

To Cooperate or Not? Why Working Together is Essential in the Arctic

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Abstract;

The Norwegian Arctic covers Svalbard, Bear Island, Jan Mayen and the Barents Sea. 80% of all shipping activities in the Arctic are within Norwegian territorial waters and the Exclusive Economic Zone. To reduce the risk for accidents, the Norwegian authorities have established several preventive measures. Among these are ship reporting systems, traffic separation schemes in international waters and surveillance capabilities. If an accident has occurred and

an oil spill response operation must be organized - resources, equipment, vessels and manpower from Norwegian and neighboring states will be mobilized.

In 2015, the Norwegian Coastal Administration finalized an environmental risk-based emergency response analysis for shipping incidents in the Svalbard, Bear Island and Jan Mayen area. This scenario-based analysis has resulted in a number of recommendations that are currently being implemented to be better prepared for oil spill response operations in the Norwegian Arctic. Further, a large national oil spill response exercise in 2016 was based on one of these scenarios involving at sea and onshore oil spill response at Svalbard.

The 2016 exercise, working within the framework of the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic between Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and the USA (Arctic Council 2013), focused on a shipping incident in the Norwegian waters in the Barents Sea, close to the Russian border. Every year, as part of the Russian – Norwegian Oil Spill Response Agreement and the SAR Agreement in the Barents Sea, combined SAR and oil spill response exercises are organized. These are held every second year in Russia and every second year in Norway.

There is an expected increased traffic and possible increased risk for accidents in the Arctic waters. In order to build and maintain an emergency response system to this, cooperation between states, communities, private companies and other stakeholders is essential. It is important that all actors that operate and have a role in the Arctic are prepared and able to help ensure the best possible emergency response plans. We depend on one another, this paper highlights some of the ongoing activities designed to strengthen the overall response capabilities in the Arctic.

Introduction

There are major changes in activities in the Arctic. Shipping and oil exploration are increasing. Due to a warmer climate, sea ice is melting, new shipping routes are opening up, fish stocks are moving further north and subsequently the fishing fleet is following. Cruise tourism is also increasing to these last wilderness areas on earth. Large amounts of the world's reserves of gas and oil are expected to be found in the Arctic. Other minerals and resources are of increasing interest in the same area. Consequently, there is an increasing international interest for these resources and for the new shipping routes.

The new and increasing activities in the Arctic raises challenges to the Arctic nations responsible for Search and Rescue and response to acute pollution from ships or the petroleum industries. Norway has introduced many preventive measures in place to avoid such accidents from happening. The remoteness, challenging climate and lack of presence of resource creates many challenges when it comes to handling larger oil spill accidents in the Arctic. Response requires specially adapted ships, equipment and trained personnel. No responsible nation has enough capacity to handle a large accident in the Arctic. International support and cooperation is a necessity when responding to such accidents and thereby minimize the negative effects on the environment. Lack of knowledge in relation to strategies, and to equipment for collecting oil in ice, in the dark season etc. also underlines the importance of cooperation in research and development is very important in this field. This paper shows what Norway has done so far to reduce the risk from accidents happening, lessons learned from real accidents and from analyses and exercises. It then goes into the need for cooperation when responding to large accidents and joining forces when it comes to research and development work that can improve our results concerning the protection of the Arctic environment.

The Norwegian Arctic includes Svalbard, Bear Island, Jan Mayen and the Barents Sea. It borders to Greenland waters in the west, to Franz Josef Land and Russian waters to the east and to Iceland and Faroe Islands waters in the south. More than 80% of all arctic shipping activities is within Norwegian territorial waters and the Exclusive Economic Zone

