port as an international multifunctional port are the development of hinterland, political regime stability in the times of global energy restructuring, and the unpredictable nature of global climate change.

The development of adequate inland infrastructure connections to provide for port hinterland is crucial to allow diversification of port activity. The absence of railways cuts Sabetta off the projected hinterland. Yet, construction and maintenance of railways in the High North is very expensive. Moreover, due to increased seasonal variability and thawing of permafrost caused by the increase in global temperatures, building on Arctic soil poses certain engineering challenges. The climatic conditions also limit the use of road transport and inland waterways. New solutions will be required to make Sabetta a multifunctional port rather than an LNG terminal.

In the institutional dimension, the regime stability is paramount. Ports require large capital investments that are unlikely to be repaid, thus state involvement and continuous support is crucial for project's success. Whereas for private sector cost recovery means regaining the investment's value, for public sector a broader set of socio-economic gains from port investment shall be considered. The stability of regime means stability of policy priorities, which, in its turn, is crucial for long-term large capital investment, such as in ports.

Finally, the impact of climate change is highlighted, as its unpredictable and still ill-understood consequences complicate the operational conditions and create both political and economic uncertainty. Even if sea ice melting continues at the present speed, the number of extreme weather events and unpredictable drifting ice are set to increase. Thus, the prospect that common open-water ships, comprising the vast majority of the world's fleet, will enter the Arctic Ocean – and call at Arctic ports - remain speculative.

Sabetta as a part of Yamal LNG project is expected to create a wide range of socioeconomic benefits at the local level: revitalize economic activity, attract transshipment cargo, bring jobs and tax revenue into the local budget. At the same time, the indigenous peoples and their cultural heritage, as well as the environment, are likely to experience also negative consequences of this intensive industrialization, including pollution, loss of habitats, and disruption of traditional lifestyle. In particular, if the critical conditions enlisted above will not favor successful port development and diversification, the image of Sabetta as a 'new powerhouse in Yamal' may remain just an imagination. ■

**DARIA GRITSENKO**

PhD, Postdoctoral Fellow in the project "Russia's final energy frontier – Sustainability challenges of the Russian Far North" Aleksanteri Institute University of Helsinki Finland



ANDREY SHADURSKIY

Russia's LNG projects in the Arctic: still on track?

Expert article • 2012

Less than a decade ago, as oil and gas companies were tapping more and more elusive fields in the drive to satisfy the galloping demand, Arctic energy projects used to be, ironically, one of the hottest topics. The recent news are just the opposite: in April 2016 the biggest US companies forfeited \$2.5 bn. worth of licenses for drilling in the US Arctic. Earlier, Shell had abandoned an \$8 bn. project in the Chukchi Sea and quit the bid for a license in the Norwegian sector. In all the cases, the reasons can be summed in the three main factors: lower hydrocarbons prices, rising costs, and the environmental concerns.

Russia's ambitious energy policy goals are still bound to the success of Arctic projects. It is particularly true for the objective that now looks more and more distant from 2020 it has been planned for – reaching a 12% share of the world's LNG supplies. What is the current state of Russia's LNG projects in Arctic, and will they allow Russia to capture a significantly higher share of the market?

There are three major LNG projects in the Russian Arctic. The first is Yamal LNG, which by May 2016 is reported to be more than 50% complete, putting this Russian project in the category of its own. The second is prospective Arctic LNG at the Gydan Peninsula, closely linked to the constructed infrastructure of Yamal LNG. The third is smaller-scale and long-disputed Pechora LNG, which, however, has recently become more promising again and comprises one of the most interesting cases helping to understand Russia's LNG export policy.

Yamal LNG, operated by an international consortium headed by Novatek is a mile ahead of other projects, although its recent progress has been marred by a number of severe problems and the chances for success are still disputed. Besides the generally negative market conditions and the rising costs for all LNG projects alike, Yamal LNG has been hit by the Western sanctions towards Russia, both financial and technological.

On the financial side, Yamal's efforts to find investment after Novatek was included into the US sanctions list have been remarkable. There was clear imbalance in the bargaining power between Novatek and the Chinese investors, which had a lot of alternative options for securing natural gas supplies. This imbalance resulted in numerous delays of announcing the deal as well as drastically changing volumes of investment at stake. The deal was finally concluded in spring 2016 with the funding expected to reach the project already in the summer. There are, however, concerns that the resulting agreement could reach well beyond the project, pave a road to China's further economic expansion to the Arctic and, in the long run, be of questionable value to Russia.

