A KONRAD-ADENAUER-STIFTUNG PUBLICATION

BELOW THE SURFACE

Russia's and China's Approaches to the Arctic:

Threats or Challenges for the Global Community?

An Analysis of Russia's and China's Role in the Arctic Region

Lutz Feldt and Patrick Hébrard

January 2021

KONRAD ADENAUER STIFTUNG

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ISBN 978-1-7774289-1-4

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About the authors

Vice Admiral Lutz Feldt joined the German Navy in 1965. He was commissioned in 1968. Sea duty assignments for 13 years with leadership functions on all command levels, including two tours as a commanding officer, provided a wide experience at sea with emphasis on operations, communication and electronic warfare. Shore duty assignments in naval staffs, the Federal Ministry of Defense, in NATO as Assistant Chief of Staff Operations and Logistic. He became Commander Military District Coast, a national joined command, Commander in Chief of the German Fleet and Commander in Chief of Naval Staff in Bonn and Berlin. He retired in 2006, after having served in the Armed Forces for 41 years. Since then, Vice Admiral Feldt has taken over several posts of honor: he became President of the German Maritime Institute until 2012, he was the President of EuroDefense Germany until 2017, he has been contracted by the European Commission for the Instrument for Stability – Critical Maritime Routes. From 2009 to 2010 he was contracted by the European Defense Agency (EDA) as a member of the Wise Pen Team, working on the topic of maritime surveillance and maritime security. Another study for EDA about European Naval Capabilities has been completed in June 2012. He is now a director of Wise Pens International Limited and is engaged by the EDA, the European Commission and several other institutions, dealing with the whole spectrum of maritime safety, security and defense matters. In this period he was involved in several Arctic studies and conferences. Besides these topics he has given several lectures about leadership responsibilities and the interaction between military and political leaders.

Vice Admiral Patrick Hébrard was born in Saigon in December 1949. He joined the French Navy as a naval aviator. He commanded a squadron of Super Étendard, a DDG and an aircraft carrier. Ashore, he has been the Chief of the aircraft carrier Charles de Gaulle's Project, before being committed to the Joint Staff successively as the Chief of the French Joint Operational Centre, DCDS Ops and Inspector of Operations and Territorial Defence. During this period of eight years, he visited forces engaged in Timor, Afghanistan, the Indian Ocean, the Balkans, Lebanon, Chad and Ivory Coast. He was promoted Vice-admiral in September 2004 and retired in December 2007. Vice Admiral Hébrard is now a consultant in strategy and crisis management. Since 2009, he has been contracted by the EDA as a member of the Wise Pen Team, later Wisepens International. He also published articles and studies on Maritime Affairs and Strategy, among them the Arctic, China as a polar power and China's maritime strategy. He is an Associate Fellow of the Foundation for Strategic Research, a board member of Eurodefense-Fr and the Institute of High Defence Studies. He is a regular speaker at various seminars and symposia.

At a glance

- **Russia and China are driven** by domestic political pressure and the desire to be recognised as global players.
- **Both states acknowledge mutual interests** in the Arctic region – Russia's development of its country's northern regions, China for the exploitation of its resources, and new lines of and military collaboration.
- **Russia will utilize its chairmanship** of the Arctic Council to increase its influence by offering scientific programs by way of door openers and intends to cooperate with foreign scientific institutions. Scientific diplomacy has so far proved successful for both Russia and China.
- **Cooperation between Russia and China** will enable each country to counterbalance the US-led western powers and influence with respect to strategic affairs and international law for as long as the entente continues.
- **Russia and China will continue** being both Janus-faced with respect to international law and in executing a military show of force.

En un coup d'œil

- **La Russie et la Chine** sont poussées par la pression politique intérieure et le désir d'être reconnues comme des acteurs mondiaux.
- **Les deux États reconnaissent des** intérêts mutuels dans la région arctique : le développement par la Russie des régions septentrionales de son pays, la Chine pour l'exploitation de ses ressources et de nouvelles lignes de collaboration militaire.
- **La Russie profitera de sa** présidence du Conseil de l'Arctique pour accroître son influence en proposant des programmes scientifiques en guise d'ouverture de portes et a l'intention de coopérer avec des institutions scientifiques étrangères. La diplomatie scientifique a jusqu'à présent fait ses preuves tant pour la Russie que pour la Chine.
- **La coopération entre la Russie** et la Chine permettra à chaque pays de faire contrepoids aux puissances occidentales dirigées par les États-Unis et d'exercer une influence en matière d'affaires stratégiques et de droit international tant que l'entente se poursuivra.
- **La Russie et la Chine** continueront d'être toutes les deux face à face en ce qui concerne le droit international et l'exécution d'une démonstration de force militaire.

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Abstract

According to statements by the media and the public, Russia and China are currently the most visible actors in the Arctic. China's northern Silkroad approach is self-evident as a proximate, alternative sea route for China and other countries. Russia, for its part, is obliged to find solutions to a wide range of domestic and international threats, which must be modified as challenges, though it is the Arctic country with the most resources and an Arctic transit route. Russia is challenged by a nuclear heritage, both to the east and the west of the Northern Sea Route. The importance of a steadily growing economy and the strategic ambition to be recognized as a global actor constitute key motives for untroubled development. The economy is based on transportation – both on sea and land – of energy and of a wealth of resources. China's self-understanding is as a "near Arctic state" with rights anchored not in international law but in a comprehensive national strategy which combines the economy, administration, para-military and military means in an impressive manner. The common assessment of the United States, as well as NATO, as constituting threats has paved the way for closer cooperation between Russia and China in general and in the Arctic region in particular. Both countries focus on similar national priorities and, as the case may be, use or ignore multinational institutions for their respective national interests. Climate change and environmental protection are acknowledged and treated, though have less priority than they do in other Arctic countries. Canada and the European Member of the Arctic Council award high priority to non-economic issues, the rights of indigenous peoples and to climate change. The effects of spill-over and spill are already occurring and will continue to do so. When focussing on Russia and China, it ought not to be forgotten that the causes of climate change within the Arctic are

similar to those causes from without, and that national interests are becoming more important than are common Arctic interests. The issue of "Freedom of Navigation" must be solved collaboratively and will take considerable time.