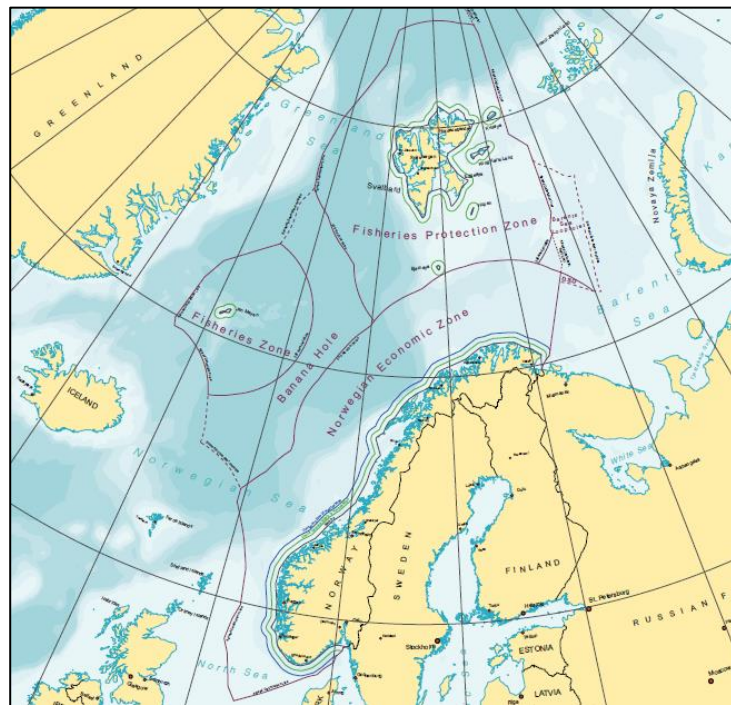


Figure 1. Norwegian Maritime Boundaries

(Brende, B., 2015). Shipping and oil exploration activities within Norwegian waters is expected to increase (Norwegian Coastal Administration, 2015). For that reason, The Norwegian authorities have put a number of preventive measures in place to reduce the risk for accidents. Among these are ship reporting systems, traffic separation schemes in international waters and surveillance capabilities. If an accident has occurred, and an oil spill response operation must be organized - the equipment resources, vessels and manpower from Norwegian sources, and neighboring states will be mobilized. This will be done in accordance with agreements to assist and within the framework of cooperation.

Arctic Risk Picture

The Norwegian Coastal Administration conducted an Environmental Risk Analysis and a Contingency Analysis for the Norwegian Archipelago of Svalbard and Jan Mayen (Norwegian Coastal Administration, 2014). The analysis was finalized in 2014, and the

reports conclude that the probability of oil spill incidents involving vessels is low, with one incident every 6 years (independent of the size of the oil spill). The most likely scenario is an oil spill with marine diesel.

The natural resources that are included in the analysis are; sea birds, marine mammals, fish (i.e. the water column) and shoreline habitats. The analysis demonstrates that the overall environmental risk is low. The area with highest environmental risk is the westcoast of Svalbard, including the Isfjord area with the two major settlements on the islands. Further, the absence of nature reserves in most of the Isfjord area means that this area is one of the few at Svalbard where the use and

carriage of heavy fuel oil is allowed (see figure 2). Heavy fuel pose a greater risk of damage to natural resources located on the sea surface. The vulnerability of the natural resources varies over the year, and is highest in spring/summer time. Therefore, the highest potential for oil spills is during the summer, at the same time that the seabirds and shoreline have the highest environmental risk. The summer season is also the part of the year when the large cruise ships visit this area.

Traffic in the Arctic is increasing for almost all kind of vessels, Towards 2030 the expected increase is for passenger vessels (mainly cruise ships) and container and bulk carriers (DNVGL, 2014). Due to climate change, ice cover is decreasing. The sailing season has