As much as the financial problems of Yamal LNG seem to have been solved, the technical remain under scrutiny. The Chinese investors can surely support the project with funding, but their technical expertise is questioned by experts, despite 80% of equipment in the project is now planned to be of Chinese origin.

Finally, doubts persist about profitability of LNG exported from Yamal. The project has completed creation of the portfolio of long-term supply agreements, but most of clients are located in Asia which is not the premium market it used to be when Yamal LNG was conceived. Low oil prices, dragging down the price of LNG in Asia, are also very likely to stay in mid-term. Last, but not the least Yamal LNG launches parallel to the wave of major expansion of LNG supply capacity in an already oversaturated market.

All the concerns related to Yamal LNG apply equally to the next project of Novatek –

Arctic LNG, to be located in immediate proximity and initially planned to benefit from the same infrastructure. The resources controlled by Novatek in the adjacent fields are of more than 2 tcm of natural gas. All the three prospective trains of Arctic LNG were granted rights to export LNG already in the end of 2014 and the first train with the capacity of 5.5 mtpa is planned to go online in 2022. The feasibility study continues and decision on a potential design of the first train may follow this year. Novatek is considering use of a floating LNG production plant and is reportedly in negotiations with Shell on participation in the project. The financing may come from Japanese energy companies and banks. The success of the \$30 bn. enterprise will however depend also on the future of development of LNG technologies in Russia. Russian Ministry of energy proposed in May 2016 to establish a domestic LNG engineering center to satisfy technological needs of future projects and Novatek has recently established a construction company in Murmansk that may be serving the next Arctic LNG projects. Contrary to Yamal LNG, Chinese companies are not mentioned as potential partners for Arctic LNG, possibly reflecting questionable experience from the cooperation.

The third project, Pechora LNG, devised by Alltech back in 2010, had have little chances to go online before Rosneft decided to participate in May 2014. Still, even with Rosneft's interest involved, Pechora has become an object of lobbyist struggles and could not get an approval for potential LNG exports: the Russian government initially clearly opposed a potential competitor to Yamal LNG. The difficulties with getting the approval were reflected by a long process of creation of the joint venture by Alltech and Rosneft, finalized only in the end of 2015. Rosneft is still to decide on the implementation of the project which depends on if the changes are made in summer of 2016 into the federal law on gas exports, allowing LNG exports for Pechora.

Russia's ambitious energy policy goals are still bound to the success of Arctic projects.

Expert article • 2012

In the current market conditions, building a client portfolio will however be no easier than acquiring the right to export – this will be another major issue in the feasibility study.

The case of Pechora indicates that a coherent LNG export strategy is still lacking in Russia. It may be changing: the manual approach to coordination of the major players: Gazprom, Novatek and Rosneft is not working. There is now a stronger trend evident towards real liberalisation of LNG exports, not the formal one when the government and the presidential administration seemed to oppose the decentralization of exports despite taking first legal steps of allowing it in 2013. Gazprom continues to confront liberalisation of LNG exports, claiming that potential competition from Russian LNG exporters was one of the major hurdles in the negotiations over the price of pipeline exports with China, but this claim is hardly credible - taking into account the limited role of Russian LNG for the Chinese market.

Contrary to Gazprom's position, Russian government may be realising that without liberalisation of exports the initial aim of capturing 12% of the world LNG market will be unattainable not only by 2020, but also in any foreseeable future. The success of all the future Russia's Arctic LNG facilities will strongly depend not only on external factors such as oil and gas prices, or the technological and financial sanctions, but also on liberalization of exports and induced effective cooperation of all the major Russian energy companies instead of a lobbying dogfight. ■



ANDREY SHADURSKIY
Senior Lecturer
School of International Relations
St. Petersburg State University
Russia

Pan-European Institute

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TOMOKO TABATA

Demographic trend in the Russian High North

Expert article • 2013

I have analyzed the demographic trend of the Russian High North in the Japan-Finland bilateral project entitled "Russia's final energy frontier – Sustainability challenges of the Russian Far North," funded by the Japan Society for the Promotion of Science (JSPS) and the Academy of Finland (2014-2016).