Introduction

All questions pertaining to the intentions and objectives of Russia and China in the Arctic regions are becoming increasingly relevant. Among other things, it is Russia's chairmanship of the Arctic Council[1] (AC) next year that prompted the formulation of the present study, which deals with the perspectives of both countries and supports its rationale even more. The future role and necessary development of the AC are urgent. One further aspect is the analysis of Canada's relation to both the above actors. Whereas, these three countries comprise one focus relations between the five littoral countries and the other three within the Arctic Circle is also relevant.

For Russia and China, the situation is quite different. The study thus begins with a two-part analysis of the Arctic policies and activities of the two countries. This section concludes with a critical assessment of their current and medium-term common actions. Today's rapid change in interests and ambitions makes it almost impossible to project further than a five-year period. After an extended period of less interest in Arctic affairs, the United States is currently paying greater attention to the region, and in redefining their interests by way of developing new strategies.[2] This signifies a major issue for Russia and China: while questioning the validity of strategies, they continue to define aims, whereby implementation is directly proportionate to funding.

Both sections offer detailed insights gleaned from open sources and current Internet research. Use is made only of those articles and documents deemed plausible and that indicate an enhanced, balanced view of Russia and China. Such material is drawn on and cited both with respect to the perspectives they provide on domestic issues and the long-term global impact of power competition. Reference is made to key literature and

scholarly publications for background information, whereby for a number of topics the pace of change has meanwhile rendered their treatment obsolete. Some fundamental findings are taken from a study on the Arctic in which both authors have collaborated.[3] It is to be noted, however, that the number of open sources on all manner of subjects is available and may contribute to providing a substantial and comprehensive picture.

Russia's tremendous development, along with the range of criteria contributing to it as an Arctic state over the last ten years – a development begun as early as 2000 – and the criteria for this development, are examined. In contrast to the majority of studies, the approach to Russia employed in the present article begins with the challenge posed by nuclear waste in western and eastern Russia, something which represents both serious environmental as well as military dimensions, and that constitutes an overarching framework for economic development. The salient position of the economy for safeguarding Russia's well-being, along with the desire for acknowledgement as a global player, are also treated. The above is then followed by an investigation of the environmental aspect and the conviction of regional and global responsibility for the mid-term future along with Russia's stance on Europe. The question as to whether Russia can assume the bridge-like function between Europe and Asia is also discussed in this section.

Russia's influence on the other states and the western companies which are already heavily committed to various business projects, together with relations to Canada conclude this section of the study.

The study analysed the strategy China has used to become what it calls a "near Arctic state." Initially concealed behind motives to which the international community could only approve, a strategy of power then gradually began to appear and about which the White Paper published in 2018 only partially outlines. China's relationship with Russia, as based mutual interests, allows it to strengthen its presence in the High North and thus justify its claims to participate in the future governance of the Arctic. Thus, a relationship of mutual dependence is established between Russia and China the future of which it is still difficult to anticipate, a relationship of economic importance for Russia and of strategic significance for China.


PART ONE
Russia
Lutz Feldt

1
Introduction

Among other things, one of the aims of the present paper is the identification of some of the central driving forces, factors and concomitant criteria that have shaped Russia's future Arctic policy; it thus provides an overview of the key issues to be considered.

The study concludes with an assessment of those things that have been possible to realise and the related priorities that will be set and that will drive future development. Both states, Russia as a wholly arctic state and China as an active observer and self-appointed "near Arctic state" comprise the focus of the present analysis. In view of the fact that nationally agreed strategies are generally a reliable source for determining ambitions, the study investigates the development of Russian and Chinese strategy and policy over the last ten years. For a better integration of current strategies among all Arctic countries, a brief evaluation is required. The range of options become evident, whereby the common interests of both states to a certain degree overlap. Precisely to what extent this is indeed the case, is dealt with in greater detail in the conclusion.

Russia's core interests have remained unchanged over the foregoing ten years: all strategy and policy are based on economic priorities, more specifically, the development of hydrocarbon extraction and the implementation of the Northern Sea Route. Of particular importance for this analysis is the relationship and balance of power between Russia, as one of the key actors in the Arctic Council and the Arctic Five, and China, as a very engaged observer in the Council together with its relations to the other member states of the Council. Norway, Finland and China share borders with Russia, albeit different in scope, and thus establish a strategic factor.

The timeline of the study covers a rather long period, from 2010 to 2030.

One key aspect of research is to understand the extent to which developments over the previous ten years help to determine subsequent events over the next ten-odd years.

Having mentioned what drives Russian and Chinese interests, along with their concomitant criteria, we now turn to those criteria which are either not, or else less influenced or directed by the other countries. Climate change constitutes one such driving factor that both scientists and actors of all professions regard as having undergone an unexpectedly high degree of change since 2010. For all countries, technical development is the option. Limited access to state-of-the-art technology due to political sanctioning has reduced progress in capability.

