

### SPECIAL ISSUE ON THE FUTURE OF THE ARCTIC

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## The Arctic – regional challenges with global consequences

By Klavs A. Holm

The Arctic agenda is both political and global.

Only a few years ago, the Arctic was not known for much more than simply being in the opposite end of Antarctica. But due to the melting of the ice cap, the Arctic agenda today consists of a number of issues that each carries such importance that countries thousand miles away have a close interest in the area.

One of the items often mentioned are the possible navigation opportunities that open up the Northern Sea Routes, NSR when the ice melts. This will cut 25 % and 40 % respectively of the sailing distance from Europe. Yet, it is less than 100 ships that sail northeastwards to Asia each year in contrast to the more than 20,000 ships that pass through the Suez Canal. Nevertheless, a country like Singapore follows the development closely because it can pose a future competitive challenge for the port of Singapore, which today is the major distribution center for goods to all over Asia.

Another important agenda point is the role of the Defense force. Analyses often refer to an increase of the military expenses in the Arctic and that we thereby have proof of a new arms race. But one tends to forget that the assignments of the Defense in the Arctic region have changed. A main task is of course still sovereignty enforcement through the presence of aircrafts, ships, dog sledges, satellites, etc. But at the same time the Defense must also deal with a number of more civilian tasks, such as environmental monitoring, license compliance, fishery inspections, and rescue at sea.

Exploration of oil and gas resources is also a sensitive issue. Data from the USA estimate that 30 % of the world's gas reserves and 13 % of the oil reserves lie hidden in Arctic. But the reserves are hard to reach. Arduous geological surveys and advanced drilling ships have to be used. The task is so huge and complex that the oil companies cooperate, but the efforts in the Greenlandic area have not yet resulted in oil or gas findings that can be commercially exploitable. However, when this happens it can impact the global oil price and have consequences for countries e.g. in the Middle East.

At the same time "the worst-case scenario" lurks beneath the surface: an unforeseeable oil spill accident. In the vulnerable Arctic environment, such an accident could cause incalculable consequences for the Arctic nature, which people live and feed off. Also, the already exposed economies in the Arctic would suffer unpredictable consequences.

In the Arctic Council, member states are just finalizing negotiations on an oil spill agreement. The agreement sets out the division of labor between the countries in the event of an oil spill, and the intention is to carry out practical exercises between the Arctic countries, just as it has been done on the rescue area.

Also, the exploitation of minerals in the Arctic, especially rare earths, is followed closely around the world. In this area, China has slowly built up its production capacity and controls more than 90 % of the global production.

The Arctic has become the scene of economy and politics. But the international cooperation in the area is going really well – in fact so well that it could be a lesson for a number of the world's hotspots. First and foremost, the countries involved have pledged to resolve potential territorial conflicts through negotiations based on international law.

Denmark, Greenland and the Faroe Islands contributed by proposing the strong declaration text – The Ilulissat Declaration adopted in 2008 – between the five Arctic coastal states: USA, Canada, Norway, Russia and the Kingdom of Denmark.

In addition to the agreements on Search and Rescue (SAR) and combating oil spills, the negotiations move forward in the International Maritime Organization (IMO) concerning rules for navigation in Polar Regions. In the meantime, discussions on a wide range of other issues take place in the Arctic Council in a viable and cooperative atmosphere which you rarely experience as a negotiator in international forums.

There is a lot of hype in the media about the Arctic. This concerns both the economic outlook (with Klondike references in the rhetoric) and high political perspectives associated with other countries' involvement in the Arctic. There is therefore reason to look at the interests of some of the other players.

The media has especially focused on China. It is true that China has shown interest in the Arctic, not only in Greenland, but also Iceland. It is no surprise if the Chinese want to take part in exploiting the existing economic opportunities just like Danish companies aspire to establish themselves and make profits in China. So far, media attention has focused mainly on possible Chinese involvement in the establishment of an iron mine in the Godthåb fiord. That's not quite the same as saying China is settling on all of Arctic.

Researchers have also paid attention to the role of Russia. The Arctic was the scene of a major build-up during the Cold War, not least from Russia. And economically, much is at stake for Russia in the Arctic – it is assumed that about 30 % of Russia's GDP in 10-15 years will be generated in the Arctic area.

That is why the economy is the main interest of Russia that is first and foremost security of natural resources, but also the North-East passage and territorial claims towards the North Pole. But does this make Russia into a potential threat to security in the Arctic? In this aspect, one must probably call off the confrontation scenario. Russia, as the other Arctic powers, has no interest in a military conflict in the region.

The conclusion is that the situation today doesn't give rise for concern that the Arctic is becoming a new confrontation area. It is more likely that the cooperation between the Arctic players – both state players, business and NGOs – will enhance in the light of the immense tasks that lie ahead of us in the 10 million square kilometer big region we call the Arctic.

*Klavs A. Holm*

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## Arctic cooperation and business

By Hannu Halinen

Since spring 2012 there has been a renewed and intensified interest in the Arctic issues at Finland's political leadership. For President Niinistö this question is one of his priorities and he has shown from the beginning that he is ready to take initiatives. The government has had two special sessions on the Arctic, agreeing on priorities and guidelines, and launching a process to completely redo our Arctic Strategy from 2010. The new strategy is expected to be finalized by summer 2013. It would contain setting goals; concrete measures to achieve them; identifying responsible actors and stakeholders; and finally, assessing costs involved. The task force preparing the strategy will also listen to the views of a wide variety of relevant sectors of the society.

The Arctic vision of the Finnish government is as follows: "Finland knows how to reconcile business opportunities and potential in the Arctic with sustainable development and environmental requirements through international cooperation".

The starting point is the firm belief that Finland has a significant Arctic expertise based on our long experience as an Arctic country, as well as on our clear focus on research, training and education. In exploiting the business potential we see two basic conditions:

- all activities need to be based on international and national laws and regulations; and
- the environment, sustainable development and social wellbeing of the people living in the area have to be taken into account.

What it means is that arctic issues have to be dealt with in an integrated rules-based multilateral framework, with an emphasis on comprehensive security and environmental sustainability.

The government is looking for ways and means to facilitate business contacts and promote effectively our economic interests. In addition to existing channels the newly activated Team Finland concept will look into this sector. Simultaneously, Finland will expand her bilateral Arctic Partnerships from Russia to other Arctic countries.

There are a number of topical issues – and challenges – we need to tackle with – in Finland and in the region around us – in order to reach a flourishing Arctic business. Let me just list here some of them: lack of information has been

highlighted particularly in Northern Finland and among the SMEs; obstacles to investments (many activities are capital intensive and there are clear gaps in capital markets); infrastructure and logistical needs (here we need to cooperate with the neighboring governments, set priorities and reach decisions); insufficient regulatory frameworks; labour markets (need for qualified labour, and policies to respond to changing demands); languages (particularly Russian and Norwegian); and alleviation of border transits.

All in all, in the Arctic there is no hype, but there are no easy wins, and no gold rush, either. The circumstances are – and even with the climate change remain – tough. With determination, planning and cooperation much can be achieved. Internationally, the organizations – like the IMO – are doing their share. And now regionally the Arctic Council is upgrading its role in the economic matters. In its inception in 1996 the Arctic Council was an environmental forum. During the years its importance has grown and its mandate expanded. While adding business on its agenda the council would be wise not only to look how to enhance economic potential within the Arctic, but recognize its global role and engage and facilitate global business interests.

In concluding I would stress that the public and private sector should proceed hand in hand in the Arctic. Governments – at least in the case of Finland – are doing quite a lot. It is now for the companies, whether large, small or medium-sized, to catch the ball and get deals. The challenges mentioned before can be overcome together. But the deals are up to the business.



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## What's next in the Arctic?

By Martti Hahl

Up to one third of the world oil and gas reserves are in the European High North. The basic minerals and precious metals are just being discovered in the same area. Iron ore has been, and still is, the backbone of the High North minerals supply. And the professional minerals exploration is just getting started. The High North is the treasure cave of European Arctic.

But even more exciting is the development in transports and logistics.

In 2012 in the period of May to November 46 ships passed along the Northern Sea Route. In 2011 the number was 36 and in 2010 only 4. There is a good reason for this steep growth, but still modest numbers. By using the Northern Sea Route the travel time is cut from the average of 30 days from Rotterdam via Suez to Shanghai down to 14 days. Each day costs minimum 100.000 € for the shipping companies so the math is simple. But the Northern Sea Route shipping season is still short, only 6 months at best. There are not enough of ships of proper ice classification, especially the large ones. The piloting ships/ice breakers are limited to those of Rosatomflot. The number of ice breakers is not sufficient and the fleet is becoming old. The rescue and environmental protection structures are still in their infancy.

Russia has understandably kept a tight leash on the ships willing to use Northern Sea Route. Rosatomflot is escorting all the ships along the Russian coast line with its nuclear ice breakers. This is in order to ensure the safety of the ships, avoid accidents and thereby prevent environmental risks. Rosatomflot is of course charging market prices for its services.

Summer 2012 was special. The Chinese ice breaker Snow Dragon made the East-West journey from Bering Strait in the convoy led by a Russian nuclear ice breaker. After completing the Northern Sea Route the Snow Dragon continued its route to Iceland. From there it took the aim straight through the ice of the Arctic Ocean very close to the North Pole. By doing this, it succeeded with a minor prestige coup in the same way it had done a few years earlier. It had "disappeared" from the Canadian defense radar and appeared unannounced in the small Canadian arctic city Tuktoyaktuk in 1999. Now it accomplished the same kind of feat by appearing in the Russian radar only after already having crossed the Arctic Ocean and entering the Bering Strait on the way home to China.

This was showing Chinese muscle and making a point that the Transpolar Route across the Arctic Ocean may render the Northern Sea Route obsolete before it even gets started. Of course this would take time, but the global warming has already melted the Arctic Ice cap area to all time low. The Arctic is an ocean, which is "just water" covered by ice. When the ice melts away, it will be a new short transport route on international waters.

In the Arctic Summit, arranged by the Economist, in Oslo, in Mid-March 2013, Mr. Huigen Yang, Director General, The Polar Research Institute of China, made a statement, which was an eye opener for many. The distance between Shanghai and Hamburg is 5200 kilometers shorter via NSR than through Suez. China is expecting to reroute 5-15% of Chinese ship transports, mostly container traffic, by 2020 to Northern Sea Route. If the volume would be 10% of the Chinese container transports, the value of the transported goods would be more than 500 B€ per year.

It is less than seven years until 2020. If the scenario is going to be realized, there will be imminent need for support and service structures, ice going container ship technology, ice going ships, ice breakers of different types, support vessels, safety and rescue equipment, ice mapping and navigation support by satellites, oil spill prevention and management etc.

For Nordic and Baltic countries the opening of Northern Sea Route, the appearance of Chinese and Korean ship transports between Asia and Europe would change the spectrum for transports and logistics dramatically. Export of minerals, export and import of energy like LNG, import of tools will require rethinking of the national, Nordic and Baltic transport strategy, which in turn will decide the future competitiveness of the Nordic and Baltic countries globally.

The People's Republic of China has applied for an observer status in the Arctic Council. The Arctic Council members, The Kingdom of Denmark, including Greenland and the Faroe Islands, The Russian Federation, United States of America, Canada, Norway, Iceland, Sweden and Finland have to decide how they will respond to the requests for observer status from shipping countries like Singapore, Italy and others. The current observers in the Arctic Council are France, Germany, the Netherlands, Poland, Spain, and the United Kingdom.

China, by applying for the observer status in the Arctic Council, is also aware of that by being admitted, it will comply with the United Nations Convention on the Law of the Sea, which has not always been the case on other parts of the globe.

So the answer to the applicant requests is simple and I will refer to Mr. Espen Barth Eide, Norwegian Minister of Foreign Affairs in Kirkenes during the 20th Anniversary of the Barents Regional Cooperation. He concluded the Arctic Council observer status applicant situation in the following way: "It is better to have them inside with us, instead of having them outside and against us".