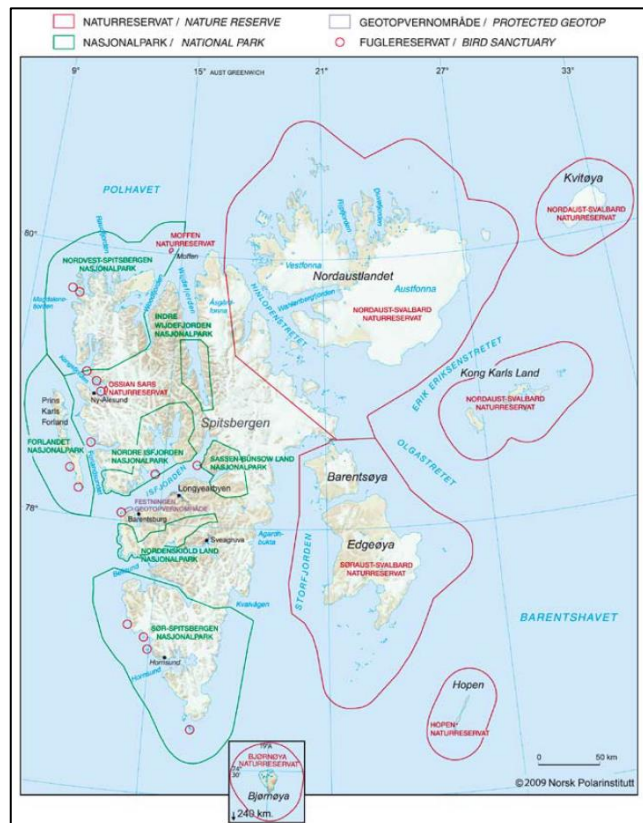


Figure 2. Protected areas at Svalbard

expanded into new areas and new times of the year. All kinds of vessels are being observed staying for a longer period of the year in the Arctic. They are also seen to create and follow new shipping lanes. The changing environment also provides access to ships into uncharted, or inadequately charted, areas increasing the risks for grounding. Less ice and different fish stocks moving further north have meant that we also observe an increase in fishing vessels operating farther and farther north in these waters. A new and growing business concept observed in the Norwegian Arctic are winter cruise. This introduces new challenges at times of the year where the activities previously were low. All these new traffic patterns will change the probability for accidents, and likely increase the risks to the Arctic Environment.

There are major undiscovered oil and gas resources in the High North. In 2008, the US Geological Survey estimated that about 22 % of the world's undiscovered, technically recoverable oil and gas resources can be found in the Arctic, or more specifically 13 % of the world's undiscovered oil and 30 % of its undiscovered natural gas (Meld.St. 7, 2011 -2012). One expects that 43 % of undiscovered oil and gas resources on the Norwegian continental shelf lie in the Barents Sea (Utenriksdepartementet, 2014). The Government will offer new areas in both geologically known and unknown areas, within the parts of the Norwegian arctic that are open to oil and gas activities. Large parts of the new areas in the North have not been explored. In the 23rd licensing round the Government will give access to new, interesting exploration opportunities in the southeast of the Barents Sea (Norwegian Petroleum Directorate, 2015). In May 2016 the Ministry of Petroleum and Energy awarded ten new licenses, consisting of 40 blocks in total, including three licenses in the newly opened area in the Barents Sea southeast as the result of the 23rd licensing round. These new areas are close to, and in one case directly on the delimitation line between Norway and Russia. A spill from

these licenses will most likely, due to the dominating currents, drift into Russian waters (see figure 3).

