

Chapter 2

The High North

Abstract The High North is currently one of the key areas on a global scale whose importance for Europe cannot be overestimated. It also concerns the regions of the USA and Canada (which are sometimes referred to as Far North), but in the European context—which is the subject matter of this work—it encompasses both a part of the continent, and the islands as well as the seas (the Barents Sea, the Greenland Sea) situated beyond the polar circle. In the era of high prices of energy resources and climate warming, the region is characterized by a high level of activity and also a certain nervousness of the states of that region, both of which influence international relations on a scale going beyond the interests of our hemisphere only. In practice, that involves a clear orientation of interests, and not political rhetoric only, the more so as the region truly possesses a high potential allowing for economic growth in at least a few sectors.

Keywords Key area globally • Discoveries, scientific research • International interests • Arctic resources • Arctic sea routes

2.1 Basic Concepts, Terminology and Definitions

High North (in Norwegian: *nordområdene*—the northern areas), as well as related notions are categories wide open to interpretation.¹ “It should be emphasized that »the northern areas« is a special term which is used in a particular way in Norwegian political discourse. »The northern areas« is a land whose territorial borders do not have to be precisely delineated” (Kubka 2011, p. 43). Their geographical specification can alter depending on the country and intentions of the

¹L.C. Jensen and G. Hønneland write: “The phrase (High North) was introduced as the English equivalent of the Norwegian term *nordområdene* (the northern areas) in the mid-1980s, eventually becoming adopted by the Norwegian authorities at the beginning of the current century. The concept has no immediate corresponding counterpart in academic or political discourse outside Norway, and it is not self-explanatory to foreigners” (Jensen and Hønneland 2011).

user. This work employs the terms “the European High North,” “High North,” or “the northern areas” in an interchangeable and equivalent manner, and those terms are limited to the European zone exclusively and related more to their practical use than theoretical connotations. They include “those parts of the Nordic countries and Russia that participate in the Barents Euro-Arctic Region, the Norwegian Sea, the Barents Sea, and the southern parts of the Polar Sea. The totality of the areas north of the polar circle (the whole circumpolar region) will be referred to by the term *the Arctic*”² (www.norden.org, p. 7).

Ronald O’Rourke takes a similar approach writing that “Some observers use the term ‘high north’ as a way of referring to the Arctic. Others make a distinction between the ‘high Arctic’—meaning, in general, the colder portions of the Arctic that are closer to the North Pole—and other areas of the Arctic that are generally less cold and further away from the North Pole, which are sometimes described as the low Arctic or the subarctic.” (O’Rourke 2012, p. 5).

The end of the Cold War brought a change in the perception of the northern areas. Once, the attention was exclusively focused on the politics of security, but today the issues of security and sovereignty have been enlarged by the addition of concerns related to climate changes, prospects of economic development, environment protection, and conditions of life. A positive development in the North is of paramount importance not only to the Nordic states (and Norway in particular) or Russia, but also other countries with vital interests in this region.

The High North is currently one of the key areas on a global scale whose importance for Europe cannot possibly be overestimated, although the knowledge of an average European on the subject is rather limited. It also concerns the regions of the USA and Canada (which are sometimes referred to as Far North), but in the European context—which is the subject matter of this work—it encompasses both a part of the continent, and the islands as well as the seas (the Barents Sea, the Greenland Sea) situated beyond the polar circle. The area straddles the territories of a few countries, namely Denmark, Norway, Sweden, Finland, and the Russian Federation. It is worth-remembering, however, that the majority of the territories classified as the High North in Europe, is actually located within the borders of the Kingdom of Norway.³ In the era of high prices of energy resources and climate warming, the region is characterized by a high level of activity and also a certain nervousness of the states of that region, both of which influence international relations on a scale going beyond the interests of our hemisphere only. In practice, that involves a clear orientation of interests, and not political rhetoric only, the more so as the region truly possesses a high potential allowing for economic growth in at least a few sectors.⁴

²*Geopolitics in the High North, Multiple Actors. Norwegian Interest.* A five-year (2008–2012) research programme financed through the Norwegian Research Council and conducted by the Norwegian Institute for Defence Studies with partners and associates.

³See <http://www.regjeringen.no/nb/dep/ud>.

⁴More on the subject in Chap. 5.

The region is characterized by a richness of the fauna—very large fishing stocks, which implies a dynamic development of the fishing industry (www.regjeringen.no), and flora. It should be emphasized that in 2004 half of 15,600 Norwegian fishermen practiced their trade within the waters of the High North (with the use of 60 % of fishing boats).⁵ A constantly growing demand in the international market for the high-quality white fish from the Barents Sea made fishing these waters a multi-billion (including also the U.S.) industry (www.norden.org, p. 2).

The area under examination is also of great strategic importance due to “very large fresh water supplies trapped or frozen in glaciers and, above all, a great abundance of deposits, among others, of crude oil and natural gas” (www.regjeringen.no). However, the policy of raw material extraction has to be implemented very carefully. In order to assure security of acquiring these materials, the Norwegian government has to cooperate in this matter not only with Sweden and Finland, but also with Russia (www.regjeringen.no). In addition, high energy prices and technological advances made crude oil and natural gas deposits (www.regjeringen.no) reachable in the areas (www.regjeringen.no) previously considered inaccessible.⁶ Similarly impactful are climate changes and the opening of new Arctic shipping lanes⁷ which considerably shorten the distance from Europe and North America to Asia.

In short, the High North arises as a leading area of tremendous possibilities in the upcoming years, and the afore-mentioned Norwegian discourse on the High North issues should induce one and all to terminate the short-sighted and egocentric lack of understanding on the part of scientific experts and decision-makers in other countries as regards those issues. Therefore, following the Norwegian attitude, we may say that the High North, or European Arctic—“occasionally, when referring to the European part of this area (the Arctic), the term »Far North« is used” (Kubiak 2012, p. 23)—not only reflects the Norwegian perception of the importance of the region, but also concerns the interactions appearing in this area, as well as challenges and opportunities defining it.

When the authors of the Danish Arctic strategy write: “The Kingdom of Denmark is centrally located in the Arctic... The Arctic makes up an essential part of the common cultural heritage, and is home to parts of the Kingdom’s population” (Denmark 2011, p. 8), they use the term “the Arctic” as a clear and obvious one. Similarly do the Russians or Norwegians when explaining their strategies regarding the High North. Nevertheless, the literature is far from consistent in understanding the borders and territorial reach of the areas defined by that common term. Even members of the Arctic Governance Project (AGP⁸) in the part “Defining the Arctic”

⁵See www.diplomatie.gouv.fr/fr/IMG/pdf/GarcinE_F.pdf. Retrieved May 10, 2011.

⁶See Chap. 5.

⁷See Footnote 6.

⁸The Arctic Governance Project (AGP) is an unofficial initiative supported by a group of private funders, and intended to bring together preeminent researchers, members of the policy community, and representatives of indigenous peoples in the interests of exploring ways to achieve a sustainable and just future for the Arctic. The term “we” in this report refers to the members of the

state the following: “There is no universally accepted definition of the Arctic. We follow the practice of the Arctic Council in treating the Arctic as a circumpolar region encompassing both marine and terrestrial systems extending southward from the North Pole, covering about 8 % of the Earth’s surface, including areas located within the jurisdiction of eight States, providing a homeland for many indigenous peoples, and including altogether some 4 million residents. But this region is highly diverse in biophysical, socioeconomic, and cultural terms” (Arctic Governance 2010).

Leaving aside for the moment the Eurocentric perception of the discussed issue, it could be advisable to present the American point of view on the matter. It emphasizes that many definitions of the Arctic spring from various descriptions of the land and maritime areas encompassed by this region. It is also used in a variety of ways in political discussions in which the employed terms may carry different meanings. For example, the CRS Report (O’Rourke 2012) although not based on a single designation, still attempts a definition: “The most common and basic definition of the Arctic defines the region as the land and sea area north of the Arctic Circle (a circle of latitude at about 66.34°N). For surface locations within this zone, the sun is generally above the horizon for 24 continuous hours at least once per year (at the summer solstice) and below the horizon for 24 continuous hours at least once per year (at the winter solstice). The Arctic Circle definition includes the northernmost third or so of Alaska, as well as the Chukchi Sea, which separates that part of Alaska from Russia, and U.S. territorial and Exclusive Economic Zone (EEZ) waters north of Alaska. It does not include the lower two-thirds or so of Alaska or the Bering Sea, which separates that lower part of the state from Russia” (O’Rourke 2012).

In turn, the definition adapted by the Arctic Monitoring and Assessment Programme (AMAP),⁹ states that the Arctic “essentially includes the terrestrial and marine areas north of the Arctic Circle (66°32’N), and north of 62°N in Asia and 60°N in North America, modified to include the marine areas north of the Aleutian chain, Hudson Bay, and parts of the North Atlantic, including the Labrador Sea” (Geographical Coverage).

Also for us, Poles, regardless of the contribution and achievements of Polish scientists and discoverers in the northern regions, the term is not unambiguous, hence the necessity of clarification.

The name “of this geographical region finds its roots in the Greek word *Arctos* which means »bear«. It is also related to the constellations of Little Dipper (or Little Bear) and Big Dipper (or Big Bear), which are located near the Polaris also called

(Footnote 8 continued)

AGP’s Steering Committee and the Executive Secretary. Committee members include: Hans Corell, Robert Corell, Udloriak Hanson, Paula Kankaanpää, Jacqueline McGlade, Tony Penikett, Stanley Senner, Nodari Simoniya, and Oran Young. The Executive Secretary is Else Grete Broderstad, at the Centre for Sami Studies, University of Tromsø. The H. John Heinz III Center for Science, Economics and the Environment serves as the fiscal agent for the project.

⁹AMAP is a working group of the Arctic Council.

the North Star” (Makowski and Rossa 2011, p. 195). The Arctic is a part of our globe encompassing both lands and waters, and includes the polar and sub-polar zones in the Northern Hemisphere around the North Pole. It is one of the wildest and at the same time least explored and least accessible places on Earth. The names of its seas and rivers are not widely known, although the Siberian Yenisei and Lena Rivers are not only huge, but they also carry more water to the sea than, for example, the Mississippi or the Nile. Greenland,¹⁰ the biggest island in the world, is six times bigger than, for example, Germany, but it is populated by only 57,000 people, mostly by the Inuit inhabiting small coastal settlements. In all the Arctic, also called the Arctic Circle (with a small margin in the South), nearly half of the population of 4 million lives in a few post-Soviet cities like Murmansk or Magadan. This region, to a large degree untouched, Sykulski (2009, pp. 6–7) defines as “an area of the globe around the North Pole. There exist no clearly defined borders of the Arctic.” Its so-called astronomical border, which is such a broad interpretation that it lacks common acceptance, is the Arctic Circle (66°30’40”N) covering the area of approximately 21 million km², in which there occurs a phenomenon of the polar night, where the northern lights can shine both day and night (Ulanowski 2013). The division onto the polar day and the polar night is caused by the very same reason why seasons of the year occur: the inclination of the Equator to its circumsolar orbit. The angle of this inclination varies, and currently stands at 23.5°. As stated by T. Ulanowski, “It means that 66.5° of Northern latitude marks the border delineating the occurrence of polar nights and days. It is so-called Polar Circle; beyond it the Arctic starts. In many places located exactly on its line, the winter uninterrupted night lasts only 24 h. In the Pole, however, it lasts for half a year.”