*Martti Hahl*

*President*

*Barents Center Finland Oy*

*Finland*



*Barents Center Finland Oy was established by the initiative of the Northern Finnish Cities, Counties, Universities and Professional High Schools in January 2011. The objective was to create a good communication with the authorities in the Barents Region.*

*It is a non-profit match-making organization promoting Finnish competence in the Barents area.*

*BCF has created a database of all open Public-Private, Public and Published Private Tenders in Northern Norway, Northern Sweden and North West of Russia. The database/tenders are updated monthly and the up-dates/reports are provided to the shareholders.*

*BCF communicates directly with the local Finnish Embassies and Consulates in the Barents area in order to provide assistance for business and entities, in applicable cases, and advise for relevant Finnish authority support.*

## Arctic of Russia – freezing hot business topic

By Kirsi-Maarit Poljatschenko

The world's Arctic territory remains passion and puzzle for the many exploring people who are eager to solve problems of urbanizing local citizens in cold and dark conditions. At the same time specialists consider ways to preserve and protect sensitive environment which is becoming accessible both for global technology giants and possibly for global campers and eco-tourists. Certain Arctic areas are under dispute and when it comes to national and international waters along the Northwest Passage, dialog is complex and long lasting. National stakeholders safeguard their countries' rights and ownership on basis of historical events and border setting. In bull's eye are those expected economic opportunities which should materialize in wealth and income in the future. Everyone seems to agree that the Arctic ice continues melting.

What could be Finland's role in the race for Arctic business opportunities? We are arctic people ourselves and the know-how related to snow, ice and darkness should be a serious asset when doing business in Russian Arctic territory, Murmansk region as an example. Yet many Finns have reasons for not going there – surprisingly these reasons actually relate to snow, ice and darkness! The root cause for many perceived inconveniences in Russian market might actually be the language barrier: Finnish people don't commonly speak Russian. This is a stumble block – many Arctic business tenders are public and available for bidding over websites, but in Russian language, not English.

Writer was recently involved in Finnnode foresight study on topic of Arctic Sea Exploration, with purpose to motivate and inspire Finnish business stakeholders to assess their product offering with respect to Arctic territory of Russia and it's future. Conclusion was that the existing Finnish technologies are and will continue to be in high demand in regions of Murmansk and Arkhangelsk – we actually called our report 'world's largest shopping list'- but the Finnish entrepreneurs seem hesitant to go and explore the market. Diversification of local arctic production is an opportunity for neighbor countries and necessity for Russia; natural resources may be endless reserve for the country but modernization of technologies is required in order to compete against competition with new products such as shale gas.

Another observation: while the Russian Federation officially promotes attractive finance portfolios and investment schemes for technologies and industries in the Arctic, the local labor market is firstly urbanizing and secondly diminishing. The trend is baffling: Rubles coming in and people moving out. For Russian Federation, it is of utmost strategic importance to attend and appreciate wellbeing of the Arctic people; the recently signed Arctic Strategy 2020 of Russia underlines development needs of communal services and facilities of housing, recreation and education. Reasons for negative demographic trend of the local population seem to coincide and match with reluctance of Finns to do business in the Arctic: freezing environment, isolation and poor infrastructure. All these challenges provide business opportunities today and tomorrow.

Logistics of people and goods have always enabled opportunities in international commerce and Arctic zone is

not an exception – road infrastructure and cargo logistics require planning work and Arctic construction know-how which Finland can offer. There is plenty of room for virtual services and innovations: various cloud services, e-solutions and virtual platforms are required in order to get remote assistance in harsh weather conditions or simply to have fun in the Arctic. There is also room for inspiring online games, cold-resistant devices and voice interfaces for communication. Traditional construction business will be booming for decades as the Soviet infrastructure is ageing. Some practical and simple steps could be taken at any moment in order to vitalize business relations: airline connection from Northern Finland to Murmansk would initiate opportunities and boost new businesses both in Russia and Finland simply if travelling was easier for people in business and pleasure.

The distressing general fact remains, that most of the historic future visions never came true and the future became different. Some of the revolutionary visions actually did come true but as the forecasts were not taken seriously, future again became different than what was expected. Professional futurists suggest businesses to consider options, scenarios and alternative futures in order to become flexible to survive in different circumstances – precise forecasting is quite clueless in global economy due to variety of variables and high speed of change.

The future of Arctic Russia seems to be even more interesting for the public eye that it's present. It might be beneficial for stakeholders and business leaders to focus at variety of opportunities today rather than wait for tomorrow, because most of the current needs and market demand will at least stay, if not accelerate, for quite a number of years. Arctic Russia is a freezing hot business topic.

The Finnnode report is retrievable at: [http://www.finnnode.fi/files/323/Finnnode\\_report\\_Arctic\\_sea\\_exploration\\_brief\\_final\\_PDF.pdf](http://www.finnnode.fi/files/323/Finnnode_report_Arctic_sea_exploration_brief_final_PDF.pdf).

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## Russia and the Arctic

By Kari Synberg

Climate change in the Arctic is expected to make the region much more interesting as new strategic resources become available. The Russian Federation is a key player in this context. Currently the Russian Arctic represents approximately one quarter of Russia's national lands, but less than 2 % of country's population. It includes, either fully or partially, the territories of the Republic of Saha (Yakutiya), Murmansk and Arkhangelsk regions, Krasnoyarsk Krai, Nenets, Yamalo-Nenets and Chukotka Autonomous Okrug. Many of these regions are very sparsely populated and therefore areas overall development is difficult. In any case, the Arctic has identified in Russia as national heritage and on the other hand zone of national interests.

That's why Russia's Arctic strategy, as well as several other documents, despite the fact that they are poorly known outside Russia, is very essential for arctic co-operation. At present, the territory and boundaries of the Arctic are inadequately defined, and no legally binding treaty exists for managing the region as a whole<sup>1</sup>. This is the reason with economic issues, that several Arctic countries have claims that certain Arctic sectors should belong to their territories. For example Russian has claims, that the underwater terrain between the Lomonosov and Mendeleev ridges (1.2 million square kilometers, 45 % of the Arctic) should be added to the Russian economic zone. In fact this requirement is based on an insufficient scientific and geographical data.

The Arctic natural resources are not confined to fuel, but rich deposits of other resources, like mineral resources should be utilized in the region. Currently almost 100% of platinum metals, barites, apatite concentrate, 90% of nickel and cobalt, 75% of tin, 60% of copper are mined in the Russian North. At the moment North accounts for about 20 % of Russia's national income and 25 % of national exports! The economic potential in the North has raised the issue of the Northern Sea Route (NSR), the use of which until recent years has been quite low, even if Russia opened it to foreign shipping with some limitations in 1991. But also then, when this route is totally ice free, the use requires icebreakers or similar service vessels and navigational support for traffic. The expected and wanted development will not happen without the improvements in services and facilities, or without the use of new technology, new roads and infrastructure in coastal areas.

In order to achieve these goals, Russia has updated existing legal and regulatory framework. In 2008, Russian Security Council formulated a key document of Russia's Arctic policy: "On the Principles of State Policy of the Russian Federation in the Arctic for the period 2020 and beyond". The adoption of the document has further highlighted the country's increased interest in the region and the main goals, main challenges and strategic priorities. Second essential document is: "The Russian national security strategy to 2020 (approved 2009). This document lays out threats and challenges within a broadly defined concept of security under chapters defined as 'National defense', 'State security and civil protection', 'Improvement of living standards', 'Economic growth', 'Research, technologies and education', 'Healthcare', 'Culture', 'Ecology', and 'Strategic stability and partnership on equal terms'.

Probably the most important document, approved finally in 2012 after long discussions, is: "Development strategy of the Arctic zone the Russian Federation and ensuring the national security for the period 2020 and beyond". This document is based to tasks of the national Arctic policy and security strategy mentioned before and it is the main mechanisms and roadmap for implementing official Russian state policy in the Arctic. It highlights the importance of science and research, and the question is above all the intellectual presence, the concentration of scientific knowledge, the high-tech service, the adequate degree of knowledge-intensive research vessels, ice forecasting and resolution satellite images from the Arctic. Russia's goal seems to be that any developing scenario of new megaprojects

should go with the active mobilization of the Russian scientific and technical potential, protecting of course the interests of Russia.

In addition to these documents, there are conceptions and several programs that directly or indirectly deal with the Arctic regions. Worth mentioning are: "The concept of long-term socio-economic development of the Russian Federation for the period up to 2020" (approved 2008), that emphasizes the importance of housing, transport and the mining sector. "The Strategy of social and economic development of the North-West Federal District until 2020" (approved 2011) and "The Strategy of social and economic development of Siberia until 2020" (approved 2010) were formulated on the basis of those before mentioned common approaches to the Arctic development. There are also other regional documents, such as: "Strategy for Socio-Economic Development of the Murmansk region by 2020 and up to 2025" (approved 2011) and sectoral strategies, for example: "Energy strategy of Russia for the period up to 2030" (approved 2009). We can ask, how the Russia's official Arctic policy responds the realism in these areas. For example the construction of Stockman field, one of the world's largest natural gas fields, located in Barents Sea, is mentioned in every Arctic development documents, however has moved forward into the future.

The main goals of implementation these documents and Russian Arctic strategy are to create a new economy of the Arctic Zone and to give rise of the socio-economic development in those regions. This seems to mean measures to expand the resource base, which is capable to fulfilling Russia's needs for hydrocarbon resources, aqueous biological resources, and other forms of strategic raw material. Also the military security, defense and safekeeping as well as environmental security are in the center of Russian Arctic policy. The new economy of Arctic requires the development of logistics sectors, information technologies, and communications and the creation of modern scientific and geoinformational fundamentals for administration of these regions. And the economy of arctic needs well-functioning systems of life support and industrial activity under the difficult environmental and climatic conditions. In addition for the better use of Northern Sea Route need's to create a reliable system for providing navigational, hydro-meteorological and information services, as well as emergency prediction and warning systems, including through the use of the GLONASS global satellite navigation system and multi-purpose space systems.

The implementation priorities of Arctic Strategy, Russia has own specific timeframes, instruments and financing, like the use of the federal and regional budgets, the extra-budgetary sources of funding, including through the involvement of private capital, active participation in projects of international organizations and interest rate subsidies on loans to commercial banks. The Russian government plans to invest directly more than EUR 30 million and indirectly government and private investments can hit as much as EUR 225 billion or more in the Arctic territories by 2020. For instance starting exploitation of Stockman deposit requires at least EUR 8 billion and Murmansk transport hub about EUR 3 billion.

Russia needs undoubtedly bilateral and multilateral cooperation with other Arctic countries, Western companies and organizations, including the Arctic Council and the Barents Euro-Arctic Region. Russia needs Western technology and foreign investments to all before mentioned sectors. Russia's Arctic strategy opens also possibilities for Finnish companies and organizations. This requires, that the Finnish companies bring out their own possibilities, their offering and Arctic know-how more visibly, because they have innovations suitable for cold climatic conditions across any sector of the economy, infrastructure and society.

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<sup>1</sup> According to the 1982 UN Convention on the Law of the Sea, the subarctic countries in the region own exclusive economic zones (up to 200 miles in width) and the continental shelf (up to 350 miles), within which they have the sovereign right to develop mineral resources.

## Russia's new Arctic strategy identifies vulnerabilities but targets modernization

By Katri Pynnöniemi

Arctic ice is melting in accelerating pace. This is a fact that everyone taking stock of Arctic politics is ready to admit. Consensus also prevails over the general characteristics of this change. The increase of average annual air temperature leads to shortening of the period of uninterrupted snow cover, ice melting, degradation of permafrost, rising sea levels etc. But when it comes to assessment and prioritization of the negative and positive consequences, the initial consensus is lost. It is replaced with deep-seated division over meaning of these changes for particular countries or for the region as a whole.

The majority of those interested of the Arctic, see in the region potential for economic growth, be it in the form of extraction of mineral resources, opening of the northern sea route, or as in Finland, renewing and maintaining the high-technology edge of the Finnish maritime industry. On the other hand, environmental activists, but not only them, have problematized the very basis of these expectations by arguing that the Arctic is at the frontline of climate catastrophe, and therefore, scarce human and financial resources should be directed to actions that simultaneously allow societies to mitigate and adapt to new level of risks. However, often these two opposite points of departure range through the national debates and, in a sense, overshadow differences between particular national strategies on the Arctic development.