Economic opportunity is closely connected to this high-paced development, bearing in mind that the Arctic climate is accountable for the global climate to a far greater extent than research has so far been able to determine. Thus, Russia's and China's policies and priorities are of key importance in this paper. Resources exploitation and shipping are examined and exhibit varying degrees of progress.

Oil and gas exploitation, as well as commerce have assumed a new significance for Russia as a producer and China as a consumer, whereby port infrastructure and the shipping industry are closely linked.

The interplay of factors necessary for further developing the Arctic region, however, represents a major challenge. Thus, the one further key question concerns the extent to which the two most centralist of administrations will be able to manage their respective ambitious agendas on the ascent to the top.

The study goes on to identify climate change, economic, political, technological, and military-related aspects. Military issues have increased in Russia's Arctic policies since 2014, and the country's visible military cooperation with China has enforced what one might call an arms-race situation of sorts, both in the Arctic region and beyond.

Whereas, socio-cultural criteria, including the status of indigenous peoples may influence Russian Arctic ambitions, they remain inadequately acknowledged due to the predominance of economic factors.

Other member states and observers, with an emphasis on Canada as the second Arctic State with Northwest Passage must also be accounted for.

1.1 Russia's old and new interests in the Arctic: Which interest has been foremost in Russia since 2014?

This section of the joint study focuses on Russia's approach to the Arctic, namely, whether Russia will threaten or challenge the global community by its methods and actions for achieving its Arctic ambitions.

One unambiguously major fact when dealing with the Russian Federation – contemporary Russia – is that, as an Arctic state, Russia has the longest coastline, the most extensive territorial waters and, following bi-and multi-lateral negotiations, the largest Exclusive Economic Zone. Furthermore, with its hinterland the Arctic Ocean is one of the key regions Russia seeks to regain and open, both domestically and internationally. It may be assumed that the former interest, which dates from the Cold War era, represents the new objective. It ought not be forgotten that Russia is scheduled to assume chairmanship of the Arctic Council in 2021. With the exception of military and para-military matters, along with security and defence, the Council debates all topics.

The Arctic Coast Guard Forum was established in 2015 for the purposes of dealing with safety and security issues, and for supporting search and rescue activities in the Arctic region. The founding of the Arctic Security Forces Round Table in 2011 augmented the Search and Rescue agreement, and has been operating without Russia since the latter's occupation of the Crimea.[4] This restricts its value and significance considerably, though there is urgent need for a forum for discussing military and defence issues: while a great many institutions are concerned with Arctic topics, there is, in fact, no institution that deals with security and defence matters. As part of the 1996 *Ottawa Declaration*, founding member states expressively excluded all military topics in order to avoid irresolvable situations. The Arctic has since changed considerably, one consequence of which was the foundation of a Council secretariat in 2012, located in Tromsö, Norway.

1.2 The Arctic is an ocean

To ensure a better understanding, a brief introduction to the Arctic as an Ocean is called for. The region is surrounded by five countries, to which may be added three others, parts of whose territory lie within the Arctic Circle, depending on which perspective we adopt.

Geography helps to better understand a strategy and the implications thereof. In answer to the question as to whether geography can change, the present study, which covers the foregoing ten-year period, answers in the affirmative. The Arctic Ocean is covered by ice and has thus, for considerable time, been regarded as land/mainland. During climate change the issue of land issue diminishes, whereas the understanding thereof also changes rather rapidly. In contrast to Antarctica, the Arctic is an ocean. The ice was one impediment for shipping and resources exploitation and exploration. Rapidly changing weather conditions, extremely poor navigation equipment and over six months of practically no daylight means that for all intents and purposes it has been a "no go" region.

From a military perspective, the Arctic Ocean became a strategic issue during the Cold war, with a clear focus on nuclear deterrence based on surveillance and reliable information sharing and nuclear-powered and equipped ballistic submarines. Both antagonists, the United States and the Soviet Union operated nuclear submarines under the ice cover and beyond. This, purely military interest, is diminishing. Following the end of the Cold War, from 1990 and for some time thereafter, scientists collaborated successfully in the Arctic Ocean. Based on trust and the exchange of data, this ongoing "scientific diplomacy" has proved successful. Whether the idea of influencing other Arctic topics will function remains questionable. For all members and observers of the Arctic Council, scientific engagement is crucial; for China it appears to be a kind of door opener to the Arctic.

Today, the rapid pace of ice thawing is unexpectedly high: depending on which scientific model is used, access to and within the Arctic Ocean varies. However, melting is a fact which not only concerns the Arctic Ocean; melting permafrost in Siberia is already altering onshore geography.

"Russia dominates the Arctic geography and possesses the corresponding dominant surface capability and infrastructure. As an Arctic state, Russia has legitimate sovereign interests in the region, including navigation safety, search and rescue, and environmental protection."[5]

This view from the United States Coast Guard is then qualified by an unambiguous "however", indicating United States' interests and national ambitions. Following a long period of minor interest in Arctic issues, the United States has been increasingly changing its ambitions and focus to the Arctic Ocean. We shall now turn to more general aspects.

