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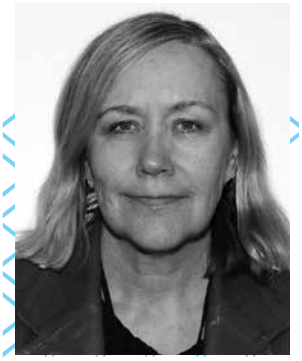

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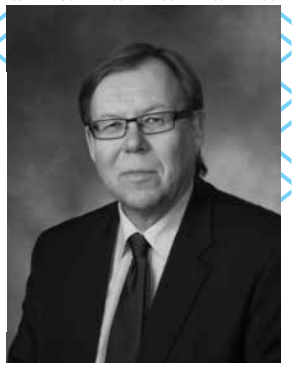

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BRE REVIEW

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EXPERT ARTICLES

ELSE BERIT EIKELAND

Norway's priority on economic development in the Arctic

Expert article • 1634

Norway's Arctic policy is creating a basis for job creation in many industries. Like the rest of the country, North Norway is currently seeing an increase in population and employment levels, and unemployment is low. The main growth industries are oil and gas, aquaculture, minerals and tourism. Compared to all other Arctic States, a larger percentage of the Norwegian population live in the Arctic. A sustainable economic development is a key to the future development of the Arctic region. Regional cooperation in the Barents region, with neighbouring countries and in the framework of the Arctic Council is in this respect a priority for Norway.

Climate change

The defining issue with regard to the future development of the Arctic is climate change, which determines access to resources and transport routes. A melting Arctic has global implications. It increases global warming, accelerates sea level rise and could change weather patterns throughout the northern hemisphere. The only responsible way to approach Arctic climate change is to try to limit it by effectively reducing greenhouse gas emissions. Climate change is putting the environment of the north under increasing pressure. It is therefore all the more important that we manage our commercial activities responsibly and seek to limit their overall impact on the environment. Norway views its policies in a generational perspective. We intend to ensure that the planet we leave to future generations is in a better state than it was when we inherited it from past generations.

Value creation in North Norway

Value creation in North Norway has improved considerably since 2008. Employment opportunities in the region have attracted many foreign employees, and this has helped to reverse a negative population growth. The main challenge for many companies today is a lack of qualified labour.

Much of the growth in the business sector in North Norway is connected to the extraction of oil and gas. For example the offshore supplier industry in Finnmark enjoyed an annual growth of 37 % from 2004 to 2011. The Norwegian Government has established a new centre of expertise and research for oil and gas operations in the Arctic under the University of Tromsø, with particular focus on responsible exploitation.

Huge mineral assets

It is estimated that Norway has profitable mineral resources amounting to around NOK 1.4 billion, with the greatest potential in the north. The Norwegian Strategy for the Mineral Industry sets out the aim of increasing profitability and growth as well as the ambition that the Norwegian mineral industry should be one of the most environmentally sound in the world. It also paves the way for closer coordination with environment and Sami interests in this respect.

A global leader in seafood

Around 30 % of Norway's value creation in the seafood sector is in North Norway, which has seen an annual growth of more than 20 % in the sea and coastal fisheries and the fish farming industry since 2004.

The tourist industry is also thriving. There was an increase in guest nights for international visitors of 19 % in North Norway from 2000 to 2012. This is considerably higher that the increase in the rest of the country of 9 %. Cruise tourism alone saw an increase of 41 % from 2011 to 2012. In 2009, the Government established Northern Norway Tourist Board to strengthen the profile of the tourism industry and international marketing of North Norway. Important new markets include countries like Russia and China.

These growth industries make it necessary to improve infrastructure. Since 2005, there have been large increases in the allocations for transport and communications in the north. Nevertheless more needs to be done, particularly to improve communication within the region.

Record high cod quota in the Barents Sea

The cod stock in the Barents Sea is now higher than it has been for many years. This is the result of a consistent long-term policy based on the principle of responsible and sustainable harvesting. In addition, we enjoy close cooperation with Russia on the management of our joint fish stocks, which dates back to the 1950s.

Thanks to this cooperation, the fishery resources of our northern sea areas are among the best managed in the world. Our close cooperation on fisheries controls is particularly important in this context, and is the main reason why Norway and Russia have been able to put a stop to illegal, unregulated and unregistered fishing, which used to be a serious problem.

Investments in education and research

Further investments in education and research are essential to ensure employment opportunities, a competitive business sector, sustainable development and increased knowledge of the causes and effects of climate change. The main challenge for further developing North Norway is the lack of qualified labour, particularly engineers and other skilled workers. Solving this issue is a key priority for Norway. We need both to increase the number of students within relevant fields and to cooperate with our neighbours in the north to create a well-functioning labour market in the region.

Increasing levels of activity in the north make it even more important to enhance knowledge of how to ensure sustainability in a region that is undergoing rapid growth. A new research programme at the Fram Centre in Tromsø has been established for this reason. The centre will build up expertise and new knowledge on the environmental consequences of industrial development in the Arctic. Such knowledge is needed in order to ensure environmentally responsible development, based on the best environmental solutions that will not have negative impact on ecosystems, cultural heritage or society. The research programme will also seek to promote international cooperation and exchange on these issues.

Safe shipping in cold waters

In 2012, the first phase of BarentsWatch was launched. This is an integrated civilian monitoring and information system for Norwegian sea and coastal areas. The next phase will be to ensure that authorities with responsibility for monitoring activities at sea and maritime safety have effective access to each other's systems. BarentsWatch makes it easier to identify dangerous situations in time, and will make it possible to save more lives.

Other measures that have enhanced maritime safety are the new vessel traffic service centre in Vardø, a new meteorological radar at Gednje on the Varanger peninsula, and routeing measures to divert high-risk traffic further away from the coast. Year-round tugboat preparedness has been established in North Norway. This is important for preventing shipping accidents and oil spills.

Regional and circumpolar cooperation

A sustainable development is a priority to Norway and it is important to promote and enhance this internationally. An increased economic and business cooperation in the North has been establish with neighbouring countries Finland and Sweden, and a common approach to sustainable development is a key in the bilateral cooperation with Russia and in the Barents regional cooperation. Norway and Norwegian business have strongly supported the establishment of Arctic Economic Council in September this year as way forward to include this in the circumpolar cooperation in the Arctic Council. Established in 1996, the Arctic Council was primarily a cooperation on environmental issues. In line with the developments in the Arctic, the Arctic Council has increasingly focused on climate change and adaption to climate change. NGOs and international organizations with a focus on environment and climate change have positively been included as observers in the Arctic Council. With the increased economic activity going on in the Arctic, it is important for Norway to include all key stakeholders in the circumpolar cooperation. The involvement and competence of business is today not part of the Arctic Council cooperation. In our perspective, an independent and business led Arctic Economic Council with clear links to the Arctic Council would be an important way forward to include business in an even stronger circumpolar approach to a sustainable environmental, social and economic development of the Arctic. ■

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MAIMO HENRIKSSON

The inevitable choice – Finnish companies go North

Expert article • 1635

When the extremely pleasant and long summer of 2014 turned into autumn in the Nordic countries the value of open business projects in northern Norway was 800 million euro and the value of open projects in northern Sweden 600 million euro. The Norwegian economy is still performing well, with an estimated yearly GDP growth of 2 %. The Swedish economy is expected to grow by 2,5 % this year.

As Russia currently is a political and economic worry and a question mark, do the Norwegian and Swedish markets look even more attractive to Finnish business actors, who want to go international in the neighbouring region. At the same time it has to be pointed out that the Russian economy has already become dependent on world economy and international know-how. In the long run Russia will offer opportunities. Russia needs Norwegian expertise in developing its offshore resources. By allying themselves with Norwegian companies today, Finnish companies can be sub-contractors to the Russian offshore industry in, let us say, 15 years' time.

At the same time when our two western neighbours have a dynamic overall economic development including new business developments in the north, Finland is suffering from a 0 % GDP growth, which is expected to hardly overcome this red zero-line next year. Finland has recently suffered from several quarters in a row of negative GDP growth. Our unemployment rate is around 8 %. Our export has plummeted.

On the positive side we have one of the world's best educated labour forces. Many Finns have until recently worked in some of the world's best companies, but are now unemployed. This means that we have very qualified free capacity. Finland is the promised land of engineers. Norway for its part is suffering from a lack of engineers. We do not speak about a shortage of hundreds, but rather thousands.

In this situation it is very natural – you could even say inevitable – that Finnish companies start to go to the north. The Finnish maritime industry has traditionally been specialized in ice breakers and vessels, which are built for harsh conditions. The Finnish construction and housing industry has developed tools and methods for advanced building in a cold climate. The Finnish machinery industry combines robust quality with high technology. The strength of the Finnish energy cluster is a broad variety of knowhow and coldhow. The mining industry is today developing especially in the north in Sweden, Finland and Norway. The ambition of the Finnish Green Mining program is to develop the Finnish mineral industry to become the ecologically most sustainable and efficient mining industry in the world. Tourism has been important for northern Finland already for many years. The next natural step is to join forces between the three countries in order to be able to receive the growing middle class of Asians, who want to visit the northernmost part of Europe.

The Finnish government has nationally taken a lead role in focusing on the north. The first Arctic strategy was adopted in 2010 and a renewed strategy in autumn 2013. The new strategy is more strongly emphasizing business cooperation, with the precondition of ensuring sustainable business activities. An arctic bilateral partnership was established with Russia some years ago and this year a bilateral arctic partnership was launched together with Norway.

The Finnish prime minister has taken the initiative to gather a group of wise persons – one from each of the three countries Norway, Sweden and Finland – with the task of brainstorming and presenting new ideas on border-crossing business cooperation in the north. This group started its work in summer 2014 and it is expected to present its results in early 2015. New and fresh ideas on cooperation between Norway, Sweden and Finland in the north are expected from the group. The level of ambition is high; the work has been compared to the so called Stoltenberg-report from 2009 on increasing foreign and security policy cooperation between the five Nordic countries.

Not only the Finnish government, but also the Confederation of Finnish Industries has concluded that the companies need a push in order to get activated in the north. The Confederation has asked former prime minister Paavo Lipponen to present ideas on what needs to be done internally in Finland.

Initiatives from the government and central organizations are there. What now is needed, is hard work by the companies themselves. Certifications have to be in order, regulations and standards must be fulfilled. Networking is a necessary precondition for any company aiming at entering the Norwegian or Swedish market. The company has to participate in conferences and fairs, whether it is the huge Offshore Northern Seas happening or an exclusive small branch event.

The language skills need to be in order. In the Norwegian and Swedish markets Finnish companies have one asset, which is more valuable than any other asset: knowledge of a Scandinavian language, in practice Swedish, which is taught as a compulsory subject at Finnish schools. This is an assets that usually is a basic precondition for success when offering a service or a product in another Nordic country; the company has to be able to write its offer in Swedish and it has to have enough employees who speak Swedish (or another Scandinavian language) and thus can take the role of being contact persons.

Finnish companies who want to go north are in a good position. The need for good and reliable business partners is obvious. The government and central business organizations provide a strong support. And most important of all: many Finnish companies have extremely good products and highly qualified work capacity to offer. What seems to be the weakest link in the chain is the outreach of Finnish companies. Do not be shy, dear Finnish business man or woman: go out, be active, create networks – and you will be rewarded. The north needs you! ■

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TIMO RAUTAJOKI

Financial and political crises are delaying projects in European High North

Expert article • 1636

About five years ago investments seemed to be booming in the European High North. Swedish LKAB was starting huge expansion project in Kiruna. Hammerfest in Northern Norway was full of promising oil and gas projects after succesful start of Snow White gasfield and LNG plant. Shtokmanovskoje gas field was still on agenda in Murmansk Region and minig boom in Lapland seemed to start within next couple of years.

Global financial crisis has had strong impact also on raw material prices all over the world. Shale oil and gas challenged the competitiveness of arctic offshore. All this has postponed most of the investments in the European High North.

Potential of Northern Norway is huge. Total value of planned investments is clearly over 50 billion euro. Energy sector is constantly on the top of the investments list including oil and gas, wind power and hydro power. Today all oil and gas projects are delayed or postponed in the Barents Sea.

Norwegian offshore giant Statoil is today focusing on Aasta Hansteen gasfield which is located in the Norwegian Sea off the coast of Nordland. Gas is conducted southwards via a pipeline and and further on to the existing network linking to Europe.

The floating platform of Goliat oil field project by ENI Norge was expected to arrive at last to Hammerfest in 2014. Once again arrival was postponed with one year. So the platform should come to Hammerfest Polarbase for finalizing in summer 2015.

Largest Statoil project in the Barents Sea is oilfield Johan Castberg in front of Hammerfest. Statoil has so far twice announced to postpone this project. According to Statoil oilfield is not at this moment profitable and pipeline to planned oil terminal in Veidnes seems to be in danger to be removed from the project. Next Statoil announcement is expected in 2015.

In spite of all delays Northern Norway has still huge investment potential. Total value of all wind energy projects has been estimated to be more than 30 billion euro. More than likely that is too optimistic estimation. However growth is continuing in the tree nortnernmost counties of Norway. Public projects like building and construction of hospitals and schools are all the time implemented. Transport infrastructure projects are continuing as planned without any crises.

Kiruna Iron mine expansion by LKAB is working fine. This project is probably finalized within next five years. Finally LKAB has now also permit to open Mertainen mine in Svappavaara. All appeals have been withdrawn from Supreme Court. As result of this gian project cities of Kiruna and Gällivare are moved to new places and total production is growing almost double to 37 million tons of iron.

Also railway from Kiruna to Narvik is going to be improved. Norwegian and Swedish railway authorities published in July 2014 plan to build second track to this railway. Total value of this investment is over 2,5 billion euro. Final decision to start implementation of this project is expected to happen in 2015.