Eight regions are included in the Russian High North (Russian Arctic zone), according to the State Program "Socio-economic development of Russian Arctic zone until 2020," adopted by Government Resolution No. 366 dated April 21, 2014. They are the entire territories of three regions (Murmansk Oblast, Yamalo-Nenets Autonomous Okrug (AO), and Nenets AO) and part of five regions (Sakha Republic, Komi Republic, Arkhangelsk Krai (excluding Nenets AO), Krasnoyarsk Krai, and Chukotka AO). Since only one region of the Komi Republic is included in the Russian High North, I excluded the Komi Republic from the following analysis. Two regions, i.e., the Sakha Republic and Chukotka AO, are also included in the Far East by the administrative definition of Russia.

In the period from 1990 to 1999, the total population of these seven regions decreased by 812 thousand, of which 810 thousand were due to outflow of the population to the other regions of Russia. In comparison, the decrease in population in this period in the Russian Far East was 1,131 thousand, while outflow of the population was 1,137 thousand. There is a substantial amount of literature explaining why such outflow of population occurred in the Far Northern and Eastern regions in this period, including reduction in subsidies to local budgets and factories, closure of factories and towns, etc.

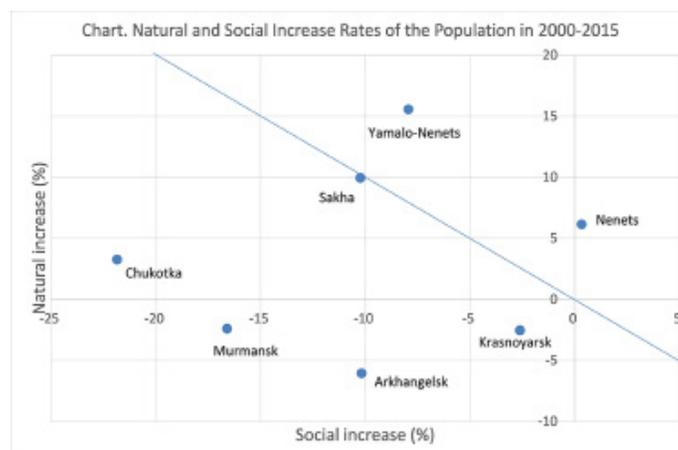
During the next period from 2000 to 2015, the populations of the Far North and East decreased by 527 thousand and 718 thousand, respectively, of which 523 thousand and 576 thousand respectively were due to outflow of the population. This indicates that depopulation and outflow of the population continued in the Far Northern and Eastern regions, although the annual rate of decrease declined considerably. It should be noted that a huge amount of government money was invested in the Far Eastern regions in this period through federal programs for regional development, as well as oil and gas development projects.

The demographic trend in the Russian High North is different from region to region. We can distinguish seven regions in this zone according to the dynamics of population by decomposing it by natural increase (births minus deaths) and social increase (inflow minus outflow of the population) in the period 2000-2015. The attached chart shows for example that, in Yamalo-Nenets AO, natural increase in this period amounted to 15.6 percent of the population at the beginning of 2000 and social decrease (net outflow of the population) was 7.9 percent. As a result, the population in this AO increased by 7.6 percent in this period. The slanting line in this chart indicates that population growth is zero on this line (net natural increase equal to net social decrease). This chart demonstrates that only in two regions, i.e., Yamalo-Nenets and Nenets AOs, did the population increase in this period. These two regions have developed thanks to their oil and gas production. It should be added that employment increased only in these two regions among seven regions of the Russian Arctic zone.

These two regions are also characterized by high wages and high growth of wages in Russia. In addition, Yamalo-Nenets AO is one of the youngest regions in Russia in terms of average age of population, which is the reason that the natural increase is so high in this district.

In the Sakha Republic, depopulation was the lowest (0.3 percent) owing to its high natural increase (high birth rate). In Krasnoyarsk Krai, the rate of decrease in the population was not very large, either (5.1 percent). These two regions are known to be rich in mineral resources: diamonds and gold in the Sakha Republic and non-ferrous metals in Krasnoyarsk Krai. In these two regions, oil production began to increase thanks to the construction of the East Siberia-Pacific Ocean oil pipeline.

