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LOUWRENS HACQUEBORD

Back to the Future

The Past, Present and Future of Resource Development in a Changing Arctic

ABSTRACT In 2007 a Russian flag was placed on the seafloor at the North Pole to mark the Russian United Nation Convention on the Law of the Sea (UNCLOS) territorial claim on the slope of the continental shelf in the Arctic Ocean. This activity drew the attention of the world to the North Pole region and the resources expected to be found there. It also made clear that a new race for the natural resources in the North Pole region was at the point of beginning. This article will discuss the relation between climate change, resource development and geopolitics. It will place recent political events in a historical context and will finish by considering some future political developments.

KEYWORDS Arctic, UNCLOS, Arctic Council, geopolitics, oil and gas, whaling, territorial claims

Introduction

On 28 July 2007 on television all over the world, the Russian politician Artur Chilingarov could be seen holding a photograph of a Russian flag.[1] This flag was placed on the sea floor at the North Pole to mark the Russian United Nations Convention on the Law of the Sea (UNCLOS) territorial claim on the slope of the continental shelf in the Arctic Ocean. By doing this, he continued a tradition of more than four hundred years and showed that not so much has changed in the global political arena since the heyday of Western European exploration and exploitation of the Arctic. As early as the end of the sixteenth century, flags and arms were planted to mark the possession of a place. In this way, Dutch and English explorers marked their discoveries in the Arctic in order to claim potential resources, but they did more. They also mapped and named characteristic parts of the newly discovered land. Two seventeenth century paintings are known depicting the same

whaling station and the same geography but different flags.[2] Together with many geographical maps and names, these two paintings are indicators of a large-scale historical process of European expansion in which exploration, colonization, resource exploitation and nationalism all played a role.

In their expansion period, the Americans used the same methods to mark their discoveries. In 1909 Robert Peary claimed that he was the first human being to have been on the North Pole. Later he telegraphed that he had the "Stars and Stripes nailed to the North Pole" to show the power of the United States of America and his nationalistic feelings (Peary 1910). In addition, when in 1969 the American Neil Armstrong landed on the moon one of the first things he did was to plant a flag.[3]

Although not new, the act of planting the Russian flag in 2007 awakened the world and drew attention to the North Pole region and the resources expected to be found there. It also made clear that a new race for the natural resources in the North Pole region was at the point of beginning. It places similar flag planting incidents by two other coastal states Denmark (2002) and Canada (2005) on Hans Island in the Nares Strait in a different perspective. The Russian action also explains the significance of the Danish geological North Pole expedition,[4] which was carried out two weeks after the Russian expedition.

This article will refer to the relation between resource development and climate and will place recent events in a historical context. It will discuss the future of the relation between resource development and climate change in a frontier region that produces raw materials for the industrial centres of the world (Hacquebord & Avango 2009). The subject of this article approaches very closely the research subject of the project Large Scale Historical Exploitation of Polar Areas (LASHIPA) endorsed by the IPY.

This article will begin with a description of the Arctic, continue with a discussion of the present geopolitical situation and resource development taking place, then examine its history, including historical exploitation activities, and it will finish by considering some possible future developments.

The Arctic

The Arctic Ocean is an ocean covered with sea-ice and surrounded by continents. Generally speaking, it is limited by the Arctic Circle but other borders are also used: meteorologists use the 10°C isotherm of the warmest month, biologists use the tree line and physical geographers use the southern limit of permafrost as marking the borders of the Arctic. All borders however, demarcate more or less the same area. A large part of the Arctic consists of an ocean, which is composed on a 30/70 basis of a deep-sea and a continental shelf. This ocean is called the Arctic Ocean and its surface area

is 9.5 million km² or four times the Mediterranean Sea (Sugden 1982: 23–24). Compared with the other world oceans the Arctic Ocean is not large; it constitutes approximately 3 percent of the world's total ocean area but it has all the characteristics of an ocean. The presence of the Arctic Ocean is the reason why the lowest temperature in the Arctic is not found on or near the geographical North Pole but on the surrounding continents of North America and Eurasia. In this respect, it is the opposite of the other frozen part of the world, because Antarctica is a continent surrounded by oceans with the lowest temperature on or near the South Pole. Another important difference is that Antarctica is uninhabited while the Arctic is home for ca 4 million people.