Most of the other mining industry investment plans in Northern Sweden are also iron ore mines. Strong decrease in demand of iron has caused serious problems. Pajala iron mine by Northland Resources is at the moment closed and company is in bankcrupty. Also Kirkenes iron mine in North Norway has same kind of problems. Other iron ore projects seem to be postponed probably to 2020´s and mining industry investment lists are at the moment empty after LKAB expansion is finalized.

The new government of Sweden made important decision during publishing the state budget for 2015. Government announced to start Norrbotniabanan railway project from Umeå to Luleå. Implementation of this 3 billion euro project is going to be started in 2016.

Investment boom continues also in Haparanda-Tornio area. Large shopping, hotel and entertainment center with total area of 106000 square meters has got starting permission from authorities. Total value of this Barents Center is about 120 million euro.

Current crisis in Ukraine has created a new challenge for Arctic cooperation and implementation of investments. EU sanctions against Russia and Russian sanctions against EU and the USA have already had clear impact in European High North Business. In Murmansk region this could mean strengthening of military bases in Severomorsk and Pechenga area. Alakurtti base near border between Finland and Russia was closed some five years ago. Now military forces are returning to this village and according to latest Russian rumours some kind of infantry brigade is coming there in spite of Radio intelligence troops.

Financial crisis delayed most of the investment projects in Murmansk region. First Shtokman gas project was postponed and Statoil withdrew from Shtokman Development Company. Mining industry in Kola Peninsula has however renewed mining technologies and one new mine has been opened two years ago in Kirovsk. Also Murmansk Transport Hub- project seems to be proceeding. Building and construction of new railway to the west side of Kola Bay from Pechenga railway started in last September.

New version of Cold War could be developing in the Arctic. The activities of Norway have been decreasing in Murmansk Region. According to latest news Norway is closing or strongly reducing SIVA Business Center in Murmansk. If military tension increases between Russia and Nato Norway could meet some sanctions regarding the use of the highway between Murmansk and Kirkenes. This highway goes through several military bases in Pechenga and Titovka. This hghway was closed during Soviet time and a special detouring road was build from Nikel to Rajaajooseppi-Murmansk road. Actions like this could seriously damage the competetiveness of Murmansk region for foreign and investments. Situation has already now changed and the result is to be seen in near future and main focus of European High North investments is going to be in west. ■

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TERO VAURASTE

Knowledge and data exchange between industry and academia in the Arctic context

ARCTIC ECONOMIC COUNCIL, AREAS OF BUSINESS AND OVERARCHING THEMES

Expert article • 1637

The Arctic Economic Council has started to work in the beginning September 2014 with the following business areas

i. Infrastructure and related matters including
   1. maritime transportation
   2. communications and IT
   3. aviation
ii. Energy, including oil, gas and renewable sources
iii. Mining
iv. Tourism
v. Fishing
vi. Human resources investments and capacity building

The Council was initiated in the Arctic Council Kiruna ministerial meeting May 2013 to foster the dialogue between the business community and the Arctic Council. In the inaurugal meeting, the delegates representing the businesses of the member states and permanent participants chose the following overarching themes

1. Establishing strong market connections between the Arctic states;
2. Encouraging public-private partnerships for infrastructure investments;
3. Creating stable and predictable regulatory frameworks; and
4. **Facilitating knowledge and data exchange between industry and academia.**
5. Traditional indigenous knowledge, stewardship and a focus on small businesses

The work

The need for the Arctic Economic Council, or formerly, Circumpolar Business Forum was acknowledged broadly in the preparation phase of current Arctic Council's Canadian chairmanship period. The Kiruna declaration (where the starting words for this period, were stated in May 2013) states as the first point: **improving economic and social conditions**

"Recognize the central role of business in the development of the Arctic, and decide to increase co-operation and interaction with the business community to advance sustainable development in the arctic." Furthermore, the declaration stated the decision on a Task Force to facilitate the creation of a circumpolar business forum, later renamed as the Arctic Economic Council.

With these statements and words it has been made clear, that the Arctic Council considers the interaction with the business community as important.

Many of the Arctic Council Working Groups submitted their ideas for possible areas of co-operation for the AEC's inaugural meeting. For instance, The Arctic Monitoring and Assessment Programme (AMAP) gave a useful submission.

But firstly, the AMAP mandates are:

- To monitor and assess the status of the Arctic region with respect to pollution and climate change issues
- To document levels and trends, pathways and processes, and effects on ecosystems and humans, and proposes actions to reduce associated threats for consideration by governments
- To produce sound science-based, policy relevant assessments and public outreach products to inform policy and decision-making processes

As we can see, the mandate is scientific. AMAP recognized the following needs – and potentials:

The main focus would be on the possibilities for improvement of the monitoring and observation of climate and pollution variables in the North e.g. by developing:

- instruments that can operate under arctic conditions all year round at remote places (remote sensing) on land, on ice and ocean and from space
- communication lines from these remote places to central places that can receive the data
- local and regional databases storing information about the local nature, natural variation, observations of changes beyond natural variations etc.
- improved involvement of local people/companies in the work mentioned above

The AEC inauguration received also input from CAFF, the Conservation of Arctic Flora and Fauna and EPPR, the Emergency Prevention, Preparedness and Response Working Groups.

The EPPR considers various opportunities on the possibilities for cooperation with industry. The PAME team, Protection of the Arctic Marine Environment, seeks also increase industrial collaboration for instance in updating the AMSA, Arctic Marine Shipping Assessment report.

Discussion

With this background from the Arctic Council and the Arctic Economic Council, **let us now discuss this further**:

What would be the main concerns, challenges and opportunities facing Arctic science? Which areas should the work on?

Let us look the need for the loop, starting from the people, with a governmental example:

The Aboriginal Affairs and Northern Development of Canada (Government of Canada) state, that "Northern oil and gas exploration and development supports economic and social components of the Government's Northern Strategy. Working in partnership with northerners and Aboriginal peoples, government

recognizes that northern oil and gas exploration and development is a key component of the future economic well-being of northern Canada."

In a holistic way, the "main concern" can be sought from different angles. Firstly it's about people in Canada and other Arctic Areas as well. Is the main concern then human rights? Or protecting the nature? Or technological challenges of oil and gas exploration? Food security? Water and waste infrastructure? Some other?

One quickly comes to decision, that it is difficult to appoint one major concern, which would be valid throughout the arctic. **Unless, the climate change is considered as such**. But let us presume, that the climate change will proceed, with a slower or quicker phase, and discuss how to adapt this, and what would be the main concerns in the adaptations?

Since the previous description is only a hint of the complexity, let us draw our conclusion and recommendation on this. The complex interaction network between arctic nature, peoples, societies and their economies – and the interaction between those as well, could serve as our recommendation for academic research: Researching the complex interaction structures between arctic nature, people(s), societies and economies, with the intention **to help businesses support the northern developments by increased economical activity.**

How can research organizations, institutes, operators and companies increase their international co-operation?

We have occasions, where business can easily, with marginal or non-existing costs, act as research platform for academia. A practical example comes from years 2012 and 2013, where our Finnish Icebreakers of Arctia Shipping used the Northern Sea Route on their home voyage from Alaska back to Europe. This transfer voyage provided facilities for ice, meteorological and technical researchers to proceed with their research projects during the voyage.

Can we adopt the technology that is needed to study and/or mitigate the rapid changes in the Arctic? If not, where are the main gaps in Arctic technology? Where can business contribute best?

The rapid climatological and environmental changes IN the Arctic are a result of activities OUTSIDE the Arctic. So, the mitigation is not about the gaps in Arctic technology, but reduction in global carbon and other emissions. This, I claim, is much more political than a technological issue. Business can contribute by introducing renewable energy sources technologies (and those produced locally when in the Arctic) and improved enhancing of renewable energy techniques.

How can public funding contribute to increased research co-operation?

We have an example in Finland of improved national input in this area by Tekes, which is a governmental research funding organization. Tekes has just recently launched a 100 m € funding programme called the "Arctic Seas", where new solutions are sought. One of these is a biodispersant research, where it is studied if we were able to produce a 100% environment-proof dispersant.

Arctic natural resources are vast. These include hydrocarbon resources, minerals, rare earths - just to appoint the most important ones. The climate change is opening doors and giving access to resources which were not accessible just some 10 or 20 years ago. The states and local governments rule the regulatory procedures in their areas.

There has been no significant global gamechanger – for the time being – for the use of hydrocarbon resources as an energy resource. World's energy consumption continues increasing and the need for all hydrocarbons; including the arctic – is depending on the developments of energy innovations.

However, the recent results of the ICC's Climate Panel and such gamechangers are urgently needed.

Conclusions and recommendations

Renewable energy sources like water, solar, wind and tidal energy in the Arctic provide big potential in the future. For example, the tide in Frobisher Bay in Iqaluit Nunavut, is more than 10 meters. In these questions, Academia and Business are to work together.

To conclude, the final statement describes the reasoning for Arctic Economic Council's work in this field.

As we understand, this is a very dynamic area. Because of these complexities and dynamics, the Arctic Economic Council has chosen the co-operation between business and academia as one of its five main areas for work.

As a final recommendation for academia let us suggest, that holistic research which researches the complexities of the various elements and their interaction in the arctic to be chosen as a main area of research. ■

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KARI SYNBERG

Finnish-Russian co-operation opportunities in the Arctic region

Expert article • 1638

Today, one can hardly remember the time when crossing the border between Finland and Russia was the right and the opportunity for small number of people. A specific openness is integral part of life between Finland and Russia, which is especially seen in some Finland's northern cities, like Rovaniemi, where the Russians presence is quite obvious.

We all know that the Arctic is changing, its weather conditions, geopolitical position, human relationships and many other things. Unfortunately there are some dark clouds in the sky. Today Arctic agenda is characterized by pragmatism and security interest. Russia is developed its military strategy in the Arctic regions, as we can see from the document entitled "The Strategy for the Development of the Arctic Zone of the Russian Federation and National Security up to 2020". The question is also Russia's intention to legally define its continental shelf in the Arctic Ocean, the use of area's natural resources and exploitation of Northern Sea Route. USA, Canadian and Norwegian strategies are very similar, what we can see from their documents for the development of Arctic territories. For example Norway has moved some of its strategic military objects closer to the Arctic coast, Canada with USA holds military exercise in the region and Denmark has formed special military unit in Greenland.

Unfortunately there are some dark clouds in the sky. Today Arctic agenda is characterized by pragmatism and security interest.

The EU has responded to the Ukraine crisis with a set of political, economic and human sanctions against Russia. Also USA and some other countries have their anti-Russian sanctions. The question is on the other hand, the Americanization of global culture in Europe, in Russia and in the Third World. On the other hand Russia is seeking its own way and culture to solve global questions, secure national interests and country's position in this geoeconomic platform. Is Finland sufferer in this game? The relations between Finland and Russia are in a state of stagnation? What kind of consequences and changes this process is going to have in future and what is going on with our cross-border cooperation and cross-border business in the North? The fact seems to be, that several arctic projects were delayed because of this new political situation and sanctions. Let's hope that the world political situation does not lead to the fact that we are facing with the new cold war, as former Soviet President Mikhail Gorbachev said in Berlin 8.11.2014[1]. The Arctic can't play a key role for the military balance between two "superpowers".

Our two countries - Finland and Russia - are connected in many ways. We share in many respects, a similar culture, lifestyle and fundamental values, even though a lot of differences can also be found. We are linked together by history and geography: by the fact that both Finland and Russia are countries that stretch into the vast, remote and cold part of the world called the Arctic. Finland is arctic country, despite the fact that it hasn't Arctic coastline. In both our countries we have a tradition of strong attachment to nature and this creates the possibility for cooperation between our countries. The Barents Region is also a strategically important region for Finland and of course for Russia; rich in natural resources, which possesses a considerable technological, scientific potential and human resources, with good experience in the environmental management in the sub-arctic and arctic climate conditions. Anyway, Arctic region is becoming more and more important for World's economy.

In the North, there were always practical relationships not only on the state level but also on regional one. This kind of regional-oriented international cooperation is not a uniform phenomenon, but it indicates the needs and desires of local people for cooperation. We can call this kind of cooperation as "people's diplomacy", which has brought also new horizons for business activities. This kind of activities and possibilities are possible with some Russian documents, such as "The principles of State Policy in the Arctic" and before mentioned "The Strategy of the Russian Arctic Development". In this Arctic game, some less raised factors are the necessity of taking account the priority interest of the local and indigenous people in the process of modernization of Arctic region. But is this a real perspective, when the discussion is around oil and energy resources and their distribution? What is the role of the Arctic council in this geoeconomic confrontation?

What about the human dimension in the Arctic? Northern Finland is sparsely populated, but the greater Arctic area of Finland - we call it Lapland - is still home to about several thousand people, including the indigenous Saami. In Murmansk region are living over 800 000 people today. The people who live in the North need jobs and economic growth just like everyone else. Murmansk Region located close to Lapland could and should be important by economic point of view to Finland. This development must be balanced with protection of the sensitive Arctic nature and engagement with local societies. Unfortunately socioeconomic and cultural interaction between our countries has no clear strategic perspective. The development of municipal formations of the whole region (Lapland and Murmansk region) has some common features, long distances, population decline and aging for example. One of the problems in this area is a weak infrastructure and the lack of adequate communication routes. This gives for Finland and its high-tech business community some special cooperation opportunities, for example to design a common cross-border transportation plan, seen as the key factor for the region's social and economic development.

[1]http://www.reuters.com/article/2014/11/08/us-ukraine-crisis-gorbachev-idUSKBN0IS0QC20141108

Expert article • 1638

Russian Geographical Society is a significant new-old player in the game of Arctic. On October 31 - November 6 in Moscow held the geographical festival, in which a number of geographical societies from 10 different countries (for example China, Italy, Spain, Turkey and Czech Republic) signed a cooperation agreement with the Russian Geographical Society. Norway has signed the agreement before. Finnish Geographical Society has also discussions on closer cooperation with Russian Geographical Society.The Society has branches in 85 regions (including the Murmansk and Karelian regions) of the Russian Federation and its president is the minister of defense, Sergey Shoigu. President Vladimir Putin is the chairman of the board of trustees, whose other members includes the reigning monarch of the Principality of Monaco, Albert II, as well as a number of Russian CEOs of large companies. Less well known is the fact that Karl Gustav Mannerheim was an honorary member of the Russian Geographical Society.

