Changes in the Russian Arctic and Global-Local Feedback Processes

Workshop Report

The Workshop "Changes in the Russian Arctic and Global-Local Feedback Processes" took place in Moscow on 9 April 2014. Russian and European researchers from multiple natural and social science backgrounds as well as representatives from civil society, government and local Arctic organizations presented and discussed various issues in relation to the ongoing changes in the Russian Arctic. A special focus was put on the role of the climatic and ecological changes in a warming Arctic environment, energy markets for resource development in the Arctic, and local effects and consequences of resource development.

Within the European-Russian Centre for cooperation in the Arctic and Sub-Arctic environmental and climate research (EuRuCAS) framework, the workshop was organized by the Global Climate Forum (GCF) and the Institute for Advanced Sustainability Studies (IASS), in cooperation with researchers from the Nansen International Environmental and Remote Sensing Centre (NIERSC) and the Institute of World Economy and International Relations of the Russian Academy of Sciences (IMEMO RAN). One of the main goals of the workshop was to build and extend a network of Russian and European researchers and stakeholders for future collaboration with the SMART (Sustainable Modes of Arctic Resource-driven Transformations) research project of IASS.

Through the multiple scientific backgrounds represented at the workshop, participants and experts jointly engaged in an integrated endeavor to understand the ongoing changes in the Arctic and the occurring problems and challenges from a transdisciplinary, i.e. scientifically holistic and stakeholder-focused perspective. The following summarizes the three sessions of the workshop and highlights the key points from the discussions.

Session 1: Global energy market and resource development in the Russian Arctic

While Arctic oil and gas prospects have received considerable international attention as a possible "El Dorado" for Arctic countries possessing large, so far untapped oil and gas resources, such expectations are likely exaggerated. Forecasted growth areas of oil and gas on a global scale are actually not predominantly in the Arctic, but rather in South and Central America and in the Middle East. While Arctic oil and gas resources in Eurasia are still most competitive of all expected Arctic resources – i.e. in comparison to Canadian and US Arctic resources – there are significant uncertainties, challenges and risks associated with offshore hydrocarbon development in the Arctic. Participants thus recommended focusing on the more efficient usage of existing *onshore* hydrocarbon sources instead of opening up high-risk offshore areas. This includes enhancing the oil recovery ratio of existing fields, focusing on small and medium oil fields in mature regions (outside the Arctic), which would also circumvent social resistance to opening fields in so far 'untouched' regions. Not to develop Arctic resources is also recommendable given the highly diverse and variable conditions in Arctic offshore areas and the low level of preparedness and

capacities of energy companies, especially in Russia, to extract oil and gas resources offshore in Arctic conditions.

Nevertheless, workshop participants also emphasized that Russia's big energy companies – Rosneft and Gazprom – are establishing joint ventures with international energy companies like Statoil, Exxon and Eni to develop Arctic offshore resources. Joint research and technology-sharing agreements are part of these joint ventures, which will provide Russian companies with so far lacking technologies for offshore activities. According to participants, a glimmer of hope in this situation could be that through these international joint ventures, the circumstances for development in Russia could improve, such as through better technology and equipment, but importantly also through stronger international scrutiny in terms of environmental standards and monitoring. Participants mentioned common learning processes and rising technological and environmental standards through Russian-international joint ventures, both in Russian waters and territory and through involvement of Russian companies in foreign field developments, such as in Norway and the US. Also the role of the international financial investors and lenders – such as the European Bank for Reconstruction and Development – may be crucial since through their involvement they also bring along standards and rules that companies have to comply with. Generally, there is a need to link stakeholder concerns about clean and environmentally-friendly energy production to international shareholders' interests in good marketing and reputation.

Developments such as the shale gas boom in the US directly impact on the competitive position of Arctic liquefied natural gas investments and thus show how quickly the development and market circumstances for Arctic oil and gas resources can change. This stands in contrast to the very slow development pace of Arctic oil and gas fields in Russia, as the Shtokman and Prirazlomnoe projects and the development of liquefied natural gas (LNG) capacity in Russia illustrate.

The uncertainties and possible fast changes of circumstances mentioned above also affect other industries dependent upon the availability of oil and gas, such as the chemicals and plastics industry in addition to the large chain of subcontractors such as refineries, pipeline manufactures and of course everyone as consumers of energy for their everyday lives.

Session 2: Climatic and ecological changes in the Arctic

While the general tenor about the climatic changes in the Arctic highlight the decreasing sea ice, it is necessary to emphasize the variability of ice extent from year to year. Also, changes in ice extent have happened in the Arctic before without global warming. The dominant focus on temperature in current research on Arctic ice extent is thus too narrow. The dynamics in atmospheric circulation possibly have a significant effect on sea ice drift variability and thus also on the extent of the ice sheet from year to year. Two types of dynamics dominate Arctic circulation: first the increase of the Arctic anticyclone in winter and second subsequent the weakening of the Arctic anticyclone. A closer look at the effect of atmospheric circulation and transpolar sea ice drift on the extent and volume of ice might reveal that climate change might be less relevant for the development of Arctic sea ice than other effects like atmospheric circulation and its natural variability.

Model validation – i.e. the comparison between observational and simulated data - remains a challenge that is crucial to decrease uncertainties. Therefore, more attention to gathering observational data (satellite and field campaigns) is needed. In the past, the USSR had continuous monitoring over the Arctic region, however nowadays there is a gap between modelling and observations. As an example, while models are very useful to determine sea ice variability, there may be an overestimation of global warming due to an overestimation of the decrease of sea ice thickness. In order to get more certainty, cooperation between modeling efforts and observation research have to be enhanced. A further significant challenge is to whom these scientific models and studies are addressed, who should use them, and how they can be meaningfully communicated.