There is no treaty system governing the Arctic as there is in Antarctica. The only international legal regimes are the United Nations Convention on the Law of the Sea (UNCLOS) and the Spitsbergen Treaty. In addition to these, legal regimes such as the convention for the Prevention of Pollution from Ships and the United Nations Fish Stocks Agreement are also applicable to the Arctic. In principle, no state has jurisdiction over the Arctic Ocean and until recently, no country has been really interested in claiming the Arctic Ocean. However, the situation is now different, mostly because of climate change and especially because of the changing sea-ice situation in the Arctic Ocean.

The Arctic Climate Impact Assessment (ACIA 2004) to model future sea-ice coverage of the Arctic Ocean made use of recent sea-ice observation figures (1979–2003). According to ACIA the Arctic Ocean will be free of ice during the summer months in around 2050. The IPCC (Intergovernmental Panel on Climate Change) models confirmed that conclusion in 2007.

However, new observations suggest an acceleration of the melting of the sea-ice. From 1979 to 2007, the sea-ice surface area decreased from 7,000,000 to 4,300,000 km², which is approximately 40 percent. Besides in surface, the sea-ice also decreased in thickness by ca 50 percent.[5] In 2008 it became clear that although in extent the sea-ice was slightly larger than in 2007 there was less multi-year sea-ice in 2008 than in 2007, which means that the ice became thinner again in that year. The expectations are that, if this development continues, the Arctic Ocean will be free of ice in the summer before 2020 instead of only in 2050.[6] Some reports even predict an ice-free Arctic Ocean before 2015.

This means that at least in the summer the Arctic Ocean will become open for the exploitation of natural resources and for new, shorter shipping routes within a reasonable period. These challenges have attracted the attention of both Arctic and non-Arctic countries and have placed the Arctic on the global political agenda.

The Present Geopolitical Situation

This increasing interest in the Arctic has led to action by the five Arctic coastal states. In May 2008, the five coastal states organized a meeting in Ilulisat in Greenland to discuss their sovereign rights and jurisdiction in the Arctic Ocean. In the Ilulisat declaration of May 2008, the five claimed the main stewardship role in protecting the Arctic Ocean based on the existing legal framework offered by UNCLOS, which they consider to be a solid foundation for responsible management by the five states.[7] This attitude has however caused a division within the Arctic Council, which consists of five claimant and three non-claimant states, which does not strengthen the political position of the council. Although the Arctic states work together in many projects, it looks as if all the states are following a very individual strategy. Most of the states have formulated their own strategy on Arctic policy.

For example, the USA formulated its Arctic policy in the *White House paper* in January 2009 as one of the last directives of the Bush administration. Russia "highlighted its commitment to its obligations under the international treaties and agreements related to the Arctic" in the document "Fundamentals of the State Policy of the Russian Federation in the Arctic up to 2020 and Beyond," which was adopted in September 2008 and published in March 2009.[8] Most recently Norway and Iceland have also formulated an Arctic strategy and Canada, Sweden and Finland already did so some time ago.

The non-Arctic states are trying to strengthen their position firstly by increasing their scientific presence in the Arctic and secondly by formulating their own strategy on Arctic policy. An increasing number of countries have recently established a research station in Ny Ålesund on Spitsbergen (Svalbard). There Norway, Germany, France, the Netherlands, Japan, South Korea, China, Italy, the UK and India are waving their flags and the European Union is financing many of the research activities in the settlement. In the framework of the International Polar Year, more expeditions to the Arctic were organized than ever before. Ice core drillings in the Greenland ice sheet, sea-ice research in the Arctic Ocean, ecological research on the continents around the ocean, geological research in the rocks in and around the Arctic Ocean and human and social research on the surrounding continents are being carried out with an increasing intensity. Drillings were also conducted in the middle of the Arctic Ocean to collect information about the geological consistency of the bottom.