It may be possible that geography as a science connecting people together can be used like a new kind of cooperation field in the Arctic. Russian Geographical Society is almost governmental organization, which have a lot of scientific goals, even if the political perspective can't be ignored. Many European geographical societies are based on almost the entire scientific background. In any case, the geographic platform is an important way to bring out new innovations, business opportunities and meaningful cross-border co-operation ideas to the northern regions. However the Russian Geographical society is an essential part of the discourse in the Arctic regions. ■

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Pan-European Institute

BALTIC RIM ECONOMIES

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To become a supplier to Russian Arctic mines – a worthy choice

Expert article • 1639

When it comes to business opportunities in the Russian High North, this mostly has to do with mining industry as it has been the most stable and thriving sector for decades.

Mining industry is remarkably well developed in Arctic Russia. Nickel, iron, copper, platinum, apatite, nepheline, rare metals, ceramic raw materials, mica make Kola Peninsula (with Murmansk as the capital city) the leading mining region of Russian North-West. Operations that shape the local mining sector are extraction, smelting and general processing.

Murmansk region's mining district is presented by a number of large Russian companies (Norilsk Nickel, Severstal, Phosagro, Eurochem, Acron) with total investments of approximately 154 MEU in 2014 for modernization of local production infrastructure. Traditionally, equipment, machinery, partially technologies and services are being exported from Japan, USA, Germany, Finland, Sweden and other countries.

Having studied companies' investments plans, carried out a number of market researches plus interviewed the key persons at local mines, we were able to define the following trends that will shape the development of the industry in the next few years:

- replacement of outdated equipment and processing lines
- investing in vertical conveying systems in order to reduce raw minerals transportation costs
- outsourcing and subcontracting of auxiliary services. Those services are energy, transport, maintenance, engineering, catering and others
- modernization of all major processes and building up a new infrastructure required to reduce low efficiency and increase competitiveness
- implementation of mineral wastes processing technologies for recovering saleable mineral products

It is also worth mentioning lack of local skilled workforce for many tasks so we expect that technologies requiring minimum level of manual input will be of high interest from Russian mines in the near future. The next question which a potential supplier quite probably would ask if the machinery maintenance and heavy equipment repair service market is highly-competitive up here.

The answer is no. We would describe the situation in the market of auxiliary services for local mines as a long, empty street with a few shops opened.

One of the reasons for that is that mines used to keep inside as many services as they could for many years because of both social obligations and, ironically, lack of professional service companies able to carry out quality and on-time operations on foreign equipment and machinery.

Now the situation has changed and Kola mines express a strong interest in meeting suppliers or service providers from Finland every time we apply for that.

Speaking about existing business opportunities in Russian High North, we cannot close our eyes on challenges that most likely foreign companies might experience. Those challenges are time and resources.

Mining companies expect a supplier to be located within a reasonably short distance from the mine and be reachable most of the time. That means one thing – a local office with service people speaking Russian language. This is the most successful way of doing business and yet the most challenging one in terms of time consumption and efforts to be made.

We believe that a good alternative for smaller and medium businesses could be a local partner. According to our experience, quite many local companies are interested in cooperation with Finnish SMEs.

Looking at the perspectives of such a receptive market with its 5 Russia's largest companies as customers located on a fairly small area, with very likely coming soon oil and gas Arctic projects, - all that makes the idea of becoming a local player a worthy choice. ■

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Russia's monotowns in the Arctic region as centers of country's mining industry

Expert article • 1640

In 2013, the mining industry took the fourth place in Russia's GDP structure having 11% and more than 1 million people working in this area. Russia has no certain region of mining, but a major part of non-ferrous metals and oil and gas resources is produced in the north part of the country. The Arctic region gives to the rest of the country 60% of copper, 95% of platinum, 85% of nickel, main part of diamonds, tons of gold and 80% of natural gas. The Russian north area is one the richest places in the world, but why do this regions develop so slow or become degraded?

The economy of Russia was created in the Soviet era and still has many things reminding of this historical period. For instance, the case of monotowns could be an example of it.

A monotown is a place whose economy is dominated by a single industry, company or sphere of activity. Nowadays, this term is mainly typical for Russia, where the Soviet Union founded hundreds of monotowns in economically feasible locations, which generally were geographically outlying and climatically inhospitable (such as the Arctic region).

For the time being, there are 342 monotowns in Russia; 86 of them are situated in the Arctic region. The number of monotowns are steadily going down, as their dominant enterprises, which do not belong to the state anymore, go bankrupt due to uncompetitiveness.

For instance, there was a rapid growth of coal prices until the end of the 70s; and the Soviet Union was motivated to found settlements near of coal deposits. During the 80s, the price was falling down and had reached its bottom by the beginning of this century. Many of coalmines were located in the Arctic region; and due to the above reasons, the coal mining in the area became increasingly unprofitable after the dissolution of the Soviet Union. People lost their jobs and started leaving their cities in the mid-90s. Nowadays, several former prosperous monotowns (Kadykchan, Halmer-U, and others) are ghost towns.

Despite the number of cities disappeared by the end of the XX century, there are several good cases that should be mentioned. One of the best examples of a city that has adapted well to the new economic model is Norilsk.

Created as a Gulag labor camp nearby the largest nickel-copper-palladium deposits in the world with 400 000 prisoners for its 21-year history, at present Norilsk is the world's second largest city north of the Arctic Circle with over 175 000 inhabitants.

Nowadays, MMC Norilsk Nickel, the world's leading producer of nickel and palladium (and also active in platinum, copper, and cobalt extraction) runs the mines and processing facilities. Norilsk's nickel production in 2013 amounted to 285 000 metric tons, and its copper production came in at 371 000 metric tons. The company has assets in Africa, Australia and Finland.

In any case, monotowns are still a problem rather than an opportunity. The prosperity of the people depends on the prosperity of the city; the prosperity of the city depends on the prosperity of the company; and the prosperity of the company depends on the prosperity of the world market. Therefore, we have an example of the butterfly effect – if the price on nickel goes down at the London Metal Exchange, a worker in Norilsk feels it within a few months. A rapid fall on the non-ferrous metals in 2009 affected the market price of Norilsk Nickel, whose capitalization was 6 times less in 2009 comparing to 2008. The prices have been very instable since the recession, and the government finds it too risky for such a huge city.

That is why the Government of Russia has changed the mining law. Since 2008, the discovery doctrine saying that the discoverer of minerals has legal rights to use them, does not work anymore. It opens the market for other players. In most cases, a discoverer is a huge corporation operating in this area (for instance, Norilsk Nickel in Norilsk). This law does not say that Norilsk Nickel may not be the owner of the resources they have found, but if they do aspire to develop new objects, they have to win the competitive tender for these objects. They have failed twice since 2008 and lost Norils-1 and Chernogorskoe deposit. Nowadays, they are fighting for the Maslovskoye deposit against Russian Patinum.

Therefore, once those projects are implemented, Russia will have one more Norilsk industrial area. Thus, this is good for all the parts: for the budget, for the city, for the people and for Norilsk Nickel as well. Because if you have a good and strong competitor, then you are motivated to develop yourself.

Nevertheless, the changing of the mining law is not the only one and last step of the government for developing the Arctic part of Russia. In 2014, Ministry of Regional Development published a project of the Decree of the President on the formation of the Arctic zone of the Russian Federation. According to this law, the Arctic zone consists of Murmansk region, North parts of Arkhangelsk, Krasnoyarsk, Yakutia, Chukotka, Nenets and Yamalo-Nenets autonomous regions.

The Arctic zone will have preferential taxation, special investment environment, as well as a number of privileges in the socio-economic sphere for the local population. Infrastructure development will be an aim for the country. One more priority is the attraction of foreign investments in the Arctic zone of Russia.

All these changes are leading us to the new level of doing business in the Arctic zone of Russia. We confess that the monotown-system was working good in the Soviet Union, but it's time to modernize it, to help the Arctic region be steady. It has been a long history of cooperation between Russia and foreign countries (particularly, Finland) in Russia's Arctic zone in the past, and we will certainly write a new chapter of this history in the future. ■

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The development of the Russian maritime sector – boosted by the growing interest to the Arctic

Expert article • 1641

Russia can be considered a relatively young maritime nation as its naval and merchant fleets really started to develop only in the 18th century, during the reign of Tsar Peter I, also known as Peter the Great. The Russian navy had been practically non-existent before his time but afterwards, following a complete reorganization of the Russian industry and armed forces, the country became a successful naval power. A large shipbuilding industry was also established during the reign of Tsar Peter I. In the 20th century during the Soviet era, the Russian maritime industry was very vivid but largely guided by military interests and mostly focused on building military vessels and submarines. However, due to the political and economic turmoil brought by the collapse of the Soviet Union, the Russian maritime industry experienced a deep financial and personnel crisis in the 1990s. The shipyards that had existed on state orders were not competitive in a commercial sense and the weight given to military production during the Soviet era had hindered the development of civil shipbuilding. The Russian navy fell into decay as well and pictures of nuclear submarines rusting away in docks caught the western media attention. Along with the new geopolitical situation, Russia lost a considerable number of shipbuilding and repair facilities, ports and naval bases because they were located in the territories of former Soviet states, such as in the Baltic States and in the Ukrainian territory in the Black Sea area. The Soviet fleet was divided between the newly independent countries, as well, Russia receiving about half of the tonnage but partly in bad condition (Gritsenko 2013). However, the Russian maritime industry started to recover again in the early 2000s, boosted by the country's economic growth.

Recently, the Russian maritime industry has received increased political attention and funding and the industry can be considered to be experiencing a rebirth. The Russian government has even classified the shipbuilding industry to one of the strategic sectors of the economy and adopted an ambitious development programme which aims at quintupling Russia's shipbuilding output by 2030 with total state funding reaching RUB 1.3 trillion (Vorotnikov 2012). Particularly the growing interest in the Arctic hydrocarbon fields and sea routes as well as the continuous importance of energy exports for the Russian economy have boosted the development of the maritime sector. The Russian economy is highly dependent on the energy export revenues, oil and gas revenues constituting half of the budget and over 70% of the exports of goods in Russia (The Ministry of Foreign Affairs of Finland 2013). While energy production is increasingly shifting north to demanding Arctic conditions, the supporting maritime industry is also required to make considerable investments and produce completely new technological solutions for the needs of the energy industry. The Russian Arctic is estimated to hold more than half of the potential Arctic oil and gas resources (Ernst&Young 2013) and the development of these northern regions is gaining increasing attention and investments from the state as well as businesses. Despite the strategic nature of the energy sector, Russia has also been inviting foreign energy companies to participate in the new large-scale energy projects in order to get the projects started with their technological expertise and capital. However, the economic sanctions imposed by the EU and the US are currently preventing EU- and US-based companies from participating in the Arctic oil exploration and production in Russia, which is now slowing down the development of the Russian Arctic energy projects.

Particularly the growing interest in the Arctic hydrocarbon fields and sea routes as well as the continuous importance of energy exports for the Russian economy have boosted the development of the maritime sector.

Besides the desire to exploit Arctic energy resources, another interest guiding the Russian maritime policy is the development of the Northeast Passage, the Arctic sea route along the Eurasian northern coast, because it provides a shorter and thus cheaper alternative to the southern Suez Canal route to the growing Asian markets. However, the Northeast Passage is not expected to emerge as a large-scale international transport route in the near future because of the undeveloped infrastructure, the lack of adequate ice-going vessels and the emerging disputes over the waterway rights. Although the period during which the route is navigable is lengthening and number of ships passing it is increasing, large investments are still required in the Arctic port infrastructure, satellite coverage and rescue system, let alone the construction of new ice-capable LNG tankers and icebreakers necessary to escort their voyage. Moreover, the enforcement of safety and environmental protection in the Arctic has remained rather heated issue internationally, and for instance environmental organisations have campaigned against Arctic oil

exploration. Nevertheless, as a concrete attempt to both increase safety and protect the harsh environment in the waters surrounding the Arctic and Antarctic poles, the International Maritime Organization (IMO) has recently adopted the International Code for Ships Operating in Polar Waters – the Polar Code. The Polar Code is mandatory for ships operating in polar waters, covering the full range of design, construction, equipment, operational, training, search and rescue and environmental protection matters relevant to these ships (IMO 2014). Furthermore, Russia is also involved in the Arctic Council which is an intergovernmental forum for cooperation, coordination and interaction among the Arctic States, in particular related to issues of sustainable development and environmental protection in the Arctic (Arctic Council 2011).

Thus, the growing interest to the Arctic has, for its part, increased the significance of the maritime sector in Russia. However, despite its significant growth potential, the modernisation of the sector will certainly take time. The current Russian expertise is mostly restricted to military shipbuilding – or commercially to building hulls – and the industry is not export-oriented or even present at the international market. Thus, the Russian maritime industry has fallen behind other shipbuilding nations in terms of technologies and knowhow and is dependent on foreign expertise. The innovative capacity of the Russian maritime industry also remains at somewhat low level. Thus, considerable developments are needed in order for the Russian maritime industry to become able to truly participate in international competition. Engagement in international activities can be seen as a key for developing Russia's own maritime expertise and foreign companies have so far been very interested in entering the country's maritime business due to the huge market potential, particularly regarding the Arctic vessels and shipping. However, the current economic sanctions against Russia have restricted the business cooperation with EU- and US-based companies which has led Russia on the one hand to develop local production and on the other hand to seek alternative suppliers from China and South Korea. The escalation of the crisis in Ukraine has already surprised the policy makers and the business and research communities with its suddenness and seriousness. The unexpectedness of these recent developments illustrate how difficult it is to predict the future – and it also remains to be seen how them will affect the development of the Russian maritime sector in the long run. ■

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The uncertain future of the global Arctic

Expert article • 1642

The Arctic is rapidly warming up, and as a consequence, gradually losing its ice cover. This is expected to have two well-known economic consequences. First, Arctic sea routes are projected to become more easily accessible for maritime transport. Secondly, the Arctic is estimated to reveal substantial new sources of hydrocarbons and minerals. As an opening geopolitical frontier with exciting economic opportunities and serious environmental challenges, the Arctic is attracting an increasing amount of attention from a range of economic and political actors, both within and without the Arctic itself.