The updated version of the Russian Arctic strategy published in February 2013, stands out from this general debate for its unequivocal prioritization of modernization as the basis for Russia's Arctic policy. Consequently, the Strategy provides a basis for "dialogue of modernization" between Russia and its western partners. At the same time, the Strategy does not recognize the climate change as a policy framework, and thus, engagement of Russia to debates on sustainable development in the Arctic will be difficult task. The document does, however, acknowledge set of risks and vulnerabilities, framed in relation to the "social-economic development".

The single most important vulnerability is the poor resilience of the communities living in the Arctic. Regional economies and societies are to the most part isolated from the Russian mainland and regional connections are poor or completely absent. The regeneration of the existing public infrastructure has reached a critical stage. Population living in the North does acquire subventions and higher salaries but is also confronted by the lack of clean drinking water, poor housing, and expensive food. For example, in the Yamal region where Russia's main gas production sites are located, 60 percent of the population centers are not connected to the Russian gas distribution network. This means that main part of their energy consumption is distributed by the "Northern Supply System", that is both inefficient and ecologically unsustainable.

The new Arctic Strategy calls for the facilitation of the use of local energy sources, including renewable energy. This is

not, however, a consistent policy line, for the Strategy also foresees the development of floating nuclear power plants as a solution to regional energy needs. The same can be said about the critical infrastructure protection in general. The Strategy lists the priorities in the sphere of sustainable development and environmental security, including an objective to mitigate the risks from man-made disasters. Importance of international cooperation in this sphere cannot be underestimated. The fire of the nuclear submarine Yekaterinburg (K-84) in December 2011, with full complement of torpedoes and nuclear missiles on board, is reminder of the risks of nuclear buildup in the Arctic.

However, the main challenge for Russia in the Arctic, as it is formulated in the Strategy and in other policy-documents, is the growing competition for Arctic resources. Therefore, it is argued in the Strategy, Russia must strengthen both its military and administrative capacity in the North. The tasks include the re-construction of the emergency-rescue services, border-guarding posts and the strengthening of the Northern Fleet. In addition, the Northern Sea Route administration has been re-established under one single agency with headquarters in Moscow. The agency will manage the development of this route, and most importantly, will channel the revenues created by this "national thoroughfare" to the federal authorities.

The consolidation of the state capacity to govern the development of the Russian North is undermined by many unresolved questions. The strengthening of the Northern Fleet will be expensive project and at the moment at least, Russian shipyards do not have capacity to implement the ambitious plans. The actual scale of Russia's Arctic zone, that is, the regions having the status 'Arctic', is not yet defined. Neither does the Arctic have its own target-program, thus the main policy-planning instrument at the federal level is missing, and finally, financing of the objectives set in the strategy remains an open question. The repeated references in the domestic debate to 'militarization of Arctic' may legitimize re-direction of domestic resources to Arctic development, but this alone does not make the state more capable to implement these tasks. On the contrary, the debate in-itself generates confusion among Russia's partners and thus, undermines efforts to cooperate in the Arctic region.

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## Resource exploitation in the Arctic: incorrect diagnoses, misinterpretations and wrong solutions – how to avoid these?

By Timo Koivurova

In the last year's Polar Law Symposium in Rovaniemi, the former premiere of Canada's Yukon Tony Penikett argued that the most important – and difficult - thing in his policy career was to find out what really is the problem in a given matter – not what was presented to him as a problem. Penikett's observation seems to apply very well to the discussion over what indeed is the problem relating to exploitation of non-renewables (hydrocarbons, minerals) in the Arctic. We seem to be under the influence of various kinds of stories and tales over what is problematic in their extraction.

One such story-line started to form when the Russian submarines planted the country's flag underneath the seabed of the North Pole in August 2007. Media and partly also the research community asserted that now the international scramble for resources had started. According to this story-line, climate change melts the Arctic Ocean (AO) sea ice, revealing the vast hydrocarbon riches. This then triggers a power competition between the AO coastal states as to who gets to occupy most of the sea-bed. Even if all this sounds logical, it is very far from reality. All the AO coastal states, including Russia, have engaged in extensive research over where the outermost boundaries of their continental shelves lie on the basis of law of the sea and law of the sea convention.

But surely there is some kind of scramble for resources in the Arctic, at least the companies are scrambling to tap into those hydrocarbon riches. Arctic, according to this line of thinking, is similar to the Wild West, where the risk-takers are awarded and where no rules neither sheriffs are to secure the order. Even the prestigious Foreign Affairs published couple of articles that compared the Arctic to the Wild West. The reality, again, seems very different. There are plenty of legal rules in the Arctic, perhaps even too much. Most of the Arctic (and in particular most of the estimated hydrocarbon deposits) is under the sovereignty and maritime jurisdiction of the Arctic states. Their national rules regulate how natural resources can be prospected and exploited. Enormous amount of international rules – from those that protect the environment or human rights to advance the opening of trade borders – are applicable in the Arctic, both within the national jurisdiction and outside it. On top of all this, the region's predominant inter-governmental forum the Arctic Council has gotten stronger by the day. It has even sponsored the making of two international agreements between the eight Arctic states, one on search and rescue (now in force) and the other on oil spill preparedness and response (likely to be signed in next ministerial meeting this May).

If there is no Wild West type scramble for resources between states or companies, what then is the real problem. The plentiful non-renewables of the Arctic are clearly within the radar of the global market-forces and the campaigns by environmental organizations to prohibit oil exploration and exploitation in the Arctic waters have not found support among decision-makers. In fact, all the Arctic states (also the Greenlandic Inuit who possess a large self-governing status) have already – or are about to – open their land and sea areas to mining and hydrocarbon exploitation. Even if this prospecting and exploitation is clearly within the scope of rules – as argued above – this does not mean that the rules – in and of themselves – would somehow miraculously make sure that these industries operate in a responsible manner. The real problem is that it is difficult to make sure that all these rules are really put in practice in the Arctic, due to lack of resources (personnel, equipment), long distances, etc. in the region. It is important to confront this problem head on, given that it is the vulnerable Arctic

ecosystems, indigenous and other local peoples that will suffer if companies do not behave responsibly.

Legal rules alone can do only so much as regards how companies operate in such remote regions as the Arctic: we need companies themselves to comply, since it is many times very difficult to try to monitor and enforce legal standards in the Arctic. Therefore, it is of much importance that corporate social responsibility (CSR) standards are being developed in various constellations for the Arctic resource exploitation. The good side about companies devising their own standards is that these can complement legal rules.

CSR standards are followed by the companies because of reputational reasons. These can also change the way the company views how it is best to do business. By having the company to internalize CSR standards may well lead them to better respect the local societies and the surrounding environment. In some cases, CSR standards may even exceed the standards required by legal systems and have their own supervision mechanisms, together with environmental NGO's acting as watchdogs for the companies to really live up to these standards.

Yet, CSR standards alone are not enough. Legal systems are needed, given that law carries such strong symbolic power in many places of the Arctic and it can also be physically enforced. Law also provides the possibility to change the rules of the game for those without much power and resources – local peoples or environmental NGO's can appeal environmentally and socially harmful decisions. The combination of legal and CSR standards seem to possess ingredients to at least minimize the harmful impacts from non-renewable resource extraction in the Arctic, and in this sense encourage more sustainable development.

It seems clear – and frustrating at times – that the Arctic is such a fascinating place for stories and narratives. Yet, when we need to make decisions over whether or not resource exploitation should take place in the Arctic, we should confront the pragmatic realities of this very complex and multifaceted region. We should peel the onion until we know the real problem, before we can start fixing it. We should also ponder the various solutions before proceeding with one. The opposition to hydrocarbon extraction in the Arctic due to climate change, environmental vulnerability of the region, and limited infrastructures, may be expected to become more vocal in the future and needs to be taken seriously, both by the companies and Arctic governments. However, we should also admit that extractive industries are powerful players in the region, and are there to stay. The real problem as regards non-renewable resource exploitation is that even if we have enough legal rules, these rules are difficult to make a living reality in remote Arctic regions. We need to have CSR standards and legal rules to work together so that we at least have better chances of having companies to respect the ecosystem boundaries and local societies in the region.

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## Socio-economic development of the Murmansk region – trends and prospects

By Vladimir Didyk and Larissa Riabova

The Murmansk region (*oblast'* in Russian) is one of the most industrially developed territories of the Russian Arctic zone. The *oblast'* was founded as a separate administrative unit in 1938. Almost the whole region's territory is situated above the Arctic Circle, on the Kola Peninsula, bordered by Finland and Norway. Total area of the region is 144,900 sq km and accounts for 0.85% of the territory of Russia. Its population is 787.9 th. people (by the beginning of 2012) or 0.55% of the country's population. About 40% of the region's population lives in the city of Murmansk, the region's capital, which is the largest city of the entire Arctic with population of 305 th. people.

The importance of the region for the Russian Federation is determined by two main factors: its geographical location with deepwater ice-free harbours and extremely rich natural resources. The region is known in the world due to the Navy bases, civil fleet of the Murmansk Shipping Company, the only in the world nuclear-powered ice-breaking fleet, the fishing industry, intensive export activities of industrial corporations – large producers of non-ferrous metals and apatite concentrate (Didyk 2008: 29; Didyk & Riabova 2010).

The Murmansk region's economy is based on extraction and industrial refinement of natural resources, especially minerals and fish. The initial stage of intensive industrial development during 1930s (Stalin period) was driven often by compulsory methods of state power. More than 250 th. people were moved to the Kola Peninsula, most of them forcibly, in the 1930s (Riabova 2012: 35-36). This led to the rapid growth of population: from 27 th. people in 1929 to 318 th. in 1940 (Luzin et al. 1994). The main industries of the region were rapidly developing during 1950-80s due to state centralised investments; development in these sectors was aimed at meeting the country's demand for raw materials and semi-processed goods. For instance, in 1960 real (in constant prices) volume of industrial output grew as compared to 1940, almost 5 times, in 1970 – 10 times, in 1980 – 14.4 and in 1990 – 19.9 times (Murmanskstat 2008: 68).

The period of the 1990s was characterised by deep socio-economic and political transformations. Dramatic changes of all sides of public life were connected, first of all, to the transition from the centrally planned Soviet economy to the market oriented economic system in Russia as a whole, and in the Murmansk region in particular. The transformation process still takes place, and is characterized by a wide variety of trends and regional specificities.

The specific features of the Murmansk region's economy have strongly influenced the character of socio-economic changes the region went through, and the outcomes for the region often differ from the country's average results. A detailed analysis of the transformational socio-economic processes and trends in the Murmansk region was carried out by the authors in 2001-2011 within the Russian-Finnish research project "Economic Monitoring of North-West Russia" in collaboration with the Centre for Markets in Transition (CEMAT) of the Helsinki School of Economics<sup>1</sup>.

Mainly on the basis of the project results a book was published (Didyk & Riabova 2012). In the book we revealed the main trends of economic and social development of the Murmansk region for the last two decades. In the economic sphere they are as follows. First, it is a quite long period of decrease (1992-1998) and restorative growth of industrial output (2000-2010). Despite the similar trends were observed in Russia

as a whole<sup>2</sup>, the specificity of the Murmansk region was that rates of both decrease and subsequent growth were noticeably slower than the Russian average. The latter is explained by the strong resource (raw materials) orientation of the regional economy. The second trend is lowering diversification level of the economy, being a negative tendency, especially with the prevalence of use of non-renewable natural resources by the key industries taken into account. The third trend in the economic sphere of the region is uneven and chronically relatively low level of capital investments compared to the real needs. It is a negative tendency as well, taking into account ageing of the existing fixed capital almost in all branches of the regional economy and the urgent necessity of technological modernization of the region's enterprises to maintain their competitiveness. Besides, there is a need for "green field" investment to diversify the economy of the region.