Besides the individual states, the European Union has also shown its interest. The Union presented and discussed its Arctic ambitions at the Arctic Conference of the Nordic Council of Ministers in Ilulisat in Green-

land in 9–10 September 2008 (Airoldi 2008). According to the conclusions of that meeting, the Union was to "get deeply involved in matters relating to the Arctic" but it is very debatable if all Arctic countries will share this conclusion.[9] On 9 October 2008 a Resolution on Arctic Governance was adopted by the European Parliament.[10] On 9–10 November 2008 the European Union organized a conference in Monaco to discuss Arctic strategy, and in Brussels on 20 November the European Commission's Communication proceeded with its strategy, which finally in December 2008 led to a formulation of some conclusions concerning its Arctic policy.[11] At this conference, it became clear that, to play a role in the Arctic political arena, the EU has to develop an Arctic Policy that takes away all doubt about the interest of the EU in the Arctic. Such a policy should be based on recognition of the indigenous rights to hunt seals, on scientific research and on the protection of the vulnerable Arctic environment.[12] The European Union has asked to become an observer at the Arctic Council but without success so far. At the beginning of April 2009, the European Parliament approved a resolution in which the Parliament asks the European Council and the European Commission to start negotiations to realize an Arctic Treaty. However, on April 29 at the Ministerial meeting of the Arctic Council in Tromsø, Norway, no readiness to talk about an Arctic Treaty could be perceived among the eight Arctic Countries.[13]

The Historical Framework

The North Pole region has a long history as a Resource Frontier Region. Some decades after the Europeans discovered it at the end of the sixteenth century, the exploitation of the resources in the region began. This exploitation has continued for more than four hundred years. The raw materials produced were transported to the harbours in Western Europe where they were used to satisfy the increasing demands of the developing industries.

As early as the sixteenth and seventeenth centuries Willem Barentsz and Henry Hudson planted flags and arms in the North Pole region to claim the newly discovered lands for their investors. This was important because in those days in the Dutch Republic, the government gave a monopoly to the investing merchants to trade with newly discovered lands for four years. Therefore, the explorers were successful not only when they discovered a northern sea route, but also when they found new lands that were commercially interesting to them (Hacquebord 1984: 42 ff.).

The interest in a northern sailing route was awakened by the revolutionary ideas of the Dutch cartographer Petrus Plancius (1552–1622). He believed in an open Arctic Ocean and not in the traditional image of the North Pole region. In the traditional image, the North Pole was composed

of four islands around a sea and in the middle of that sea the North Pole on a rock. The famous mapmaker Gerard Mercator (1569) created this image. Willem Barentsz was the explorer who in 1594, 1595 and 1596 was sent to sail to the north to search for a northern passage to the other side of the world. On his last trip (1596–1597), he discovered on 80° north an arctic archipelago, which he named *Spitsbergen*. He placed the colours and arms of the States General of the Government of the Dutch Republic on one of the small islands near the north coast of Spitsbergen. Soon after his discovery and Henry Hudson's voyages of discovery in 1607, the exploitation of the living marine resources of Spitsbergen began. The Englishman Jonas Poole sailed to Spitsbergen to hunt reindeer and walruses in 1609 and 1610. He reported many whales in the bays of Spitsbergen and English whaling started in 1611. In 1612, one year after the English, the Dutch appeared on the scene. Whaling captain Willem van Muyden hunted whales in the bays of Spitsbergen and although he was not very successful, he returned to Spitsbergen the following year. This time he hired Basque whalers to harpoon and process the whales and despite the English obstruction, he returned home with a small cargo of whale oil (Hart 1957).

Soon there was very strong competition going on between the English and Dutch whalers. When a little later the King of Denmark Christian IV also started to participate in whaling, the competition became even stronger. The English whaling company did not accept any competition in their whaling activities and it used its greater number of ships and cannon to chase the competitors away (Hacquebord 1984: 50).

The first claims on the no-man's land of Spitsbergen were made by the English and the Danish kings. Colours and arms were planted to show everybody that the land had been claimed. The Danish king claimed it because he was of the opinion that Spitsbergen was a part of Greenland and the English king claimed it because he was convinced that the English were the first to start whaling in the region (Muller 1874).

Based on the ideas of Hugo de Groot,[14] the Dutch whalers initially did not claim the land but claimed free use of the Spitsbergen waters and of the living resources in those waters. Later on they understood that they had to claim the land in order to process the whales at their whaling stations. The Dutch whalers asked the States General for men-of-war to protect their fleet and the Dutch interest in whaling. They received this protection and to mark their claim Dutch whalers built houses in the bays used by the English whalers, which the English mostly demolished and then used the material to build their own facilities in another place (Hacquebord *et al*. 2003).