Although climate change is the key enabler in the process, it is the economy that plays – and will continue to play – the key role in the Arctic transformation. The economic potential in the region is undoubtedly huge. Indicative of this, recent estimates suggest that the Arctic area could witness investments ranging up to €225bn during the next decade, mostly related to the exploitation of non-renewable energy sources and related infrastructure construction. This process is further facilitated by technological innovations, including advances in ship, communication, satellite, drilling, and navigation technology. In reality, however, Arctic economic development faces severe challenges, stemming from both internal and external sources.

> Even if a year or two of sanctions does not necessarily threaten the projects in the long-term, the crisis in Ukraine will affect the Russian Arctic development by increasing the overall risk levels for international investors.

Regarding the Arctic maritime transport, the high expectations are often based on insufficient understanding of the Arctic conditions. With severe temperatures, long distances, drifting ice, and darkness, the Arctic is multi-dimensionally harsh operating environment which makes Arctic maritime operations challenging and costly. In addition to operational challenges, the Arctic maritime routes lack en route markets. Thus they are not suitable for container traffic that relies on just-in-time logistics and high load percentage while serving multiple ports. The increase in hydrocarbon and mining activities offer some possibilities, but these are primarily within specific regions (so called destinational shipping). The developments in vessel design are moving towards ever bigger vessels in search of economies of scale, which makes the shallow and peripheral Arctic routes increasingly uncompetitive.

Moreover, if changes in the world market logic shift manufacturing south of Hong Kong in 20 years when production costs in China, for example, have risen too high, let alone if production is insourced back to Europe or North America due to technological advances (e.g. 3D printing) or viable domestic energy (unconventional gas and oil), the Arctic maritime routes might lose much of their economic viability. China may be exemplary in another way: Chinese resource interests and investments (e.g. multi-billion investments in port facilities in Greece, Pakistan, Sri Lanka and elsewhere) are primarily along the southern maritime routes. The 71 transit passages through the Northern Sea Route (NSR) during the 2013 sailing season pale in comparison not only with the transport flows along the more traditional routes, such as the Suez Canal which sees the passage of up to 18,000 ships each year, but also with the amounts of shipping in the NSR itself in the past. In terms of volume, the 2012 figure amounted to only 60 per cent of the NSR maximum in 1987, illustrating the disparity between hyped popular images and empirical reality in the contemporary Arctic maritime domain.

Despite high expectations, Arctic oil and gas development also face significant challenges that need to be tackled if the region is ever going to be globally important and competitive in energy markets. The bottom line is that implementing oil and gas development projects in the Arctic is complex. On top of the harsh operating environment, their feasibility depends to a large extent on the global supply and demand dynamics, namely the price of energy. From an economic perspective, the basic principle is that the selling price must exceed a certain relatively high threshold for Arctic oil and gas extraction to be profitable. For example, the production costs of Arctic oil can vary between $40-100 per barrel, whereas the production of a barrel of oil in the Middle East costs between $5-40. With current (and declining) oil price of $85 per barrel, Arctic oil development is simply less attractive due to the high production costs and low or non-existent profit margins.

Arctic oil and natural gas extraction involves serious technical problems and requires huge investments. Perhaps most importantly, actors in the energy sector have to mitigate the risk of environmental accidents. The Arctic environment is fragile and hard to restore in the event of accidents. The liability issues – e.g. reputation loss and financial penalties – related to a potential environmental catastrophe pose major obstacles to resource extraction and hinder the development of potential projects. There is also the problem that the mitigation of global climate change and the extraction of new hydrocarbons in the Arctic is an equation that does not add up easily.

Arctic energy projects also tend to have long lead times. The time between the initial discovery and the actual production phase might be up to two decades or even beyond. This timeframe could see unpredictable global or regional developments, such as changes in

energy supply and demand, environmental accidents or political crises, which might have negative effects on the planned projects, either delaying them or resulting in them being cancelled altogether.

An enlightening example of the contingency of Arctic energy exploitation is the case of the Shtokman gas field project, situated in the Barents Sea. It was initially designed to supply Russian liquefied natural gas (LNG) to the US market. However, the project has been put on hold indefinitely by technological breakthroughs in shale gas extraction technology, which has saturated the US gas markets and consequently blocked the export of Shtokman LNG to the US.

As such, committing to these long, capital intensive projects is difficult because of the great uncertainty surrounding the Arctic development. Especially, there is a growing concern that assets in the Arctic could become stranded due to lowering price of fossil fuels brought about by increases in renewable production and improvements in energy efficiency, or due to increasing competitiveness of shale and deep-water development elsewhere in the globe.

Global politics plays another crucial role, as seen today in the context of the Ukraine crisis. The West has decided to prohibit the exportation of Western goods, services and technology for the development of Russian Arctic offshore oil prospects, and has restricted the access of the highly expensive Arctic megaprojects to Western capital. Even if a year or two of sanctions does not necessarily threaten the projects in the long-term, the crisis in Ukraine will affect the Russian Arctic development by increasing the overall risk levels for international investors, resulting in lack of capital and know-how for future investments. Moreover, Russia's on-going rebalancing to China, particularly now in the context of East-West tensions, may boost the development of East-Siberian resources at the expense of the Arctic. Also shale-oil development in Western Siberia may turn out to be the more attractive energy option in economic terms, given the existing infrastructure and easier operational environment.

Yet, it is vital to note that even if the Arctic economic prospects were not realized in full, there would most likely still be substantial investments in(to) the region. Barring state failure in Russia, this means that the Arctic is likely develop economically, even if the pace and extent of the economic developments will remain more moderate than what was expected still few years ago. Because of the above-mentioned factors, the future of the Arctic remains uncertain and there is a need to engage in a constant, comprehensive and risk-aware assessment of Arctic dynamics, among other things in order to make sustainable, timely and well-focused investment decisions. ■

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The achieved high Arctic stability as an asset for the storms of international politics

Expert article • 1643

The globalized, 'post' post-Cold War Arctic is facing a danger of a shift from high stability, based on an international, mostly multilateral, cooperation on environmental protection – here it represents 'cooperative security' - to the priority of economic activities and higher political tension, and correspondingly a decline of intergovernmental cooperation between the Arctic states.

Behind is on the one hand, that the Arctic and its resources, as well as options to them, have become a target of the growing interest of the region's states, as well as that of growing global interest much due to a better access to resources made possible by rapid climate change. This strategic position of these (energy) resources, together with new global sea routes may increase the mass-scale exploitation of resources, and economic competition between the Arctic states, as well as between them and non-Arctic states. On the other hand, the current state of international politics - much influenced by constant 'war on terror', and continuing regional warfare with international sanctions and counter-sanctions, as well as loud rhetoric full of rumours, propaganda, and mis-/disinformation and falsification with strange consequences, such as the Swedish Navy hunting for "something down there" in the archipelago of Stockholm – has its reflection and indirect impacts in the entire North.

Some might say, a bit misleadingly, that Geopolitics is back. All of this is clearly an indication of 'Realpolitik', but is not the whole picture, since Geopolitics has been there all the time, though taken over by Geo-economics and global financial liberalism. The situation is more complicated, and the scale is broader, simply global, and the international community, as well as the Arctic region, is facing bigger and unpredicted challenges and serious irrational violence: first, the threat presented by ISIS, the Khorasan group, and the exploding Middle East; second, world-wide epidemics, human catastrophes, e.g. the Ebola virus as a zoonotic disease; third, impacts of unavoidable climate change, e.g. loss of sea ice and that of glaciers, and the consequent conflict 'the climate vs. capitalism'; fourth, corresponding holistic environmental degradation accelerated by the Anthropocene, e.g. the Arctic paradox; fifth, a discourse shift of security from traditional to comprehensive, particularly human, security with the core question, "who are subjects of security"; and final, structural societal problems of the governing systems, and the possible ever-present 'irreversible collapse' due to growing inequality and the unsolved cumulative crises of Europe (from fiscal, economic, political to moral crisis).

The year 2014 has been difficult for the Arctic region and its, so-far smoothly run, international multidimensional cooperation: The Ukrainian crisis, and warfare there, has wrought tension between Russia and its Arctic neighbors casting a shadow over Arctic affairs, if not outright putting them into a danger. There has been a clear shift from environmental protection to economic development by Arctic states. We even saw the first (ever) boycotting of Arctic Council meetings. Consequently, there is a growing and legitimate concern that due to this situation the current era of high political stability of the Arctic may be lost.

Briefly saying, in the 2010s the post-Cold War (in the Arctic) is over, and the achieved Northern order based on multilateral cooperation and common interests is in a test - first time since the end of the 1980s. At the same time, there in the Arctic are new dimensions and bigger challenges, which require local, regional and global political responses, and fresh, bold ideas. For example, according to the report *Russian Strategies in the Arctic: Avoiding a New Cold War*[1] the Arctic region, where the Russian Arctic consists a big part, faces both challenges and opportunities, and needs more transparent, predictable and consistent policies of Arctic states, and a kind of up-dated version of 'new thinking'. Also a paradigm shift 'from unipolar, national, military security to holistic approach' is badly needed – though might be too radical for most of the Arctic states, but supported by many local and regional non-state actors - not least due to the 'Arctic paradox', and that the 'Anthopocene' is already at play in the Arctic.

In this current unstable situation of international politics at the 2010s - with several continuing regional wars, aggression and attacks by violent non-state groups and constant fight on international terrorism, as well as 'from fiscal and economic crisis to political and moral one' – the stable and peaceful Arctic could, as well should, be taken (by policy-makers) as a human-made capital and immaterial value, as a contrast to the emphasize of material things, particularly energy resources.

The first geopolitical shift 'from confrontation to cooperation' for environmental protection and sustainable development was a real achievement – it could go into another direction. Here the Arctic states played, and still play, very important role. This was a conscious choice by them, and was much supported, even pushed, by the region's non-state actors in the Arctic, particularly indigenous peoples' organizations, environmental movements and scientific community. In their recent national strategies and policies the Arctic states recognize the value of Arctic stability and cooperation – indeed, stability is a useful means for national security and economy, and other state interests, as well as for state control over its territory.

This shift meant changes in premises of Arctic security, as well as Arctic governance: The region's stability is not any more threatened by the military presence and the deployed nuclear weapon systems, but more by a concern on a state of the fragile environment due to first, long-range air and water pollution and then rapid climate change

[1] The focus of the report is Russia's activities and interests in the Arctic, particularly in the Russian Arctic, and Russian recent policies in and dealing with the region. It was launched in October 2014 by the Russian think-tank Valdai DC at its annual meeting in Sochi.

with its environmental and socio-economic impacts. Consequently, the discourses of environmental and human security became more in focus, and peoples started to recognize something called 'every day's security' and slowly became subjects of (their own) security. If this was important when designing and maintaining the new Northern order, which replaced the confrontation of the Cold War period, the high stability and peacefulness still play an important role for Arctic governance and its further development. Therefore, it can, and should, be interpreted as a joint valuable asset (by the Arctic states) and a reserve for the future. The Arctic region with high political stability and willingness to find common interests, together with rich (natural) resources and human capital, could act as an example for the rest of the world, as well as a test ground to examine new and innovative ways of governance, economic development and human security. This goes beyond state sovereignty, the military and nationalistic ways of thinking, as do the above-mentioned challenges and threats. ■

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The article is based on my introduction in the international panel "Security of the Arctic" at the 2nd Arctic Circle, organized by the University of the Arctic's and the Northern Research Forum's Thematic Network on Geopolitics and Security. The panel – with four breakout sessions and 25 talent speakers - was rich in various security themes and broad approaches to security studies from the nexus of the environment, resource extraction, global economy, energy security, sovereignty, and global governance, and from the current military strategies to redefinition of further human / environmental / local security of the Arctic, as well as to the question of subjects of security.

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Arctic Roulette – will economic sanctions open the door for Sino-Russian offshore operations in the High North

Expert article • 1644

The former CEO and owner of Yukos Oil Co., Mikhail Khodorkovsky, compared "investing in Russian equities to gambling in Las Vegas" in a recent Council for Foreign Relations interview. From the point of view of the Arctic offshore operations, Khodorkovsky's comparison is not void of meaning. The stakes are high, since the melting sea-ice has revealed new options for the exploitation of oil and gas reserves as well as newly opened sea lanes. The promising estimations of fossil fuel resources are like honey to the bees. Different actors, from in and outside the Arctic region, are looking for 'the full house' in terms of economic profits.

The hand of the Russian Federation in the Arctic poker game is promising, as she is the largest state geographically, an important regional and global actor in energy markets, and has one of the most attractive northern sea lanes along her coastline. Even though it seems that Russia has aces in her hand, the game is not over yet. In order to utilize offshore energy resources Russia needs both financial and technological assistance from foreign players. During the past decade Russia and its SOEs have formed a number of strategic partnerships, particularly with big Western TNCs. These joint ventures are beneficial for both parties, as they open the door for TNCs to the Arctic treasure box and give Russian SOEs support to operate in extremely expensive and technologically demanding offshore operations.

For a long time players in the energy roulette seemed to calculate their odds well. Deeper economic interdependence and the need to satisfy the global hunger of energy motivated exploration in more severe conditions. However, the situation today is somewhat different. Firstly, new forms of unconventional oil and gas resources have become technologically and economically viable which has brought new players to the table. According to some estimations the United States will turn from a net importer of oil and gas to a net exporter in the next few years. Secondly, the global economic downturn and particularly the financial crisis in the EU have resulted in declining demand for energy in OECD countries. Third, tensions in international relations are at the highest levels since the Cold War. The ongoing crisis between Russia and Ukraine has altered the faith in economic interdependence as the guarantor of peace and stability. One of the consequences has been economic sanctions, laid by the EU and the USA, which ban the export of technology and prevent Russian companies from getting loans from the Western banks. The rationale behind these actions is to play out the aces from Russia's hand.