In the social sphere of the Murmansk region, three major trends are defined for the twenty-year period. First, it is the decline, throughout the whole period, in the region's position regarding the living standards of its population, both in relation to the beginning of the 1990s and to the national average. The 1990s featured a sharp drop in the living standards of the regional population that in Soviet times used to be very well-off in comparison with non-northern ones. In the 2000s, real per capita incomes grew slower than the average for the RF. Today real per capita incomes in the Murmansk region make only 60% of the 1991 level, while in Russia on the average they exceeded it by almost 40%. Paradoxically, such unsatisfactory dynamics of living standards in the region do not correspond to its input into the country's economy – the Murmansk *oblast'* is one of the leaders in the Russian Federation by gross regional product per capita. Such situation is typical for the majority of the regions of the Russian North and its Arctic zone, and only four regions could be considered as exceptions – Yamalo-Nenetskiy, Chukotskiy, Khanty-Mansi autonomous *okrugs* and the Sakhalin region (Riabova 2012: 46-47). This means that residents of the Murmansk region experience a high degree of spatial socio-economic injustice, reflected, first of all, in inadequate compensations to the people working and living in the extreme conditions of the Far North. The reason for such situation is lack of proper budgetary, regional and tax policies of the federal authorities which negatively influences many regions of the Russian Federation, including those in the North and in the Arctic zone. This state of affairs has a negative impact on the state of human capital of the Murmansk region which is a key factor in regional development as a major source of innovation and competitive advantage. Urgent measures aimed at improving the living standards of the population in the Murmansk region, as well as in many other regions in the North and in the Arctic zone of the Russian Federation, are required.

The second important trend in the social sphere of the region is the continued relatively high unemployment which despite a significant decline in the 2000s, exceeds the national average. An explosive growth of unemployment in the region occurred in the 1990s. In the early 2000s, due to the measures undertaken at the federal, regional and local levels, unemployment in the region significantly decreased. However, over the whole period

<sup>2</sup> The fall of industrial output in the Murmansk region in the mid of the 1990s was about 40% compared to 1990, whereas in Russia as a whole it was more than 50%. Since 1999 up to 2011 in the Murmansk region cumulative growth of industrial output in constant prices made 15%. In Russia as a whole in the same period the indicator made 86%. However, by 2011 neither Russia, nor Murmansk region didn't reach the volume of real industrial output of 1990 level.

<sup>1</sup> Now CEMAT is research unit of the University of Aalto. All bi-annual monitoring reports were published on the web site <http://cemat.aalto.fi/en/electronic/economicmonitoring/>.

unemployment rates were exceeding the national average, as well as the natural unemployment rate. This to a large extent is explained by the resource-oriented and low-diversified economy of the region. In 2011 the level of general unemployment in the region made 8.8% (about 45 th. people) against the national average of 6.6%. To maintain the positive trends in the reduction of unemployment and to achieve its levels below the national average (what we believe should be pursued in the northern and Arctic regions of the RF), additional measures at all levels of power consolidated with efforts of business community and population itself are needed.

The third, highly significant social trend in the Murmansk region is improvement of demographic situation as compared to the beginning of the 1990s. During the period of 1992-2000 population in the region decreased by 247 th. people, or by 21%. Out-migration made the main input in such negative developments (net migration then made 174.8 th. people). Since the early 2000s demographic situation in the region began to noticeably improve. In 2012 the region managed to overcome the depopulation process. However, the problems of high mortality and low birth rates and lower than the national average life expectancy still exist.

One of the most important demographic indicators and a reliable measure of quality of life in the region – life expectancy at birth – lags behind the Russian average (68.9 years against 69.8 in 2011) almost for the whole twenty-year period, while until 1993 the situation was the opposite. It points to systemic failure in achieving at least average national level of life quality in the region, and signals the need for improving social policy in the region, as well as in other northern and Arctic regions of the Russian Federation.

Taking into account the fact that by all the key trends in the social sphere the Murmansk region lags behind the national recovery tendencies, we have to conclude that the social costs of market reforms for residents of the Murmansk region, as well as for most of the northern and Arctic regions of RF, turned to be higher than for Russia as a whole.

As to the future prospects of the region's development, an official view of the matter is reflected in the "Strategy of socio-economic development of the Murmansk region to 2020 and for the period up to the year of 2025"<sup>3</sup>. The last version of the document was approved by the regional government in December, 2011. In the Strategy four scenarios of future development of the region were described. All the four scenarios anticipated realization of the Shtokman project – development of one of the largest in the world off-shore gas field in the Barents Sea – no later than 2020. It was expected that the final investment decision on the Shtokman project would be taken by 1st July, 2012.

However, quite recently expectations of the region future development changed substantially. The investment decision on the Shtokman project was again postponed for indefinite time. Since the project supposed huge investments (more than \$40 billion, including \$17 billion on the territory of the Murmansk region) and various spin-off effects, today it is clear that such delaying the project realization notably worsens the prospects of the region's socio-economic development, which were expected according to the Strategy.

Therefore, other projects and directions of development that the Strategy includes – such as development of the Murmansk transport hub, a set of investment projects in the mining and energy industries (including alternative energy sources), fishery and tourist clusters, small and medium-sized businesses – become of primary importance for the future of the region. It is obvious that development efforts should be based on the proactive socio-economic policy of the regional government supported by business community and the region's population,

under condition of proper policy of the federal level towards the North and the Arctic of the Russian Federation.

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<sup>3</sup> The text of the document (in Russian) is presented on the web site: [http://minec.gov-murman.ru/content/strat\\_plan/sub02/sub01/](http://minec.gov-murman.ru/content/strat_plan/sub02/sub01/).

## The Russian North going global

By Vesa Rautio

My on-going research project deals with foreign direct investments (FDI) to and from Russian. As part of the project I have studied the socio-economic development of Murmansk Oblast.

The region played important role in rebuilding the country after World War II. Since the region is rich in natural resources it was rapidly populated and industrialised after the war to provide raw materials for the needs of domestic industry. As a consequence of this post-war regional development policy, set up by the Soviet planners, northern regions faced vast and serious problems when the Soviet Union collapsed. Murmansk, like most of the regions in the Russian North, had limited tools for adaptation to the new era in the beginning of the 1990s.

Despite of the tremendous growth of the Russian economy since the collapse of rouble 1998, the growth has not led to increased socio-economic well-being in the Federation's peripheral regions. For instance, the regions of the Russian North are still struggling with numerous structural problems without solid regional policy measures provided by the state to cope with the challenges.

Murmansk Oblast can be seen as a product of the Soviet era. More than 90 per cent of the region's population is urban, and a good part of the urban settlement network was built to support the mining and metallurgical activities that met the needs of the Soviet Union. Moreover, one aspect of the Soviet system was the appreciation of the urban settlement as compared to rural, which was seen to represent backwardness and vulgarity. Therefore, for instance in Murmansk Oblast even fishing and reindeer communities are highly urbanised, which is a clear dissimilarity compared to region's neighbouring countries Finland and Norway. Moreover, the region has always been important military area for Russia, with a number of military bases situated primarily in the north along the Barents Sea coast.

In the early 1990s, it became obvious that the economic system in the north, which was created during the Soviet era was neither economically nor environmentally sustainable. At the beginning of the 1990s the regions of the Russian North suddenly had to operate under rules of the market economy without having any experience of it or the economic capacity to cope in global markets.

Murmansk Oblast is even today highly depended on its mining sector. The main mining company in the region is Norilsk Nickel, which is a leading global nickel producer with 18 per cent and palladium producer with almost 50 per cent of the world market share in 2011. During the last ten years Norilsk Nickel company has invested heavily abroad, but it has not modernised its domestic operations in Murmansk and Siberia. Norilsk Nickel's serious environment problems have been an important impetus to Finnish and Norwegian initiatives to assist in the modernisation of company's subsidiaries in Murmansk Oblast. However, the lack of Russian financial contribution prevents highly needed investments.

Another major problem for globalisation process of Norilsk Nickel is outdated human resource policy, which has caused problems in the company's subsidiaries in Africa and Finland. According to a Western mining executive the company's human resource policy has not undergone any major changes since 1970s. These challenges were confirmed in a survey and expert interviews conducted among staff of Harjavalta Nickel plant, which was acquired by Norilsk Nickel in 2007. Based on survey results, the difference in working environment between a traditional Russian company and a Western-based one is enormous. According to Russian deputy CEO at Harjavalta, Yuri Filatov, the communication in the Finnish company among

management and workers is open and informal, and notably more democratic than in a Russian company, which he described as operating according to a military logic.

Like a selected few other Russian companies, Norilsk Nickel has taken on some of the governance trappings of a global company: a significant free float of shares, audited reports, foreign board directors. But it is still very much a Russian company dominated by oligarchs, in this case squabbling between themselves and engaging in eyebrow raising share dealings. Given that it is hard to see Norilsk Nickel becoming a true global company in the foreseeable future.

Globalization of the Russian North is strongly linked with use of natural resources. Murmansk region is highly dependent on natural resources and companies operating in the resource sector. However, this does not mean that the future prospects of Murmansk and Magadan Oblasts are completely dependent on world market prices of raw materials or strategies of the companies operating in the regions. The Post-Soviet Era has shown that local inhabitants in the Russian North have tight socio-economic ties to their place of residence in spite of harsh climate, high living costs, environmental problems and pressures to out-migrate set by business and public sectors. Most of the local inhabitants interviewed for the study represent a generation, which were born, or have lived for several decades, in the regions. Therefore, they are not as willing to move to other parts of the country as public sector officials expected at the beginning of the 1990s.

Murmansk Oblast has greatly benefitted from the success of Norilsk Nickel in a form of thousands of well-paid jobs, taxes and other payments by the company. The company has managed to avoid open conflicts with its labour force and with public sector officials due to personal contacts with representatives of the regional administration and the Government of Russian Federation. However, these relations are highly tight to individual level, which means that changes in the state or regional administrations can have a direct impact on this co-operation.

International links in Murmansk Oblast are mainly formed by major raw material companies through export of their production and import of technology. For instance, cross-border co-operation with Norway and Finland is still quite undeveloped in the level of small and medium size companies (SMEs). Increased cross-border activities would lower the living costs for inhabitants and provide wider markets for SMEs as well. Murmansk Oblast has clearly unused potential in resource sector as well as in merchandise and service sectors. Utilization of this potential would create new possibilities for long-term sustainable regional development, but it requires willingness, commitment and co-operation by all three actors: inhabitants, administration and business sector.

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## The Norwegian Barents Sea adventure

By Morten Anker

*The Norwegian part of the Barents Sea seems to be on the threshold of becoming the next big oil and gas province in Norway. Norwegian authorities have a clear preference for the Barents Sea, companies are exploring for oil and gas more actively than ever, and at least two discoveries will be developed within a few years. In addition, the sea border treaty between Norway and Russia from 2011 opens up a new promising area. However, the area needs a transport solution for its gas resources. With a gas pipeline the area may prosper, but without a pipeline interest may fade away.*

2013 will likely see the highest exploration activity ever in the Norwegian part of the Barents Sea. The state-controlled company Statoil has announced an extensive exploration program in 2013 and 2014.<sup>1</sup> In addition, several other companies are drilling in the area. The big interest has its roots in exploration success of the two last years. It started with Statoil's discovery of the Skrugard oil deposit, called a "break-through for frontier exploration in the Barents Sea" by the company's exploration director.<sup>2</sup> More discoveries followed and company interest was big when the Norwegian government offered 72 new Barents Sea licenses in its 22nd licensing round. 36 companies applied for licenses, including some companies that have never had activity on the Norwegian continental shelf.<sup>3</sup>

The Norwegian petroleum directorate (NPD) is eager to have more acreage opened for petroleum activity in Norway, and immediately after the border agreement between Russia and Norway was signed begun seismic exploration in the Norwegian part of the previously disputed area. In February this year, after two summers of seismic exploration, the NPD published its resource estimates for that area. The new estimates show significant potential and increased the total undiscovered resource potential of the Norwegian shelf by 15 per cent.