Later on the Dutch even built a fortress to protect their main station of Smeerenburg (Hacquebord & Vroom eds. 1988). The two paintings men-

tioned in the introduction representing the same scenery but with different flags show the competition that existed between the Danes and the Dutch. These paintings by Abraham Speeck (1634) and Cornelis de Man (1639) are perfect examples of the seventeenth century competition on the no-man's land of Spitsbergen.

In this competitive way, whaling began in the bays of Spitsbergen in the second decade of the seventeenth century. It was a market-driven international activity with the English Muscovy Company and the Dutch Noordse Compagnie as the most important actors. These two companies controlled the catch. The Dutch company made agreements about catches and prices. They functioned as a cartel *avant la lettre*. Temporary whaling stations were built mostly near the place where the whale was killed, and because of competition between whalers of the different nations, especially the English and the Dutch, many conflicts arose which led to decreases in the profits of the companies. In 1623 after many conflicts, an agreement was finally made between the English and Dutch whaling companies to end this useless competition. It worked because the Dutch concentrated their activities in the north and the English stayed in the southern bays of Spitsbergen (Hacquebord *et al*. 2003: 122).

In this way, the Dutch had occupied the best hunting ground because the edge of the ice pack was mostly near the northwest corner of Spitsbergen and the bowhead whale was always to be found near the edge of the ice pack. During its migration, the bowhead whale travels alone or in small groups. Large groups of bowheads are only found in areas with a dense biomass in the feeding grounds, in places where movement to the north is impeded by the ice pack and in their breeding grounds. Based on written sources, the migration routes of the bowhead in the North Atlantic Ocean have been reconstructed. The breeding grounds were found near Jan Mayen and the feeding and mating grounds near the edge of the ice pack and in the bays of Spitsbergen (Hacquebord 2008b).

In the beginning of the seventeenth century, there were many bowheads in the bays of Spitsbergen because of the vicinity of the ice pack. Not the killing but the processing of the whale formed the bottleneck for the industry: flensing and cooking were the weak parts of the process. It made the whalers dependent on the land for their cooking activities. Claims on the no-man's land of Spitsbergen were the consequence of this dependency on the land.

Around 1650 the situation changed because ice blocked the bays and shortened the working season on Spitsbergen. The whalers reacted to the new situation by moving the flensing and cooking of the blubber out of the bays of Spitsbergen. They flensed the whales alongside the ship again

or pulled them onto an ice floe. The blubber was put into barrels, and then transported to the homelands where it was cooked in newly built try-works. The stations on land were abandoned, as no land was needed anymore and there were no land claims either. For the Europeans Spitsbergen was no longer important. It was not until the second half of the nineteenth century that the resources in the Arctic Archipelago once more became interesting to the Europeans.

The whaling trade became open to everyone. There were no limits. It was not possible to control the catch, so that the companies were no longer able to function. During the whaling period there was a strong relation between the exploitation of natural resources and the location of the sea-ice in the Atlantic Arctic. The edge of the ice pack steered the location of the whale and hence also the activities of the whalers and thus determined the success of the trade. This resulted in open competition among whalers from different nations. The consequence of this development was an almost total extermination of the Atlantic population of the bowhead (Hacquebord 2008b: 95).

Oil and Gas

Because of the unlimited whale hunt, which took place in the past, there are now almost no bowheads anymore in the Atlantic Arctic. At the end of the whaling period, the North Pole region became attractive again as a region supplying raw materials. This time coal attracted the attention of southern investors. At the beginning of the twentieth century, the great demand and high prices paid for coal made the region interesting for coal mining (Avango 2005). Later on other minerals like iron were found and mined as well. In recent years, the region has been becoming more and more important as an energy producing area. The expectations concerning resource development in the Arctic are very high: 13 percent of the potential world oil reserves and 30 percent of the potential world gas reserves are expected to be found there, according to the US Geological Survey.[15]

At the moment oil and gas exploitation is concentrated in two areas with enormous potential development: the Barents Sea/Kara Sea region and the Beaufort Sea region. In the Barents Sea region, oil and gas exploitation is very promising. The biggest offshore gas field in the world is to be found in the Barents Sea. It is called the *Shtockman field*. This field is estimated to contain 23 billion cubic meters of gas and 37 million tonnes of gas condensate. Although the Russian gas company Gazprom has signed an agreement with Total, Statoil, and Norsk Hydro to develop the field, the work is proceeding very slowly, partly because of the slackened Russian governmental policy and partly because of the Russian lack of technological capacity (Nicoll ed. 2008).