According to the Americans, eight countries have territories north of the Arctic Circle: the United States (Alaska), Canada, Russia, Norway, Denmark (by virtue of Greenland¹¹), Finland, Sweden, and Iceland. These eight countries are often referred to as the Arctic countries, and they are the member states of the Arctic Council.¹² A special subset of the eight Arctic countries are the five countries considered the Arctic coastal states: the United States, Canada, Russia, Norway, and Denmark (by virtue of Greenland).¹³ Americans also state that there exist several other definitions and ways of denoting the Arctic which are based on factors such as average temperature, the northern tree line, the extent of permafrost on land, the extent of sea ice on the ocean, or jurisdictional or administrative boundaries.¹⁴

¹⁰More on the subject in Sect. 3.3, Chaps. 4 and 5. Also Kublik (2013).

¹¹On November 25, 2008, voters in Greenland approved a referendum for greater autonomy that some observers view as a step towards eventual independence from Denmark.

¹²For more on the Arctic Council, see <http://www.arctic-council.org>.

¹³See O’Rourke (2012).

¹⁴For more on the discussion on the issue, see Susan Joy Hassol (2004), Yong and Niels Einarsson (2004), Hugo Ahlenius (2012).

European researchers are of the opinion that apart from the astronomical borderline, there exist four more ways of defining the scope of the Arctic:

- The climatological boarder running along the +10 °C isotherm on land and +5 °C on sea in the warmest month of the year (July),¹⁵
- The so-called Nordenskiöld Line,¹⁶ also termed a botanical border, delineated on land by the northern tree line (coinciding to a large degree with the climatological border); and in water environment demarcated by water temperature and the reach of glaciation,
- The geopolitical border which, according to Osica, “concerns a region extending north of the 60th parallel. As well as this, there is the notion of the Arctic Circle, which narrows down the sub-region’s political range to the Polar Circle. From this perspective, the major players are those states of the Arctic G5 which neighbor with the Arctic Ocean, i.e. Russia, the USA, Canada, Denmark/Greenland and Norway (Osica 2010, p. 12).

Osica (2010, p. 12), presenting the American perception of the issues, adds the following: “When viewed from the perspective of the term ‘High North,’ the circle of concerned parties is increased by the Polar Circle states of the Arctic Council, whose territories are adjacent to the Arctic circle or are located below it, namely Iceland, Finland and Sweden”.

The central part of the Arctic is constituted by the Arctic Sea¹⁷ (or the Arctic Ocean, also called the Northern Icy Ocean or the Northern Ocean). The Arctic Sea is ca. 14.75 million km² large; 5.9 million km² is covered by ice in summer and in winter, and the ice cap grows to 11.7 million km².¹⁸ It is a continuation of the Atlantic Ocean towards the North Pole. That kind of continuation exists not only in the form of joining the waters but also in “...the form of sea bed structures such as continental shelf, ocean continental slope, and mid-ocean ridge... This region can be divided into three oceanic basins: the Basin of Norway and Greenland (BNG), the Basin of Europe and Asia (BEA), and the Basin of America and Asia (BAA). BNG is an example of typical oceanic structure with the rift zone in the middle and it is closed on both sides by a continental slope... The depth change of the ocean on the continental slope measures ca. 1.5 km. The continental margin, which includes the continental shelf, continental slope, and continental rise, in BEA has a typical characteristic of an elevation in the form of several islands: Svalbard Archipelago (SA), Franz Joseph Land (FJL), and New Siberian Islands (NSI)” (Moskalik). The narrow and shallow Bering Strait links the Chukchi Sea with the Bering Sea and surrounds the Russian Big Diomed Island and the American Little Diomed, and

¹⁵In this case, the Arctic encompasses ca. 26.5 million km².

¹⁶Nordenskiöld, Adolf Erik (1832–1901), baron, Swedish researcher and explorer who, among others, led the Arctic expeditions on Spitsbergen in the years 1864–1873. See Uppslagsbook and Södertälje (1985, p. 910).

¹⁷For more on the subject see Lomczewski et al. (1979).

¹⁸See Killaby (2005–2006).

separates the Arctic Sea from the Pacific, "... while from the open Atlantic a symbolic line runs from the eastern coast of Greenland to Iceland (where the so-called Denmark Strait is situated) and then along the Iceland Rise to the Faroe Islands, and along the Wyville Thomson Ridge to the coasts of the Scandinavian Peninsula" (Kubiak 2012, p. 24). On the western side of Greenland, the border runs from Cape Chidley on the northern tip of Labrador to Cape Farewell (Greenlandic: Uummannarsuaq) on the southernmost extent of Greenland (Maj-Szatkowska 2004, p. 24).

Moskalik (2012) lists 12 shelf seas in the region: Baffin Sea, Barents Sea, Beaufort Sea, White Sea, Chukchi Sea, Greenland Sea, Kara Sea, Lincoln Sea, Laptev Sea, Norwegian Sea, Pechora Sea, and East Siberian Sea (extensively discussed then by Kubiak 2012, pp. 25–33), 31 straits, 1 channel (Parry Channel), and 42 bays.

The above-listed areas, which consist of seas, islands (among others, Greenland, Baffin Island, Novaya Zemlya, Victoria Island, Ellesmere Island, or Svalbard Archipelago)—together with the tundra vegetation covered stripe of Eurasia, the northern and eastern part of Labrador, the land part of northern Canada, and Alaska, straits and bays—occupy some 27 million km². The land part, encompassing the tips of the East European Plain, the West European Plain, the West Siberian Lowland, Kolyma Lowland, Yano-Indigirskaya Lowland, as well as the plains at the Arctic Ocean in North America, occupies some 10 million km². Mt Gunnbjörn (3700 m above sea level) in Greenland is considered the highest peak of the Arctic.

Compared to the rest of the globe, the Arctic is characterized by lower average air temperatures of a very wide range—annual average temperature in Reykjavik is listed at 4 °C, in the middle of the Arctic Ocean –18 °C, and in the upper parts of Greenland continental glacier—at –29.1 °C (ACIA 2005, p. 10) and lower water temperatures, as well as the presence of ice and snow sheet—seasonal at lower latitudes, and permanent at higher ones (Węśławski et al. 2007, p. 312).

The Arctic's ice sheet, called cryosphere,¹⁹ includes glaciers, sea ice, and permafrost. The distribution of ice in the Arctic is very uneven: its land part makes up 3.1 million km³ of ice, and other ice-covered areas are located in various climatically diversified zones. Greenland Continental Glacier is the largest today, being four times bigger than the glaciers of Siberia, Scandinavia, Alaska, and Canada put together.

Sea ice²⁰ is a porous matrix that harbors within its interior a network of brine pores. Sea ice is a complex composite made up of pure ice and including pockets of air and highly saline brine. Liquid brine and air are trapped within a matrix of pure ice crystals. The process of sea ice forming is very complex and occurs in a few stages. "As the ocean water begins to freeze, small needle-like ice crystals called

¹⁹More on the subject in ICARP II—SCIENCE PLAN 7, TERRESTRIAL CRYOSPHERIC & HYDROLOGIC PROCESSES AND SYSTEMS, Second International Conference on Arctic Research Planning (ICARP II), Copenhagen, Denmark, 10–12 November 2005, www.icarp.dk.

²⁰The process of its formation differs from the freezing of freshwater. The minerals existing in sea water lower the freezing temperature to ca. –1.8 °C. The higher the salinity is, the lower the freezing temperature.

frazil form. In windless weather, the ice grows downwards; in strong winds and waves, the ice forms so-called *pancake ice*. If it is snowing, the snow makes the newly-formed ice submerge and thus creates its structure more granular. In the final stage of the process, solid first-year ice is created, and then multiyear ice characterized by lesser salinity as well as density. The sea ice dynamics depends on the extent and plasticity of ice cover” (portalwiedzy). On the surface, there appear hummocks, melt ponds, ice overhangs, and leads (long, linear areas of open water that range from a few meters to over a kilometer in width, and tens of kilometers long; they develop as ice diverges or pulls apart).

Permafrost,²¹ or permanently frozen ground, is ground (soil, sediment, or rock) that remains at or below 0 °C for at least two years, and it is characterized by firm hardness (Goszczko 2012, p. 40). These features make the High North a special region, extremely inhospitable to men, in which building permanent settlements has always been connected with severe risk and the necessity of constant fight for survival.

The consequence of the harsh or even extremely cold climate is a rather poor flora of the Arctic, dominated by “dwarf shrubs, hardy perennials (mostly grasses and sedges), moss, lichen, and moss-tundra, dwarf-shrub-tundra, lichen-tundra, and forest-tundra. The animal world is represented mainly by the abundant though little diversified marine fauna, mostly fish: species of cod, herring, and sculpin” (Repelewska-Pękalowa and Pękała 2007, p. 280). Although there exist here only some 150 fish species, because of their numbers alone, the fish play important role in the ecosystem functioning,²² as well as the economies of the Arctic states.²³ “The largest arctic fish is the Greenland shark; it can exceed 700 kg in weight and 6 m in length. This shark is a slow-moving demersal fish that catches almost all kinds of prey from carrion to birds, sea seals, and other fish. The second largest Arctic fish is the Greenland halibut, which is a huge flatfish up to 4 m in length” (Weslawski 2012a, p. 100).

The animal world also includes sea mammals: whales (including endemic Greenland whale, narwhal, and beluga—*Delphinapterus leucas*), walruses, and seals. Because of the rich feeding grounds of the margin of the ice pack, almost all of the whale species of the northern hemisphere migrate to the Arctic in summer. “Blue whales, fin whales, sei and humpbacks feed in Atlantic Ocean of the Greenland and Barents seas, while gray whales and Greenland whales in the Pacific sector of the Chukchi and Beaufort seas... Narwhales are fish eaters connected to the ice pack while belugas prefer coastal waters and river mouths” (Weslawski 2012b, p. 104). Walruses came close to extinction in the European Arctic in the

²¹More on the subject in Große et al. (2006). *IASC Bulletin* 08/09 (2010).

²²The most important single fish species is the polar cod (20 cm), and it is the only one that occurs in large quantities beneath the ice pack. It is the primary prey for nearly all seabirds, seals, belugas and narwhal whales. Polar cod has physiological adaptation to life in low temperatures.