Things are also happening with discoveries already made. Italian ENI has started developing the Goliat oil field north of Hammerfest and plans to start producing in 2014. Statoil has already announced its plans to develop the above mentioned Skrugard oil discovery with its sister discovery Havis. That development will probably begin in 2014.

However, there are some major challenges that may put a lid on the optimism in Northern Norway and among the companies currently active in the area.

The first major challenge is the transportation issue. With oil transportation is no big challenge. It is quite easy to transport on ship to the big ports of Rotterdam and similar. Gas on the other hand requires either pipelines all the way to the market or expensive liquefaction (LNG) before it can be brought to the market. The Barents Sea currently has only one transport solution in place and that is the LNG plant for the Snøhvit field – the world's only Arctic offshore gas field in production. However, the plant does not have room for new gas in many years. With current reserves and production pace, the LNG plant will be fully occupied with gas from Snøhvit until the 2040s. Without another transportation solution potentially commercial discoveries may be left undeveloped. Plans to build another plant next to the existing one was shelved last year. A pipeline has been much discussed in the Norwegian media lately. The advantage of a pipeline is that it could have significant capacity for gas, thus making development possible for even moderately sized discoveries. A discovery like the Norvarg gas discovery made by Total and partners in 2011 would stand a good chance of commercial success. And even though the area is far from the closest market in Europe the new pipeline would only have to be constructed half-way and connect with the existing pipeline infrastructure in the Norwegian Sea. And existing pipelines will have capacity as current gas production inevitably will start its decline in the 2020s. The problem is who should pay for such a pipeline.

Normally in Norway the owner of a gas discovery will pay for pipeline to existing infrastructure. In the Barents Sea the challenge is to keep interest among companies before enough discoveries are made. And to get companies to pay for capacity up-front would be very difficult. The Government has stated that it will not pay, but there might be a chance that it needs to get involved one way or another for a pipeline to become a reality.<sup>4</sup>

The second major challenge is the market outlook. The two discoveries currently under development or planned for development are oil discoveries. With today's oil price outlook it seems quite easy to make a medium-sized oil discovery profitable. Not necessarily so with gas. The American shale gas "revolution" has put the gas market upside-down and there is big uncertainty about the future developments of that market. For gas from Norway the European market is the closest. Currently, prices have stayed quite high, but with more LNG coming in from the Middle East – and possibly even the USA, and more renewable energy sources coming online a downward pressure on the price may be a result. The gigantic Stockman gas discovery in the Russian Barents Sea has been postponed indefinitely among other things due to market uncertainty.<sup>5</sup> If that field has uncertain commercial prospects what then with fields only a fraction of the size? Obviously some of the trouble with Stockman may also be related to Russian rules and regulations and challenges of partner alignment, but it is still an indication of some of the challenges related to gas as opposed to oil.

A third potential challenge is that the area borders to Russia. In the new estimates of oil and gas resources in the area bordering up to Russia the NPD states that there is a possibility that petroleum deposits cross the border between Norway and Russia.<sup>6</sup> In that case, it will be necessary with a special unitization agreement between the two countries outlining how such deposits should be developed. None of the two parties may develop such a deposit without an agreement with the other party.<sup>7</sup> As the Norwegian side seems more eager to develop the area than the Russian side, and the Norwegian side at the same time is increasing its competence and experience with Arctic offshore oil and gas while Russia seems to walk slowly, there is a certain chance that the Russian side may put a break on possible developments of border-crossing resources.

Given that the right actions are taken, the Norwegian Barents Sea may become the new oil and gas province that the Norwegian industry is hoping for. Activity on the Norwegian side may even spur activity on the Russian side through transfer of competence, and possibly also offering a pipeline for Russian gas sometime in the future.

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<sup>1</sup> <http://barentsobserver.com/en/energy/statoil-increases-barents-drilling-29-08>

<sup>2</sup> <http://www.statoil.com/en/NewsAndMedia/News/2011/Pages/01AprSkrugard.aspx>

<sup>3</sup> <http://www.regjeringen.no/en/dep/oed/press-center/press-releases/2012/22nd-licensing-round-great-interest-in-t.html?id=709231>

<sup>4</sup> [http://www.petroarctic.no/index.php?page\\_id=12105](http://www.petroarctic.no/index.php?page_id=12105)

<sup>5</sup> <http://online.wsj.com/article/SB10000872396390444914904577620733220528246.html>

<sup>6</sup> <http://www.npd.no/en/news/News/2013/New-resource-figures-for-the-southeastern-Barents-Sea-and-Jan-Mayen/>

<sup>7</sup> <http://www.regjeringen.no/pages/14629599/PDFS/PRP201020110043000DDDPDFS.pdf>

## The Barents Sea – successful fisheries management

By Geir Hønneland

People tend to think that the world's fisheries are in crisis: rogue states are plundering the world oceans, even 'civilized' states fight over marine resources – and fishers are notorious cheaters, focused on their own short-term gain and not on the long-term common good. As an expert on the Barents Sea fisheries, where Norway and Russia have jointly been in charge since the mid-1970, I hear such views all the time when I lecture and give comments to the press. There has been jurisdictional disagreement between the two coastal states, and spectacular arrests of fishing vessels occur from time to time – as when the Russian trawler *Elektron* kidnapped two Norwegian Coast Guard inspectors in 2005 – so a widespread image has emerged: that newly-rich Russian fishers do as they please and that the valuable Barents Sea fish stocks are close to extinction.

The truth is rather different: stocks are in good shape, institutional collaboration between the two coastal states is conducted in a constructive atmosphere, and most fishers comply with most regulations most of the time. This may well be the case also in other ocean areas where governments and fishers alike have received an unfairly bad reputation. At least in international fisheries circles, the Barents Sea is now recognized as one of the most successfully managed large-scale fisheries in the world. In my *Making Fishery Agreements Work* (Edward Elgar, 2012), I attempt to pinpoint some of the reasons for this success.

The book seeks to subsume theories of individual and state compliance under the concept of post-agreement bargaining. I pose two general questions: why do people obey the law, and why do states abide by their international commitments? In the literature, there are 'formal' models of compliance that largely presuppose unitary, rationally calculating actors driven by self-interest, with a concomitant social logic: a crime being committed, a common-pool resource destroyed, an international treaty concluded and subsequently complied with (or not). Empirically, these models are used to study how self-interest, deterrence and power play out in real-world situations. 'Enriched' models of compliance, by contrast, assume that actor motivations are more mixed and social dynamics less stylized and predictable. Here research efforts have focused on how norms, legitimacy and institutional organization affect compliance. The theory of post-agreement bargaining narrows in on how states promote the compliance of other states through inter-state communication after a treaty has been concluded.

In *Making Fishery Agreements Work*, I show how Norway did not stop negotiating each time a new agreement was reached with Russia on a specific regulatory measure, but rather viewed bargaining as a continuous aspect of living under the agreement. Annual quotas were set by the two countries, but not adhered to by the Russians. Norway then took steps to document total Russian catches and introduce new reporting and control routines in order to halt the illegal fishing. When the Russians branded low quota recommendations from the International Council for the Exploration of the Sea as Western attempts to harm the Russian fishing industry, Norway first proposed a compromise in the form of a three-year quota, then a harvest control rule that bound the parties to precautionary reference points while also giving the fishing industry greater predictability. Gradually, compromise has emerged on most

technical regulatory issues, such as minimum mesh size and minimal allowable length of fish, and new measures have been introduced jointly by the parties: satellite tracking of all fishing vessels, and obligatory use of selection grid in trawls. On the fishing grounds, Norwegian inspectors have used widespread communication with the Russian fishing fleet – in Russian! – when jurisdictional disagreements have prevented the use of coercive action.

The Joint Norwegian–Russian Fisheries Commission is the main institutional body for fisheries management in the Barents Sea. Bargaining might be expected to take place between the parties 'over the table' – at plenary sessions of the Joint Commission. In practice, I found two other main tracks of Norwegian negotiation efforts: from bargaining at lower levels to approval by the Commission; and bargaining by the two heads of delegation, with decisions subsequently anchored in the respective delegations. The Norwegians often saw the need to create ownership to the proposed measures on the Russian side. This was done by meticulous and persistent arguments (no short cuts), and by taking things in several rounds, from lower levels to the Commission itself. And the Norwegians had nothing against letting the Russian delegation leader credit his own side for the new regulatory inventions.

Why did Russia comply with its international obligation to conduct fisheries management according to the precautionary approach? I maintain that the reason was *not* because this was in Russia's declared interest, presumably not even its *perceived* interest. Quite the contrary, Russia followed suit *more or less unwillingly*, with Norway at the helm. Transnational seafaring norms and good-neighbourly relations may have tuned the negotiators in on a pro-compromise wavelength, but I find institutional factors best suited to explain Russia's compliance. In the Barents Sea fisheries management, Russia gradually spun itself into an institutional web of increasingly more elaborate decision-making procedures, with Norway taking the leading role after the end of the Cold War. In part, the established formal and informal standard operating procedures led to decisions that the Russians would soon criticize – but they stuck to them. Moreover, there was in the Joint Commission a drive towards compromise that might to some extent have overshadowed strictly defined national interests, or at least have led the parties to interpret such interests as positively as they could, weighing them up against the possibility of reaching agreement.

In the end, Russian negotiators were also satisfied with the result. At the time of writing, Barents Sea fish stocks are at an all-time high, and the Russians highlight the collaboration with Norway to the west as an example for emulation in their fishery relations with states in the Far East. The lessons learned include institution, communication – and time.

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## Arctic marine transport driven by natural resource development

By Lawson W. Brigham

An important component of the Arctic Council's Arctic Marine Shipping Assessment (AMSA) released in 2009 was a scenarios creation effort to look at the future of Arctic marine navigation to 2020 and 2050. One key challenge was to identify the main uncertainties that would shape the future of Arctic marine operations and illustrate for the Arctic states, Arctic indigenous peoples' organizations, and many stakeholders the complexity and global connections of what is happening in the maritime Arctic. The AMSA scenarios team identified 120 factors or driving forces that may influence future levels of marine activity. Among the factors considered most influential were: global oil prices; new natural resource discoveries; legal stability and overall governance of Arctic marine use; occurrence of a major Arctic marine disaster; global trade dynamics and world trade patterns; limited windows and seasonality for Arctic marine operations (economic implications); climate change severity (more disruptive sooner); transit fees; global agreements on construction rules and standards; the safety of other global maritime routes; and, the entry of non-Arctic flag state ships operating in the maritime Arctic.

In the AMSA scenarios process two primary factors were selected to frame, as axes of uncertainty, the scenarios matrix used to develop four plausible futures of Arctic marine navigation. Degree of plausibility, being at the right threshold among the myriad of external factors, and relevance to Arctic maritime affairs, were the key criteria which led to the selection of the two major factors and uncertainties: resources and trade (demand for Arctic natural resources relating to the uncertainty of global commodities markets and market developments) and, governance of Arctic marine activity (the degree of stability of rules and standards for marine use both within the Arctic and internationally). Implied by governance is the need for a stable, efficient operating system of legal and regulatory structures. It is critical to note that Arctic sea ice retreat and climate change are fully considered in these scenarios. Understood is that the extraordinary retreat of Arctic sea ice provides for improved marine access and highly plausible, longer seasons of navigation. A prime example of this situation is along the Eurasian coast and the increasing use of Russia's Northern Sea Route (NSR). And, the sea ice retreat is assumed to continue based on the findings of the Arctic Council's Arctic Climate Impact Assessment, recent observations, and the sea ice simulations of a cadre of Global Climate Models. However, for future Arctic marine operations and levels of marine traffic, supported by the work of AMSA, Arctic natural resource developments driven by global economic drivers (global commodities prices) are considered paramount factors.

How are these plausible futures playing out in the 'new' maritime Arctic? Two key mining complexes above the Arctic Circle illustrate the linkages of Arctic shipping of resources to global markets. The Red Dog mine in northwest Alaska on the Chukchi Sea is the largest zinc mine and producer of zinc concentrate in the world. Operating since 1989, large bulk carriers sail into U.S. Arctic waters in summer, ice-free conditions and load zinc ore from barges sailing from a small port facility at the coastal community of Kivilina. The Red Dog operation is globally connected to markets (smelters) in British Columbia, Canada and East Asia. Winter operations would require substantial polar class

bulk carriers to effectively operate in the U.S. maritime Arctic, and this option to extend the navigation season has not yet been implemented.