Oil and gas development onshore is not new to the Arctic. In the 1950s and 60s, large oil and gas fields were discovered and subsequently developed in Western Siberia. More often than not this left a highly disturbed and damaged environment behind. An example is the impact of oil spills which hampers re-vegetation and severely affects soil properties, thus raising the question of how to rebuild ecosystems after oil and gas development. The aim of ecological restoration is to help nature to self-reorganize, i.e. to support and trigger recovery mechanisms to counteract ecosystem impact on land-disturbing activities. For example, the moss layer plays a key role in the Arctic tundra by acting as an insulator of permafrost, therefore when moss is removed insulation is lost. Possible measures to trigger moss recovery includes the introduction of nitrogen fixers, creating ponds, removing and leveling of gravel, and planting plugs to initiate the spreading of plants and seeds.

The challenge is to understand how multifold natural systems interact in order to increase productivity and reduce stress, and to ultimately make recovery more efficient. The involvement of indigenous knowledge in such undertaking is of crucial importance. The Indigenous Peoples' Restoration Network (IPRN) is an example of such an attempt. While some funding for recovering and recultivation of ecosystems is designated in Russian administrations, corruption, little experience and limited scale are serious obstacles.

Session 3: Local effects of resource extraction in the Arctic

Demographic changes in the Arctic are very diverse, i.e. in some areas populations are growing, in others they are shrinking. The eastern Russian Arctic has a very low population density throughout, while developments are more diverse in the western Arctic. Changing living trends in Arctic cities include:

- more companies require shift work and outsource services to service providers,
- the place of work of many people does not match their place of living, leading to increased commuting, and
- job creation is largely dependent on resources that often are not close to population areas, such as on the Yamal peninsula.

A crucial distinction of cities is made between so-called "colonial" and "socially-grounded" city models. The former depends on distant headquarters, which narrows the opportunity for local

small and medium business development. The latter entails a larger independence of businesses and a greater influence of the local population on the local administration, allowing more freedom for development in accordance with local circumstances. The crucial challenge for Arctic cities is to be a partner for resources companies and at the same time ensure development opportunities and innovation potential for small and medium business.

The intensive industrialization of certain regions in the Russian Arctic has substantial health consequences for the people living and working in the region. Around three million people are employed in the mineral resources industry with resulting risks of pollution and other health risks for the local population. Exposure to persistent toxic chemicals from different sources such as abandoned oil barrels - estimated to be around 12 million barrels - and reoccurring oil spills have serious effects in water bodies, thereby damaging fish and public health. Other health risks stem from climate change consequences like more extreme weather conditions, including the increasing exposure to storms and higher incidence rates of flooding.

In essence, there are three core health issues for the population in the Russian Arctic:

1. increasing exposure to diseases due to climate change (e.g. influenza, SARS, rubella, viral hepatitis A, tuberculosis, smallpox, diphtheria, pertussis, measles),
2. contamination from waste sites, and
3. under-nutrition resulting from diminished availability of traditional food due to change of animal migration patterns.

Importantly, many pollutants in the Russian Arctic do not originate there but are emitted from areas far away. Tsunamis were mentioned as a major pathway for pollutants reaching the population, as illustrated by the dispersion of pollutants from the Tsunami in South-East Asia in 2004. Additionally, pollutants migrate northwards due to ocean currents as well as fish and bird migration routes. In order to improve local health conditions, an international approach is thus inevitable, such as the Stockholm Convention on Persistent Organic Pollutants and the Convention on Long-range Transboundary Air Pollution. Local cleaning efforts have happened, but have only achieved limited results, since up to 80% of local Arctic contaminants are coming from Asia. Local cleaning efforts are thus a necessary, but not sufficient measure to improve health conditions in the north.

Since business plays a crucial role in the development of the Arctic, the concept of Corporate Social Sustainability (CSR) and its understanding and perception among stakeholders (oil and gas companies, regional and local authorities, local population) in the North is of relevance. Comparative studies between Arctic locations in Norway and Russia have shown that CSR is generally perceived as being of rather low importance in northern Norwegian oil and gas development areas like Hammerfest where people generally have a high trust towards authorities, environmental concerns are rather limited, and preferences for high-competence jobs are high. In the Russian Nenets Autonomous Okrug, by contrast, people know CSR well as a concept and value it highly. This coincides with strong environmental and social concerns in relation to the oil and gas developments in the region, as well as demands for support for basic, social needs such as food, heating, kindergartens, health facilities etc. While in Norway the perception is that the energy industry provides jobs for the people in the North, only a very small fraction of the population in

the NAO find jobs in the oil industry, based on the argument that locals there do not have the right qualifications.

In sum, regional authorities play a major role for companies to contribute to the local, social conditions. While oil and gas activities are generally seen as positive among people in some northern areas, environmental concerns were more strongly voiced in the Russian areas under study. Recommendations for industry to support stable, local conditions include:

- focus on opportunities, not on what does not work;
- talk to people where they live;
- basic needs before luxury;
- be aware of diverging or competing interests; and
- real engagement will be valued.

A key is here also to achieve a "social license" to operate in the respective region, including social legitimacy, credibility, and trust between companies and locals. While in some areas, like on Sakhalin during the Sakhalin-2 project, stakeholder engagement and close dialogue took place resulting in an indigenous people's development plan (addressing e.g. environmental concerns and benefit sharing), in the Komi Republic hardly any dialogue took place in the set-up of oil and gas development.