²³There is commercial fishing of halibut, redfish, cods, mackerels. Some of those species arrived in the Arctic only due to the warming of the area.

mid-twentieth century. Today, stable populations estimated at a few thousand individuals inhabit the Arctic. The most abundant seal species are the Greenland seals which keep at the open sea and the ice pack. In addition, also ringed seals and bearded seals are found there.

The symbol of this area is the polar bear which actually lives on ice pack and floating ice. Of all the mammal species, today, the polar bear is most threatened by the disappearance of the ice pack. Other mammal species include reindeer (an Arctic and Subarctic-dwelling deer), caribou, Arctic fox, and musk-ox. Seabird species list seagull, auk, skua, snowy owl, ptarmigan, sea duck, and others. It is worth-mentioning that in the Barents Sea, for example, the fish stocks are equally exploited by the fisheries, seabirds, and marine mammals. Jan Marian Węśławski rightly observes that “sea mammals are important regulators of energy turnover through a phenomenon known as top down control. Polar waters support very efficient food (trophic) webs that extend from microplankton through macroplankton to sea mammals. Whales feed on the krill that feeds on diatoms so any changes in the abundance of carnivores are transferred quickly to the lower trophic levels” (Węśławski 2012b, p. 104).

All of that prompts observers to seek various analogies and make comparisons (Anioł 2010, p. 91). Their common denominator illustrates the increasing importance of the region on the basis of the processes occurring there and their accompanying events.

One could say that the High North, and the Arctic in particular, has been very much present in the international politics, starting in mid-twentieth century. Although initially perceived as an area of Cold War competition, after the changes in the international situation, it became a subject of scientific cooperation and efforts directed at environment protection. Currently, the international importance of the region undergoes a significant transformation. “The consequences of the climatic changes occurring around the North Pole and the accompanying it increased activity of the states possessing territories beyond the Northern polar circle have contributed to the significant growth of interest in this area by the international community. The attention has been focused both on the problem of possible negative consequences of the new situation, and the visions of substantial benefits which may be drawn from the so-far inaccessible Arctic” (Reflections 2010, p. 692).

Such statements are hardly surprising if one realizes that the expected access to the rich raw material resources and the monitoring of Arctic sea routes have resulted in both a reason for competitive efforts, and an impulse for the search of new forms and mechanisms of international cooperation in the High North. There exist many reasons calling for the problems of international relations in this region to become a subject matter of joint analyses and scientific cooperation. This, in turn, requires close cooperation of scientists, conducting active research in the Arctic in the fields of natural sciences, as well as specialists in social sciences.

2.2 The High North: The Region of Discoveries and Scientific Research

High North has always evoked much interest in humans. The first news about the lands in the North was brought through the travels of Pytheas of Massalia (today Marseille), who around 330 BCE probably reached Iceland (the island of Thule). The centuries 9 and 10 mark the period of settling the new lands by the peoples of the North: in the year 877, Gunnbjørn discovered Greenland; in 880 his compatriots reached the White Sea, and in the years 1000–1005 the Baffin Bay and Labrador. “In the 12th and 13th centuries, the Pomors or Pomory (seal hunters and fishermen from Northern Russia) sailed to the Novaya Zemlya—the Kara Sea” (portawiedzy). The driving forces behind those discoveries were: the exploration of new lands, hunting and whaling expeditions, and prospecting for raw materials. Nearly a completely separate chapter has been written by the history of development of seafaring among the Northern peoples. Only towards the end of the 16th century, people began searching for a northern sea route to southern and eastern Asia (India and China). The attempts at circumventing the American continent from the north resulted in discovering consecutive areas of the Arctic. Among others, in the years 1576–1578, M. Frobisher reached Baffin Island; 1585–1587—J. Davis sailed to the strait between Greenland and Baffin Island (Davis Strait) and Cumberland Sound; 1607–1611—H. Hudson made it to the Novaya Zemlya and to the river, strait and bay named after him; 1612–1616—W. Baffin sailed around the western coast of Greenland, explored Hudson Strait and Lancaster Sound, reached the sea and land named after him, as well as Devon Island and Ellesmere Island. The exploration did not concentrate on the so-called Northwest Passage as expeditions were undertaken also along the northern coastal line of Eurasia—Northern Sea Route. In 1553, H. Willoughby and R. Chancellor reached the White Sea, and in 1554, S. Borrough discovered the islands of Novaya Zemlya and Vaygach. W. Barents²⁴ managed to reach Svalbard and Kola Peninsula in the years 1596–1597.

The 17th and 18th centuries were dominated by discoveries made by the Russians: 1648—Semyon Ivanovich Dezhnyov sailed around north-eastern Siberia and discovered a passage between Asia and America (later called Bering Strait); 1710–1712—Merkury Vagin and Yakov Permyakov discovered Lyakhovsky Islands in the East Siberian Sea; 1728–1730—the expedition of Vitus Jonassen Bering and Aleksei Ilyich Chirikov rediscovered Bering Strait; 1732—Ivan Fyodorov and Mikhail Spiridonovich Gvozdev reached Alaska; 1742—Semyon Ivanovich Chelyuskin made it to Taimyr Peninsula and discovered Cape Chelyuskin; 1765—Vasili Yakovlevich Chichagov reached 80°26'N north-west of Spitsbergen.

²⁴Willem Barents (actually Barentzoon), ca. 1550–1597, a Dutch navigator, cartographer and explorer; while searching for the Northeast Passage took part in three expeditions. In 1596, he discovered Spitsbergen and the Bear Island; see *Upplagsbook*, Södertälje 1985, p. 97.

The years 1733–1742 marked the “Big North Expeditions” led by V.J. Bering, which discovered among others Aleutian Islands and Alexander Archipelago, and in which also participated the Russian explorers (to mention only Khariton Prokofievich Laptev, Dmitry Yakovlevich Laptev, Stepan Gavrilovich Malygin, Vasili Vasilyevich Pronchishchev, Stepan Petrovich Krashenninnikov, and Semyon Ivanovich Chelyuskin).

In North America, Samuel Hearne reached Coronation Gulf (1771), and Alexander Mackenzie the Beaufort Sea and the river named after him (1789–1793). In 1837–1839, Peter Warren Dease and Thomas Simpson made it to Victoria Island.

The 19th century marks a new period in the exploration of the High North in which the North Pole was reached and several attempts at navigating the Northeast Passage and Northwest Passage were made. Freiherr Nils Adolf Erik Nordenskiöld, on the steamship “Vega,” was the first one to successfully navigate the former (1878–1879).²⁵ Even though the Northwest Passage was actually discovered in the years 1850–1853, Roald Engelbregt Gravning Amundsen,²⁶ on the fishing vessel “Gjøa,” made the passage successfully only many years later (1903–1906).²⁷

Polar explorers who particularly wanted to reach the North Pole include:

- William Edward Parry²⁸—in 1827 reached 82°45'N;
- James Clark Ross²⁹—in 1831 located the position of the North Magnetic Pole on the Boothia Peninsula;
- George Strong Nares—in 1875–1876 reached 83°20'N and proved that Greenland was an island;
- Fridtjof Nansen³⁰—1893–1896 Nansen took his ship “Fram” to the New Siberian Islands and waited for the drift to carry the ship across the Arctic Ocean. Later, he reached 86°N on foot;

²⁵Earlier, those attempts were made by Russian Baron Ferdinand Friedrich Georg Ludwig von Wrangel and Pyotr Fyodorovich Anjou (1820), as well as George W. De Long, an American explorer, in 1879.

²⁶Roald Engelbregt Gravning Amundsen (1872–1928) was a Norwegian explorer of polar regions. He was the first expedition leader to (undisputedly) reach the North Pole (December 14, 1911). He disappeared in the Arctic in June 1928 while taking part in a rescue mission. See *Upplagsbook*, Södertälje (1985, p. 38).

²⁷While attempting to navigate the passage, several new discoveries were made: Sir John Ross reached Smith Sound and Lancaster Sound (1818–1819); W. E. Parry discovered Barrow Strait, Melville Island (Northwest Territories and Nunavut), and Melville and Banks islands (1819–1820); J. Franklin charted the north coast of America from the eastern side (1819–1822), and in the years 1845–1847 disappeared on his last expedition, attempting to chart and navigate a section of the Northwest Passage in the Canadian Arctic.

²⁸Parry, Sir William Edward (1790–1855), officer of the British Navy, attempted four expeditions searching for the Northwest Passage in the years 1819–1827. See *Upplagsbook*, Södertälje (1985, p. 968).

²⁹Ross, Sir James Clark (1800–1862), British polar researcher.

³⁰Nansen Fridtjof (1861–1930), Norwegian polar explorer, naturalist, oceanographer, social and political activist, representative of Norway in the League of Nations. He was the first one to

- Otto Sverdrup—in 1898–1902 discovered Axel Heiberg Island, a member of the Sverdrup Islands.

In fact, the North Pole was truly reached by Robert Edwin Peary and Matthew Henson who rode in a dog sled and arrived there on April 6, 1909.

Also the 20th century marked many expeditions and discoveries:

- Boris Andreyevich Vilkitsky³¹ was the second one to have sailed through the Northeast Passage as a commander of an icebreaker and discovered Severnaya Zemlya (1913–1918);
- Vilhjalmur Stefansson³²—journeyed on foot (on drift ice) and traversed the Beaufort Sea—from Alaska to Victoria Island (1913–1918);
- Jan Nagórski³³—the first person (aviator) to fly an airplane in the Arctic reaching 76°30'N (1914);
- Richard Evelyn Byrd and Floyd Bennett—the first to reach the North Pole by air in 1926; Roald Amundsen, Lincoln Ellsworth, and Umberto Nobile made it there by the dirigible “Norge”;
- George Hubert Wilkins and Carl Ben Eielson left Point Barrow, Alaska, on April 15, and flew across the Arctic Ocean to Spitsbergen, crossing the Arctic Sea (1928);
- the Soviet icebreaker “Sibiryakov” in 1932 made the first successful crossing of the Northern Sea Route (Northeast Passage) in a single navigation season without wintering;
- “St. Roch,” Canadian schooner, was the first ship to complete the Northwest Passage in the east-west direction (1944);
- “USS Nautilus” (SSN-571) was the world’s first operational nuclear-powered submarine. She was the first vessel to complete a submerged transit to the North Pole on 3 August 1958;
- Sir Walter William “Wally” Herbert made history in 1968–69, when he led the British Trans-Arctic Expedition (BTAE) with dog-sleds from Point Barrow, Alaska, to Spitsbergen;

(Footnote 30 continued)

traverse Greenland from east to west in 1888; in 1893–1895, he commanded an expedition to the North Pole; winner of the Nobel Peace Prize.

³¹Vilkitsky Boris A. (1885–1961), Russian hydrographer and surveyor; he was the first one to sail the Northeast Passage from east to west; since 1920 remained in exile.