In the Russian Arctic the Siberian complex at Norilsk is the largest mining company in Russia (also a significant taxpayer in the Russian Federation) and is the largest producer of nickel (18% in the world) and palladium (41%); it is among the world's top four producers of platinum and one of the largest copper producers. Key to linking Norilsk Nickel to domestic and international markets is a modern Arctic marine transport system using a fleet of five, advanced icebreaking carriers. Since 1979 year-round marine navigation has been maintained to Dudinka, a port on the Yenisey River that services Norilsk with a rail connection. Today's shuttle system of independently operated icebreaking carriers (these icebreaking commercial ships generally require no icebreaker escort) take nickel plates west to Murmansk and eventual distribution to global markets. During recent summer navigation seasons, experimental voyages by Norilsk ships have carried natural resources from the Kola Peninsula to China. The Norilsk's Arctic ship *Monchegorsk* carried metals to China in September through October 2012 and became the first cargo ship to sail the entire NSR without icebreaker assistance; returning from Shanghai to Dudinka, the ship carried consumer goods, equipment and technical supplies for the Russian Arctic. This historic voyage opened the possibility that appropriate ice class polar ships would be allowed to sail the length of the NSR independently during future summer navigation seasons.

Hydrocarbon developments in offshore Arctic Norway, the Russian Arctic, Greenland and the United States (off Alaska) have stimulated increased Arctic marine operations, both tanker transits on the NSR and in the Barents Sea, and fleets of support ships operating during exploratory drilling. Liquefied natural gas (LNG) has been shipped out of Arctic Norway from Hammerfest to global markets; the gas has been piped ashore from the seabed complex Snohvit, and additional Norwegian exploration is underway in the Barents Sea. During the 2010 and 2011 summer seasons Cairn Energy from Scotland supported drill ships and a fleet of offshore support vessels in lease areas off the west coast of Greenland. In late summer 2012 Shell conducted preliminary operations in leased areas off northwest Alaska in the Chukchi and Beaufort seas; a fleet of two drill ships and some 16 major support vessels, including ice management icebreakers, operated in the U.S. maritime Arctic. In the eastern Barents Sea of the Russian Arctic, two shuttle tanker systems are operating year-round with the carriage of oil to the port of Murmansk for storage and distribution. A new two-ship icebreaking tanker fleet is to operate from the Prirazlomnoye offshore production platform in the Pechora Sea, when production begins in 2013. And also in the Pechora Sea, a three-ship operation services the offshore terminal at Varandey with an annual delivery of 12 million tons to Murmansk. Both shuttle systems are designed to operate without icebreaker escort during the winter season, and both fleets can carry oil east along the NSR during the summer navigation season to markets in Asia.

Perhaps the most visible and developing link of Arctic natural resources to Pacific markets has been the renewal of

maritime operations along Russia's Northern Sea Route. The focus of recent, experimental and operational voyages has been on tankers and bulk carriers sailing east and along the NSR from ports in the Russian Arctic and northern Europe during summer months (with minimal ice coverage) to markets in China and southeast Asia. Some tankers have also sailed west along the NSR (an example was the carriage of jet fuel from Korea to Finland in August 2012). Several key operations illustrate these new global connections: during August 2011 a supertanker, *Vladimir Tkhnov*, with 120,000 tons of gas concentrate crossed the NSR (with icebreaker escort along the entire NSR) from Murmansk to Bangkok; the bulk carrier *Sanco Odessey* (Liberian flag) with 66,000 tons of iron ore sailed from Murmansk to Beilun, China on the NSR in September 2011; and, during November 2012 the LNG ice class carrier *Ob River* transported 66,342 tons of LNG from Hammerfest, Norway to Tobata, Japan. During the 2012 summer season 46 vessels sailed the NSR and total cargo transported was approximately 1.26 million tons (71% petroleum products). Six ship voyages carried iron ore and coal with the Danish firm Nordic Bulk Carriers being particularly active in using shorter summer NSR links to Asian markets. To place this level of NSR traffic in historical context, during the Soviet era in 1987 the use of the NSR peaked with 6.7 million tons of cargo carried with 331 vessels making 1306 voyages. Thus, the operational aspects of the NSR have been fully developed in past decades, but most of these voyages were internal and the entire NSR operation was not focused on international trade links beyond the USSR. Shippers today along the NSR are focused on the transport of natural resources out of the Russian Arctic and from northern Europe in a 3 to 4-month summer navigation season with some expectations this operational season could be extended to 6 months. It remains to be seen whether regular container ship operations (on trans-Arctic voyages) can make viable and economically sustainable use of the NSR during a short navigation season.

Future natural resource developments in the Canadian Arctic and Greenland will also be supported by Arctic marine transport systems. On Baffin Island is located one of the largest high grade iron ore deposits in the world. The Mary River mine project has been designed to develop this iron ore and link it year-round using a bulk carrier shuttle system to European ports and steel mills. However, in January 2013 the operator, Baffinland Iron Mines Corporation, revised plans for the project deferring the construction of a railway and port because of the global financial climate and slowing commodities demand. The company will annually produce 3.5 million tons vice the 18 million tons each year envisioned in the earlier mine plan. Bulk carriers will transport this

resource from the Canadian Arctic to global markets likely in Europe. For Greenland, a cursory look at a recent map of exclusive licences for hydrocarbons and minerals from the Bureau of Minerals and Petroleum highlights the potential offshore and onshore natural resource wealth of this emerging state. In 2011 there were 142 hard minerals licences granted and applied for, including a broad range of exploration projects for rare-earth minerals, iron, zinc, gold, and rubies and sapphires. Many of these projects when moving to production phases will require ports, maritime infrastructure and ships to move future cargoes to global markets.

Highly plausible are projected increases in tankers and bulk carriers sailing in Arctic waters. These increases will be driven primarily by the demands of global commodities markets, and if one takes a longer-term, strategic view, by scarcer natural resources on the planet. Uncertainties and key influences must be considered: the building of oil or gas pipelines across Eurasia (from Russia to China) as transport competitors to Arctic shipping; the response of international gas markets to higher natural gas production in the U.S., and if the Arctic can be an economically-viable region for future gas development; the practical operational challenges of ice class polar ships and open water vessels in Arctic regions with diminished sea ice conditions, especially once a mandatory Polar Code is adopted by the International Maritime Organization; and, the plausibility of the transport of fresh water by bulk carriers from the Arctic (Alaska, Canada, the Russian Arctic and Greenland) to more southern and increasingly warmer regions. In summary, globalization of the Arctic through natural resource development is upon us, and the use of efficient and safe Arctic marine transport will link the Arctic ever more closely to the rest of the globe through the 21st century and beyond.

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## Finland's world class Arctic marine technology know-how

By Yrjö Myllylä and Jon McEwan

### Arctic marine technology is driven by resource extraction

The Arctic marine technology is first and foremost a question of utilization of natural resources: gas and oil, minerals and timber. It is also necessary for food consumption – Arctic fishing stocks for harvesting and a few new international trade routes: the Northeast Passage also known as the Northern Sea Route and the Northwest Passages to world markets. Natural resources belong to the core interests of industrialized nations growing demand for basic commodities e.g. lead, zinc, copper, iron, nickel, palladium, and platinum to name a few in addition to energy resources. From this perspective, Finland must re-evaluate its own economic and development strategies.

The strongest clusters and products in highest demand of Finnish Arctic marine technology are the environmental protection technology, meteorology and weather forecasting, including essential controls and monitoring systems for ice going vessels. There is strong demand of these products and services and as measured by employment and profit. Rapid growth is forecasted in Arctic marine technology products in the coming decades with climate change opening up the Arctic.

The fastest areas of potential growth, as compared to the previous levels of business in terms of employment and profit, is in the research and drilling operations, offshore construction, and safety and rescue operations. Ship building traditionally is the strongest sector providing short-term and vital cash flow in the maritime cluster. The construction of new ice going vessels is supported by the transport and logistics systems with Finnish know-how and over 50 years of ice data developed the last hundred years out of necessity of shipping over ice packed waters in the Baltic and Arctic.

### Post Cold-War shifts Russian interests to North promoting Northeast Passage

Strong prospective trends may increase the demand for Arctic marine technology. Numerous experts were interviewed using the Delphi method, revealed the main external trends affecting Uusimaa or the Helsinki area and the rest of Finland's Arctic marine technology development are the growth opportunities of the emerging role of the North and technological innovations (progress) needed for sustainability. By interviewing panels of experts, the main external trends affecting the Uusimaa region and rest of Finland's arctic marine technology development are the growth of new role of the north and technological progress. Russia's North or the Arctic North is at the fore, due to growing demand for northern natural resources, especially in the growing demand for arctic minerals and oil and gas exploration, as well as in an increase in the political will for the benefit of the Northeast Passage. A key element of the North demand growth is also Russia's economic interests shifted to the North as a result of the dissolution of the Soviet Union and the end of the Cold War. The technological development, in turn, involves for instance the cost and nature-friendly transport, energy and environmental technology and information technology development.

The strengthening of cooperation in the Baltic Sea region is also an important trend. If Finland wants to benefit from the opportunities in the Arctic, the Finnish technology industry must develop closer cooperation with Russia. Yamal and Stokman gas fields need liquefaction facilities, mobile sea stations, storage and transportation vessels, service vessels and Arctic nuclear powered icebreakers. Finnish know-how is best demonstrated by innovative oil spill clean up products that have the potential to cluster with other actors in the Baltic Sea region. In addition, modernization of the Russian Navy, a fleet of roughly 2000 ships, will create new opportunities. On the other hand, if Finland wants to benefit from the opportunities in the Arctic, the Finnish technology industry has to have closer cooperation with Germany, a leader in many areas of technology.

### The roots of cruise ship know-how are in the Arctic environment

Cruise ship skills can also look through "Arctic spectacles" and can also meet the demand for Arctic tourism in Polar class vessels including the design of research vessels like the *Aurora Boreali* that may accommodate 120 people, with half being researchers and others. In recent decades, shipbuilding know-how was promoted heavily, enhancing Finland's role as an expert in the construction of cruise ships. Cruise ship and ferry expertise is rooted in one feature of the Arctic environment, in other words in long distances and especially in Finland, for example Silja Line's and Boren's orders for cruise ships built in Finnish shipyards. In particular, the ship traffic between Finland Sweden has created the need for this particular type of know-how from the 1960s.

Know-how has been scaled, so that Finland manages 20 percent of the cruise ship market, and has manufactured the world's largest cruise ships. In the ferry markets Finland dominates the field with 40 per cent. The field and manufacturing are competitive by themselves what is basically supported by domestic supply networks located nearby. In addition, competitiveness is supported by the Finnish strong project management know-how, whereby the work (the projects are) is done in a reliable and timely manner.

Finland experienced a decline in orders after the global financial crisis. The major role of state aid and selected line of action by authorities have eroded the Finnish position especially in the cruise ship markets. However, the demand of Arctic and ice-breaking know-how is increasing. Knowledge is critical to the Arctic super powers and they are willing to cooperate with the Finns. After all, Finland has manufactured 60 percent of the world's icebreakers. Willingness to co-operation is manifested in a new Artech Helsinki Shipyard dock in Helsinki in 2010, where already the third ice-breaking vessel is being manufactured, and the fourth order to come from the Russian Ministry of Transport just before Christmas.

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## Business prospects for the Finnish maritime industry in the Arctic

By Eini Laaksonen

Although the emerging business opportunities in the Arctic have aroused a lot of public discussion in the Finnish media, it seems that not many concrete actions have taken place in terms of engaging in the developments in the High North. Finnish companies remain rather absent in the Arctic regions of both Norway and Russia, where there would, at least it seems, be great demand for Finnish knowhow and workforce.