1.3 Who's who in the Arctic?

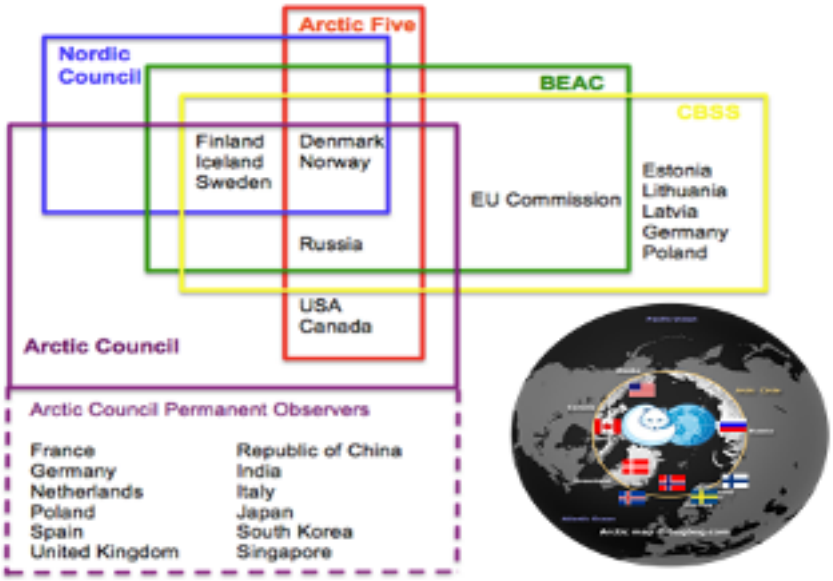
Eight countries belong to the Arctic Council, the major council incorporating several assemblies that deal with Arctic issues. To date, the Arctic Five have sought to establish a separate body with limited effect. Barents Euro-Arctic Council (BEAC) and The Council of Baltic Sea States (CBSS) are regional assemblies which support the Arctic Council with their perspectives.

"There is no precise, internationally coordinated and generally legally valid definition for the Arctic eight. The most frequently used geographical definition of the Arctic includes the area north of the Arctic Circle (66 ° 32'N) and corresponds to about 8% of the earth's surface. However, this definition is often changed taking geopolitical boundaries and other features into account."[6]

Another current perspective is the limit in the growth of trees. The way to define the Arctic is life, according to which climate change follows not immediately but in the medium-term. Tree growth is a new aspect of pragmatic understanding. Melting sea ice is changing geography and thus all activities at sea and ashore.

All those criteria enclose, however, a substantially common, essentially maritime region, as climactically and developmentally the surrounding Arctic and Sub-Arctic land is directly influenced by the Arctic Ocean.

Thus, one indisputable geographic definition of the Arctic Zone is the sea-land region, which is dominated by the Arctic Ocean.



Belgian Defence College, Arctic seminar, 128 DivMar 18 December 2013

One important distinguishing feature of the Arctic Ocean is that it is the shallowest of the five major oceans with an average depth of 1000 metres, a factor that makes almost all sea-beds accessible to exploration.

Its continental shelves are also the widest in the world. Both facts are important for a better understanding the Russian position. Russia's Arctic coast provides a greater number of ports, both for domestic supply as well as for international transition, though some are river ports that require extensive infrastructural renovation if they are to develop.[7]

The downside is that, unlike the Russian side, there is a significant shortage of deep-water ports on the North American continent. The need for ports on the Canadian side, making the Northwest Passage safe, is the responsibility of Canada. Both sea routes are limited in draught sections in several areas and are thus prone to blockage by grounded icebergs.

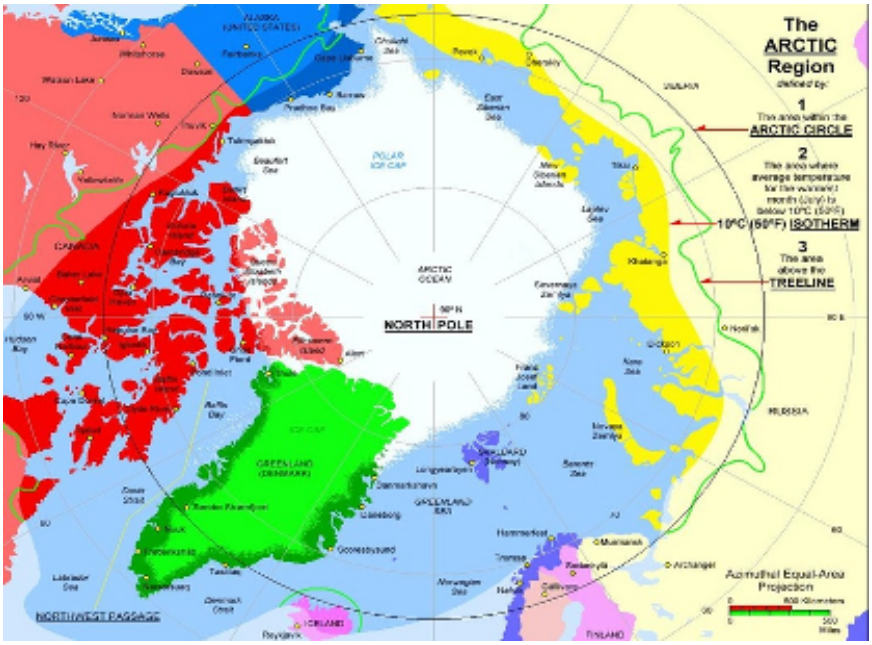
1.4 The Arctic is not uniform

All general definitions must account for the fact that the "Arctic" does not exist as a whole. Its regions are substantially different and require commensurate treatment. This first part of the present study focuses on Russia and concludes with a second part dealing with China. For Russia, as the Arctic country with a vastly long coastline extending from the Barents Sea to the west bordering Norway, to the Bering Sea and the Sea of Okhotsk bordering China to the far-east has an important vote and multinational responsibility. It's de facto coastline extends some 24,140 kilometres. The view of this area has undergone significant change since 2014. It represents an additional challenge for Russia with respect to major climatic and weather conditions in the West and in the East.