³²Stefansson Vilhjalmur (1879–1962), Canadian polar explorer known for his ethnographic expeditions.

³³Jan Nagórski, (1888–1976), Polish pilot of the Imperial Russian Navy. In 1914, taking part in a Russian polar expedition, on a “Farman” class hydroplane, he was the first in the world to fly a plane in the polar region. It is worth-adding that in the 19th century several thousand Poles were sent to the High North as exiles after consecutive Polish risings against Russia. Many of them became researchers and the people like Dybowski, Czerski, and Czekanowski became known in world science.

- “NS Arktika” is a nuclear-powered icebreaker of the Soviet (now Russian) Arktika class; she was the first surface ship to reach the North Pole in 1977;³⁴
- Naomi Uemura (www.everesthistory.com) was the first person ever to reach the North Pole solo in 1978. The first Polish man to repeat the feat was Marek Kamiński in 1995 (the same year he reached also the South Pole).

During the First International Polar Year (1882–1883), scientists from eight countries made a cooperative endeavor to solve the fundamental questions in terrestrial magnetism and international meteorological data gathering. In the Second International Polar Year (1932–1933), already 13 countries participated, including Poland. The beginnings of the Polish presence in the Arctic date back to the mid-eighteenth century and are connected with research activities of the Polish political prisoners sent forcibly to Siberia. The local geographical names honor their achievements. In the first half of the 19th century, A. Czekanowski and J. Czerski participated in Siberian polar expeditions. L. Hryniewiecki and J. Morozowicz explored the Novaya Zemlya, K. Bohdanowicz Chukchi Peninsula and Alaska, and K. Wołosowicz the New Siberian Islands. In the years 1899–1901, as participants in the Russian scientific expeditions, the following Poles took part in the exploration of Spitsbergen: zoologist Aleksander Birula–Białynicki and astrophysicist J. Sikora, the latter being the first Pole, known to us, who spent winter on Spitsbergen and made photogrammetric pictures of its southern parts. In 1910, Henryk Arctowski, famous for this wintering in the Antarctic, spent some time on Spitsbergen as a head of the science division of the New York Public Library. “The first Polish polar expedition went to Spitsbergen in 1932, and the consecutive ones in 1934, 1936, and 1938. The first Polish expedition to Greenland was organized in 1937 by the geographer and glaciologist Aleksander Kosiba, and the other members included S. Bernadzikiewicz, A. Gawęł, A. Jahn, and S. Siedlecki.³⁵ In July 1957–December 1958, in connection with the International Geophysical Year (IGY), another Polish expedition to Spitsbergen was organized, which until 1960 conducted research in Polar Bear Bay (Isbjørnhamna) in Hornsund Fjord, West Spitsbergen” (portalwiedzy). Owing to such active participation of Polish explorers, maps of Spitsbergen were assigned Polish geographical names: mountains named after Copernicus—KOPERNIKUSFJELLET, Staszic—STASZICFJELLET, Pilsudski—PILSUDSKIFJELLA and Curie-Sklodowska—CURIE—SKŁODOWSKAFJELLET as well as a glacier called Glacier of Poles (Polakkbreen) or Poles’ Glacier, and many others.

³⁴In 1992, “The Oden,” a large Swedish icebreaker, was the first non-nuclear surface vessel to reach the North Pole.

³⁵The founder of the Hornsund Station, geologist Professor Stanisław Siedlecki (1912–2002) devoted his whole life to the Arctic research. His scientific career began in 1932 with an expedition to Bear Island.

In the years 1957–1958, in connection with the International Geophysical Year, a Polish expedition on Spitsbergen was organized and research conducted until 1960 at Isbjørnhamna (Polar Bear Bay), in Hornsund Fjord (portalwiedzy). The Hornsund Polish Polar Station, established in 1957 and called “The Polish House next to the North Pole,” became a base for the Polish research in the Arctic carried out within the scope of the International Geophysical Year 1957–1959. Until the mid-1970s, the Hornsund Polish Polar Station had been used by research teams in summer seasons only. Reconstructed in the summer of 1978, the Hornsund Polish Polar Station has functioned as a geophysical observatory.



The Hornsund Polar Station in winter. (Photo by P. Głowacki)

It is located at a distance of about 200 km from the nearest human settlements. Throughout the year, the Hornsund station can be reached only by helicopter, during the winter by snow scooters, and in the summer by the sea.



The Hornsund Polish Polar Station—distance indicator. (Photo by R.M. Czarny)

In this region, the polar night lasts from October 31 to February 11. The polar day begins April 22 and ends August 21. It is then that the world's only sundial runs showing time 24 h a day. The Hornsund Polish Polar Station's location in the central part of Svalbard archipelago (where the Eurasian and American Arctic meets) provides for exceptionally favorable conditions for the study of the structure of lithosphere and physical processes occurring in the atmosphere and extraterrestrial space.

Hornsund Fjord in Svalbard is kind of a laboratory for recognizing and understanding the processes occurring on a great scale in the High North. A significant and modern center of this "laboratory" is Stanisław Siedlecki Polish Polar Station, created in 1957 at Polar Bear Bay (Isbjørnhamna). The station has been managed by the Institute of Geophysics, Department of Polar and Marine Research of the Polish Academy of Sciences since 1958. Many of the station's research programs on the Arctic are conducted by international teams.³⁶ The Institute of Oceanology of the

³⁶Research at the Hornsund Polish Polar Station in Spitsbergen has been done with the participation of the following foreign partners: Arctic Center, University of Lapland in Rovaniemi, Finland—geophysical investigations of glaciers and snow structure in Spitsbergen at the Hornsund area; Departamento de Matematica Aplicada ETSI de Telecommunication, Universidad Politecnica de Madrid Ciudad Universitaria, (Spain)—cooperation in radar surveys and their application in modelling of structure of the processes occurring within the glaciers of Svalbard; Department of Geosciences and Geography, University of Helsinki—joint research on sedimentation in young glacial sea basins such as Brepollen in Hornsund; Institute of Geography of the Russian Academy of Sciences—studies of the glaciers and snow covers dynamics in Arctic and in Russian mountain region; Geodetic and Geophysical Research Institute of the Hungarian Academy of Science,

Polish Academy of Sciences (IO PAN) in Sopot since 1987 has conducted regular research of the High North, and the European Arctic in particular, from the Research Vessel s/y (sailing yacht) “Oceania.” In addition, various Polish universities and research institutes send yearly expeditions to the region.

In recent years, Polish scientists have been working also in Polish-Norwegian scientific programs researching the causes and effects of climate changes in polar regions. One of such programs is *Alkekonge*, whose name comes from the Norwegian term for the little auk, the smallest of the European auks. It is the most numerous species among the marine birds in the North Atlantic. Most of the population breeds in colonies in the southwestern and northwestern parts of Spitsbergen. Research on Little Auks feeding and breeding ecology is mostly conducted by ornithologists from the Department of Vertebrate Ecology and Zoology, University of Gdańsk, who make comparisons of the planktivorous diet of the birds and chick feeding rate in the Little Auk between the areas of Spitsbergen of different oceanographic conditions: the southern one (in the vicinity of the Polish Polar Station in Hornsund), the central one (the area near Longyearbyen, capital of the island), and in the north (the picturesque Magdalenefjorden, the former whaling station). They compare and observe the behavioral response of the Little Auk (*Alle alle*) to climate change in the European Arctic.

(Footnote 36 continued)

Sopron, Hungary—long-term variations in the Schumann resonance parameters in Polish Polar Station at Spitsbergen and Central Europe (in the years 2008–2011, on the basis of the agreement on scientific co-operation between the Polish Academy of Sciences—PAS) and the Hungarian Academy of Sciences—HAS); the Czech Academy of Sciences, Institute of Rock Structure and Mechanics of the ASCR—joint research on isostatics and shifting of orogeny rock mass resulting from the changes in the polar ice caps in the region of southern Spitsbergen; Laboratoire Physique des Radiations, Faculty of Science, Technology and Communication University of Luxembourg, Campus Limpertsberg—joint isotopic analyses of the Hornsund region waters; Laboratoire de Planetologie du Grenoble, France—joint research on auroral phenomena; Norwegian Meteorological Institute, Oslo (Norway)—recording meteorological observations from the Hornsund Station and transmitting SYNOP messages to the center in Oslo; Norwegian Institute for Air Research NILU, Kjeller (Norway)—carrying out the tasks of the program AMAP; National Antarctic Center Kuala Lumpur (Malaysia)—joint biological research; The University Center in Svalbard (UNIS) Longyearbyen (Norway)—cooperation in lake-sediment studies to reconstruct environmental changes occurring in the region of the polar station; University of Oslo, Faculty of Geoscience, Oslo (Norway)—application of geophysical methods in examining glaciers.

The following Polish scientific entities participated in the research programs in 2011: the Maritime University of Gdynia—1 team (research on climatology); Space Research Centre—1 team (ionosphere research); the Institute of Geophysics of the Polish Academy of Science in Warsaw (IGF PAN)—3 teams (glaciology, geophysical processes and phenomena and atmospheric physics); The Institute of Oceanology of the Polish Academy of Sciences (IO PAN)—2 teams (oceanography and marine ecology); the Institute of Nature Conservation PAS in Krakow—1 team (biology); the University of Gdańsk—1 team (ornithology); Jagiellonian University in Krakow—1 team (geomorphology); the Maria Curie Skłodowska University UMCS in Lublin—1 team (geomorphology); the University of Silesia in Katowice—3 teams (glaciology, climatology and hydrology); the University of Wrocław—3 teams (climatology, botany and geomorphology); the University of Warmia and Mazury in Olsztyn—1 team (biology).

Ecologists from the Institute of Oceanology of the Polish Academy of Sciences research changes in zooplankton composition, structure and count, while physical oceanographers examine causes of the changes in the temperature of the Atlantic water. The data gathered by the team led by Prof. J. Piskozub from the Air-Sea Interaction Laboratory regarding exchange of mass and energy, momentum and radiation at the ocean-atmosphere contact zone, and acousticians from the team led by Prof. Z. Klusek in gas bubbles in the seas and methods of their detection, together with the achievements of scientists from the Institute of Geological Sciences of the Polish Academy of Sciences in isotopic research should give some answers to the issue of seabed methane emission in the Arctic.³⁷

The second significant and comprehensive research program is called AWAKE—Arctic Climate and Environment of the Nordic Seas and the Svalbard-Greenland Area—which should help understand the interactions between the main components of the climate system in the Svalbard area and improve our understanding of ocean, atmosphere and ice to identify mechanisms of interannual climate variability and long-term trends. Researchers from the Nicolaus Copernicus University in Toruń have studied the Arctic climate for years and scientists from the University of Silesia the glaciers of Svalbard (the archipelago of which a part is Spitsbergen). The Hans Glacier in Hornsund, Svalbard Archipelago, is a true laboratory in glaciological investigations. The program AWAKE, among others, is to verify the hypotheses regarding the indirect (through the changes in air temperature, and streams of heat emitted to the atmosphere) and direct influence (as meltwater forms on the glacier surface, it gradually finds its way down to the glacier sole along channels in the ice) of the Atlantic water on the melting and calving of Svalbard glaciers. In recent years, they have produced more and more icebergs which results in more mass disappearing into the sea more rapidly. The reason why they disappear more quickly is that the water beneath the ice lubricates the subsurface causing the glacier to glide faster, which increases the calving of icebergs.