The third round of sanctions, which came into force in September 2014, forced Western companies to halt joint exploration projects with Russian partners in the Kara Sea. The new sanctions hit the American TNC Exxon the hardest, which is in a strategic partnership with Russian state-controlled Rosneft. For Exxon, Russia is the next mega-area where the resource potential is not yet fully seized. However, because of political relations vis-à-vis Russia and the West as well as economic sanctions, Exxon's heavy investments in Russia are in great risk. Nevertheless this is not an easy situation for Russia, either, since its economy is so heavily dependent on the exports of fossil fuels. Furthermore, Russia needs new reserves to substitute for its maturing fields. In order to be successful in this foreign investments and modern technology are necessities, and this is something that the political and economic elite, in both Russia and the West, know. So, is the 'energy game' between Russia and the West as straightforward as it seems?

Even though there is a strong interdependence between Russia and the West in terms of energy trade, both sides are actively searching for diversification. For Russia, the new market is in the Far East, particularly in China. In Spring 2014, China and Russia signed a massive 30-year $400 billion gas deal which is significant in many ways. On the one hand, it opens a new market for Russian gas and thus compensates the decline in demand in the EU. On the other hand, although exports to the European market have decreased, new reserves are needed. Chinese financial instruments and energy companies play a critical role in this, because they are not influenced by the economic embargo against Russia. Hence, the current political struggle between Russia and the West could give a stronger foothold for China in Arctic energy projects. Chinese firms like CNPC and CNOOC are already partners in energy projects, together with the Western and Russian companies in the Arctic.

The current situation regarding transforming the Arctic oil and gas resources into exploitable reserves is in a flux. The first option could be that the projects are on hold because of economic reasons i.e. a low market price of oil and gas, the growth of unconventional reserves as well as sanctions which prohibit Western TNCs and investments from operating in the Russian Arctic. The second option could be that if economic sanctions last for few years, the Western TNCs and investments would be replaced by Chinese counterparts. Although both Russian and Chinese companies do not have the capability nor the technology to safely operate in the harsh climate conditions and icy waters, the second scenario is possible, as Chinese and Russian companies have been collaborating with more experienced Western companies for a relatively long time. The joint projects, such as Universistkaya-1 in Kara Sea, must have taught something about offshore operations to Russian companies. So, when the next round is played, there might be only two players left: Russia and China. ■

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After getting in – what comes next after China got the Observer Status?

Expert article • 1645

In May 2013, the Arctic Council welcomed six new observers into the club, with China catching much of the media's attention. China has been engaging with scientific research and organizing expeditions to the Arctic since the 1990s. China was invited to participate Arctic Council affairs in 2006, and applied Observer Status in the following year. It takes about seven years for China to get the Observer status. So, it is no surprise that the news of China's being accepted as an Observer was hailed by high level Chinese media.

Why bother joining the club?

First, the fast changing Arctic and its consequences are increasing connected with China. Everyone knows that the Arctic is changing. Global warming in the Arctic is two times faster than the rest of the world. For better or worse, the consequences of the changing Arctic offer opportunities and challenges. It is believed by some researchers that climate change in the Arctic has some influence on China's agricultural production, weather patterns, etc. To learn more about climate changes in the Arctic and its global impact, especially impacts on China, are the main tasks for China's Arctic research and expeditions. The potential economic opportunities offered by an opening Arctic is more salient in China's claims of its perceived interests in the Arctic. These include the Arctic passages, which is much shorter in distance than the current passages from Europe to Asia; the potential availability and exploitation of energy and resources in the Arctic, which offers new options to satisfy the growing demand for energy. These connections is dual dimensional. As one of the biggest emitter of green-house-gases, for better or worse, China is also contributing to the warming of the Arctic, and the increasing presence of Chinese companies in the Arctic is also influencing the Arctic.

Second, being an Arctic Council Observer was perceived as being recognized as a legitimate stakeholder in the Arctic. Though initially as an agenda-setting forum, the Arctic Council was perceived as the most influential body governing the Arctic, this is valid especially in the light of recent developments in the Arctic Council making more binding rules. Not an Arctic country geographically, non-Arctic countries, including China, cannot become a member of the Arctic Council. Following the governing rules of the Arctic Council, being an observer to the Arctic Council and thus joining the Arctic club is the only option for those interested non-Arctic states to forging the connection with the Arctic. With the increasing interest of China in the Arctic, some researchers have defined China as a "near-Arctic State" or an Arctic Stakeholder, which is also bought by high-level Chinese officials as shown in their speeches on formal occasions. By joining the Arctic Council as an observer, China can be invited to attend Arctic Council meetings and other activities, to observe the work of the Arctic Council, and make relevant contributions through the engagement of working groups, as elucidated in the *Arctic Council Observer Manual for Subsidiary Bodies*. This is a great leap-forward for China in future participation in the Arctic because it is more formal and institutionalized.

A learning curve

The understanding of the Arctic by Chinese researchers in social sciences and the perception of China's intentions in the Arctic are experiencing a learning curve, in which both sides are more rational in observing and interpreting what's happening. Arctic affairs became a topical issue for Chinese social scientists and commentators are less than 10 years. So the knowledge and understanding of the Arctic is scant for early researchers, thus it is no surprise for some of them to have radical arguments. This is the same for international commentators to exaggerate "the Chinese are coming" in the Arctic, and the threat and challenges that poses. Seeing "the dragon eyes the top of the world", some commentators even passionately argue to "stand up against China's increasing claim in the Arctic". With more interaction among researchers and commentators, enhanced mutual understanding follow suit. Less media attention and irrational interpretation of China's sixth Arctic Research Expedition appeared in 2014.

What's next?

While applying the Observer Status to the Arctic Council, China promised to be a responsible stakeholder, and contribute to good governance of the Arctic, alongside with the Arctic countries and the international society. Capacity is the key for making the contribution, and China is boosting its Arctic research capacity by constructing the second icebreaker, conducting routing Arctic research expedition, and support more research projects on Arctic issues, thus to transform China from a big polar country into a strong polar country.

Polar strategy is part of China's strategy of building China into a strong maritime power, but there is no published yet. An Arctic policy paper should be issued to clarify China's plan and position in the Arctic, thus eliminating outsider suspicion, though the principles and main positions of China's engagement in the Arctic is elucidated in the talks by high-level Chinese officials when attending Arctic related conferences. Those principles include international cooperation on Arctic researches, good governance of the Arctic, being a responsible stakeholder, and make meaningful contribution to the Arctic, etc. The Observer Status can serve as a catalyst for China in formulating and issuing such a policy paper.

The connection between China and the Arctic also grows at the society level, more research institutes dedicated to Arctic studies are founded, especially salient in social science field, and more conferences and scholar exchanges are carried out with the China-Nordic Arctic Research Center as a pioneer. Eight Chinese institutions joined the University of the Arctic network in 2013, and more is joining in the coming years. The Observer Status boosted Chinese social scientists interest in Arctic researches.

China is also more realistic as being an Observer to the Arctic Council because there is basically only very limited room for observers to exercise power in shaping Arctic Council agendas. The Observers, including China, while engaging in the Arctic, they should accommodate their interests in line with Arctic states' interests, and paying special attention to the different needs among different Arctic groups. Only through this approach, the observers are welcomed in making meaningful contribution to good governance of the Arctic for the Arctic peoples, Arctic states, and the entire world. ■

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The Arctic – South Korea's interests and challenges ahead

Expert article • 1646

South Korea's interest in the Arctic has grown gradually with the acceleration of the Arctic sea ice melting. The interest reached its peak on May 15, 2013, when South Korea obtained observer status in the Arctic Council. Expecting that the Arctic would bring great profits to South Korea, newspapers and media wrote articles on the so-called "Arctic Ocean era" full of rosy prospects. Many seminars and expert interviews were conducted about the Arctic, while port cities on the east and south coasts of South Korea asserted that they would become the main beneficiaries of the Arctic Ocean era. Now just a year and half later, the media's and people's interests in the Arctic have waned considerably; they slowly became aware of the fact that the stories of huge profits from the Arctic are not happening in the immediate future. On the other hand, the situation can be "beneficial" for the government as they can now prepare mid- and long-term policies calmly and rationally. The author will discuss South Korea's main interests in the Arctic and the challenges ahead.

Above all, South Korea's interests in the Arctic begin from economic benefits. The opening of the Arctic sea routes in summer due to accelerated thawing in the Arctic earlier this century, combined with the U.S. Geological Survey's report that 13 percent of the world's oil reserves and 30 percent of its natural gas reserves are submerged in the Arctic, drew the attention of South Korea to the Arctic Ocean. South Korea's economic interests are focused largely on five main points.

First point is the Northern Sea Route (NSR). Current sea routes that connect South Korea to Northern Europe pass the Strait of Malacca and the Suez Canal. It is expected that NSR will decrease the transportation distance by about 40 percent (8,000 km), reducing fuel expenses by 25 percent and the time by about 10 days. It is, without doubt, highly advantageous compared to the existing sea routes. However, the use of NSR depends solely on the melting of the Arctic sea ice. Experts forecast that it will take at least 20-30 years to be able to navigate the ice-free Arctic without an icebreaker. While South Korea's first voyage across the NSR – from Ust-Luga Port of Russia to Gwangyang Port of South Korea – was successfully completed by the South Korean logistics company Hyundai Glovis in October 2013, the second voyage is still yet to happen. Currently, the main challenges include the costly ice-breaker and ice-pilot fees, securing the freights when ships go back to home ports, and difficulty of finding well-trained and experienced crew. Another obstacle is that due to the severe climate conditions in the Arctic, shipping through the NSR is still limited to bulk cargoes and oil, while regular container shipping remains not feasible.

Second, the opening of NSR is expected to vitalize South Korean ports. After South Korea earned observer status in the Arctic Council, local governments with major ports on the east and south coasts demanded much investment in preparation for the opening of the NSR. However, this was too hasty a move without any concrete evidence. South Korea's Busan Port currently ranks 5th in the world in terms of container cargo volume. Unlike what many envisions, the benefits of utilizing NSR to the Busan Port are not as high as expected. The actual increase in traffic will be limited for the time being since container shipping through the NSR stills requires more time as aforementioned. Moreover, the NSR merely replaces existing sea routes, meaning that as the traffic from the Arctic increases, those from the Suez Canal will decrease just as much.

Third main focus is in the participation of Arctic oil and gas development. Majority of the oil and gas in the Arctic is reserved either on land or coast of Russia. The exploration is already under way in western Russia, where the environment is relatively easier to excavate. The global economic recession coupled with the decrease in oil prices due to shale gas growth are also other factors that hinder the energy development in the Arctic. Therefore, it is not likely that South Korea will enjoy the benefits of Arctic energy resource development in the near future. So far, The South Korea Gas Corporation (KOGAS) has only acquired 20 percent stake in the Umiak gas field in the Canadian Arctic in 2011.

Fourth point is the possibility that South Korea could participate in the development of the Russian ports. Modernization of old port facilities of Russia is crucial to navigate the NSR. South Korea is discussing its participation in the port renovation projects with Russia's federal and local governments, but the worsening financial situation due to Russia's economic recession is blocking the process.

Lastly, South Korea has an economic interest in the shipbuilding industry. Demand for special vessels, such as icebreakers and ships with icebreaking capability, is increasing as the NSR opens up. South Korean shipbuilders, including Hyundai Heavy Industries, Samsung Heavy Industries, and Daewoo Shipbuilding & Marine Engineering (DSME), are among the world's top manufacturers in terms of construction technology and the amount of contracts. DSME has signed with the Russian shipping companies, including the state-owned Sovcomflot, to build a total of 15 ice-class LNG carriers for the Yamal project, which will be delivered in 2016. However, the demand for such special vessels will decrease over time as the Arctic sea ice melting accelerates.

As identified above, despite South Korea's high interests in the Arctic, the actual financial benefits are exaggerated and limited in many aspects. In this regard, the Arctic Policy Master Plan by South Korea in December 2013 – which was the first among non-Arctic states – deems very realistic and practical. The Master Plan sets four main goals for the period of 2013-2017, each consisting of a detailed plan to attain these goals: (1) Strengthen International Cooperation; (2) Encourage Scientific and Technological Research Capacity; (3) Pursue Sustainable Arctic Businesses; and (4) Secure Institutional Foundation.

The detailed plans for each goal include actively participating in meetings of the Arctic Council and all activities of the Working Groups, creating strong and diverse relationships with research institutions affiliated with the Arctic in the Arctic States, supporting Arctic research

stations and establishment of the Arctic scientific research foundation, examining the feasibility of Arctic sea routes, supporting the development of Arctic related technology, and founding the Polar Information Service Center. It is a highly desirable effort that the South Korean government is pursuing more feasible policies for the mid- and long-term.

With respect to the Arctic, South Korea is facing at least three challenges. First is the relationship with Russia. Securing a solid partnership with Russia is of critical importance to maintain South Korea's economic interests in the Arctic. However, due to the current situation in Ukraine, Western countries are issuing political and economic sanctions against Russia, and South Korea cannot stand alone in such global action. Second is the harmonization of the NSR with trans-Siberia railway route, an initiative to connect Europe and South Korea via the Silk Road. It is important that the two routes should have a complementary rather than a competitive relationship. Lastly, the South Korean government's Arctic policy has been gaining momentum since South Korea obtained observer status in the Arctic Council. South Korea should strive to maintain this momentum even though no tangible results may be achieved in the short term. ■

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The relevance of Corporate Social Responsibility (CSR) reports in the framework of Arctic business operations

Expert article • 1647

What is the Arctic? There are plenty of different perspectives in this regard and subsequently different answers to that question. In a geographical view, the Arctic is primarily ocean and in addition the most northern land territories of a few countries. For several reasons the development of the Arctic is increasingly dominated by human activities. Despite the fact that human activities have effects on the entire planet, the Arctic plays in that perspective a prominent role, often referred to the vulnerable Arctic ecosystem and the possible environmental damages within this ecosystem. Hence it is meaningful to consider which actors significantly influence the Arctic. Politicians, local communities, indigenous people, scientists, non-governmental organisations and enterprises which operate in the Arctic are some of the most influential actor groups. The latter group is of particular interest by considering the aforementioned human activities by reason that the Arctic has a vast amount of various natural resources. Major industrial sectors in that context are forestry, metal & mineral mining, oil & gas production and fishery.