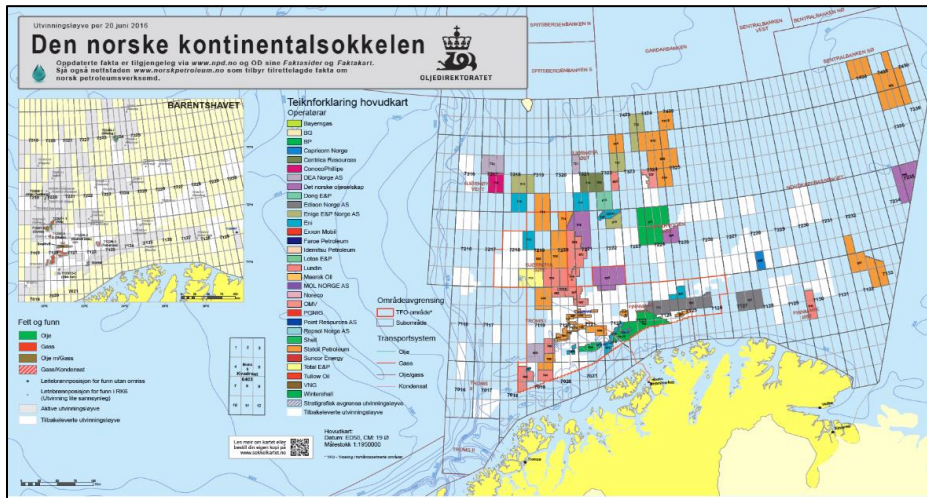


Figure 3. Awards and exploration activities in the Barents Sea

Arctic Environment

The Norwegian Arctic includes the archipelago of Svalbard (including Bear Island) and the Jan Mayen Island, and is one of the world's last wilderness areas that still is relatively untouched. Maintaining it as such, is a challenge in an extreme climate, where nature needs a long time to repair damages caused by human intervention, wear and tear and other causes.

The Arctic environment is under growing pressure from human activity. Tourists are heading deeper into the wilderness, and more and more people wish to experience the untouched nature that can only be found in polar regions. (miljostatus.no)

Commercial and industrial activities are also expanding further into the Arctic, and new technology is giving access to areas and resources that were once out of reach. Because the Arctic environment is so vulnerable, it is increasingly important to investigate the Arctic ecosystems and the impacts of these developments. (miljostatus.no)

In recent years, the Norwegian environmental authorities have given higher priority to management of the natural environment in Norway's Arctic territories including Svalbard (Spitsbergen, the rest of the archipelago and Bjørnøya (Bear Island)), Jan Mayen and the surrounding territorial waters. Norway has set ambitious goals for its management of the Arctic environment, and for Svalbard one of these goals are to become one of the best-managed wilderness areas in the world. (miljostatus.no)

The environmental protected areas of Svalbard today comprise around 65 percent of the total land mass of the archipelago, and around 85 percent of the territorial waters out to 12 nautical miles. Svalbard has 29 protected areas, all protected by the Svalbard Environment Law (Norwegian Polar Institute)

Arctic Environment is vulnerable. Biodiversity is characterized by relatively few species but a huge number of individuals. For example, in the Svalbard area there is 3-4 million breeding seabirds. An accident the wrong place at the wrong time can do a lot of damage for specific species.

Norwegian Arctic Preparedness

Norwegian waters are a "gateway" to the Arctic Ocean. The Norwegian Sea and the Norwegian parts of the Barents Sea are used when sailing north from both Europe and the Atlantic Ocean. Therefore, the Norwegian Coastal Administration actively implements preventative measures to reduce the risk of shipping incidents in a clean and rich marine area of great significance for Norway. These measures include a number of services aiming at improving the safety for vessels navigating these waters. New technologies have paved the way for improved surveillance over larger sea areas by e.g. AIS satellites. This includes monitoring by a Vessel Traffic Services Centre (VTS) covering the entire Norwegian

coastline and combined with other services such as Emergency Towing Vessels (ETV), sea routing and traffic separation scheme and pre-planned places of refuge. The overall level of security has improved over the last decade. On the environmental side improvements in vessel design and international rules have limited the use of single hull tankers in the area. In addition, Norway has implemented restrictions on use of heavy fuel oil in most of the waters around Svalbard. This will reduce the possible impact following a spill.

Several risk reducing measures are already in place, and others will be operational in the near future. These include a land and satellite based AIS monitoring network, the NOR VTS (located in Vardø) and emergency towing preparedness. Norway also participates in the Safe Sea Network (SafeSeaNet). The SafeSeaNet system gives valuable data for a better detection of potential risk situations as well as a prompter reaction in case of a threat to maritime safety and the environment.

The coastal waters along the Norwegian coastline are well marked with aids to navigation, including lighthouses, lights and radar beacons.

Additional risk reducing measures are under consideration (Norwegian Coastal Administration, 2015). These include:

- Evaluate introduction of Traffic Separation Schemes (TSS) for the Arctic. In order to reduce the risk of accidents, Norway has already established a series of TSS off the mainland coast of Norway, adopted by IMO.
- Expand the surveillance areas by the Vessel Traffic Service (VTS)
- Enhance the land based AIS coverage on Svalbard.
- Assess instructions for vessels to sail in “convoy” meaning that vessels sail together and hence are available to help one another.
- Establish precautionary areas - including improved nautical chart

- Improve management related to ice and climatic conditions, ice class for vessels etc.