Considered as a whole, the different regions of the Arctic are characterized by considerably different geographical conditions, whereby the western part of Russian Arctic is substantially different from the eastern part. Approximately four million people inhabit the Arctic region, seventy per cent of whom live in Russia, with a ten per cent minority of indigenous peoples.

It should be noted, that in Canada and Greenland they have their own rights and do not represent a minority. All activities, whether commercial, social, military or cultural are adapted to the extreme climatic conditions, and indigenous people vote on aspects of these activities. The climate conditions undergo permanent and unpredictable changes in local and regional areas. The fact of climate change is generally accepted in Russia; the consequences of such change are dealt with differently, whereby environmental protection at sea and ashore are not the priority of regional and central government. The impact on local and regional areas must account for bad weather conditions, extreme storms, fog and a dangerous mixture of ice and water in all regions that share a direct border with the Arctic Ocean.

The general rule that seventy per cent of the globe is covered by water, that eighty per cent of the world's population live up to 100 kilometres off the coastline and the ninety per cent of the goods are transported by



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sea, is not valid for the Arctic Ocean. To better understand the situation this well-established division is helpful:

1. The terrestrial areas of the eight neighbouring countries of twelve nautical miles
2. The exclusive economic tones of the five coastal states of 200 nautical miles, and
3. International waters or the open sea.

These divisions are based on the *United Nations Convention on the Law of the Sea* (UNCLOS).[8] Another important treaty is the *Svalbard Treaty*, signed in 1920. This treaty clarifies rights and responsibilities concerning Svalbard and the islands belonging to the archipelago.[9] Russia requested clarification and Norway, as the sovereign country, refused discussion of different interpretations of the treaty.

No other comprehensive treaty for the Arctic Ocean exists. The members of the Arctic Council have no interest in a special Arctic agreement.

The *Ilulissat Declaration* of 27 May 2008,[10] made it clear that the coastal states of the Arctic Ocean clearly opposed the need and the possibility of such an agreement or an additional Arctic treaty. This, and especially the agreement for further dialogue and negotiations on conflict resolution, had been confirmed.

Cooperation and conduct, or rather governance in the Arctic Ocean is laid down by the UNCLOS framework and customary international law. From a geographical point of view, difficult questions concerning the continental shelf must be solved. This is set to be a long-term and open-ended undertaking. The identification of common interests is the major driver for solving existing disputes.

This process runs through the UN Commission on Limiting the Continental Shelf. Most Arctic countries have already submitted their applications to the Commission and the process has so far been conducted in a cooperative manner. However, it may take several years or even decades before the boundaries between the continental shelf and the international seabed are finally settled and the assignment of the shelf regions is complete. Should the ice continue to melt at the present rate, then the direct passage through the pole will be the preferred transit route. This would have a serious impact on transitional shipping, the NSR and the WSP.

"Within the existing frameworks, the Arctic Ocean and its different seas are largely subject to the sovereignty and sovereign rights of coastal states, including their Exclusive Economic Zone (EEZ), which includes water and seabed within 200 nautical miles. Marine areas beyond the EEZ form the high seas, are areas outside of any national jurisdiction. The ocean floor beyond the continental shelf of the coastal state is an international ocean floor, which is also referred to as 'The Area'." [11]

1.5 Russia's path from 2009 to 2020

One interest of the present study is to further elaborate on the development of Russia's goals and ambitions as set out in its strategic and policy documents, and to compare these to its actions. The second purpose is to compare this process with the new strategy, published in March 2020.

In this connection, one further important issue is the various Russian and other Arctic Council members' perspectives and the observer countries.

Each policy, whether former or most recently published, begins with Russian national interests. The order of importance is economic and resource exploitation and the Northern Sea Route, whereby security and defence issues occupy the forefront. To date, the treatment of nuclear waste has not received prominent attention, but the national and international measures for dealing with this crucial subject have been ongoing for many years.

2

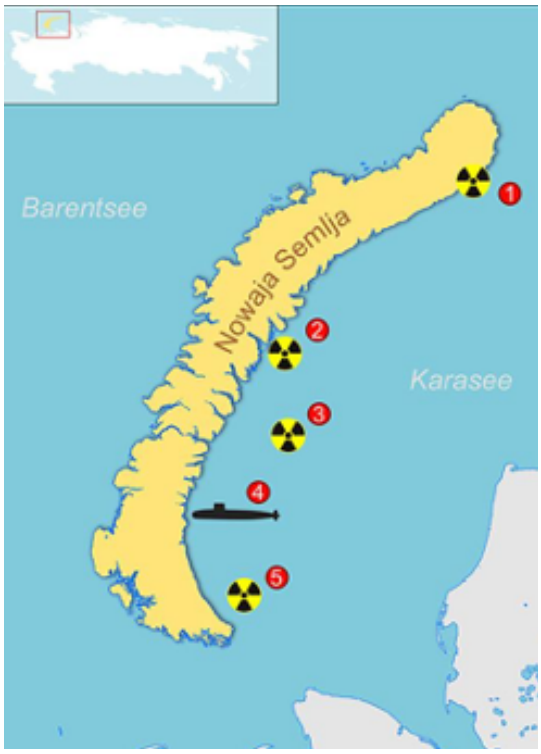
The present study begins with another crucial concern, namely, the nuclear issue

"**From 1946 through 1993,** thirteen countries used ocean disposal or ocean dumping as a method to dispose of nuclear/radioactive waste. The waste materials included both liquids and solids housed in various containers, as well as reactor vessels, with and without spent or damaged nuclear fuel. Since 1993, ocean disposal has been banned by international treaties. (*London Convention*, 1972, *Basel Convention*, MARPOL 73/78)."[12] This general overview and introduction into the global dimensions of nuclear waste dumping into world's oceans is taken from Wikipedia and provides an explanation as to why a principle change has occurred – prompted by international agreements since 1993 – and nuclear dumping into the Arctic and Northern Pacific is not an exclusively Russian problem.