In the other three regions, depopulation was a serious issue, largely due to the high rate of outflow of the population, in addition to the high rate of natural decrease. This seems to indicate difficulty in socio-economic development in the regions in the High North, not rich in energy and mineral resources. In fact, in Murmansk and Arkhangelsk, the populations have decreased every year since 1990. It should be recalled that the northwestern part of Russia is characterized by its highest mortality rate among the regions of Russia, mainly due to deaths caused by diseases of the circulatory system. Moreover, in these two regions, employment has decreased in tandem with the decrease in population, resulting in continuing outflow of the population.



I am planning to further analyze the dynamics of population and employment trends in the Russian Arctic area, taking into consideration the structure of employment by the industrial sectors, and investigate the reasons that depopulation is continuing in this area. ■



TOMOKO TABATA

Ph.D Economics, Associate Researcher
Hokkaido University
Japan

MASAHIRO TOKUNAGA

The Russian Arctic and environmental discourse

Expert article • 2014

The natural environment of the Russian Arctic region has been damaged by intensive resource development and military activities during the Soviet era. A Russian commentator once described the Soviet Arctic development approach as 'the more we take from the Arctic, the better' (A. Roginko in *The Soviet Environment: Problems, Policies and Politics*, edited by J. Stewart). In addition to these negative influences of the Soviet regime, we are now facing new environmental risks mainly due to the advent of the hydrocarbon sector in the Arctic Circle. Although it seems self-evident that the exploitation of fossil resources in a fragile natural environment like the Arctic Sea has a huge negative impact on the local ecosystem, the ability to explore and interpret this issue is highly dependent on the social context in a given society. One society might take strict countermeasures against conceivable environmental risks, while another might prefer to exploit underground resources for maximum financial gain, rather than preserve nature. A third society might proceed to exploit with the aim of fulfilling national and political interests, irrespective of profitability. A perceptive discourse and an appropriate policy response must be based on the specific local context as well as historical background. Furthermore, any discourse is not time-invariant.

In fact, we have already seen this situation over the issue of climate change. Views regarding climate change are diverse, with policy responses being far from consistent across different parts of the world. The European Union (EU) has been the front runner as most of its citizens acknowledge that global warming risks are real, climate-related science and research are widely accepted, and alleviating its negative impacts is high on their political and economic agenda. In the United States (US), on the other hand, there are still many people who are sceptical about global warming and climate change science. Their voices have received much favourable coverage in mass media, forming a major internal discourse. Consequently, the issue of climate change was excluded from their diplomacy in the early 2000s when they decided to withdraw from the Kyoto Protocol. Since then, this issue has been discussed mainly in academia, rather than in Washington, until President Obama took office. As for Japan and Russia, both countries rejected their second commitment period from 2013 to 2020 as ineffective. The countries that were sceptical about an extension of

Kyoto Protocol appealed for the establishment of a new international framework with the participation of all major economies including the US and China, the two major emitters (this task was realized in principle in the Paris Agreement last year). Interestingly, however, we have witnessed very different climate change discourses offering a conflicting perspective, from Japan and Russia. Japan's discourse has been in line with the EU's, in principle, although it has failed to gain enough support from the business community to become a 'greener' superpower in the international arena. Russia's view on the climate change issue is unique, as many people, including influential politicians, high-ranking officials, leading scientific researchers and others, have raised questions about the reliability of climate change science, seeing it as a sort of political conspiracy (led by the EU, among others). For at least a part of the population, climate change is not yet a scientific phenomenon, but a political message or ideology that has originated out of the West.

Focusing back on the Arctic issue, there may be diverse discourses on the natural environment and its utilization. A conflict of views might be hard to resolve, considering the potentially huge benefits from Arctic development and the potentially equally enormous negative impacts on the Arctic environment. Moreover, the 'Russian factor' appears to be more influential. Among the five coastal nations along the Arctic Sea, Russia has an overwhelming part of the area under its control. This has its roots in the history of Arctic development. Looking at the Arctic Circle on the world atlas, it can be seen that many of the places have been named after Russian explorers (e.g., Laptev Sea, Bering Strait, Dikson city, etc.) and political events related to the Soviet Union (such as October Revolution Island and Bolshevik Island of the Northern Land Archipelago in the Arctic Ocean). Simply put, the Arctic is like Russia's backyard. Their voices are expected to carry a lot of weight in any discourse on the Arctic environment. The discourse on climate change has been a product of the West, having kept Russia away from the main discourse arena. However, the discourse in Russia is likely to have an inevitable influence on the discussion regarding the Arctic development and environment, not only within the country, but also in the international community.