However, when taking a look at the actual business opportunities in the Murmansk region, for instance, not much has materialized, at least for the time being (Laaksonen 2012). The Shtokman field project had set the hopes high for the local people and authorities as the huge project was expected to attract lots of workers, investments and other activity to the region. However, as in 2012 the project consortium concluded that the project is not economically viable in the current economic situation – with major uncertainties concerning future prices and production of energy – the materialization of the long-awaited business opportunities might take longer than expected. Nevertheless, even without Shtokman project, the extraction of various natural resources continues in the Barents Sea region, which increases the need for new logistical solutions and supporting infrastructure. The melting of the Arctic opens up new possibilities for using the North-East Passage, and this route might in some decades' time well develop into a new transport route to Asia. Keeping in mind these developments, there is definitely room for Finnish expertise in the Barents Sea region – not only in Russia, but also in Norway.

From the perspective of Finnish companies, maritime industry is definitely one of the most interesting sectors for which there is increasing demand in the Arctic. According to the ambitious program approved by the Russian Government, Russia is to quintuple its shipbuilding output by 2030 through substantial state funding and by establishing new economic zones for constructing vessels (BOF 2012). This boom will most certainly provide subcontracting opportunities for Finnish expertise. In fact, successful cooperation already takes place for instance in the Arctech Helsinki Shipyard, which operates under the joint ownership of the Russian United Shipbuilding Corporation (USC) and STX Finland. In fact, the high level of Finnish shipbuilding expertise originates from the war payments to the Soviet Union after the Second World War, which forced the Finnish maritime industry through a rapid industrialization process. Although Finnish shipyards have recently suffered from poor profitability and changes in ownership, the expertise remains at top-level and the competitive advantage lies in high specialization, investments in R&D, excellent quality, and reliable delivery times. However, offshore ice management segment, including icebreakers and the related services, is one of the most interesting development areas in the Finnish maritime cluster. Simultaneously, the ability to design and build innovative multipurpose vessels is of demand as such ships can be used in various functions all year round.

As an example of Finnish productivity, Arctech Helsinki Shipyard finished the Arctic offshore vessel Vitus Behring four months ahead of time. The ship was ordered together with its sister ship by Russia's largest shipping company Sovcomflot, and they are to serve the oil and gas production platform of Exxon Neftegas Limited in the Russian Far East. Arctech Helsinki Shipyard is simultaneously working on

another order from Russia, to build a multipurpose icebreaker together with Yantar Shipyard JSC in Kaliningrad. The project uses the icebreaking and oil destruction solutions developed by Aker Arctic Technology Oy, a Finnish company which has a unique ice model test laboratory in Helsinki and which is currently involved also in designing several Arctic icebreakers, for instance to China and Canada.

In addition to the expertise in designing and building various ice-going vessels, the offshore sector is of increasing interest to the Finnish maritime industry. Offshore sector refers to businesses that support the search and production of oil and gas from the sea bottom and the production of wind power, wave power and solar power offshore (SOT 2012). Possibilities for offshore oil and gas production in the Arctic areas of Russia, the US, and Canada are under active exploration. Simultaneously offshore industry is increasingly investing in offshore sea wind, wave and solar power production plants, particularly in Germany, Denmark and Great Britain, thus concerning not only Arctic areas. In Finland the industry network comprises technology companies which provide offshore industry with special know-how in propulsion, mechanical engineering, lifting, electrics, and measuring technology. Traditional maritime industry shipyards also increasingly serve the offshore industry which is replacing the production deficit caused by the lack of large cruiser orders. Several Finnish companies are global leaders in their own niche markets, such as ABB with propulsion solutions, Technip with the Spar platforms, KONE with the lifting solutions, and Napa with ship design software.

As stated also in the recent report by the Maritime Industry 2020 competitiveness working group (initiated by the Finnish Ministry of Employment and the Economy), the Finnish maritime industry has every possibility to become the world leader in the Arctic maritime expertise (TEM 2013). In fact, the Arctic might appear to be the key competitive advantage of the sector in the future (SmartComp 2012). However, such an advantage should not be taken for granted – continuous investments in R&D and innovation activities are required in order to keep one step ahead of the ambitious competitors, not only in Europe, but for instance in South Korea and China as well. In addition, stronger clusters and increased cooperation are needed among the relatively small Finnish companies, also between competitors. Namely, international buyers increasingly prefer buying larger product packages or solutions than Finnish SMEs with their current supplier networks can offer, and thus dynamic and proactive cooperation is a necessity in the future to maintain the flow of orders and, as a result, to maintain and develop the cumulated expertise. To develop our state-of-the-art knowhow, we need national as well as international networks.

Although it eventually is the companies that have to be active in the face of Arctic business opportunities, the role of state support should not be forgotten. Guaranteeing the education of the needed workforce, developing the financing instruments for R&D and investments, developing the logistical linkages to the High North, and supporting the internationalisation of Finnish SMEs, are of crucial importance. Moreover, particularly in the Russian markets, the high profile support of politicians as door openers is in

some cases essential for the success of Finnish companies in getting their share of the forthcoming project orders.

Finland is currently updating its Strategy for the Arctic Region, and hopes are high for the state to present now concrete and far-reaching measures on how the Finnish business community could better engage in the developments taking place in the High North. International networks, both within companies and the public sector, are needed so that the Finnish maritime cluster can make most of the business opportunities emerging in the future.

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## Opportunities for local development in a nationally contested Arctic – when Nordic communities engage with Asian economies

By Adam Grydehøj

The Arctic region's emerging accessibility to trade and industry, largely as a result of climate change, has enhanced interest among the Arctic states in exploiting new trade routes and natural resources (fossil fuels, fisheries, precious metals, etc.). It is tempting to view these developments either in terms of regional cooperation or zero-sum competition between states, yet the reality is more nuanced. Regional intergovernmental bodies such as the Arctic Council and the Barents Euro-Arctic Council are not merely forums for mutually beneficial decision making but are also platforms for declaring unique national interests and for limiting the opportunities of states that are not members of 'the Arctic club'— or in the case of the 2008 Ilulissat Declaration, the 'Arctic Ocean club'. Similarly, attempts to outmanoeuvre allies by entering into special strategic relationships with non-Arctic states has the potential to result in a safer, more secure world in which benefits from natural resources are more justly distributed.

Even this, however, is an oversimplification, for the lack of a regional body with statutory authority means that states – engaging in international relations either independently or as part of intergovernmental forums – are not the sole arbiters of Arctic policy. Subnational jurisdictions (communities, towns, municipalities, etc.) are increasingly shaping the future of the Arctic by engaging with state and private actors from outside the Arctic region, with or without the encouragement of the national governments to which they belong.

### National versus local powers

When discussing the governing capacities of subnational jurisdictions, it is important to differentiate between *de jure* distributions of competencies between governments at the national and subnational levels and *de facto* competencies acquired through tradition and practice. Although foreign relations are generally considered the exclusive *de jure* competency of sovereign states, which possess diplomatic legitimacy in the international arena, most subnational jurisdictions have the ability to engage directly with foreign state and private actors. In the Arctic context, the government of Greenland is, for example, making considerable political investments in engaging with the Chinese state and Chinese businesses even though Greenland – as a specially empowered subnational jurisdiction within the Kingdom of Denmark – lacks the *de jure* competency to unilaterally carry out foreign relations. The Greenlandic government's encouragement of Chinese industry, with at best ambiguous support from the government of Denmark, does not merely represent an attempt to bolster the Greenlandic economy; it is also an attempt to establish greater economic and political independence from Denmark. Greenland is a special case inasmuch as the present situation is part of a long process toward greater autonomy. However, it is not just independence-minded subnational jurisdictions that can benefit from the globalisation of the Arctic: Local communities of all kinds desire stronger economies.

Local economic development may be in the national interest inasmuch as the locality is a constituent of the state, yet national and local interests do not always coincide. For

instance, in Norway, towns, cities, and counties may wish to become involved in international Arctic trade and industry in a way that is uncondusive to the Norwegian government's efforts to make Tromsø a regional hub for industry and diplomacy via investment in such projects as Grøtsund Industrial Park and the Arctic Council's permanent secretariat. Similarly, the difficulty that the Zhongkun Group, a Chinese corporation, has faced in its attempts to invest in northeast Iceland suggests conflicts between a local desire for development and national geopolitical concerns.

### Opportunities for local communities

Nevertheless, competition for resources among the Arctic states has opened up space for local governments to get involved. National attempts to attract, prevent, or manage trade, investment, and industry from non-Arctic states (especially Asian states like China, Japan, South Korea, and Singapore) in order to further national interest have relatively ignored the importance of locality. The *de facto* and non-exclusive of competencies held by subnational authorities often permit them to forge relationships with foreign state and private actors without interference from national governments. A municipal authority that wishes to welcome more foreign shipping vessels to its harbour can largely do so without the support of its national government, and barring national legal prohibitions (such as those that seem to have scuppered the Zhongkun Group's property development plans in Iceland), there is nothing to prevent a subnational jurisdiction from encouraging foreign direct investment.

An illustrative example is the town of Longyearbyen in Svalbard, an Arctic archipelago governed by Norway but with a complex jurisdictional status that allows foreign nationals to settle and undertake economic activity. Although it is in Norway's strategic interest to keep Svalbard as centrally controlled as possible, the local government in Longyearbyen is reaching out to foreign actors in order to politically and economically empower the local community— and there is little the Norwegian government can do to prevent this.

Not all development is positive, and there can be no absolute privileging of local versus national interest or *vice versa*. There is a need though to recognise that opportunities for local development are increasing as well as that local pursuit of international trade can run into obstacles in the contested Arctic region.

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## Japanese-Russian business on a brink – how to go with Gazprom?

By Masahiro Tokunaga

At the 2012 APEC Summit Japan's then Prime Minister Yoshihiko Noda and Russian President Vladimir Putin signed an agreement on building a liquefied natural gas (LNG) plant in Vladivostok. Japan's major trading firms are cooperating with the Russian gas giant Gazprom to start production within a few years. Japanese government expects most of the LNG produced at the plant to be exported to Japan. According to Vitaly Markelov, deputy chairman of Gazprom's management committee and a member of Gazprom's board of directors interviewed by a Japanese press, Japan would purchase up to 65% of the total LNG production in Vladivostok until 2020.

Japan is buying more LNG at much higher price than the rest of the world to supply fuel to power stations after the Fukushima disaster triggered overall shutdowns of nuclear reactors. The Japanese economy recorded its first trade deficit since 1980 in 2011, which was tied to slowing global market growth and a historical appreciation of the currency at the time (factors leading to a drop in export) as well as rising energy imports as a result of substitution of natural gas for nuclear power. Latest figures of national trade performance show a largest monthly trade deficit at the beginning of this year mainly due to ballooning imports of oil products and LNG. Japan is thus desperately in need of cheaper energy sources to rebuild itself as a powerful trading nation in the world economy. One solution for the issue is to share the benefit of shale gas revolution with the United States: both countries look set for reaching an agreement on the supply of American natural gas to its Asian allies. Another and longer-term solution would be diversification of energy suppliers with a gradual reduction in dependence on oil and gas in the Middle East that accounts for around 85% of the total value of Japan's energy imports. Against this background, Russia is becoming a much more important energy supplier for Japan.

When viewed from Russia, there is no doubt that Japan will be a perfect trade partner having a possibility of becoming a saviour for the Russian energy sector. The European Union is seeking non-Russian energy sources; European shale gas is expected to be available in the near future (firstly in Poland); negotiations on sales of Russian natural gas to China are in a stalemate; there are another LNG suppliers in the Asia-Pacific basin (Indonesia and Australia, among others); and unlike 1990s Russia has no hope of exporting energy products to the North American continent. By eliminating the impossible, energy exports to Japan along with joint ventures of resource exploitation are the biggest profit generators for the Russian energy sector in the foreseeable future. In fact, both countries have a half-century history of mutually beneficial cooperation on the resource development in Siberia and the Far East region and the Sakhalin oil and gas project will be a success story of the collaborative relationship in the energy field.