One past and present concern for Russia and its neighbouring states pivots on the problem of nuclear waste and the risks and threats which occur from this dangerous waste in the Barents and Kara Sea to the western side and in the Bering Sea, the Sea of Okhotsk and off Vladivostok on the eastern side.[13]

With the assistance of numerous foreign governments and hundreds of international experts over the past 30 years, Russia has safely disposed of the 198 obsolete nuclear submarines that constituted the bulk of the once-feared Soviet Northern Fleet.

However, cooperation and funding by Norway and other states have by no means significantly diminished the risks and threats.



❶ Two reactors without spent nuclear fuel

❷ Two reactors without spent nuclear fuel and 60% of the nuclear fuel of the icebreaker Lenin in containers

❸ Six reactors with uranium, 10 without nuclear fuel, 11,000 containers with radioactive waste

❹ submarine K-27 with two reactors

❺ Three reactors with and three without nuclear fuels

Source: polarnews.ch/arktis/menschen-politik/573-russland-sondiert-nuklearabfalldeponien

According to a catalogue issued by the Russian government in 2012, among the findings were some 17,000 containers of radioactive waste; 19 ships containing radioactive waste; 14 nuclear reactors, including five still loaded with spent nuclear fuel, and 735 other pieces of radioactively contaminated heavy machinery.[14]

According to the Institute for Safe Development of Nuclear Energy, a department of Russia's Academy of Science, urgent measures must be taken to secure six objects containing over 90% of all radioactive waste.

Most of the objects are metal containers containing low and medium-level radioactive waste. The current challenge, however, is the reactors containing high-level waste and spent uranium fuel, objects that pose a serious threat to the marine environment for tens of thousands of years should nothing be done to secure them. The danger of contamination in a sea that provides a substantial amount of fish for Russia is imminent.

2.1 Russian submarines and ice breakers

Russia's submarine decommissioning program provides information on the plans.

The reactors from the submarines K-11, K-19 and K-140, plus the entire submarine K-27 and spent uranium fuel from one of the old reactors of the Lenin icebreaker must be lifted and secured. Furthermore, experts conclude that the submarine K-159, which sank north of Murmansk while being towed for decommissioning in 2003, has to be lifted from the seafloor. Special priority should be given to the two submarines K-27 in the Kara Sea and K-159 in the Barents Sea. The study report prepared for Rosatom and the European Commission has evaluated the costs of lifting all six objects, of bringing them safely to a shipyard for decommissioning and of securing the reactors for long-term storage.[15] The estimated price-tag for all six will be €278 million, of which the K-159 is the most expensive costing €57,5 million. Unlike the submarines and reactors that are dumped in relatively shallow waters in the Kara Sea, the K-159 is at a depth of approximately 200 metres and is thus more difficult to lift. According to the report, the cost of lifting the K-27 and of transporting it to a shipyard for decommissioning and long-term storage in Saida Bay is estimated at €47.7 million. According to one expert, the work can be carried out over an eight-year period.[16]

As the expert-group underlines, however, the €278 million funding exceeds Russia's current federal budget. This finding represents a concern for the Arctic countries. Russia's real commitment to the protection of the Arctic Ocean, to the landsite and the populations inhabiting areas at close or medium-range proximity of up to 100 km from the sea, must be given higher priority. This is of immediate concern to Norway, Sweden Finland and Russia. The real challenge is the impact on fishing, mining and almost all aspects of human life in the northern regions of all countries. Russia is most exposed to the risk. These findings concern the West only with respect to waste, which accounts for the fact that the Russian Northern Fleet, located at Archangelsk, was and still is the home of nuclear submarines, both fuelled and armed with nuclear ballistic missiles. The future life period and later dismantling of floating nuclear power[17]

plants should be decided by the Arctic Council and not seen as the nuclear waste of the Soviet Union.

It is in nobody's interest to make this a controversial issue, and it is one topic about which scientists and practitioners are able to find common and well-organized solutions. As can be seen in some of the (publicly accessible documents), descriptions of the challenge to Russia and neighbouring countries differ. By contrast, it is also possible to determine that many existing fora and meetings are used to continue safeguarding both the Barents and Kara Seas. The interview in Arctic.ru is a good source providing an up-to-date estimation of the dimensions of this long-term task and of what has thus far been achieved.

Arctic.ru editors discussed the reprocessing of nuclear waste buried in the Arctic and the Russian Far East with Anatoly Grigoryev, Chief of international technical assistance projects at the Directorate for International Programs and Projects in the Area of Radioactive Waste (RAW), Spent Nuclear Fuel (SNF) and Decommissioning of Nuclear-and Radiation-Hazardous Sites (DNRHS), Rosatom State Nuclear Energy Corporation. The interview was held at the 9th International Forum the Arctic: "Today and the Future." In one passage, Mr. Grigoryev discusses the most dangerous sites in the northern districts, which he summarizes as follows:

> "The first and biggest of these sites is Andreyev Bay, where nuclear fuel from no less than 100 submarine reactors was delivered. Moreover, this fuel had to be handled on two occasions. At first, it was accommodated in a regular storage facility but then reloaded to adapted tanks for liquid radioactive waste after the 1989 local nuclear accident. The plans were to remove this fuel for reprocessing five or eight years later.
>
> The second site is Gremikha, near Murmansk. It is Russia's only storage facility for Alpha-class submarine reactor cores with liquid heat-transfer metal. The fuel assemblies there contain uranium-beryllium fuel composition.
>
> The third facility is Atomflot's technical site in Murmansk. It stores 50 containers with uranium-zirconium fuel from nuclear

icebreakers, which were delivered from the Lotta Floating Maintenance Base.