International Agreements – Bi- and Multilateral

Agreement between Norway and Russia

In 1994, Norway and Russia signed an agreement concerning Cooperation on the Combatment of Oil Pollution in the Barents Sea. Attached to the Agreement, the parties agreed to develop the Joint Norwegian - Russian Plan for the Combatment of Oil Pollution in the Barents Sea (Utenriksdepartementet, traktatregister). In addition to the existing cooperation related to the agreement, Norway and Russia have conducted joint shoreline response exercises to improve the preparedness in the area. The increased oil and gas activity in the Barents Sea has also resulted in the need to clarify procedures if oil from an oil installation is drifting to the other country. To date, two tabletop exercises have been arranged to test routines for notification, border crossing between the two countries for response vessels, joint at sea response and shoreline response. Evaluations of these exercises have identified the need to clarify, e.g. routines for the use of dispersants, how to coordinate a joint operation in a large area of both countries, efficient border transfer of equipment between the two countries, etc.

Based on a 2006 letter of intent between Russia and Norway on cooperation to increase maritime safety, a mandatory ship reporting system has been developed for the Barents Sea area. This system, called Barents SRS, entered into force from June 2013, and covers the waters between Lofoten in Norway and Murmansk in Russia (IMO, 2012). Under the Barents SRS vessels with a gross tonnage of 5000 and above, all tankers, all ships carrying dangerous

and hazardous materials entering this area must report type of cargo, destination and other data.

Agreement between Finland, Sweden, Iceland, Denmark (Faroe Islands and Greenland) and Norway (Copenhagen Agreement)

The governments of Denmark, Finland, Iceland, Norway and Sweden have agreed to cooperate concerning response to oil spills or other harmful substances at sea. The agreement was signed in 1971 and has later been revised. Contracting parties have, through the agreement, undertaken to cooperate in protecting the marine environment – regardless of which country is threatened by the contamination. Areas of agreement are the coastal waters, territorial waters and other waters within the respective fishing zones, continental shelf and economic zone boundaries (Copenhagen Agreement). In the case of an incident around Greenland, this agreement will facilitate assistance.

Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic

In 2013, the eight Arctic states (Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and the USA) signed the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic. The objective of this agreement is to “strengthen cooperation, coordination and mutual assistance among the Parties on oil pollution preparedness and response in the Arctic in order to protect the marine environment from pollution by oil. Based on this the parties state that each country shall maintain a national system for prompt response to oil pollution, taking into account the particular activities and locations most likely to give rise to acute pollution. Further, the agreement has a set of guidelines for i.a. notification and communicating between countries. The agreement also states that the Arctic countries are

required to notify each other should there be an oil spill—from any source—anywhere in the Arctic (Arctic Council, 2013)

Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic

The Arctic SAR agreement to strengthen aeronautical and maritime search and rescue cooperation and coordination in the Arctic was signed by the eight Arctic states as a binding agreement in 2011 (Arctic Council, 2011).

Arctic Council – Emergency Prevention, Preparedness and Response Working group

Emergency Prevention, Preparedness, and Response (EPPR) Working Group is one of the six standing working groups, with a mandate to contribute to the prevention, preparedness and response to environmental and other emergencies, accidents, and Search and Rescue (SAR). While not an operational response organization, members of the Working Group conduct projects to address gaps, prepare strategies, share information, collect data, and collaborate with relevant partners on capabilities and research needs that exist in the Arctic. Projects and activities include development of guidance and risk assessment methodologies, coordination of response exercises and training, and exchange of information on best practices with regards to the prevention, preparedness and response to accidents and threats from unintentional releases of pollutants and radionuclides, and to consequences of natural disasters.