Even that select piece of information clearly shows that Polish polar research is realized through active participation in numerous scientific organizations and in international research programs within broad international cooperation. “The procedural and legal basis for the Polish presence and activity in the Arctic is provided by the Svalbard Treaty of February 9, 1920, whose signatory is also Poland, and the Polish presence in the Arctic Council. This diplomatic position of Poland is in addition strengthened by the participation in numerous Arctic agreements and international organizations of economic, scientific, cultural nature, and environment protection” (Reflections, p. 616).

³⁷In 2009, the European Commission launched the project called “Pergamon” whose aim is to coordinate the European research to quantify the methane input from marine and terrestrial sources into the atmosphere in the Arctic region and ultimately to evaluate the impact of Arctic methane seepage on the global climate. Poland in the Pergamon is represented by Prof. M. Lewandowski (Director of the Institute of Geological Sciences PAN) and Prof. J. Piskozub (Head of the Air-Sea Interaction Laboratory of the Institute of Oceanology PAN).

Regular scientific research in the Arctic has been conducted since the end of the 19th century. Today, among others due to territorial issues and the division of the High North in terms of countries, we are dealing with an enormous number of world projects, as well as regional and national ones, of much diversified scope and character. They start with energy resources (raw material deposits and reserves) and go through environment protection, research on the flora and fauna, all the way to those related to indigenous peoples in the North. Initiatives at the grass-root level are a new and much interesting a phenomenon. In other words, it is activism or initiatives of and by the native peoples. Such possibilities, in my opinion, are created by the relative autonomy of the local peoples as well as their strong sense of ethnic identity, together with a sense of distinctiveness in terms of the culture dominating in the country in which they reside. Frequently, they go beyond the area in which they were born, and their ideas become common for the communities from other regions of the High North.³⁸ One could possibly risk a statement that a certain “flywheel” or a driving force behind all those undertakings became the International Polar Year (IPY), proclaimed for the third time then and falling onto the years 2008–2009.³⁹ This international research undertaking was organized on a scale unheard of until then and realized in the new and much favorable geopolitical conditions for polar research. It was accompanied by substantial investment in research and logistics.⁴⁰

2.3 The Growing International Interest in the Region

WWII brought unprecedented changes in the High North which became a real theater of action on sea and in the air because of the struggle between the Allies and Germans. Meteorological observatories, airfields, airbases, food storages and military bases were then built. There was a clear delineation of control: Americans and Danes were “responsible” for Greenland, Russians for Franz Josef Land, and the British watched over Svalbard Archipelago and Jan Mayen Island. Furthermore, the Arctic and particularly the Northern Sea Route (former Northeast Passage) became extremely important for the Allied supplies to the Soviet Union during the war. “After the collapse of the agreement between the Allies, the United States and the Soviet Union faced another type of war which consisted in »controlled stillness«. In the regions isolated at the time of war, situated alongside the arc stretching from Greenland to Bering Strait, defensive installations were built like the Distance Early Warning (DEW) Line the cost of which was over 600 million dollars” (Nazari 1998, p. 162). The Arctic became heavily militarized which was connected, among others, with technical and technological progress in the military forces of the

³⁸More on the subject in Indigenous Arctic Peoples, Chap. 4.

³⁹More on the subject: www.ipy.org. See also Kaiser (2010).

⁴⁰More on the subject at: www.ipy.org.

superpowers of that time,⁴¹ and the polar stations, both American and Soviet, were manned by extremely strong military and civilian personnel. According to J. Symonides: “The Arctic played a double role at the time of »Cold War«, not only as an extremely important area from which to attack the other side with nuclear weapons systems deployed there, but also a vital element of a »deterrent«” (Symonides 2011, p. 24).

A temporary reduction of the Russian presence in the Arctic was a consequence of the breakdown of the bipolar order of power, the collapse of the Soviet Union and, what followed, the elimination of several Russian bases in the region. “The Russian Navy’s submarine fleet was significantly reduced. A substantial part of it has been withdrawn and scrapped. Regular patrols and flights along the Canadian and American coastlines have been stopped. In the atmosphere of détente and cooperation in the 1990s, also Canada, Norway, and Denmark significantly lowered their military potential and engagement. Naval forces have been reduced and maneuvers and military exercises stopped” (Symonides 2011, pp. 24–25).

Although the change in the strategic balance after 1990 brought a period of cooperation of countries in the region, it has not, however, resulted in its full demilitarization or solved political and legal disputes.

Over two decades after the end of the “Cold War,” there still exists the need for deepening our knowledge of the Arctic—the vast, unpopulated, hardly accessible and still not very well understood domain. We already know that “Since all of the processes that influence the Arctic also directly impact us—e.g., global increases in sea levels stem from the mass melting of Arctic glacier, and European temperatures depend on heat exchange between Atlantic and Arctic Ocean interrelations—we must organize international efforts to continue observations and research made and all of the knowledge acquired must be available to the public” (Węśławski, p. 5). Countries like the Russian Federation, the USA, Canada, Denmark (Greenland), Norway, Sweden, Finland, and Iceland, which all have territories in the Arctic, do it for obvious reasons—they need to be knowledgeable about their own lands. Still, polar research stations and expeditions are organized by many non-Arctic countries: Germany, the Netherlands, Poland, Great Britain, Italy, Spain and a number of other countries from outside Europe, notably China, Japan, India, and the Republic of Korea. For all these countries, there are three most important reasons for their interest in the Arctic:

- Its role in shaping the climate of the Northern Hemisphere;
- Exploitation of hydrocarbons (oil, gas) and mineral deposits, and living stock of crustaceans, fishes, and mammals;
- New shipping routes.

⁴¹It mainly concerned long-range bombers capable of carrying nuclear weapons, the development of offensive ballistic missiles, and nuclear-powered submarines sailing under the ice of the Arctic Ocean. See Young (1985) and following.

The activities regarding the first issue are researched by the network of international cooperation, hence, for example, the existence of the international research station in Ny-Ålesund on Spitsbergen which has Japanese, Korean, Indian, and Chinese components. The second of the listed reasons engages many actors on the international scene, representing both national and private interests, including the “fast growing economies” of Asia. They all show an increased interest not only in the Arctic alone, but also, generally speaking, in the European High North. Undoubtedly, it is something much more than pure political rhetoric, the more so as the region has a considerable potential and possibilities of growth.

Countries like the People’s Republic of China, Japan, and the Republic of Korea are particularly interested in new raw deposits and the possibilities of utilizing the Arctic shipping routes. These countries are some of the largest importers of crude oil (BP 2011),⁴² and in the case of Japan and Korea, also of natural gas. In their energy strategies, a diversification of energy raw material sources supplied from an economically and politically stable region is much desired and the High North hydrocarbon resources appear to provide an opportunity to improve their energy security.⁴³ Since the economies of these countries are based mainly on export of goods, it is no surprise that the possibility of shortening the sea routes is of such paramount significance as it refers to the prospect of shortening the route to Europe (through Northern Sea Route and Northwest Passage) by some 40 %, and to the East Coast of the USA.

All of the above activates these nations, and particularly the Chinese who are interested in licenses for mineral exploration.⁴⁴ Although this large country has not disclosed any official strategy towards the High North yet, its interest in the opportunities and challenges connected with the region as well as its attempts to secure own interests there are indisputable. As stated by J. Grzela, “Research on this region has not only great significance in scientific understanding of the polar system, but also provides an opportunity to comprehend its impact on Chinese climate, agriculture, natural resources, and environment protection. The arguments supporting such a statement list, among others, the following:

1. The climatic system of the Arctic has a considerable influence on China’s climate, and weather exerts decisive control over the changes of seasons to bring in droughts, floods, wind and frosts to major economic areas in China;
2. Ocean currents of the Arctic have a strong influence on the land climate of East Asia and world ocean fishing (1/4 of Chinese annual fishing yield comes from the Arctic Ocean and the Bering Sea);
3. Arctic research may provide some scientific data for battling droughts and land desertification in North China” (Grzela 2012, p. 4).

⁴²See also Młynarski (2011b); and Godlewski (2012).

⁴³In the case of crude oil, the majority of imports come currently from the Middle East and Africa.

⁴⁴More on the subject in Kubiak (2009).

“Whoever has control over the Arctic route will control the new passage of world economics and international strategies,” says Li Zhenfu of Dalian Maritime University, as cited by Jakobson (2010), and these words fully reflect the viewpoint of the media and scientists, publicly encouraging the government and other official authorities to undertake actions regarding utilizing the commercial and strategic opportunities presented by the melting ice of the Arctic.⁴⁵

For the Chinese, the Arctic is a subject of scientific research conducted in the field of climate changes,⁴⁶ fish species, new sea routes, and energy security. Within the frame of an extensive program of scientific research, in 1989, they established the Polar Research Institute of China—PRIC. The first Chinese Arctic expedition took place in 1999, and China’s first Arctic research station, Arctic Yellow River, was founded at Ny-Ålesund in Norway’s western Svalbard archipelago in July 2004. In the field of researching the Arctic environment, the Chinese have cooperated with Norway since 2004, and since 2009 both countries have conducted a bilateral dialogue as regards climate change and environment protection.⁴⁷ The Republic of Iceland, however, seems to be of particular interest to the Chinese authorities, and in April 2012, China signed an agreement with Iceland as regards science, polar research, and geothermal energy.

Chinese Arctic researchers since 1997 belong to the International Arctic Science Committee—IASC. They have at their disposal the world’s largest (non-nuclear) icebreaker, the Research Vessel “Xuelong” (Snow Dragon).⁴⁸ It was the first-ever Chinese vessel that navigated the North Pole in August 2012.

Although the official position in its rhetoric is much milder than the expectations or even demands voiced by the media, the academia, and military circles, it is virtually impossible not to assess that the described heightened activity leads to the growing importance of the People’s Republic of China in the Arctic (Jakobson 2010). Nobody should be deceived by the appearances of the Chinese detachment

⁴⁵More on the subject in Sakhuja, V. China: Breaking into the Arctic Ice. Retrieved October 10, 2012 from <http://www.icwa.in/pdfs/ib%20%20dr.pdf>.

⁴⁶In 1995, a group of Chinese scientists and journalists travelled to the North Pole on foot and conducted research on the Arctic Ocean’s ice cover, climate and environment.