Using a Russian media database and first-hand observations, my research work shows that the Russian discourse on environmental issues is becoming homogeneous with the Western environmental discourse.

Expert article • 2014

For outsiders, Russia may appear eccentric with regard to its environmental discourse. 'An increase of two or three degrees would not be so bad for a northern country like Russia. We could spend less on fur coats, and the grain harvest would go up.' This statement in Putin's 2003 speech impressed upon the rest of the world that their views on the environment were very different from that of the West. Regarding their stand on the discussion about the environmental issues in the Arctic, considering that Russia stands to gain a lot from the Arctic development, their opinion might be along the lines of 'the warmer the Arctic becomes, the better'. In fact, we can sometimes find such views in their media. However, it is *not* a mainstream opinion, even within their country. According to my survey of the Russian discourse on the Arctic environment, their official statement is similar to the EU's Arctic policy: '[it] focusses on advancing international cooperation in responding to the impacts of climate change on the Arctic's fragile environment, and on promoting and contributing to sustainable development...' (cited from *Joint Communication to the European Parliament and the Council* on April 27, 2016). On the other hand, President Putin, in his welcome speech to the participants of a conference held in Arkhangelsk last year, said that 'Russia has a special responsibility for the Arctic. One of our priorities is to keep the balance between the economic activity and preservation of the unique environment...' (cited from the website of *Barents Observer*). Interestingly, his opinion on climate change has radically changed in the past decade. In an

official address during COP21, he said, 'climate change has become one of the gravest challenges humanity is facing... Russia has been contributing actively to addressing global warming. Our country is taking the lead.' (cited from the website of *New York Times*). Using a Russian media database and first-hand observations, my research work shows that the Russian discourse on environmental issues is becoming homogeneous with the Western environmental discourse. This is not to say that Russia is taking as much action as, say, Germany. There seems to be a major gap in the performance between these two countries with regard to climate change policy or environmental policy in general. However, any change in policy begins with a shift in the relevant discourses and Russia seems to be heading towards mainstream environmental discourse. Their outlook towards the environment is apparently unlike it was a decade ago. We need to acknowledge this change, when we talk about Russia's Arctic development and/or environmental policy. ■

MASAHIRO TOKUNAGA
Ph.D., Vice Dean and Professor
Faculty of Business and Commerce
Kansai University
Japan

Pan-European Institute

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SHINICHIRO TABATA

Research on the socio-economic development of the Russian Far North

Expert article • 2015

In *Baltic Rim Economies* (No. 5, 2014), I introduced the Japan-Finland bilateral project entitled "Russia's final energy frontier – Sustainability challenges of the Russian Far North," funded by the Japan Society for the Promotion of Science (JSPS) and the Academy of Finland. The period of the project is from September 2014 to August 2016. In this report, I would like to summarize the results of this project, although a roundup symposium on the project will be held in Sapporo on July 7-8, 2016.

The aim of this project is to examine the sustainability of the development of the Russian Far North based on oil and gas development. Since the Russian Far Northern areas are vast and significantly different from each other, I have distinguished three types of regions. The first is the regions where oil and gas production is a driving force of their socio-economic development. This type includes Yamalo-Nenets, Khanty-Mansi, and Nenets Autonomous Okrugs (AOs). The second type is the regions where mineral resources other than oil and gas are their driving force, including such regions as the Sakha Republic and Krasnoyarsk Krai. The third type is other regions that are not so rich in mineral resources and that are trying to take advantage of their external relations with neighboring countries. This type includes Arkhangelsk and Murmansk Oblasts.

We have analyzed data on economic development, oil and gas exploitation, the Northern Sea Route, the effects of these developments on the environment of the Arctic and lives of the indigenous people, attitudes of businesses and governments toward these effects, demography, etc. We conducted joint fieldtrips in Arkhangelsk and Murmansk Cities in September 2014, and in Yamalo-Nenets AO in September 2015. In addition, I visited Yakutsk and Yuzhno-Sakhalinsk in October 2015 through different projects. From previous research on the Russian Far Eastern regions, we have found that Sakhalin Oblast belongs to the first type, and that Primorsky and Khabarovsk Krai reside in the third category.