EPPR maintains the Operational Guidelines that implement the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic (MOSPA and implements corrective actions and recommendations from the exercises related to the Agreement on Cooperation on Marine Oil Spill Preparedness and Response in the Arctic (MOSPA

Agreement).). EPPR also supports the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue (SAR) in the Arctic by addressing relevant lessons learned from SAR exercises and real incidents.

Recommendations on the Prevention of Marine Oil Pollution in the Arctic

In the 2011 Nuuk Declaration, Arctic Council Ministers tasked the Emergency Prevention, Preparedness and Response (EPPR) Working Group with developing recommendations and/or best practices in the prevention of marine oil pollution (Arctic Council/EPPR, 2013).

The EPPR working group identified recommended prevention initiatives within the following fields that would contribute to safer operations and increase knowledge of Arctic specific risks and possible mitigation measures:

- Hazardous ice detection, forecasting and monitoring,
- Standards for Arctic oil and gas activities,
- Circumpolar marine environment risk assessment,
- Facilitate oil spill prevention research and regulatory cooperation,
- Ensure appropriate infrastructure is in place for emerging Arctic shipping lanes.

Task Force on Pollution Prevention

In order to strengthen the focus on prevention of oil pollution further, the Arctic council Ministers at the meeting in Kiruna, in 2013, decided to establish a task force on Arctic Marine Oil Pollution Prevention (TFOPP). The mandate for the task force was too “identify how best the Arctic Council can contribute to marine oil pollution prevention in the Arctic, recommend a concrete plan of action, and, as appropriate, develop cooperative arrangements to implement

the Action Plan.” This has resulted in the Framework Plan for Cooperation on Prevention of Oil Pollution from Petroleum and Maritime Activities in the Marine Areas of the Arctic. The plan focuses on enhancing the exchange of information among participants in the Framework Plan and addresses themes such as:

- Development of an overview of measures for improved safety in petroleum activity;
- Promotion of standardization initiatives within the sphere the petroleum sector;
- Strengthening of cooperation between national regulators of petroleum activity;
- Strengthening of maritime traffic monitoring and management;
- Improvement of maritime services, including navigational charts and met-ocean forecasts; and
- Reduction of risks associated with the use and transport of heavy fuel oil.

Implementation of the Framework Plan, which is not a legally binding document, is left in the hands of the appropriate and competent national authorities in each State (Iqaluit, 2015).

It is decided that EPPR working group in cooperation with PAME working group should report the status of the implementation of the Framework Plan.

Norwegian National and International Exercises

Svalbard exercise

The Norwegian Coastal Administration together with the Governor of Svalbard conducted an oil spill exercise at Svalbard in late September 2016. Main objectives for the exercise were to train the transfer of incident command from the local authorities (i.e. The Governor of Svalbard) that lead the initial response to the “accident”, over to the national authorities (i.e. The Coastal Administration). Further objectives were to test communications in remote areas, and to test the transfer of equipment, ships, crew etc from both the mainland to Svalbard, and

from the staging area to the clean-up site. Working conditions for responders in cold climate were also tested.

A simulated grounding of a container vessel followed by a large spill of heavy fuel oil was the scenario for the exercise. The simulated oil drift resulted in oil recovery operations both at sea and on the shoreline. The exercise area was selected to comply with the



Picture 1. "Polarsysse" and "KV Barentshav" during exercise Svalbard. Photo: Kystverket

environmental restrictions that applies for all land-based activities on Svalbard. The exercise involved eight vessels, two helicopters and one surveillance aircraft. The Norwegian Coastal Administration, The Governor of Svalbard, The Norwegian Coast Guard, The Joint Rescue Centre North-Norway, The Norwegian Polar Institute, The Norwegian Clean Seas Organization for Operating Companies (NOFO) and other private organizations took part in the exercise.

Among the lessons learned are:

- It is important to send experienced personnel that can facilitate the transfer of command from the local authorities; at the same time, it is also important to incorporate the local authorities' competence and knowledge into the operation.
- It takes time to transfer people and resources to Svalbard. Arctic weather challenges can delay this process even more. It is important to store more

equipment on Svalbard. There is also need for more local ships and crew under contract, trained and equipped with oil recovery equipment.