The fourth facility is the storage on the Lepse Floating Maintenance Base, which is now at the Nerpa ship-maintenance yard, a branch of the Zvyozdochka Ship-Repairing Center."[18]

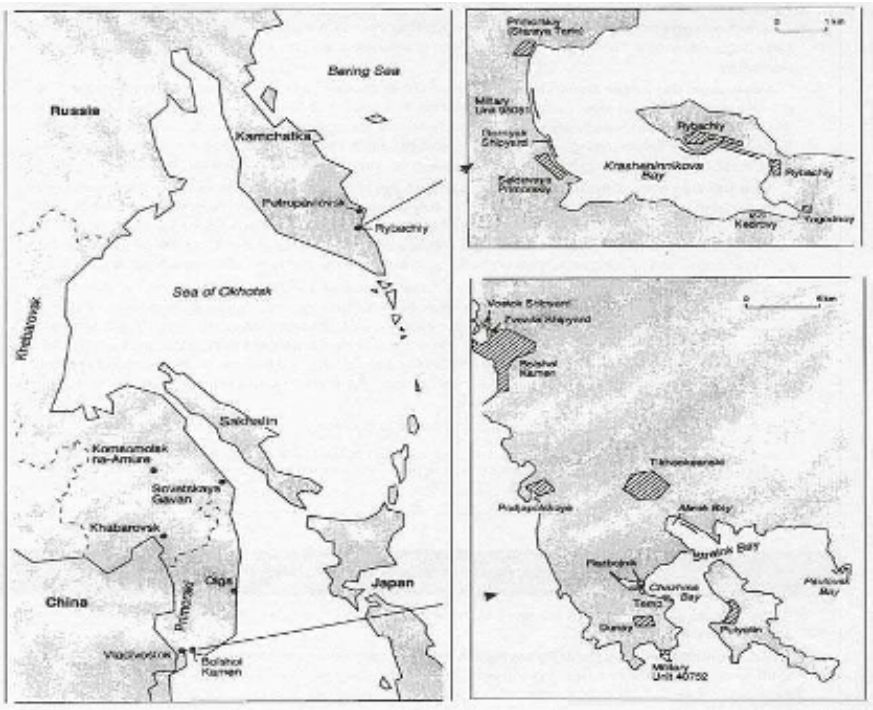
In his interview he described the situation as a whole and focuses on the achievements reached so far. For our study, it is important to recognize a common assessment about the dimension of the nuclear-waste challenge and, further, to state that there is common assessment about the six most urgently recovered nuclear sites from sunken submarines and the nuclear icebreaker *Lenin*. The European Commission, as well as Italy, Germany, the UK and Norway are contributors to the long-term process in finding appropriate ways to solve the issue. The questions must be solved in detail and as a common undertaking and funding. To expect sponsoring from other countries without also making contributions is questionable.

It was not, however, until 2012 that the Russian government admitted this internationally, namely, when Moscow shared with Norwegian nuclear officials the full scope of the problem.

2.2 Russia updates maps of radioactive debris sunk in the Arctic: "The Maritime Executive, July 21, 2020"

All issues outlined in the above focus on Russia's western Arctic coast line; here we must also include two other areas which had been used for waste dumping. The east side and the rivers debouch into the Arctic Ocean are of common concern for the United States and Canada.[19]

A research paper from Princeton University provides an impressive overview of both sides of the Northern Sea Route which are subject to the threat of nuclear waste. Elaborated and published in 1995, this comprehensive paper is the most recent assessment of the challenge for Russia, whereby it took some time before Russia accepted the findings.



Nuclear risk sites in the Russian Far East
map source: Nuclear Wastes in the Arctic, OTA-ENV-632) uploaded from www.researchgate.net/figure/1-Nuclear-risk-sites-in-the-Russian-Far-East-map-source-Nuclear-Wastes-in-the-Arctic_fig1_310481822

"The Arctic Ocean is ringed by seas. Principal among them are the Beaufort (shared by Canada and Alaska); Chukchi (between Alaska and Russia); the East Siberian, Laptev, and Kara Seas of Russia; and the Barents, bordered by both Russia and Norway. The liquid and solid nuclear wastes dumped by the Soviet Navy are located in the Barents and Kara Seas, in the Pacific Ocean along the east coast of Kamchatka, and in the Sea of Japan. In addition, an island group called Novaya Zemlya which separates the Barents and Kara Seas was the site of most of the atmospheric and underground nuclear testing by the former Soviet Union. Other than Canada's Mackenzie River, all the major rivers that flow into the Arctic's adjacent seas are Russian, and more than 40 percent of that flow is to the Kara Sea. Russia's Pechora, Ob, and Yenisey Rivers empty into the Kara Sea; its Kotuy and Lena Rivers [empty] into the Laptev Sea; and the Indigirka and Kolyma, into the East Siberian Sea. The

Pechora River, already severely polluted in some areas, has been under additional ecological threat from leaking oil pipelines, such as the coma oil spill, which occurred early this year. Nuclear contamination created by facilities thousands of miles south in the Urals could possibly migrate to the Kara Sea and the mouths of the Ob and Yenisey River."[20]

This provides a good summary of the immense geographical dimension, and also includes the inshore aspect of the nuclear waste problem for Russia. Most of Russia's nuclear industrial companies are located close to rivers for several reasons, the major one being cooling. Furthermore, besides nuclear waste, the paper also points out oil spillage and other critical waste problems. Whereas this study focuses on Russia and China, it also discusses the US and Canadian perspective albeit that the latter are not at the forefront of the discussion. In the knowledge that nuclear waste dumping also represents a problem for a group of other countries, it thus seemed appropriate to discuss it at the beginning.