Consequently, large-scale enterprises related to these business sectors have a special role in this regard. Several multinational companies operate in the Arctic territories and affect the economy of the regions, the well-being of the local communities and the health of the Arctic ecosystem. In this respect the significance of considering Corporate Social Responsibility (CSR) in these corporations and subsequently the implementation of CSR policies and strategies within the corporate planning is continuously increasing. CSR is defined differently by diverse organisations due to the fact that no specific core theory of CSR has prevailed to this date. However, the vast majority of CSR guidelines and definitions have one thing in common, that a successful organisational CSR strategy is adequately based on the three dimensions environment, social and economy and a reasonable balance among these three dimensions.

One prominent solution to depict CSR efforts and create transparency of an organisation´s sustainable practice is the frequent publication of a CSR report (also identified as sustainability report). These reports are often based or at least related to international reporting standards. The Sustainable Development Working Group of the Arctic Council for instance proposes the application of the Global Reporting Initiative guidelines (GRI) with its environmental, social and economic performance indicators, the OECD guidelines for multinational enterprises or the United Nations Global Compact standard. By looking at the large-scale enterprises with operations in the European Arctic and North America the differences to the most other global companies are marginal. In Canada, Finland, Norway, Sweden and the United States the development approaches of CSR reports are very similar to the methods of large-scale-companies in the most other industrial countries, for example in Central Europe. Russian companies follow various reporting strategies. Some Russian companies (for instance a few notable oil and gas producers) use the international reporting frameworks to the same extent as their competitors from Western Europe and North America, others on the contrary follow a rather individual reporting strategy.

Due to the fact that CSR is aligned to the three dimensions of sustainability, the relevance of CSR in the economy, environment and society of the Arctic is briefly outlined in the following:

I.) *Economy:* The Arctic has plenty of natural resources that attract amongst others the industries of forestry, mining and oil & gas production. Forestry is a key business sector in Canada, Finland, Sweden and the Russian Federation. Moreover there are several mine locations in the Arctic which produce for example coal, copper, nickel, gold, chrome, zinc, lead and iron ores. Hence mining constitutes another pillar for the national economies of Arctic countries. Canada, Norway, the Russian Federation and the United States have the lucrative situation to have direct access to the Arctic Ocean and consequently to the oil and gas resources in the sea. That fact plays a crucial role with respect to the economic development of these countries. CSR reporting and implementation of CSR policies into the corporate strategies of companies in these industries could attract investors/shareholders who appreciate sustainable investments.

II.) *Environment:* In an environmental perspective, the Arctic is more than just a remote place with frozen water and a handful of polar bears. The Arctic ecosystem has an extraordinary flora and fauna with numerous species. Though the ecosystem is comparably vulnerable and the long-term survival of many species is nowadays dependant on sustainable practices of operating businesses in the Arctic. Hence industrial companies have to put emphasis on minimising their negative environmental impacts. The most influential of these impacts could be water, soil & air pollution, high levels of greenhouse gas emissions and the loss of biodiversity by disturbing or destroying the natural habitat (e.g. forests, swamps, lakes & rivers) of species. Some CSR reporting tools provide a specific framework to depict and report about every single of these possible impacts and the commitment and actions of an organisation to avoid or reduce damages.

III.) *Society*: The social dimension in the Arctic has diverse facets. Around four million people live in the Arctic and the majority of these people in the European Arctic territories. A new operation by a multi-

national company in these territories could increase the well-being of the local communities to a considerable extent. The creation of jobs, the development of the local infrastructure or compensation efforts for environmental damages lead to positive effects for communities in a monetary sense. On the other hand if compensations are inappropriate or insufficient, the effects could turn into the opposite direction. Various population groups in the European Arctic depend on two further business sectors that could be negatively influenced by the extractive industries. As well indigenous as non-indigenous people in the Arctic run businesses in reindeer herding and tourism. Reindeer herding requires wide areas of ecologically healthy landscapes. Land destruction of forestry and mining operations or long cuts in the landscape with gas pipelines disturb severely the livelihood of reindeers. Regarding the tourism sector, the businesses need a perceivable clean Arctic environment to provide a feeling of remoteness and untouched nature to attract eventually tourists. CSR reporting can be beneficial by localising and determining all the stakeholders of an organisation. Additionally, a contrast of positive and negative impacts on the society might reveal potentials for improvement of an organisation´s social performance.

The extractive resources industries play essential roles in the Arctic and the CSR debate. Oil, gas, coal and diverse metals are non-renewable and the demand for these goods on the international markets will persist in the future decades. By facing in addition lots of social and environmental challenges today and in the future, the organisations that operating in the Arctic can benefit to a great extent from an implemented CSR strategy and the creation of sophisticated CSR reports. ■

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Arctic Contaminants Action Program (ACAP) – practical projects to reduce contamination in the Arctic

Expert article • 1648

ACAP is the Arctic Council's sixth permanent Working Group. Established in 2006, ACAP was founded to address Arctic pollution sources. It acts as a strengthening and supporting mechanism to encourage national actions to reduce emissions and releases of pollutants. Cooperative actions make an important and significant contribution to the overall international effort to reduce environmental damage on a global level.

ACAP's main objectives are to develop and demonstrate technical solutions to remediate pollution in the Arctic and to assist countries in meeting their commitments to international conventions such as the Stockholm Convention on Persistent Organic Pollutants (POPs), the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, and the recently negotiated Convention on Mercury

ACAP carries out projects in seven thematic areas that impact the circumpolar region. Currently projects are focussed in the Northern regions of the Russian Federation. These include, the environmentally sound management of PCBs and obsolete pesticides, reduction of releases of atmospheric mercury, short-lived climate forcers, such as black carbon, dioxins and furans, and the development of a comprehensive hazardous waste management strategy for selected northern regions in Russia. Reduction of exposure to contaminants for circumpolar indigenous peoples' communities remains a priority for ACAP.

Environmentally sound management of PCB contaminated waste

PCBs have been used in transformer oils, capacitors, sealants and paints since the 1930's. Their use and disposal has been strongly restricted in many countries for decades. Huge stockpiles of PCBs are housed in equipment and open-applications, like paints and sealants, which need to be properly managed as hazardous waste. ACAP carried out an inventory in Russia and has worked to facilitate the environmentally sound destruction of PCBs. However, this has not been possible due to the lack of environmentally sound destruction capacity in Russia and the inability to obtain operational licenses for construction of such a facility.

ACAP is closely following Russian decisions related to implementation of the Stockholm Convention. PCBs are one of the key issues addressed in the Russian National Implementation Plan.

Environmentally sound management of obsolete pesticides

Russia has large stocks of obsolete pesticides, estimated at 40,000 tonnes, originating mostly from Soviet times. In 2001, ACAP initiated a project to improve management of obsolete pesticides stockpiles in 12 priority regions in Northern Russia.

To date, 7000 tons of obsolete pesticides have been discovered in ten regions in Northern Russian. Most of the stocks have been repackaged and transported to interim storage facilities to protect the environment and human health while awaiting environmentally sound destruction. As Russia is still lacking this capacity, the only option at the moment is safe interim storage. Due to the lack of final destruction capacity, landfilling hazardous waste in dumpsite "polygons" has been a common practice. It is unlikely that pesticides stored in this manner will ever be retrieved for final destruction.

Although the Russian Federation has reported development of destruction capacity, the environmental performance of these technologies has not been fully documented. Unfortunately, it may be a long time before environmentally sound destruction capacity is commercially available.

Mercury

Mercury pollution is an ongoing concern in the Arctic. Like many persistent pollutants undergoing atmospheric transport, the Arctic serves as a sink for emissions of the Northern hemisphere. Mercury has been found throughout the Arctic, polluting the food chain. The concern over Mercury pollution has led to the creation of an international convention to reduce Mercury pollution. ACAP contributed to this process by developing an Arctic Mercury Releases Inventory in 2005, and the first inventory of atmospheric Mercury releases from the Russian Federation.

The ACAP Mercury Expert Group works to coordinate and facilitate demonstration projects that reduce the release of mercury, communicate results and coordinate synergies between projects. Projects are taking place in a number of sectors including, ferrous metals/zinc smelter mercury reduction, development of a coal-fired power plant sorbent technology for emission reduction, mercury reduction in industrial gold mining, a review of artisanal and small scale gold mining, and coordination on mercury-containing waste issues with relevant ACAP Expert Groups.

Indigenous Peoples' Contaminant Action Project (IPCAP)

Industrial development of the Arctic has been accompanied by waste accumulation. This represents a growing threat to the health and safety of the Arctic people who, due to traditional subsistence lifestyles, are exposed to higher levels of contamination in the air, water, soil and food supply.

To address these issues in Arctic indigenous communities, the Permanent Participants of the Arctic Council proposed the Indigenous Peoples Community Action Initiative (IPCAP). The goal of IPCAP is to reduce the exposure and impact of contaminants on local communities. Currently, the Russian Arctic Indigenous Peoples Organization (RAIPON) and the Russian Federation, are developing a project ad-

dressing black carbon emissions in indigenous communities in the Aleutian Islands of Alaska and Chukotka.

Short-lived Climate Forcer Contaminants (SLCFC)
Black carbon is composed of fine particles that are produced from the incomplete combustion of fossil fuels, wood, crop waste and other biomass, and refuse. Fine particles, known as PM2.5, have well known and significant adverse impacts on human health. Many governments have taken action to reduce emissions on the grounds of health impact alone. Black carbon also has a significant impact on the environment, particularly in the Arctic. Other SLCFCs include substances such as hydrofluorocarbons (HFCs) and methane.

ACAP's SLCF Expert Group works to facilitate projects that focus on activities that reduce black carbon emissions transported and deposited in the Arctic. Projects addressing emissions from two different sources are under implementation. Project reports on reduction of black carbon emissions from residential wood burning (ACAPWOOD) and a project addressing emissions from diesel engines, widely used for energy production in remote areas, will be submitted to the Arctic Council Ministerial Meeting in 2015.

Reduction/Elimination of dioxin and furan emissions
Dioxins and furans are among the substances included in the original Stockholm Convention "dirty dozen". In 2005, ACAP facilitated development of an emissions inventory from sources in Arkhangelsk and Murmansk oblasts and the Republic of Komi using UNEP's *Standardized Toolkit for Identification of Dioxin and Furan Releases*. Subsequently, an analysis of gas releases for dioxins was carried out at the most significant sites to define experimental emission factors. In 2008, a feasibility study was undertaken to identify potential pilot projects, identifying the Vorkutinskiy Cement Plant as a potential site for further work. Funding for the final phase reduction activities is currently being explored.

Integrated Hazardous Waste Management Strategy
Managing hazardous waste has been a long standing priority of the Arctic Council. Many hazardous waste management projects have not been completed because of the lack of environmentally sound hazardous waste management capacity. ACAP's IHWMS Expert Group is developing an integrated strategy for environmentally sound management of all hazardous waste streams in selected regions in Northern Russia. The project is currently identifying the pilot regions where the work could be initiated.

ACAP future
ACAP will continue to implement and identify demonstration projects addressing contamination threats to the Arctic. ACAP will continue working with Russian authorities to identify and build environmentally sound destruction capacity for hazardous wastes. The current lack of this capacity for obsolete pesticides, PCBs and many other kinds of waste is preventing the completion of projects. An important tool in the future work of ACAP is the recent operationalization of the Arctic Council's Project Support Instrument (PSI), to speed up the implementation process by providing funding to projects reducing contamination of the Arctic. ■

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The human face of the Arctic – the Sustainable Development Working Group of the Arctic Council

Expert article • 1649

The circumpolar world is experiencing fast-paced and far-reaching transformation. The observed climate and environmental changes in the Arctic exacerbate the ongoing challenges presented by resource demands, globalization, economic development, and changing demographics. Arctic communities are expected to respond to these socioeconomic, political and environmental realities while simultaneously seeking to benefit from the evolving opportunities. With more than four million circumpolar residents and indigenous peoples living in the Arctic region, it is necessary to consider the human dimension and support those who continue to pursue sustainable livelihoods, particularly in the context of ongoing international collaboration. The Arctic Council's Sustainable Development Working Group is at the forefront of this pan-Arctic work aiming to build the capacity of Arctic communities and support circumpolar peoples in their attainment of sustainable and prosperous ways of life.

> The Arctic environment continues to change in ways that we are still trying to understand.

Formally established by the Ottawa Declaration in 1996, the Arctic Council is a high-level intergovernmental forum that promotes cooperation and coordination among Arctic States, indigenous communities and Arctic inhabitants on common circumpolar issues through representation by eight Arctic States and six indigenous Permanent Participant organizations. A key achievement for Canada as the first Arctic Council Chair was the creation of the Sustainable Development Working Group (SDWG) in 1998 in Iqaluit, Canada. The SDWG was formally instituted to advance sustainable development in the Arctic, including opportunities to protect and enhance the environment, economies, culture and health of indigenous peoples and Arctic communities.