At the same time, when viewed from Japan, the Sakhalin project posed a grave challenge not only to the business community but also to the entire society. Gazprom acquired a 50%-plus-one-share stake in the Sakhalin-2 project, to which top Japanese companies Mitsui and Mitsubishi had been deeply committed for a long time, after the operator consortium of foreign investors was accused of breaking local environmental laws. As a result, two Japanese investors' stakes were reduced from 45% to 22.5% in total in exchange for cash compensation. Although the deal itself was not bad as some experts recognized, Gazprom was portrayed as the villain in the media and became a symbol of Russian-style bad manners at business. Most of us still believe the Russian government alleged that foreign investors had infringed environmental laws in

an attempt to transfer the established business interests of the Sakhalin-2 project to Gazprom.

A few years later, however, a top executive of Mitsui surprised us by professing that Mitsui supported the idea of changes in the composition of Sakhalin-2 operator in favour of allowing Gazprom to hold the majority stakes. When the President Putin came back to the Kremlin, the CEO of Mitsui welcomed his re-election and manifested his willingness to cooperate with Moscow on various business projects. I do not think they just gave lip service. Actually, a dozen of Japanese business persons I met in Russia more or less supported Putin's Russia. Why does the Japanese business society prefer such an authoritarian (at least less democratic compared to most major countries), corruption-stained (Mitsui's staff members were arrested over bribery allegations involving public works contracts for a Russian support project), and state-capitalism style regime (though Putin himself refuses to term Russia like this)? Probably, the words of the above Mitsui's executive drop a hint: "if Russia takes the initiative on the Sakhalin project, it becomes free from political interference. In fact, after Gazprom bought stake in Sakhalin-2, we are able to handle political and economic tasks more smoothly than before. Russia is a country like this." (cited and translated from a Japanese business journal, *Weekly Diamond*, 15 November 2010)

We know foreign investors in emerging markets favour a political stability, because it often equivalents to lower business risk than otherwise. Furthermore, in the case of Gazprom, this quasi-state company is able to reduce the so-called transaction costs as suggested by the above remarks. A Japanese business person who I interviewed in Russia was keen to make a deal with Gazprom, and between Japanese enterprises and Gazprom including its affiliated companies business projects have been expanding in the recent years as exemplified in the opening sentence of this essay. In my view, Japanese-Russian business is in the next stage where Japan needs to strategically think about how to go with Gazprom. Probably in the coming years, we can hardly do business with Russia without taking this Russian gas giant into account like any major European country. A forecast said around 20% of the total imported LNG in Japan will come from Russia and both countries decided to resume an undersea gas pipeline construction project from Sakhalin to the Tokyo metropolitan area (approximately 1400km in total length) in a decade. We may face a gas war as some political analysts warn. Or unexpectedly do well with such an outsider. Remember that Japan also was reckoned as a big outsider in the world business community and criticized as having eccentric business customs and manners. I think we will have the answer to this question before too long.

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## The migration of people in the Arctic

By Timothy Heleniak

The migration of people has been central to the making and unmaking of Arctic settlements since the first humans crossed the Bering land bridge following the last glacial maximum. Until the mid-19th century, the population of the Arctic consisted primarily of 300,000 indigenous peoples living traditional lifestyles based on fishing, sea mammal harvesting, and hunting. But with improved transportation, exploration, and exploitation of the Arctic, waves of outsiders migrated to the region. Increasingly large settlements were constructed in the Arctic, especially in the Soviet Arctic, which first used forced labor and later wage increments to populate the region. Later, the Cold War brought military personnel and others to the region. The Arctic is poised for another dramatic shift in population with climate change and increased demand for the region's natural resources.

According to the Arctic Human Development Report (AHDR), the Arctic consists of the U.S. state of Alaska; the Canadian territories of Yukon, Northwest Territories, and Nunavut, northern Quebec and Labrador, Greenland, Iceland, and the Faroe Islands, the counties of northern Norway, Sweden, and Finland, and in Russia, the Murmansk oblast, the Nenets Okrug, Vorkuta city in the Komi Republic, Taymyr Okrug, the Yamal-Nenets Okrug, the cities of Norilsk and Igarka, the northern regions of Yakutia, and the Chukotka Okrug.

The main drivers of migration in the Arctic are economic growth, climate change, and the role of the state. Income differences between regions drive migration across the world but more so in the Arctic because the small size of regional economies. The availability of natural resources dictate regional income levels. Climate change can make some Arctic regions more accessible while rendering others nearly uninhabitable because of reduced sea ice destroying coastal communities or thawing permafrost ruining the infrastructure of inland settlements. The state plays a role in attempting to influence the spatial distribution of the population everywhere but more so in the Arctic, especially vis-à-vis indigenous peoples who have been forcibly moved, consolidated into unfamiliar urban settlements, and had their children placed into boarding schools.

According to the AHDR, the current population is just over 4 million and has been at roughly that level for the past several decades, though there have been significant differences among Arctic regions in terms of those which are losing or gaining large numbers of people from migration. The centrally-planned economy of the Soviet Union pursued a development policy towards its Arctic and northern periphery regions based on the construction of large permanent settlements, a massive and expensive logistical supply effort to provide food, fuel, and other basics to these settlements, and heavily-subsidized transport to Arctic settlements. The breakup of the Soviet Union and the institution of a market economy in Russia have made this development policy unsustainable. One effect was rather significant population losses due to out-migration. Over the past two decades, the regions of Arctic Russia have had population declines of one-quarter or more from out-migration. At the extreme was Chukotka, in the far northeast where three-quarters of the population voted with their feet and moved away from the region. This exodus from the Russian Arctic slowed during the first decade of the twenty-first century when the population only declined by nine

percent. This was due to a significant population increase from migration in Yamal-Nenets, the gas region in West Siberia that is fueling much of Russia's current economic growth. Elsewhere in the Russian Arctic, the steep population declines from out-migration continued.

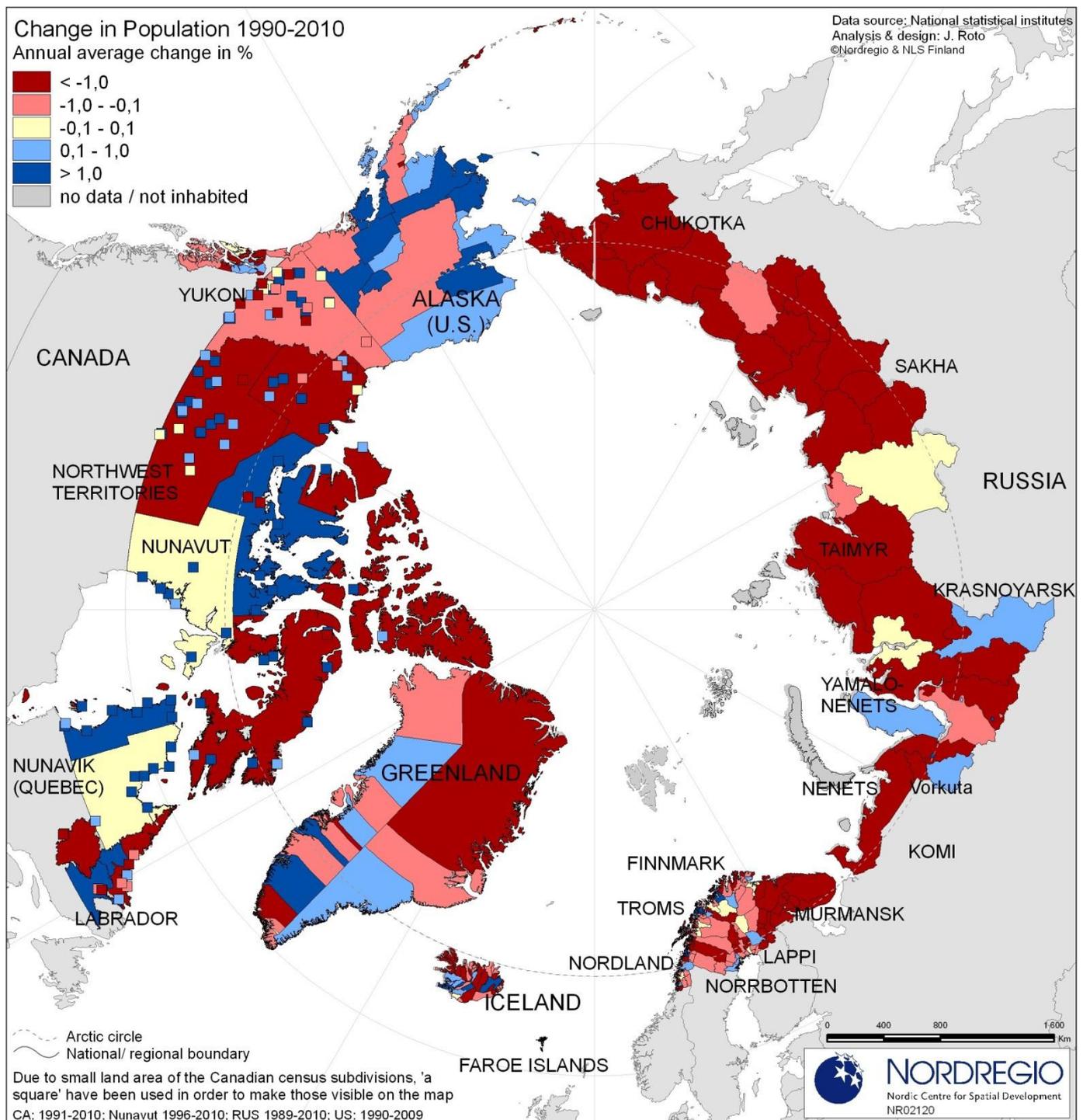
The populations of most Arctic regions are quite transient with larger portions have been born outside the Arctic and having migrated from elsewhere. When economic conditions deteriorate, as they did in the Russian Arctic after Communism, it is these people with ties elsewhere who left in the largest numbers leaving behind an older and immobile population. Northern Finland and Sweden had population declines of about five percent over the first decade of the twenty-first century. The populations of Arctic Norway, Greenland, and the Faroe Islands remained roughly the same or had moderate increases. Since 2000, the global population has continued its rapid increase growing by thirteen percent. The populations of Alaska, the Canadian Arctic, and Iceland grew faster than the world average because of high rates of in-migration due to resource extraction projects.

Two simultaneous migration trends seen across most Arctic regions are population losses from migration to the southern portions of these countries combined with gains from international migration. For instance over the past several decades, the northern regions of Fennoscandia and Russia have had net out-migration to the southern or more central portions of these countries. To compensate for this loss of labor, most Arctic regions are experiencing large inflows of labor from abroad. Northern Russia are the regions with highest shares of registered foreign workers in the country, with large numbers of workers from Central Asia. This is the largest group of foreign citizens in Greenland and Svalbard and among the top seven in Norway, Iceland, and the Faroe Islands. There are also large populations of workers from Poland and other recent EU accession countries working on large new industrial projects in Norway, Iceland, and Greenland. There are large Thai populations working in the service sector in Alaska and large Philippino populations in northern Canada.

The global population recently passed a milestone, where over half of the world's population now resides in urban areas. The Arctic passed this mark long ago because of the structure of Arctic economies based on resource extraction and transportation which tend to take place in urban settlements. A trend seen across almost all Arctic regions is a tendency of migration up the urban hierarchy into larger urban settlements. The bright lights of the big city are a powerful pull because of better employment, educational, and lifestyle opportunities than in smaller settlements. All Arctic regions except those in Russia have had urban population growth over the past two decades.

Standard population projection methodologies don't work very well in the Arctic because of the small population sizes which are subject to booms and busts based on natural resource extraction. In the future, the population of the Arctic will likely be somewhat larger than it is currently because of a number of current or potential resource-extraction projects which could draw large numbers to the region and climate change could allow some regions to become more accessible. The trend of increasing shares residing in urban areas in the Arctic will undoubtedly continue.

Figure 1. Population change in Arctic settlements, 1990-2010.



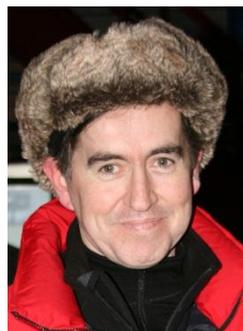
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