Concerning the first type of regions, since 2000, their economic growth has been outstanding among the regions of Russia in terms of GDP, industrial production, investment, revenues of regional budget, etc., especially when we look at their per-capita indicators. In terms of per-capita GDP, Nenets, Yamalo-Nenets, Khanty-Mansi, and Sakhalin ranked first to fourth among the Russian regions in 2014. Needless to say, this was thanks to increasing oil and gas production and exports, and increase in their prices in the world market. Since oil and gas companies and local governments have sufficient financial resources, they seem to have paid great attention to protection of the environment and the lives of the indigenous people. We visited a reindeer meat-processing complex and fish-raising farm in Yamalo-Nenets AO, both of which receive enormous financial and other support from gas firms and local government, in order to facilitate the economic activities of the indigenous people in the former case, and to preserve the ecosystem in the latter case.

With respect to the second category of regions, local governments try to diversify their industrial structure by developing oil and gas fields, in addition to the development of their traditional mineral

resources, such as diamonds, gold, and ferrous metals. Krasnoyarsk Krai and the Sakha Republic are now producing a considerable amount of oil and exporting it through the East Siberian-Pacific Ocean oil pipeline, constructed in 2011, to China, Japan, and South Korea. The share of federal districts of Siberia and Far East in oil production in Russia increased from 4.0 percent in 2005 to 12.9 percent in 2013.

As for the third category of regions, they are looking forward to the development of the Northern Sea Route (NSR), since they are located at the western end of this route. In our project, we have paid special attention to issues related to the NSR, because this will have a great impact on the development of the Arctic zone as a whole in the next several decades to come.

I am optimistic about the future development of all of these three categories of regions: they have great potential for further economic advancement. We should, however, take into consideration the negative impacts of the two shocks caused in 2014: the drop in oil prices and the economic sanctions adopted in relation to the Ukrainian conflict. The decline in oil prices has considerably decreased the profits of oil and gas companies, as well as the revenues of federal and regional governments, which had been the main financial resources behind the socio-economic development in the regions of the first and second categories. The oil price drop is having a negative influence on the use of the NSR, since the decrease in fuel prices diminishes the advantage of a shortened sea route, compared with the Suez Canal route, and reduces incentives to explore oil and gas reserves along the NSR. In addition, the sanctions against Russia have had a considerably negative influence on the development of the oil and gas fields in the Arctic Sea by banning exports of necessary technology and equipment and by prohibiting credit provision to oil and gas companies of Russia. All of these changes of circumstance blurred the perspective of future development in the Arctic regions in Russia.

Although our project mentioned above will soon end, our new project will fortunately enable us to continue the research in this direction. This new project is a national project entitled "Arctic Challenge for Sustainability (ArCS)," funded by the Ministry of Education and Science for the period 2015-2020. I am the principal investigator of one of the sub-programs of this ArCS project, entitled "People and Community in the Arctic: Possibility of Sustainable Development." We are planning to conduct multi-disciplinary research in Russia together with foreign scholars, including our Finnish and Russian colleagues. ■



SHINICHIRO TABATA
Director and Professor
Slavic-Eurasian Research Center
Hokkaido University
Japan



EINI HAAJA & HANNA MÄKINEN

Need for international research on international business in the Russian Far North

Expert article • 2016

The Russian Far North is highly interesting yet uncertain region from the business perspective. The region provides considerable opportunities for economic activity, for instance in mining, oil and gas production, and shipping infrastructure development. However, the current economic downturn and the economic sanctions imposed by the EU considerably hinder the progress of the mega projects planned in the Russian Arctic.

The Pan-European Institute has participated in the Finnish-Japanese research project "Russia's final energy frontier – Sustainability challenges of the Russian Far North" funded by the Academy of Finland and the Japan Society for the Promotion of Science. Established under Turku School of Economics, we have employed the business perspective towards this project topic. In particular, we have studied how foreign firms, both SMEs and MNEs, view the Russian business environment.