Projects and initiatives of the SDWG are carried out in six thematic areas: Arctic Human Health, Arctic Socio-Economic Issues, Adaptation to Climate Change, Energy and Arctic Communities, Management of Natural Resources, and Arctic Cultures and Languages. A guiding principle for the work of the SDWG is to pursue initiatives that provide practical knowledge and support the building of capacity of indigenous peoples and Arctic residents to respond to the challenges and benefit from the opportunities emerging in the Arctic. Of central importance to the SDWG is returning information to Arctic communities in order to enable them to evaluate and implement strategies informed by scientific, traditional, and local knowledge.

It is important to underline that the SDWG is a forum where topics and projects of particular importance to the Permanent Participants are advanced. Indigenous peoples, represented by six indigenous Permanent Participant organizations, have a strong voice in the SDWG and are integral to the success of projects. Permanent Participants provide effective and extensive consultation with indigenous peoples and often take leadership roles in SDWG initiatives.

The work of the SDWG is informed by two subsidiary expert groups. The Arctic Human Health Expert Group (AHHEG) pursues efforts to increase awareness and visibility of health concerns of circumpolar residents in the fields of health research, and the expansion of health and education networks. The recently created Social, Economic and Cultural Expert Group (SECEG) provides access to research networks, subject-area expertise, and input into proposed and ongoing Arctic Council projects. It is recognized that challenges facing the circumpolar world cannot be addressed in isolation. For the SDWG, the two Expert Groups play a critical role of facilitating and participating in work across other Arctic Council Working Groups. Additionally, the Expert Groups are innovative spaces for the development of strategies and act as gatekeepers to networks of knowledge and experience.

After completing a rotation of all Arctic States, Canada has once again assumed the Chairmanship of the Arctic Council for 2013-15. The overarching theme for the Chairmanship is "development for the people of the North," with a focus on responsible Arctic resource development, safe Arctic shipping and sustainable circumpolar communities. These priorities placed considerable focus on the SDWG and its associated projects. Covering everything from climate change adaptation to reindeer herding, indigenous language promotion to the integration of Traditional and Local Knowledge into Arctic Council work, SDWG projects reflect the diverse challenges and opportunities of life for people in the Arctic.

It is undeniable that better and more effective results are achieved when Traditional and Local Knowledge is consistently integrated into projects and initiatives. In the Kiruna Declaration (2013), Ministers requested that the SDWG lead efforts to develop recommendations for the more consistent integration of Traditional and Local Knowledge into the work of the Arctic Council. To this end, two workshops were held in partnership with the Indigenous Peoples Secretariat (IPS), bringing together the Permanent Participant organizations as well as representatives from the Arctic Council Working Groups to explore how traditional and local knowledge, together with science, can enhance our understanding of the Arctic and better inform policy and decision making. This important work is intended to continue throughout future Chairmanships as the Arctic Council pursues deeper and fuller integration of Traditional and Local Knowledge into its work.

Another priority initiative of the SDWG pertains to the promotion of mental wellness. Many Arctic communities are successfully implementing approaches that enhance community resilience, therefore

there is a need to know if successful programs developed by one community could be adapted and scaled into other communities. The SDWG is working on *The Evidence-Base for Promoting Mental Wellness and Resilience to Address Suicide in Circumpolar Communities* and supports two research teams in their exploration of mental wellness promotion measures around the circumpolar world in order to enable communities across Arctic States to develop initiatives to increase the resilience of circumpolar communities.

The Arctic environment continues to change in ways that we are still trying to understand; it is evident that increased temperatures, the reduction of sea ice, and other implications of environmental change will have vast effects on the livelihoods of circumpolar residents. The *Arctic Adaptation Exchange: Facilitating Adaptation to Climate Change* creates an online portal to be used in the enhancement of adaptive capacity of communities and foster innovative approaches to climate change adaptation. This centralized resource will allow communities and policy-makers to have access to shared knowledge, data and best practices upon which effective strategies can be developed.

It is with great anticipation that the SDWG awaits the publication of the *Arctic Human Development Report II*. This report will provide a ten-year update on the 2004 *Arctic Human Development Report* (2004) which presented a snapshot of human development in the circumpolar world. Covering diverse themes including culture and identities, resource governance, and human health – I anticipate that this report will be an important input into the work of the SDWG and go a long way in informing future work.

As the Arctic continues to experience vast transformation, continued collaboration among Arctic States, indigenous peoples and circumpolar communities will be central to sustainable development in this region. The SDWG is an important forum for the implementation of practical initiatives that enhance the capacity of circumpolar residents to meet the evolving challenges and opportunities associated with life in the Arctic. With continued support, the environment, economies, and cultures of the Arctic can be protected alongside the ongoing pursuit of prosperity of Arctic communities. ■

For more information on the work of the SDWG and ongoing projects, please visit www.arctic-council.org/sdwg.

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Futuring the Arctic

Expert article • 1650

The Arctic is hot! Not since the Arctic exploration and mapping expeditions that dominated the 19th and early 20th centuries has the Arctic garnered so much attention internationally. Issues of climate change, oil and gas production, and "carving up" the Arctic have driven the conversations regarding the status of this ostensibly remote region to the centre of political debate from Moscow, to Brussels, to Washington, DC, to Beijing. Indeed, the Arctic has and will continue to be significant in global politics for the foreseeable future. For those of us who live and work in the Arctic, while these political debates indeed do have resonance, what is clear is that, in the future, the Arctic will become, not just politicized, but also even more industrialised and urbanised. And as such, we will encounter challenges of mitigating the potential conflicts and problems these will bring to Northern residents who are more and more affected by both industrialization and urbanization in the High North. In short, I argue that the Arctic in the next 20 to 50 years will be characterized by industrialization, urbanization, and followed by intensified civil society engagement. These will be exacerbated by the world market demand for resources, by climate change, and by geopolitics.

In short, I argue that the Arctic in the next 20 to 50 years will be characterized by industrialization, urbanization, and followed by intensified civil society engagement.

Climate change has had a profound impact on the opening up of the Arctic and sub-Arctic regions to extractive industrialization. While it can be argued that mining and oil and gas development has existed for a century or more, especially if we look to the Russian example, opportunities and possibilities offered by a warming Arctic has increased such industrialization. Moreover even in highly developed mining sectors in the Russian Arctic, extractive industry activities have risen. In the Nordic countries, Canada, and Alaska, the mining industry, including oil and gas, have been reopened, intensified, or started where there was no mining before in order to meet world market demands.

All mining projects in the circumpolar Arctic are now also much more viable because of, at least until very recently, high prices for iron ore, gold, diamonds, coal, placer, uranium, quartz, oil & gas, and many more. Asia is the major consumer of such minerals and energy, but so are Europe, the United States, and Canada. Again, mining and extractive industries are driven by world market demands, and therefore, much of the investment, exploration, and extraction in the remote Arctic regions are often steered by international companies with head offices in Toronto, Moscow, or Sydney. Such predominance and influence of world markets in the remote North will have enduring impact on the economies, communities, and polities of Arctic regions. We already see the anticipation of this perceived eventuality as the Arctic Council, the intergovernmental forum for governance in the Arctic, gave observer status to the Asian states of China, Japan, South Korea, Singapore, and India at its Ministerial meeting in May 2013. For Asia, the Arctic potentially represents a source of natural resources, a gateway to the European market with the potential for transshipment of goods from Asia through the Northeast passage, and not least, to continue and strengthen cooperation on scientific research on and in the Arctic.

Hand-in-hand with the rapid industrialization of the Arctic is urbanization. Today, seventy percent of those who live in the Arctic live in cities and urbanized spaces. With the exception of Russian urban centres in its Northern regions, cities in the other Arctic 8 states are increasing in population – a growth driven by extractive industry jobs and their spin-off businesses, labour migration, and the attendant services required to run municipal governments. Even in the Russian Arctic, population growth and shifts can be characterized by increasing labour migration with workers moving to the North to live and work, by fly-in-fly out workers, and by lateral moves from rural villages to larger centres in the North.

As with most of the world, whether industrialised or industrialising, over the next decade, most Arctic residents will live in cities -- spaces of urban development that provide a core of centralized services expected by city-dwellers including but not limited to efficient and affordable public transportation, high-tech service options, diverse meeting spaces for social engagement, access to education, and health care, etc. By all accounts, as the Arctic becomes more industrialized and as populations from the global South migrate northwards and as Northerners themselves choose to live in central regions in the High North, it will also experience such dramatic shifts in population growth and development. Much of the movement between rural to urban will be driven by the shrinking of service provisions in the rural countryside, including postal, medical, education, and other public services. Thus, the next decade will mean exciting transformations and deep challenges for Arctic cities.

Extant are questions of how municipalities will provide jobs for in-migrants; how they will provide services for multicultural newcomers who may demand other cultural and religious provisions within a metropolitan framework. Moreover, how will cities answer citizens' demands for sustainability, environmentally responsible practices, and energy efficiency even in the midst of growing resource extractive industries in Arctic regions? What are the strategies of cities to diversify economies to promote entrepreneurship and innovation in

order to attract and keep people dedicated to the development and success of the cities in which they live? How do mayors intend to make their cities attractive for both residents and visitors alike in order for communities, economies, and polities to thrive sustainably? These will be what concerns Arctic municipalities in the future as the world becomes more dependent on the Arctic for resources, and transport and logistics.

Population increase, demands for municipal services, and concerns over sustainability will demand more robust civil society engagement. Northern communities will no longer accept big industry, whether oil, gas, mining, or shipping, without having a say in how they operate and what benefits they can reap from them. We already see growing engagement from indigenous populations in the Arctic who have demanded that they be included in processes of decision-making regarding development. In Nunavut and the Northwest Territories in Canada, for example, the Inuit have demanded that a percentage of the workforce in the diamond mining industry should come from their communities. More recently, the Swedish Sami have protested mining operations in Northern Sweden, and Norwegian Sami have rejected gold mining in Kautokeino in Northern Norway. Strong protests of the development of oil and gas in the sensitive seas of Lofoten, Vesteraalen, and Senja in the Northwest of Norway have divided stakeholders. And even in Russia discourses about corporate social responsibility and trust regarding big industry is becoming more common. While protests and demands from local residents regarding economic development connotes negative tones, we can also see it as a positive development for strengthening democracy by fostering debate and negotiation about land and sea use and the population's rights over them.

The future of the Arctic can be characterized by rapid and continued industrialization, urbanization, and the attendant challenges that both will pose. I argue that, as a result of these challenges, there will be a necessity for deep civil society engagement in Arctic communities. Moreover, as interest in the Arctic for its resources grows, and with continued climate change, we will only see these intensify in the future. ■

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Japan-Finland bilateral project on the socio-economic development of the Russian Far North

Expert article • 1651

In this report, I introduce the project that we have just started with Finnish colleagues on the topic of the sustainable development of the Russian Far North. Its formal title is "Russia's final energy frontier – Sustainability challenges of the Russian Far North." This is a bilateral project between Japan and Finland, managed jointly by the author and Veli-Pekka Tynkkynen of the University of Helsinki and funded by the Japan Society for the Promotion of Science (JSPS) for the Japanese side and the Academy of Finland for the Finnish side. It started in September 2014 and will continue for two years.

The aim of this project is to examine sustainability of the development of the Russian Far North based on oil and gas development. It also aims to analyze the significance of the development of the Russian Far North for the development of the Russian economy as a whole, calculating costs and benefits of the development of the Russian arctic areas in a broader sense.

A few words about the definition of the Russian Far North. Russian Far Northern areas were defined in the Soviet time, in order to pay additional salaries and other benefits to the people working in these areas (USSR Cabinet Resolution No. 1029 of November 10, 1967). They include 16 regions (four Republics, three Krais, five Oblasts and four Autonomous Okrugs). On April 21, 2014, the State Program "Socio-economic development of the Arctic zone of the Russian Federation for the period until 2020" was adopted by Government Resolution No. 366. In this program, eight regions were listed as Arctic areas, including Murmansk Oblast, part of Archangelsk Oblast, Nenets Autonomous Okrug (AO), one region of Komi Republic, Yamalo-Nenets AO, part of Krasnoyarsk Krai, part of Sakha Republic and Chukotka AO. We will concentrate our attention on these eight regions in our project in its first stage.

Topics to be included in the project are broad. First, we investigate the role of energy in the socio-economic development of the Russian Far Northern areas, including the following sub-topics: 1) Budgetary relations between the center and these areas; 2) Demographic trends in these areas; 3) Social and environmental responsibility of the hydrocarbon sector; 4) Energy developments and rights of indigenous people in the Russian Far North; and 5) Future role of international companies in the development of the Russian Far North. Second, we analyze the effects of oil and gas development in the Russian Arctic and Far Northern areas on the following: 1) International politics and relations in the Arctic; 2) Future use of the NSR; 3) Environmental situation of the Russian Far North and the Arctic. In this context, we are interested in the implementation of the above-mentioned State Program "Socio-economic development of the Arctic zone of the Russian Federation for the period until 2020." We will examine the concrete measures taken by regional governments to implement this program.

Four features of our project should be mentioned. First, this project is characterized by its multidisciplinary approach. Members of the project are specialists in various disciplines of mostly social sciences, including economics, geology, political science, international relations and anthropology. Japanese members include not only researchers in Hokkaido, including Natsuhiko Otsuka, Masanori Goto and Tomoko Tabata, but also specialists in other parts of Japan, including Masumi Motomura, Fujio Ohnishi, Masahiro Tokunaga and Kazuho Yokogawa. As for the Finnish side, members consist of scholars of the universities of Helsinki, Turku and Lapland, including Veli-Pekka Tynkkynen, Lassi Heininen, Kari Liuhto, Hanna Mäkinen, Eini Laaksonen and Nina Tynkkynen. Our intention is to implement this project from a viewpoint of various disciplines by top specialists in each field both in Japan and in Finland.