- Our response plans, maps of sensitive areas, common



Picture 2. Transfer of beach-cleaning equipment from vessels to shoreline. Photo: Kystverket

operational picture and internal and external communications are based on the Internet. Internet access (and other means of communication) is very limited in the arctic and other solutions must be prepared beforehand.

- Fragile environment, long and costly (both economically and environmentally) transport of recovered oil and polluted waste are other specific concerns.

Exercise Barents between Norway and Russia

During exercise Barents SAR and Oil spill response is combined on an annual basis. The exercise is arranged by Joint Rescue Coordination Centre Northern Norway and Norwegian Coastal Administration (NCA) together with the Russian counterparts (MRCC Murmansk and Northern Branch of the Marine Rescue Service of Rosmorrechflot). It is designed around a scenario which includes both SAR and oil spill response. The exercise area is held annually either in Norway or in Russia.

In 2016, Norway was responsible for the exercise. Russian vessels and resources came to assist Norway. In Norwegian waters the exercise was led by a Norwegian on scene commander. The scenario consisted of both SAR and oil spill response challenges, and it took place in the border area between Russia and Norway. To respond to a large incident in this

vulnerable and remote area, assistance from the neighboring states may be crucial for the success of the response operation. Close cooperation during exercises is therefore essential in order to be as prepared as possible.

Exercise within the Agreement on Cooperation on Marine Oil Spill Preparedness and Response in the Arctic (MOSPA Agreement)

The 2016 EPPR MOSPA Agreement Exercise was the result of a planning process led by US Coast Guard. It was based on a set of planning conferences and on input from the MOSPA member states. The scenario of the exercise was a tanker collision in Norway. The exercise itself was conducted over three stages starting with notification and requests for assistance from Norway, followed by a response from each state. In June 2016 a table-top exercise took place in Montreal, Canada in connection with the EPPR I meeting. In the table top each state verified their routines for offering assistance and Norway as scenario host, informed about routines for Host Nation Support. The exercise itself demonstrates international cooperation by being arranged by US Coast Guard, based on a Norwegian scenario in Montreal, Canada.

In conclusion

Working together in the Arctic is essential. The question cannot be- to cooperate or not- but rather how? And in what ways? No single country has the capability or the resources to efficiently handle a large oil spill in the Arctic Ocean on their own. For this reason, the Arctic SAR Agreement and the Arctic Marine Oil Spill Prevention Agreement (MOSPA) were negotiated and signed. In addition to response, the prevention measures are a prioritized task, both for the individual countries, and for the international community.

From a Norwegian perspective, both the expected increase in ships' traffic and the new areas being opened up for oil exploration demand that the private (the oil companies) and public sectors are able to cooperate both on a national and on an international level. The Svalbard exercise in 2016 was arranged in response to recommendations from the environmental risk-based emergency response analysis for Svalbard and Jan Mayen related to testing and verifying the capabilities to handle a large oil spill response operation at Svalbard. Together with the experiences from the annual exercises between Russia and Norway and the MOSPA exercises it is fair to say that we are better prepared to set up an oil spill response operation in the Arctic than we were a few years ago.

The Norwegian Pollution Control Act state that the private sector can be requested to assist, even when Norway is being called upon to assist another country. The bi- and multilateral agreements for notification and assistance, if and when an incident should happen, has prepared the neighboring states further for the routines and systems needed to cooperate. These international agreements, as well as the national arrangements, all need to be exercised and improved on a regular basis. The distances in the Arctic prevent a full scale field exercise involving all the signatories to MOSPA at the same time, but for the bi-lateral agreements regular exercises are an important tool to maintain the level of preparedness.

In this paper, we have not mentioned the ongoing research and development related to Arctic oil spill response as e.g. mechanical recovery, dispersing or burning oil-in-ice, remote sensing, weathering of oil, etc. Working together internationally on these issues and sharing knowledge and experiences will further contribute to better and more robust oil spill preparedness in the Arctic.

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