However, the preparations for the exploitation of the resources in the

Barents Sea have started and will continue in the near future. Gazprom has a lot of experience on land but needs the assistance of Western oil and gas companies and contractors for offshore drilling. The company needs assistance to build an offshore infrastructure to transport the oil and gas to the existing pipelines to the European market in the south. The infrastructure needed consists of pipeline connections with the already existing pipeline system and a LNG loading platform near Murmansk. In cooperation with the Russian company MRTS,[16] Dutch firms such as Royal Boskalis Westminster NV are now already dredging to prepare the construction of pipelines (Baydaratskaya Bay) and an oil terminal in the Pechora region in Northern Russia called *Varanday oil termina*l, which was launched in 2008.[17]

The expectation is that Murmansk will develop into the offshore harbour for the prospecting and exploitation of the resources in the Russian part of the Barents Sea. At present government-to-government discussions are taking place between some European countries and Russia to create a local knowledge environment necessary for offshore industry. The discussions between the Russian authorities and the Norwegian and Dutch governments are focused on setting up an expertise centre at the local Technical University in Murmansk linked with the Gubkin University in Moscow. The Russian authorities are concentrating on scientific cooperation, transfer of technical knowledge, business support and education. The ties between the twinned cities of Murmansk and Groningen are being used to build up the transfer of knowledge. Within the twenty-year-old framework of the relation of friendship between the two cities, Groningen University and technical high schools there are working with their Russian partners to build up technical capacity in Murmansk.[18]

Russia needs safety and health regulations (search and rescue) and trained technical staff and that takes time. Another delaying aspect is the fact that subdivisions of Gazprom are making the rules (Uniigaz) for drilling and the environmental impact assessments (Firega). These aspects have to be solved before the exploitation of the Shtockman gas field can begin. The expectation is that the first flow will come out of this field around 2014. The first oil from the Barents Sea will come from the Prirazlomnoye oil field in 2011 (Bambulyak & Frantzen 2009).

On land, the current Russian oil and gas exploitation is concentrated to the Nenets Autonomous District of the Archangelsk region, in the Komi Republic along the Pechora River and in the Yamal-Nenets Autonomous District in Western Siberia (AMAP 1998: 666). The estimated yearly production in these three regions is 93 million tonnes of crude oil and 742 trillion cubic meters of natural gas. Most of this oil and gas is transported to the European market by pipelines. Since 2008, when the oil terminal Varanday was

completed, tankers have transported large quantities of oil to Rotterdam and this transport will certainly become more intense in the end. However, because of the drop in oil prices, the Russian economy is suffering under the global financial crisis at the moment and so is their investment activity in energy production.

Recently considerable oil and gas reserves have been identified in the Canadian Arctic. They are located both on land and on the continental shelves. In the 1960s, substantial reserves of gas and some small oil fields were discovered in the Sverdrup Basin, and in the following decades new discoveries were made in the Mackenzie/Beaufort Basin. Especially the gas deposits discovered in the Mackenzie were huge. An economic exploitation of these gas deposits needs however stable oil prices over a relatively long period. In the Mackenzie delta and the Arctic Islands in total 1,665 million barrels of oil and 1,157 billion cubic meters of natural gas were discovered. This quantity of oil is found in 45 fields and the gas is spread over 84 fields (AMAP 1998: 664). Because of the costs for both oil and gas, the extraction is currently small scale. The exploitation of many of these fields was considered to be uneconomical in the 1990s market conditions, but the increases in the oil and gas prices in the first years in the twenty-first century have made it attractive. The 2008 financial crisis has however decreased the attraction again. It will take some time before attention is once more focused on these oil and gas deposits.