Second, we attach greater attention to field research. The timetable of the project includes four seminars in Helsinki (September 2014 and 2015), in Tokyo (January 2015) and Sapporo (July 2016) and field trips to the Russian High North in Murmansk and Arkhangelsk (September 2014) and Yamalo Peninsula (May-June 2015). We already held a seminar in Helsinki in September with the participation of Mr. Kenji Shinoda, Ambassador of Japan in Finland, and Dr. Hideo Akutsu, Director of the Stockholm Office of JSPS. Following this seminar, we had a fieldtrip to Murmansk and Arkhangelsk with 13 participants (seven Japanese, five Finns and one Chinese). We visited regional administrations, Northern (Arctic) Federal University, local offices of the Norwegian Barents Secretariat, Finnish Consulate in Murmansk, shipping and logistics companies and local associations of enterprises.

Third, we compare eastern and western parts of the Russian Far Northern areas. Japanese participants have good experiences in research in the Russian Far East and Eastern Siberia, some of which regions are included in the Far North. On the other hand, Finnish colleagues have more expertise on the north-western part of Russia. We expect some unique results from the exchanges or fusion of experiences and views between Japanese and Finnish colleagues.

Fourth, in our project we make full use of all available statistical materials. We analyze statistical data on national accounts, state budget, foreign economic relations, energy, demography etc. Our members include specialists of statistical analysis on the Russian data who have written a number of papers in international journals.

For successful implementation of the project, we need close cooperation with Russian colleagues, especially working in the Far Northern regions. We are ready to expand this project into a trilateral project between Japan, Finland and Russia. ■

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LARS ELENIUS & MATS-OLOV OLSSON

A History Textbook and an Encyclopedia of the Barents Region

Expert article • 1652

Two forthcoming publications about the Barents Region in a north European context

The Barents Region – a Transnational History of Sub-Arctic Northern Europe is a textbook about the Barents Region dealing with the history of the sub-regions and nations of the Barents Region territory from around 800 AD until 2010.

The Encyclopedia of the Barents Region is a publication describing the conditions of life in the Barents Region with a focus on human activities in relation to the Sub-Arctic environment.

The long-existing historical relations between people living in these northern territories have been largely neglected in official nation-state oriented historical narratives. Thus, one of the objectives with the Barents history textbook and the Barents encyclopedia is to connect the past with the present dynamic development in the region. It will fill a gap in European history and, hopefully, in the process promoting the world's interest in the "Northern Dimension".

Background

In the period 2002–2006, a network of historians working in academia all over the Barents Region was established with primary financial support from Riksbankens Jubileumsfond and the Nordic Council of Ministers. The network was initiated by Prof. Lars Elenius of Luleå University of Technology. During this project, called *The Modernization Process in the Barents Region*, three conferences were organized in Luleå, Arkhangelsk, and Petrozavodsk with participation of professional historians from all parts of the Barents Region. Through the conferences ongoing research at the universities was presented and critically reviewed. Presentations at the conferences were issued in several volumes of the series Studies in North European Histories published by Luleå University of Technology.

Networking activities continued in 2006 when Elenius together with a group of colleagues established a new project with the objective to produce a history textbook and an encyclopedia of the Barents Region.

Funding for the project was subsequently received in April 2009 from, amongst others, the counties of northern Sweden, Finland and Norway, the *Swedish Research Council,* the *Norwegian Research Council,* the *Swedish Institute*, the *Nordic Council of Ministers*, and the EU through its *Interreg IVA Nord programme*.

The Barents Euro-Arctic Region – an innovative regional construct

The territory that is now called the Barents Region has a long and unique history of ethnic, cultural and commercial contacts between the people living around the Gulf of Bothnia and in the White Sea area and along the shores of the North Atlantic Ocean to the Ural Mountains. These historical contacts offered a natural foundation for the creative diplomatic process that was a decisive factor behind the 1993 decision to establish the Barents Region as a new trans-boundary regional entity.

However, history also produced significant differences in socio-economic development, not only between the various sub-regions constituting the current Barents Region, but also between the four nation states to which these sub-regions belong. The current globalization process exerts similar influence in all parts of the Barents Region, but capacities for adapting to, or counteracting, the effects of globalization differ between various sub-regions.

The Barents Region largely belongs to the Arctic. The last twenty years or so have brought an increasing international attention to Arctic issues, mainly because of the huge natural resources, such as oil, gas, minerals, timber, and fish, available in the area. The raising interest for the North is also due to the problematic consequences of global warming that are expected to dramatically change the natural prerequisites for all life forms on our planet. The Barents Region is probably the area of the Arctic that is most influenced by human industrial activity and therefore likely to have a great impact on global warming and regional environmental degradation. Thus, there is an urgent need to learn as much as possible about the interdependencies determining developments in the regional socio-economic system.

The trans-boundary interregional co-operation initiated through the 1993 Kirkenes agreement strives to promote a sustainable economic, cultural and social development all over the Barents Region. This is a new kind of macro region spanning the borders of four nation states, some of them belonging to, while others partly outside of, the European Union. The region consists of thirteen sub-regions characterized by their own distinctive socio-economic and cultural history. The Barents Region is the first region to cross the former boundaries of the Cold War. The history of this innovative regional construct is important for people residing inside as well as outside of the regional borders.

The purpose of the project

The ultimate purpose of the project to produce a history textbook and an encyclopedia devoted to the Barents Region is to foster the collaboration within the region, especially between its Nordic and Russian parts. By producing these publications the project also responds to a commonly felt need in higher education of a comprehensive textbook. It will offer a compilation of facts that makes use of new knowledge gained through recent research. It gives an analysis of the establishment and further development of the Barents Region, which is expected to stimulate the collaboration between universities, their researchers and students. The two publications will foster mutual understanding of the varying existing conditions of life in the region. Such knowledge will stimulate the development of a common Barents identity and facilitate mutually beneficial collaboration between authorities, enterprises, and citizens in the whole region.

Authors contributing to the Barents history textbook and the Barents encyclopedia have been recruited among academics and social science writers in all parts of the Barents Region. The format and contents of the two volumes are outlined below.

The history textbook has eight chapters, each written by four authors, one from each of the four countries belonging to the Barents Region, and one concluding chapter. Prof. Lars Elenius is the Chief Editor of the Barents history textbook.

The encyclopedia contains 415 articles of varying length covering most aspects of life in the region, such as the history, demography, geography, economy, culture, and languages of the citizens living in the Barents Region. Dr. Mats-Olov Olsson is the Chief Editor of the Barents encyclopedia.

The Barents history textbook as well as the Barents encyclopedia are intended for a broad readership. Some six million people reside in the Barents Region. The two publications will present information that is of interest for students in higher education, for academics in various disciplines, for employees in enterprises and public authorities, as well as for the general public.

The Barents History Book

The history textbook will serve as course material for students of history in universities throughout the Barents Region, but it is also suitable for students in the social sciences. The textbook should also be useful for anyone interested in the history of north-western Russia and northern Fennoscandia. The book covers the time period from 800 to 2010, discussing the transformation from independent ethnic communities to integrated regions within nation states. The modernization process in the Barents Region during the 19th and 20th centuries provides a background for analyzing recent globalization and post-colonial phenomena. The choice of focus is determined by the belief that young people in the Barents Region want to know more about the complicated processes of nation state building, democracy, dictatorship, welfare society, cold war, ethnic revitalization and globalization and their impact on the region in which they live. It is also very important for the ongoing democratization process in the region.

The eight chapters of the book will cover the changes from the Napoleonic wars, over the Russian Revolution, the Second World War and the ensuing Cold War, to the disintegration of the Soviet Union and the subsequent establishment and development of the Barents Region as a new political body. The intention has been to compile the parallel histories of the different constituent sub-regions within each one of the four nation states represented in the Barents Region in order to produce a comparative regional history of northernmost Europe, a history that complements that of other trans-national regions in the world.

The Encyclopedia of the Barents Region

The Barents encyclopedia outlines the cultural values of the many peoples that inhabit the region, and describes their ethnic traditions and beliefs, their varying living conditions, and the prerequisites for their further socio-economic and cultural development.

A limited number of longer overview articles frame the contents of the encyclopedia. The topics of these articles are: the Barents Region project (BEAR); Environment – threats and policies; Geopolitics, security and globalization; History; Economic development; Minorities; Religion; and Education.

The overview articles are supplemented and supported by shorter entries covering a broad range of topics, such as, important places (counties, cities, towns, villages), individuals who have made an impact on developments in the Barents Region, historical events of special importance, the demographic characteristics and the languages of the region, its culture, architecture, politics, the economy and economic geography (emphasizing the development of infrastructure, economic structure, and natural resource extraction), the rich nature found in the region and environmental threats, effects of recent geopolitical developments, legal issues (e.g., regarding indigenous populations, natural resource extraction, sea borders and fishing rights), and the legacy of the Soviet era (problems related to the Russian transition to democracy and a market based economy, historical traumas, such as the political repression and its consequences for contemporary democratic and economic development).

The two publications will be published by Pax Forlag, Oslo. The Barents history textbook will issued at the end of 2014, while the encyclopedia will appear in the fall of 2015. ■

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Concluding remarks on the Special Issue on the future of the Arctic – from researcher's perspective

Expert article • 1653

There is no denying that the Arctic is an extremely interesting and multidimensional area for many kinds of actors, activities, opportunities and concerns.

Many of the articles point towards the business prospects in the Arctic, for instance in energy, offshore, maritime, and mining sector. In all these sectors, increased international cooperation is welcome – not only within business actors but also other stakeholders. This special issue highlights the opportunities for foreign businesses particularly in Norway, and touches also upon the considerable needs for foreign expertise in Russia. The economies surrounding the Arctic are highly interconnected, but in terms of business, there is still clearly potential for higher international interaction. As an interesting note, the economies in the Arctic share lots of similarities but are still quite heterogeneous with different economic structures and development interests. For the research community, these different economies around the common region provide an interesting context for studies on foreign direct investment dynamics, international business, innovation systems, and corporate social responsibility, for instance. Discovering new ways for international cooperation could be an important way to promote sustainable economic development around the region.

However, even though talks on the Arctic business opportunities have been going on for a decade, many of those still wait to be materialised. Of particular interest have been the large-scale energy projects which, however, have encountered delays – firstly due to the revolutionising energy sector, and more recently due to the economic sanctions related to the crisis in Ukraine. The well-started international cooperation in business as well as in politics towards solving (or at least agreeing on the way to proceed with) many of the challenging issues concerning the developments in the Arctic region are now threatened by the crisis and the resulted freezing of the relations between Russia and the West. A couple of years ago, discussion started concerning the "race towards the Arctic", with experts more or less seriously foreseeing severe conflicts between nations over the natural resources hidden in the Arctic. However, in the midst of peaceful cooperation for years and the recent achievements particularly in the EU-Russia relations, it was hard to imagine this kind of problems on the horizon. As the crisis in Ukraine nevertheless escalated quite suddenly, the research community, among other stakeholder groups, has been forced to admit that we still cannot always understand (let alone integrate or coordinate) the objectives of different states, not even within Europe.

As was noted in several articles, the political tensions that have increased along with the crisis have had their effect also on the cooperation activities in the Arctic, and it is hard to predict the way things will develop forward. In addition to the Arctic states, several countries outside the region, such as China and South Korea, are increasingly interested in the developments in the Arctic, which further increases the future potential for the clash of competing interests in the region. For long the Arctic was overlooked, and now it has become the object of global interests. The Arctic keeps "heating up", and for now we can only guess what kind of a future it will see.

Despite the political conflicts, it is, however, highly important that different stakeholders continue international cooperation in terms of environmental issues and promote responsibility and sustainability in all activities. We cannot prevent the resource extractions, industrialisation and urbanisation from taking place in the Arctic, and therefore all efforts must be put in finding the least harmful ways and solutions for these processes. Fortunately, we can see that for instance under the Arctic Council a lot of valuable cooperative work is being done for these issues. Further research should innovatively seek for new ways of integrating these various activities and stakeholder interests.

All in all, the Arctic provides a perfect setup for highly multidisciplinary research. In fact, that is also required because – as can be seen from the interlinks between the articles presented in this Special Issue – the developments in the region within society, environment, or different fields of industry are all tightly connected. Of utmost importance is also international research cooperation. Particularly at the time of political conflicts, it is not only active business relations but also scientific cooperation that is important in continuing international dialogue and hence improving understanding on the viewpoints of different parties. Moreover, eventually, it can be said that dealing with many of the problems in the Arctic, such as climatic, environmental and societal issues, really requires international collaboration.

Of great importance is also international student exchange. Most of the expectations heating up now will materialise only in the future, and in addition to doing our best now for guaranteeing sustainable and peaceful development in the region through various agreements and institutions, we must focus on the young who will have to handle those changes eventually. For instance, the Northeast Passage is not going to transform into a new Suez Canal overnight but instead we might witness considerable increases in the arctic shipping in two or three decades. The best preparation is to support the international networking of students within the region. Their fellow students of today will be their business partners and policy-maker colleagues of tomorrow. Of great importance is also triggering their interest towards the Arctic and related issues – the political and economic aspects, the environmental and societal concerns, and also the opportunities that could be derived from the changing world if dealt with in a sustainable manner.

As a researcher today, I could say that this region offers a great multitude of complex phenomena and challenging problems for the research community. And as the Arctic keeps "heating up", times will only get more interesting. More understanding and sustainable foresight is needed in order to support the better outcomes for international relations, economy, society, and environment in the Arctic.

Personally, I doubt I will ever find another research context this multidimensional and intriguing. ■

The Pan-European Institute (PEI) is actively engaging in Arctic research, particularly related to different aspects of international business. For instance, PEI is involved in the project called "Russia's final energy frontier – Sustainability challenges of the Russian Far North" co-financed by the Academy of Finland and the Japan Society for the Promotion of Science. Simultaneously, PEI is involved in researcher exchange with Russian and Norwegian research institutions. Moreover, students are considered as a priority for the future of the Arctic, and therefore we have been actively developing international student exchange to and from Russia, for instance. In addition, in the Spring 2014, PEI commenced a specific master's level course in Turku School of Economics called "Business Prospects in the Arctic" in order to increase the students' awareness on the Arctic issues and to encourage them to further look into those along their studies and later in their working life. For further information on PEI, please visit www.utu.fi/pei.

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