At the time when the project was initiated, our interests were solely in the international developments in the Russian Arctic and there was no sign of the crisis in Ukraine. Although we can say that the crisis is unfortunate and unwelcome, it has further spiced up our research by turning the Russian Arctic into an increasingly unpredictable and thereby interesting business environment. The eyes of the world are increasingly pointed towards the developments in this internationally attractive yet sensitive region. During our longitudinal data collection along the project, we have had the pleasure of viewing it not only through our own eyes but also through those of business representatives.

One of our research objectives has been to follow the views of Finnish SMEs regarding their interests and actions in the Russian market. Our focus has been in the SMEs operating or aiming at entering the Russian maritime, offshore and energy sectors where the industrial projects tend to be directly or indirectly related to the economic activities in the Far North. We have interviewed a group of firms repeatedly over the research period, and since the crisis situation has continued, most of the firms have not made large moves towards the Russian market. They currently focus on entering and/or operating in other markets, and wait for the times to get better in Russia. However, some firms still actively attempt to establish new business relations in Russia while others, in turn, have decided to completely abandon the market. We have concluded that the reason for some entrepreneurs entering and some abandoning the market is their different mental images on the market in question. Each entrepreneur or manager views

the market through his/her mental image of the foreign market. This image is constituted of three dimensions: experiences on the market, the firm strategy and resources, and the current attractiveness of the market. These theoretical findings are discussed in detail in the academic articles produced along the project (see www.utu.fi/pei).

Another aspect of our research has been the Russian business environment for foreign MNEs. Here we have focused our research on the energy sector. In particular, we have analysed the sources of political risk in two projects exploiting natural resources in Russia, i.e. ExxonMobil's investments in the Kara Sea project and Total's investments in the Yamal LNG, by reviewing media coverage on these projects. The analysis of the media coverage has revealed

that the Ukrainian crisis and ensuing challenging host and home country relations appear as the main sources of political risk in these cases, resulting in indirect political risk exposure. This applies particularly to the case of Exxon; although the Russian Government did not directly cause the stalling of operations in the Kara Sea project, it was Russia's actions in other parts of the world and the following international dispute that resulted in Exxon's home government causing the suspending of operations through sanctions imposed on Russia. On this basis, we have concluded that the Kara

Sea project currently suffers from the materialisation of political risk in the form of coerced stalling of the operations. The Yamal LNG project faces political risk materialisation as well, although indirectly and more mildly through Novatek's difficulties in getting financing.

As a result, this research project has provided much needed information on the perspectives of both small and large businesses in terms of entering and operating in Russia in the current economic and political situation. Although the politics are often much more visible in the media, it is the business sector that plays a key role in strengthening cross-border cooperation and international co-development at grass roots level. This is important in increasing international dialogue at various levels and hence reducing misunderstandings, stereotypes and otherness in East-West relations. Furthermore, increased international business and collaboration are important for the economic development both in Finland and in Russia; businesses at both sides suffer from the current situation. In addition, through technology transfer and co-development, the collaboration benefits also the society and environment in the whole Barents region.

We have viewed this Finnish-Japanese research collaboration highly interesting and eye-opening, bringing together the views on the Russian market from two sides of the world.

Expert article • 2016

Consequently, further research is needed on the perspectives, actions and processes of foreign firms in the Russian context. In order to truly promote international business, the public decision-makers have to understand what actually influences the international actions of SMEs. Likewise, it would be highly useful for the SMEs to have increased capabilities to systematically evaluate and reflect on their own views and decision-making in international business. In terms of large enterprises, further studies on the activities and progress of foreign investment projects in the Russian energy sector are needed in all forms. In times like this, international projects and collaboration for common interests are highly important in enhancing economic and political stability, and better understanding on the antecedents of business disruptions may assist in avoiding their emergence.

Such international business research also calls for further international research collaboration. We have viewed this Finnish-Japanese research collaboration highly interesting and eye-opening, bringing together the views on the Russian market from two sides of the world. We hope to continue collaboration and aim at initiating new research projects with this respected team of researchers, and welcome also further geographical perspectives and disciplinary approaches to future research on the Russian Far North. ■



EINI HAAJA
University Teacher
Turku School of Economics
University of Turku
Finland



HANNA MÄKINEN
Project Researcher
Turku School of Economics
University of Turku
Finland

Pan-European Institute

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