The Prudhoe Bay Oil Fields were discovered at the end of the 1960s. These oil fields were assessed as containing 20 billion barrels of oil. In 1977, when the construction of the Trans Alaska Pipeline System (TAPS) was finished, the Prudhoe Bay oil fields were connected with Port Valdez in South Alaska. In 1989, when the production of these fields declined, plans were made to exploit the small fields in the neighbourhood including the oil fields in the Arctic National Wildlife Refuge (ANWR) (AMAP 1998: 664 f.). The decision to start exploration drillings in the ANWR raised much discussion in and outside the USA. However, the exploration continued and three offshore drillings were successful, one of them located 12 miles offshore of the ANWR. Consequently, the state authorities of Alaska have recently given permission to explore within the 3-mile zone along the coast of the ANWR.[19]

The energy production in this part of the Arctic is unlikely to cause a significant increase in transport in the Arctic waters because much oil and gas are transported by the TAPS. Owing to all the resistance by the local people, the Mackenzie Pipeline has not yet been constructed (Bone 2003: 149–151). This lack of a pipeline might cause an increase in LNG transport from the Canadian Arctic gas fields in the long term.

Other Resources

Besides oil and gas, there are more minerals to be exploited in the Arctic. Iron, lead/zinc and diamond mines are under development in several Arctic regions. Transportation by ship is often the only way to transport the products from the mines to the market. At this moment transport of minerals in the Arctic is small but this might increase soon. Year-round transport of nickel, palladium, copper and platinum has taken place from Norilsk/Dudinka to Murmansk from 1978–1979 onwards (Arctic Council 2009: 82 f.). Plans have been made to develop a high-grade iron-ore mine in Mary River in Nunavut, Canada and a zinc/lead mine, the Black Angel Mine, in Greenland. The expectations for both mines are high, the feasibility studies promising and the environmental impact assessments acceptable.[20]

The ore will be shipped on a year-round basis in ice-strength cargo carriers which have been proven cost effective and reliable for well over 20 years at Arctic mines such as Polaris in Resolute and Nanisivik in Arctic Bay. The ore from both new mines will be shipped to Europe, which makes it very competitive because of the shorter distance between the mines and the market. The distance between Rotterdam and Steensby (Mary River) is 3,100 nautical miles and the distance between Rotterdam and the alternative production region Brazil is 5,000 nautical miles. The same is true of the Greenland Black Angel mine and Rotterdam. This mine is owned by a British firm and the products are meant for the European market.[21] In Scandinavia, a re-opening of the Sør-Varanger iron-ore mine in Kirkenes is expected. The production of this mine will increase the number of bulk carriers in the Norwegian Sea.

The changes in the Arctic did not introduce the region to tourists because the region and its attractions were already known a century ago. However, the current events have put the Arctic on the agenda and in the tourist brochures. Climate change has taken the tourists to places not visited by ships before. The economic growth and the changing circumstances in the Arctic have stimulated a greater number of people to travel north. Every summer large cruise ships sail to Spitsbergen, Greenland, Canada and Alaska. The Bering Sea, Beaufort Sea, Davis Strait, Greenland Sea, Norwegian Sea and Barents Sea are the targets of the modern tourist and an increasing number of ships have been counted in the last five years. Between 2003 and 2008 the number of cruise ships making port calls in Greenland increased from 164 to 375 bringing 22,000 passengers ashore (Artic Council 2009: 27). The same development is to be seen in Spitsbergen. There the number of tourist landings increased from 40,000 to 80,000 between 1996 and 2006 (Roura 2007). The financial crisis will however have a negative effect on this

development and will soon lead to a decrease in the number of ships and the number of tourists.

Conclusions

At present the Arctic is on the threshold of a new era, an era with almost no sea-ice anymore and unlimited economic challenges. History teaches us that the unlimited, market-driven exploitation of natural resources will have an enormous impact on the natural environment and lead to exhaustion of the resources. It also tells us that market-driven exploitation activities will very often be accompanied by politically driven activities and territorial claims. Some processes seem to be repeated, because the Arctic is undergoing a claiming and an exploitation process again. To protect the fragile Arctic environment, to consolidate the rights of the indigenous peoples and to continue scientific research, a management plan should be made for the Arctic Ocean. Such a plan should include areas in the Arctic Ocean closed to all economic activities for reasons of nature conservation and comparative study. Such a management plan needs however an Arctic Ocean Treaty signed by all states active in the Arctic.