⁴⁷More on the subject in The statement made by the Norwegian Minister of Foreign Affairs, Jonas Gahr Støre, in China at China Institute for International Studies, Beijing, 30 Aug. 2010. Retrieved November 25, 2010 from http://www.regjeringen.no/en/dep/ud/whats-news/speeches/-and-articles/speechesforeign/2010/arctic_vierijing/html?id=613162.

⁴⁸Research Vessel “Xuelong” (Snow Dragon) was purchased from Ukraine in 1993. In October 2009 the State Council (the Chinese Cabinet) decided that “Xuelong” alone no longer met the demand of the country’s expanding polar research. The government approved the building of a new high-tech polar expedition research icebreaker, which is to be launched in 2014; more on the subject in China’s 1st icebreaker to be completed in 2013. Retrieved May 03, 2012 from http://usa.chinadaily.com.cn/china/2011-10/25/content_13976000.htm; Lasserre, F. China and the Arctic: Threat of Cooperation Potential for Canada? Retrieved June 05, 2011 from <http://www.opencanada.org/wp-content/uploads/2011/05/China-and-the-Arctic-Frederic-Lasserre.pdf>; and Viglundson, J., Doyle, A. First Chinese ship crosses Arctic Ocean amid record melt. Retrieved October 25, 2012 from <http://uk.reuters.com/article/2012/08/17/us-china-environment-idUKBRE87G0P820120817>.

and objectivity in treating the problems of the High North, particularly in the context of their search for bilateral agreements with the Arctic countries which can be spectacularly illustrated by the direction of Chinese politics towards Iceland. In September 2011, Icelandic Internet media started examining the interest of Chinese businesses in their country. The news website RÚV—Ríkisútvarpið, the Icelandic National Broadcasting Service (Haykowski 2011)—assessed that it was a result of the attempts of Beijing to build a strategic stronghold in the Arctic Region.⁴⁹ Alongside with the intended purchase by the Chinese investment fund of an “eco-golf course” and luxury resort on a 300 km² tract in Iceland’s desolate north-east corner, already covered by the world media, there have been constant endeavors by the Chinese investors to enter Iceland. Among others, those include participation in constructing a new hub-port, gas and oil pipeline through which the extracted raw materials are to be transported from the new sources around Iceland and Greenland.⁵⁰ Attempts of the Chinese authorities at strengthening relations with Iceland are clearly noticeable and can be exemplified by the recently started cooperation between the main banks of the respective countries.

The very same purpose was served by the Chinese President Hu Jintao’s state visit to Denmark in June 2012⁵¹ which is considered to be an excellent example of Chinese attempts at gaining influence in the Arctic and Greenland. The two sides signed 11 cooperation documents.⁵² “Beijing’s efforts bring about results. In December 2012, Greenland’s Parliament passed legislation to allow into the country foreign workers who earned salaries below the local legal minimum wage—the minimum wage there is one of the highest in the world” (Kublik 2013). If we take into consideration that should the U.K.-based London Mining Inc. (a firm backed by Chinese steelmakers and investing 2.3 billion USD into the exploitation of iron ore in Greenland) employ in its mines some three thousand Chinese low-wage workers, the above-mentioned legal solution clearly favors the Chinese.

Two other countries, namely **Japan** and **the Republic of Korea**, similarly to China, are much interested in gaining access to the energy resources of the High North. They carefully follow all the developments in the Arctic, and their policies towards the issues of this region are extremely well-measured if not outright cautious.⁵³ I am also convinced that their attempts to gain the observer status in the Arctic Council have a very significant influence on the form of their activities. They fully realize that their strong, innovative and technologically advanced economies

⁴⁹Iceland is often described as an ideal transport hub for Arctic shipping considerations, being perfectly located between Northern Europe and the East Coast of North America. This country can be, for example, a good place for transshipment and reloading on the new northern shipping routes.

⁵⁰More on the subject in Chap. 5.

⁵¹Two months earlier, during the visit of the Chinese Prime Minister, Denmark agreed to support the Chinese bid to gain the permanent observer status in the Arctic Council.

⁵²Following the contracts awarded to Danish companies in China, worth as much as 3 billion USD, for example Carlsberg will build breweries in the “Center of the World,” and the concern Maersk will develop one of the sea ports there.

⁵³More on the subject in Kubiak (2009).

may prove to be a strong argument in potential maritime licenses or investment considerations in this region.

Japan is particularly interested in environmental programs and passage routes through the Arctic area, and development of resources in the Arctic Circle, as well as creating effective mechanisms to settle potential disputes. As for the last issue, the Japanese Government is of the opinion that the Arctic should be recognized as part of the common heritage of mankind, and the international community should protect this area, take care of its sustainable development and environment protection, use it for peaceful purposes, and as a whole have access to the potential benefits.⁵⁴ Japan's position is that the legal issues related to the Arctic Ocean should be addressed within the existing legal framework, whose central framework is UNCLOS. It is stressed that should the work on establishing new law begin, the occurring changes ought to be considered with a substantial participation of the interested states, and not only the littoral ones.

As one of the largest economies in the world, a large import market and a significant energy importer and one of the world's largest traders not only in its own region, but also with the USA, Europe, and the Middle East, Japan is interested in the potential possibilities of sea transport. Should the reduction of ice cap allow for a larger zone and longer period of navigating the Arctic Ocean, then the distance, for example from Yokohama to Hamburg, will be shorter by 62 % compared to the Suez Canal route. "We are interested in environmental programs and transportation or passage through the Arctic area, and development of resources in the Arctic Circle," said Yoichi Fujiwara (2010), a spokesman for the Japanese Embassy in Ottawa, and these words, in my opinion, fully reflect the attitudes not only of the government, but also the media, public opinion, and the academia.

Today, the basic instrument of the Japanese activity in the Arctic is the research conducted, among others, by the National Institute of Polar Research (NIPR), Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Japan Aerospace Exploration Agency (JAXA), and a number of universities. "The Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) has launched a new interdisciplinary Arctic science project to clarify and evaluate the global influence of the Arctic, named the Green Network of Excellence (GRENE)" (Grzela 2012, p. 8). Scientists of this country have use of their own station in the Svalbard Archipelago,⁵⁵ and researchers gathered at Japan Consortium for Arctic Environmental Research (JCAR) deal with addressing long-term Arctic environmental research planning, and human resource development in the Arctic.⁵⁶ "Since

⁵⁴See Hidehisa Horinouchi (Deputy Director-General, International Legal Affairs Bureau, Ministry of Foreign Affairs of Japan). Japan and the Arctic. At the Japan-Norway Polar Seminar, Monday, 26 April 2010, own archive.

⁵⁵Japan is one the 13 countries that have their own permanent research stations there.

⁵⁶Compare: Written Statement by the Delegation of Japan at the Second Meeting of Deputy Ministers of the Arctic Council 15 May 2012 Stockholm. At <http://www.arctic-council.org/.../118-deputy-ministers-meeting-Stockholm-15-may-2012?...Japan>. Retrieved January 11, 2013 from <http://www.jcar.org>.

2009, Japan has cooperated with Norway in deploying sounding rockets in the Norwegian part of the Arctic, which are to help learn more about polar atmosphere and factors influencing climate changes... Moreover, Japan participates in the debates regarding the Arctic at several international fora, including the International Maritime Organization” (Grzela 2012, p. 9).

The Republic of Korea (South Korea) is becoming increasingly active in looking at possible Arctic ventures as the melting glaciers open up tremendous opportunities connected with utilizing the natural resources of the region,⁵⁷ new sea routes, and chances for scientific discoveries. Korea needs a stable supply of cold-water fish and Korean fish industries need new fishing grounds like the Arctic Ocean. The Arctic fishery is expected to contribute to a steady growth of Korean fisheries in a long-term perspective and to activate the new growth engine in the fishery sector.

These needs and hopes are perfectly exemplified by the first visit to the High North by the South Korean President Lee Myung-bak in September 2012, during which the Korean leader presented and explained the interests of his country in the region. At a meeting in Greenland,⁵⁸ Lee Myung-bak and Kuupik Kleist (Prime Minister of Greenland) signed the memoranda regarding common sea routes, resources development and scientific cooperation, including geology,⁵⁹ and announced the plan of joint development of “low carbon, green growth” projects, the undertakings which seek economic growth and new jobs through environmentally friendly technologies and industries, without releasing greenhouse gases.⁶⁰

In turn, in Norway, the President of South Korea and J. Stoltenberg, Prime Minister of Norway, agreed to partner with each other to tackle climate changes threatening the Arctic and to develop the resources-rich region without harming its indigenous people and the environment, including opening up polar shipping routes.⁶¹ The meeting provided also a suitable occasion to sign the memorandum of

⁵⁷More on the subject in Seon-hee Eom (2011).

⁵⁸South Korean President Lee Myung-bak paid a visit to Greenland in 2012 without going to Denmark first and without the presence of the Danish Prime Minister who is responsible for the foreign policy and Denmark’s security. This nearly gave Greenland the status of an independent state. More on the subject in South Korean President Lee Myung-Bak in Ilulissat. *Greenland Today*, September 10, 2012.

⁵⁹Several agreements were also contracted, among others, state-owned Korea Resources Corporation (KORES) has agreed to work with Greenland mining firm NunaMinerals to seek opportunities for joint minerals projects, exploiting deposits of rare earths and other strategic metals. More on the subject at: <http://in.reuters.com/article/2012/09/10/greenland-korea-minerals-idINL5E8KAAKP20120910>. Retrieved September 15, 2012.

⁶⁰See President Lee steps into the Arctic Circle for South Korea’s Arctic initiative, <http://www.korea.net/NewsFocus/Policies/view?articleId=102568>. Retrieved October 24, 2012.

⁶¹In July 2012, industry experts and government officials from Norway and South Korea met to discuss the prospects of global warming creating a sea passage across the North Pole. And the benefits are clear. The distance between ports in Western Europe and those in Japan, China and Korea is 40 % shorter through the Northern Sea Route than the typical route through the Suez Canal and the Mediterranean. However, while Korea on the one hand is pursuing the business opportunities resulting from the effects of climate change, there continues to be a strong political will on the Korean Peninsula to take action against the causes of climate change. In early 2012,

understanding in which both sides obligated themselves to assist their transport companies in opening up polar shipping routes. Furthermore, the politicians confirmed a partnership in tackling climate changes and protecting the environment,⁶² and biodiversity of the Arctic (Bennett 2012).