If such an Arctic Ocean Treaty is not possible, an extension of the Arctic Council with non-Arctic countries as full members instead of observers should be considered. At the moment there is no international organization strong enough to regulate the presently emerging and possible future maritime activities and the long-term exploitation of natural resources. The Arctic Council is a high-level forum, but not an international governance organization. According to the USA, the Arctic Council has a limited mandate for the protection of the environment and sustainable development. It is therefore unlikely that the Arctic Council will be able to deal with events resulting from increasing economic activity in the Arctic. Furthermore, the members of the Arctic Council do not hold the same position politically vis-à-vis the coastal states compared with the non-coastal states (Hacquebord 2008a). Some non-Arctic states are observers with the same weak position as NGOs like IFRC and WWF. They may give their opinion at the end of the meeting but participate neither in the discussions nor in the decision-making process in the Arctic Council.[22] Although the Arctic Council provides a useful platform for interaction with indigenous peoples, it is not likely that the council will be transformed into a formal governance organization (*White House Paper* 2009).

However, under the leadership of Norway (2007–2008) and under the pressure of a greater interest from the rest of the world, the Arctic Council is becoming more political. It is emerging into *the* body for Arctic affairs. It still has a limited mandate, but in the long term it might develop into a

political body with an extended state membership based on scientific endeavour in the Arctic. Through its Arctic members (Denmark, Sweden and Finland) the European Union should play a role in the establishment of such a political body.

NOTES

[1] The expedition was made possible by the financial support of Fredrik Poulsen, a millionaire from Sweden. He paid for it because he wanted to be the first man on the real North Pole under the sea ice and the Russians had the technology to take him there.

[2] Abraham Speeck (1634), painting of a Danish whaling station, Skokloster, Stockholm. Cornelis de Man (1639), painting of a Dutch whaling station in the Arctic Ocean, Rijksmuseum, Amsterdam.

[3] www.nasm.si.edu; access date 21 May 2009.

[4] The name of this Danish expedition was the *Lomonosov Ridge off Greenland 2007* or *LOMROG expedition*. It was carried out with the Swedish icebreaker Oden, supported by the new Russian nuclear icebreaker 50 Let Pobedy.

[5] National Sea Ice Documentation Centre (NSIDC), Boulder USA.

[6] Arctic Climate Impact Assessment (ACIA), Intergovernmental Panel on Climate Change (IPCC) and NSIDC.

[7] Ilulissat declaration, Actic Ocean Conference in Ilulissat, Greenland, on 28 May 2008.

[8] *White House paper* published on 9 January 2009; *Russian Arctic Policy Paper of September 17* 2008 published on 26 March 2009.

[9] Corell, Hans, 10 September 2008, Conclusions by the Chairman of the Conference, Ilulisat, Greenland.

[10] European Union Brussels, 9 October 2008, European Parliament Resolution on Arctic Governance.

[11] Final declaration of the Monaco Conference 9–10 November 2008. The Arctic: Observing the environmental changes and facing their challenges.

[12] Hacquebord, L. "Resource Exploitation and Navigation in a Changing Arctic," Lecture in Berlin, New chances and new responsibilities in the Arctic Regions, 11–13 March 2009.

[13] Ministerial Meeting in Tromsø, Norway on 29 April, 2009.

[14] Hugo de Groot, Mare Librum, 1609.

[15] US Geological Survey factsheet 2008—3049, July 2008; US Department of the interior, US Geological Survey, Washington.

[16] MezhRegionTruboprovodStroy (MRTS).

[17] www.boskalis.nl; access date 8 March 2009.

[18] Interview Geert Greving of Gas Terra, Groningen, Netherlands; 17 February 2009, www.gasterra.nl.

[19] www.arcticcircle.uconn.edu/ANWR/

[20] www.Baffinland.com; access date 24 April 2009, and www.zemek.com/black-ang/pages; access date 20 May 2009.

[21] www.zemek.com/black-ang/pages: access date 20 May 2009.

[22] Arctic Council observer states: France, Germany, Poland, Spain, the Netherlands and United Kingdom and ad hoc observer states: China, South Korea and Italy.

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