South Korea's indubitable asset is the shipbuilding industry (one of the world leaders), and the scientific and research potential. Due to large capabilities in the latter category, they conduct Arctic research in the polar station on Spitsbergen (established in 2002), called Arctic Station Dasan. In 2004, Korea Polar Research Institute (in the Korean city of Incheon) was launched, which spun off from the Korea Ocean Research and Development Institute. Simultaneously, "The agreement signed in May 2012 between Canada and Korea is to allow the first South Korean icebreaker 'Araon' to conduct research activities in the Canadian part of the Arctic Ocean (the Beaufort Shelf), checking for the region's gas hydrates found deep at sea or in offshore permafrost layers" (Grzela 2012, p. 11). It will also examine the effects of the release of methane gas on the Arctic environment.⁶³

When discussing Asian countries which seriously link their future with the High North, it is absolutely necessary to include the **Republic of India** whose engagement in the Arctic dates back to the British overseas territories. It was then that India, by virtue of the Svalbard Treaty of 1921, became a stakeholder in the Arctic. Today, the country wishes to secure a better access to discussions and negotiations in environment protection, economy, and politics in this area.⁶⁴ "The specified goals list: development of multilateral cooperation with the Arctic countries not only in the sphere of economy and science, but also broadening it by adding political and strategic aspects; researching the political environment in the Arctic and establishing a special strategy of India towards the Arctic; diminishing the confrontational style of contacts in this region; promoting the Arctic as a nuclear-free zone. India is a strong advocate of global nuclear disarmament and can play a vital role in promoting the idea (Grzela 2012, p. 11).

(Footnote 61 continued)

Korea approved an emission trading plan that will be implemented in 2015. In July 2012, Korea announced a new program intended to develop a satellite for monitoring climate change and air pollution in Northeast Asia. See the statement made by Hong Yoo-deok (Director of Climate and Environment Research Institute) who said: "If the satellite finds the exact origin and the path of pollutants from China, we can mitigate the damage to our forests and agriculture," adding that such data could also be used for demanding compensation from China; quoted after Peter Bjerregaard, The Arctic passes climate threshold, June, 2012, www.norden.org, p. 3. Retrieved August 29, 2012.

⁶²See more on the subject in Korea, Norway agrees on partnership for environment-friendly Arctic development. http://www.koreatimes.co.kr/www/news/nation/2012/10/120_119777.html (retrieved October 21, 2012) and <http://english.yonhapnews.co.kr/national/2012/09/12/57/0301000000AEN20120912008951315F.HTML> (retrieved September 21, 2012).

⁶³More on the subject in <http://english.yonhapnews.co.kr/business/2012/05/15/64/0501000000AEN20120515002800320F.HTML>. Retrieved July 17, 2012.

⁶⁴See more on the subject in Mitra (2012).

Although for quite a substantial period the government of India had not conducted any active policy towards the High North, the current dynamics of changes in the region has clearly intensified the research activities of this country. The Arctic studies in India date back to 1981 when the Department of Ocean Studies was established by the initiative of Prime-Minister Indira Gandhi and then a program of the Arctic research was developed. At the beginning of this century, India negotiated and signed a special program of Arctic studies with the Norwegian Polar Institute. In August 2007, the Norwegian part of the archipelago was visited by the first Indian scientific expedition. Since that breakthrough, India has been sending to the Arctic 3–4 scientific expeditions per year and in July 2008 “Himadri” research station was officially opened at Ny-Ålesund on the Spitsbergen.

The fact that the Republic of India is becoming the third country in the world in hydrocarbons consumption, responsible for 15 % growth of global demand for energy, in practice translates into the need for its active participation in the exploration of the polar riches. Since the country does not have sufficient financial and technical capabilities, India is counting first of all on the cooperation with Russia. “India already participates in Sakhalin projects and during the visit of Prime-Minister Manmohan Singh to Moscow in December 2009 the access of Indian companies to the European North of Russia was discussed. In December 2010, JSFC ‘Sistema’ and Indian largest oil and gas corporation ‘ONGC’ signed a framework cooperation agreement, and in 2011, it was announced that India might become a partner in the exploration of Trebs and Titov oil fields in Nenets Autonomous District” (Grzela 2012, p. 12).⁶⁵

No less attention to the issues of the High North, and the Arctic in particular, is paid by the European countries,⁶⁶ out of which, among others, France, Great Britain, the Federal Republic of Germany, Poland, and Italy already have the observer status in the Arctic Council.

France and the Arctic date back to the 18th century when representatives of that country reached the region. Today, France’s interest, strengthened by the appointment of the Ambassador for International Negotiations on the Arctic and the Antarctic (Polar Ambassador),⁶⁷ concentrates on:

⁶⁵The author, to prove her theses, lists the following sources: http://polish.ruvr.ru/2012_05_29/76362407/ (retrieved November 12, 2012); Official visit of Prime Minister to the Russian Federation, at: http://www.indianembassy.ru/index.php?option=com_content&view=article&id=797%3Apress-release&catid=53%3Avisits&Itemid=625&lang=en (retrieved November 02, 2012); Major deals between India and Russia, New Delhi, December 22, 2010, at: http://www.rusembassy.in/index.php?option=com_content&view=article&id=2122&Itemid=102&lang=en (retrieved November 02, 2012); Cabinet okays merger of ONGC’s Russia assets with Sistema firms, at: http://articles.economictimes.indiatimes.com/2011-06-20/news/29679979_1_russneft-imperial-energy-bashneft (retrieved November 02, 2012).

⁶⁶More on the subject in Interests and roles of non-Arctic states in the Arctic (2011).

⁶⁷It is Michel Rocard, former Prime Minister of the French Republic, appointed to this post (Ambassadeur en charge des négociations internationales sur les régions polaires, l’Arctique et l’Antarctique) in March 2009. See Rocard nommé ambassadeur de France en Arctique. *Le Nouvel Observateur*, March 18, 2009.

- Economic activity in the Arctic which is perceived by the French as the last remaining area in the world with untouched resources of oil and gas. Hence comes the strategic attention to place some French companies there (for example Total S.A., a French multinational integrated oil and gas company), but also special care is devoted to fishing⁶⁸ and transport. The later issue finds a clear reflection in:
- Maritime security and maritime protection, as well as concern about pollution caused by ships, the increase in maritime traffic and danger of pollution (stemming from emissions and waste from ships) as well as oil spills caused by tankers or drilling rigs, and also rights and freedom of navigation. As T. Młynarski writes: “French officials have repeatedly underlined the economic benefits resulting from an opening of the North West Passage and the Northern Sea Route, and Ambassador Rocard challenged Canadian claims that the Northwest Passage is part of the Canadian territory, and thus supported EU and US positions” (Młynarski 2011a, p. 12);
- Consequences and challenges of climate change⁶⁹ which open new opportunities for tourism, marine fishing, commercial shipping, exploitation of mineral resources, and increased military activity in the Arctic thus defining new conditions for France, and;
- Broader geopolitical interest to face the challenge of the High North being dynamically militarized.

Also the **Federal Republic of Germany** recognizes the Arctic as a new and most important geopolitical sphere in which the country wants to be present, be it only by virtue of the size of its commercial fleet. Germany maritime trade routes are of crucial importance. About 90 % of external trade is transported by sea. Non-European trade counts for about 30 % of Germany’s imports and exports. Of these, the trade with Asia accounts for 15 % of exports and 20 % of imports, so the new possibilities of sea routes in the Arctic waters are of tremendous importance. In 2009, the German Bremen-based Beluga Group claimed they were the first Western company to have crossed the Northeast Passage sailing from South Korea along Siberia towards Rotterdam. Germans import from Russia a variety of raw materials and supply goods to Western Siberia, hence their shipping companies are hoping to use the “North East Passage” along the Northern European and Asian coasts in the near future to transport goods between Europe and the booming regions of Eastern Asia. Germany seeks to broaden its influence in the High North via the EU and through own close cooperation with Norway, and treats the Arctic Ocean as a serious maritime challenge in the near future. Considering the fact that four out of five Arctic coastal states are NATO members—Canada, Denmark, Norway and the

⁶⁸French officials have called for the establishment of special environmental zones. These zones shall protect those areas that are particularly vulnerable to human activities. This should include the protection from regular and irregular fishing activities.

⁶⁹France is present in Svalbard by virtue of its scientific bases of Charles Rabot and Jean Corbel in the region of Ny-Ålesund, where several research programs are being conducted.

United States—in the event of a military conflict, those who are members of NATO would be urged to fulfill their treaty obligations.⁷⁰

Germany does not have an overarching “Arctic Policy.” Currently, its North policies are divided between its defense, foreign, and environment departments. Germany also executes its Arctic policy via the EU. All this is to assure achieving the following practical goals: (Interests and roles of non-Arctic states in the Arctic 2011, p. 8).

- Freedom of scientific research; Germany has been a world leader in polar research. Germany intensively develops its polar research programs, analyzing the regional as well as global implications of climate change. Currently, Germany maintains two permanent Arctic research stations: Koldewey Station at Ny-Ålisund in Svalbard and Samoylov Station in northern Siberia;
- Access to new energy resources as the country possesses advanced technologies to allow for extraction in extremely difficult conditions. Due to Germany’s anticipated exit of nuclear energy production, there is a need to seek and secure new supply sources of hydrocarbons;
- Freedom of navigation (Germany has the world’s third largest merchant fleet). Based on the 2006 White Paper, Germany seeks to prepare its fleet for expeditionary tasks (Paper White 2006);
- Guarantees that the strictest environmental standards are observed and that responsibility is taken for any environmental damage that occurs.

Germany’s Ministry of Foreign Affairs wants to ensure that the region remains the “common heritage of all mankind,” and the five countries bordering the Arctic agree for the riches of the region to be shared with other countries (Schwägerl and Seidler 2011).

When in August 2013 the *Guidelines of the Germany Arctic policy. Assume responsibility, seize opportunities* (www.bmelv.de) was made official, the Federal Government stated it views the Arctic as a region in transition with a growing geopolitical, geoeconomic and geoecological importance for the international community. The specific nature of the Arctic makes the region a central focus of German policy as it is perceived as having a great potential for the economies of Germany and Europe. At the same time, it is recognized that all actions must be carried out cautiously and sensibly, and only through enforcing the highest environmental standards the major environmental challenges could be met. The Federal Government will seek the establishment of protected areas to preserve Arctic biodiversity. The government stays convinced that as a partner with vast expert knowledge in the areas of research, technology and environmental standards, Germany can contribute to sustainable economic development and progress in this region. The Federal Government is ready to embark on maritime-sector cooperation (e.g. in polar technology) with the countries bordering the Arctic Ocean, and supports the right to freedom of navigation in the Arctic Ocean (Northeast,

⁷⁰See <http://www.german-foreign-policy.com/en/fulltext/57888>. Retrieved October 25, 2012.

Northwest and Transpolar Passages) in accordance with high safety and environmental standards. The government is also working to guarantee the freedom of Arctic research, based on the conviction that scientific findings are of fundamental importance for the Arctic policy. The government remains committed to international and regional conventions⁷¹—in particular the United Nations Convention on the Law of the Sea, the MARPOL Convention, the conventions for the protection of the marine environment and on biological diversity—and focuses its activities to ensure that the Arctic remains the region of only peaceful purposes.

Great Britain has been present in the Arctic for over four hundred years.⁷² Its current Arctic policy has been developed by the Ministry of Defence and endorsed by the Defence Board in December 2008 as the Arctic Strategy⁷³ which stresses the following: the necessity of maintaining stability and security in the region, developing cooperation, building trust, and joint governance structures. A significant determinant of this strategy of the early 21st century is the energy security of the country and the chances offered by the Arctic's resources. Hence the practical interests of the United Kingdom in this region (Interests and roles of non-Arctic states in the Arctic 2011, p. 9)⁷⁴ can be defined as generally concerning:

- New sources of oil, gas, minerals and fisheries;
- Scientific research on climate change and its impact on fauna;
- New shipping routes in the North. As stated by Młynarski (2011a, p. 14), “A key security aspect is to keep Arctic trade routes safe and open. As in the case of France, the UK still has the second strike nuclear capabilities and continues to patrol Arctic waters with nuclear armed submarines, and conducts military exercises in the Arctic”;
- Opportunity to influence the international scene. It is of utmost importance in the British opinion as security in the Arctic is not only the sphere of economy, climate or environment, but also a military matter.⁷⁵ Therefore, the British Secretary of State for Defence, Liam Fox, on November 10, 2010 took part in the meeting of Nordic and Baltic defense ministers where he not only did signal his country's growing interest in the Arctic's security, but also pointed to Norway as Britain's “key strategic partner.”⁷⁶ He also added that Great Britain

⁷¹This is how the Germans write about the Spitsbergen Treaty: “The Spitsbergen Treaty forms the legally-binding framework for states' rights and obligations with respect to the Arctic.” Retrieved October 25, 2012 from <http://www.german-foreign-policy.com/en/fulltext/57888>.

⁷²See Sect. 2.2. Currently, in the research center Natural Environmental Research Council (NERC) in Ny-Ålesund a 15-million-pound Arctic research-environmental program for the years 2010–2015 is realized. More on the subject in Arctic Research Programme at www.nerc.ac.uk. Retrieved: August 22, 2012.

⁷³See Minister for International Defence and Security, at the Joint NATO/Icelandic Government conference, Reykjavic, Iceland on 29 January 2009, Ministry of Defence Archives, <http://webarchive.nationalarchives.gov.uk>. Retrieved: July 11, 2012.

⁷⁴See also Depledge and Dodds (2011).

⁷⁵See also Minister for International Defence and Security 2009.

⁷⁶Over two thirds of crude oil imports by Great Britain come from Norway.

would more intensively than before observe the developments in the High North, particularly where the British interests lie (UK displays 2010).

In 2013, Polar Regions Department of the British Foreign and Commonwealth Office published a 40-page document titled *Adapting To Change: UK policy towards the Arctic* (Adapting to Change 2013) which, among others, states the following: “We will work towards an Arctic that is safe and secure; well governed in conjunction with indigenous peoples and in line with international law; where policies are developed on the basis of sound science with full regard to the environment; and where only responsible development takes place” (Adapting to Change 2013, p. 14).

In accordance with the document, the British government’s approach towards the Arctic is guided by three principles: respect, leadership, and cooperation. The UK expresses full respect for the sovereign rights of the eight Arctic States and the people who live and work in the fragile environment of the Arctic. Fundamentally speaking, the UK is of the opinion that the economic governance should rest with the eight states and the people who live there. However, should the need come, the UK seems to be ready and willing to take on a leadership role in Arctic issues of global importance, to name only combating climate change which has such an important impact on the Arctic. The country emphasizes also the need for partnership with other states, business and international organizations in addressing complex issues affecting the Arctic. One might venture to say that *Adapting to Change: UK policy towards the Arctic* recommends a policy of balance that recognizes the differences among the Arctic stakeholders. This policy seems to reconcile the responsibility of the states for effective governance in a global environment with providing opportunities for economic growth and also ensuring prosperity for the people. The policy presents several actions the UK is taking in order to promote effective Arctic governance and protection of the environment. Obviously, the policy mentions British interests and openly encourages responsible activity of UK businesses.⁷⁷

Another European country, which recently gained the observer status at the increasingly more important Arctic Council, is **Italy** whose concerns ENI and Enel opted for cooperation with the Russian Federation. On April 25, 2012, Italy’s Eni and Russia’s Rosneft signed a strategic cooperation agreement whose goal is the exploitation of oil and gas resources in the Arctic. The agreement was enlarged to include the exploitation of oil and gas in the Black Sea (Russian Rosneft). On the basis of the agreement (very similar to that signed a week earlier between Rosneft and the American concern ExxoMobil), ceremoniously accepted by the then Prime Minister Vladimir Putin, ENI received 33.33 % of shares in the holding with Rosneft which will undertake the exploitation of the Arctic deposits in the Barents Sea and the Black Sea.⁷⁸ The deposits are estimated to hold total recoverable

⁷⁷See the full text of the document.

⁷⁸Russia’s Rosneft and America’s ExxonMobil signed documents which laid out the details of the agreements on the strategic co-operation and joint projects of the two companies, signed in January

resources of 36 billion barrels of oil equivalent,⁷⁹ or twice less than the resources which Russia brought into the partnership with Exxon. Rosneft President Eduard Khudainatov estimates the joint investment with ENI at 125 billion USD, but it is ENI that is obligated to invest 2 billion USD in geological prospecting in the Barents and the Black Sea. ENI reports that the first exploration well in the Arctic Ocean blocks will be drilled only in 2020. Rosneft will also participate in ENI's international projects as part of the strategic partnership deal.

However, in the second half of 2013, the Russian conglomerate Rosneft, Gazprom and Novatek bought out shares in the Arctic natural gas fields from the Italian energy consortium of ENI and Enel⁸⁰ which the Italian companies had acquired from Yukos.⁸¹ Thus the north gas fields which in four years will produce the output of an equivalent of the annual Russian gas exports to Germany became fully controlled by the Russians. The Italian consortium pulled out of the exploitation of these gas fields in Siberia making great profit. Owing to the afore-mentioned business deals, the Italians not only earned Kremlin's gratitude (for protection of Gazprom) but also, as stated by Kublik (2013): "made a fortune for acting as a middleman or, in fact, for providing a protective umbrella for Gazprom. For nearly half of the shares in the Siberian gas deposits, ENI and Enel paid ultimately approx. \$0.6 billion and then sold them for nearly \$5 billion."

(Footnote 78 continued)

2011 (on the Russian Black Sea shelf) and in August 2011 (on the Kara Sea in the Arctic). ExxonMobil has given Rosneft participation in its projects in U.S. (30 % in a project involving the extraction of difficult-to-access oil), in the Gulf of Mexico (30 % in the twenty oil fields owned by ExxonMobil) and 30 % in the project covering the extraction of shale oil in the Canadian province of Alberta. The investment is estimated at 200–300 billion USD. The final decisions regarding the investment into Arctic deposits will be made by Exxon and Rosneft on the turn of 2016. If the prices of crude oil fall down significantly, the venture Exxon-Rosneft will pay no taxes at all. As stated by A. Kublik, "Owing to this agreement, Exxon will enlarge its oil deposits in the Arctic which holds some 20–25 % of the world deposits of oil and gas yet unexplored. Moreover, in Russia, the exploitation of Arctic deposits does not meet so many protests by ecologists as in the West." Kublik, A. *Antarktyczna alternatywa. Gazeta Wyborcza*, April 21, 2012.

⁷⁹See Co Włosi dadzą za Arktykę. *Gazeta Wyborcza*, April 26, 2012.

⁸⁰One should keep in mind that the Italian state-controlled consortium ENI and Enel had a 49 % stake in SeverEnergiya while the rest was owned by the company set up by Gazprom Neft with the private gas company Novatek, Russia's largest independent natural gas producer. .

⁸¹Yukos used to own SeverEnergiya. In 2007, the company was sold off at a forced auction the proceeds from which were then used to pay off the settlement for back-tax bills as claimed by the government. As writes A. Kublik (November 24, 2013): "At the liquidation auction, which lasted 10 min, the consortium ENI and Enel purchased the lot which included SeverEnergiya and a 20-percent stake in Gazprom Neft. The Italians paid \$5.83 billion for the package but almost immediately recovered their investment. Soon after the auction and the formal acquisition of Yukos assets, the Italians sold the 20-percent stake in Gazprom Neft to Gazprom for \$3.7 billion. Then, for 1.5 billion Gazprom repurchased from the Italian consortium a 51-percent stake in SeverEnergiya which Gazprom later sold to the company in which Novatek had shares." Retrieved December 01, 2013 from http://wyborcza.biz/biznes/1,100896,15008703,Rosjanie_wykupili_Wlochow_z_arktycznych_zloz.html#ixzz2lgEoBgGX.

It is worth-mentioning that before Gazprom was the main partner of ENI in Russia.⁸² It was with Gazprom that ENI established the consortium South Stream⁸³ which undertook the construction of a pipeline transporting liquefied gas across the Black Sea to southern Europe, bypassing both Turkey and Ukraine. In 2011, Italy's ENI and Russia's Gazprom signed an agreement confirming the handover of a Libyan oil field to the Russian giant.

Even such brief remarks on the increasing international interest in the region (mainly on the part of non-European states) allow to state that in the case of non-Arctic countries this interest becomes a distinctly emphasized element of their international policies and definitely is not a result of mere temporary fascination of a fleeting fancy.

The growing dynamics in the interest shown towards the High North ought to be translated into the inspiration for a serious discussion on the vision of developing the High North in the upcoming years, and the Arctic in particular.

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⁸²ENI purchased the Yukos gas assets at auction after it went bankrupt due to the actions by the Kremlin, and then immediately resold the controlling packet of shares to Gazprom, which protected the latter from possible court suits by the shareholders of Yukos.

⁸³In the presence of Prime Minister of the Russian Federation Vladimir Putin (in Sochi, at the International Investment Forum on April 16, 2011), Gazprom, ENI, EDF (French energy company) and Wintershall (German) signed an agreement on construction of the South Stream pipeline, a rival undertaking for the Nabucco gas pipeline. Russians first managed to sign the agreements with Bulgaria, Hungary, Serbia, Austria, Italy and Turkey through whose territorial waters the pipe on the bottom of the Black Sea will go. Then they convinced Italian ENI to diminish their shares and give the difference to the French EDF. In the venture, South Stream Gazprom owns 50 % of shares, Eni 20 %, EDF and Wintershall 15 % each. Gazprom estimates the investment at EUR 15.5 billion. The first leg of the pipeline (16 bcm³ annually) from Russia to Bulgaria under the Black Sea, the Balkans, Italy and Austria will be ready by 2015. By the end of 2018, the South Stream Offshore Pipeline will allow 63 bcm of natural gas to be transported to European markets every year. See *Rzeczpospolita*, September 17–18, 2011.

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The High North

Between Geography and Politics

Czarny, R.M.

2015, XVIII, 244 p. 4 illus., Hardcover

ISBN: 978-3-319-21661-4