We must also consider that Russia's new nuclear programs are once again opting for nuclear propulsion with modern, state-of-the-art technology. And, as in the former Soviet Union, the submarine fleet and the icebreaker fleet again benefit from political decision-making. Plans to save and protect the ocean environment, and especially the population from radiated fish or, more specifically, from the impact of radiation on the food chain necessarily entails connecting former mishandling of nuclear waste with new nuclear programs. It is not acceptable for neighbouring countries and companies to sponsor the possible overlap in safeguarding old and new waste. When researching this part of the study, it became evident that a functioning group of fora and organisations for dealing with this problem exists. Identifying the six most urgent threats is the first step towards a solution. The fact that nuclear waste dumping has not been mentioned in official memoranda of the Arctic organisations and associations is remarkable and, like defence issues, is a clear signal that discussion on most critical issues is evaded.

Thus, the ministerial representatives of the eight Arctic States (joined by representatives of the six Permanent Parcticipant organizations) did not cover it at all in the *Rovaniemi Joint Ministerial Statement 2019*

issued at the eleventh ministerial meeting of the Arctic Council. Aware of the fact that these statements have their own formalities, excluding such topics from the agenda and thus leaving matters to the committed – though in terms of authority – limited meetings of scientists and experts is questionable.

Conclusion: nuclear waste dumping has been practiced for years and official acknowledgement by Russia to this effect was issued in late 2011. While international scientific and expert cooperation is encouraging, funding is uncertain and is to a considerable extent based on voluntary sponsoring.

Six projects related to five submarines and one icebreaker have been identified as urgent projects, which must be initiated soon. Nuclear waste is one among several risks in a longer list of future environmental challenges for Russia. Information based on differing perspectives is published by experts monitoring this topic.

In summary, we are able to determine two lacunae: firstly, the gap between existing knowledge of the sea and land sections with nuclear waste and the danger to people and environment and secondly, the political gap between statements of principle and policy together with the lack of funding and concomitant political will to solve the tasks. On the other hand, this situation does provide good opportunity for further and widespread multinational commitment. Arctic observer countries could execute responsibility by participating in this huge task.

3
Russia's military ambitions and capabilities

Russia's military commitment to their own Arctic territory and its sovereign part of the Arctic Ocean has changed in the foregoing ten-to-fifteen years. A new strategy has been published and requires comprehensive analysis.

Before surveying this strategy, it would be worthwhile taking a look at the last one, published in 2008/2009. We can thus better assess the achievements, those aspects that remain open and require further implementation and those that are new. From a global perspective, most countries, including the members of the Arctic Council, are demanding more and stronger climate measures in an effort to decelerate and stop the destruction of the Arctic Ocean and its surrounding areas. Furthermore, Arctic countries and the global community are looking with great interest at the opening of shipping routes and at new opportunities for mining and drilling. An analysis of all available open papers prompts us to conclude that the balance between economy and ecology will be the crucial task in the years to come. As already mentioned, the military has both a national and multinational role, whereby this increasing relevance has been frequently cited in several analyses as "conflict or cooperation" or some such. Many Arctic countries and several important global actors have developed their own national Arctic strategies and policies. As may be expected, the latter have changed considerably since those released ten years ago. National interests and bilateral agreements are some countries' responses in organising their future. To date, cohesion and solidarity have been the major characteristics of the Arctic, whereby these are currently under threat due to bilateral agreements and a proliferation of national agendas.

The fact that the region is on the radar of many countries which are developing their national Arctic policies is, as Halvorsen put it, all the more reason "why it is so important to have full knowledge and in-depth analysis of the regional situation, including the legal framework and the governance structures that are already in place."[21]

In public discussions, the Arctic is often depicted as a remote and somewhat exotic region to be saved by external commitment. Regional stakeholders, by contrast, emphasise that exactly the opposite is the case – the Arctic is populated, regulated, and not so far removed from our daily business provided we accept fact and not fiction. Such facts are unambiguous and a brief glance at geography, for example, supports this knowledge and is an aid to a better understanding. The adjoining countries and those carrying out research in the Arctic region, would be better off if they were to have an integrated approach towards the Arctic. Norway, Finland and Sweden or to Denmark and Greenland are very closely connected to the Arctic and not that far remote from it. And, as already mentioned, neither is it an area with a legal vacuum. One other aspect requires further attention, namely, the fast pace of climate change, which heightens uncertainty both with respect to the value of strategies and policies and the political will by outside countries to engage in Arctic issues. Guided by the politicians of observer and other countries, both topics are set to dominate future discussions. Climate change and its future development will influence all conventional military capabilities and options.

The statement issued by the French Ministry of Defence regarding the Arctic Ocean prompted several strong comments from the eight members of the Arctic Council. The French document declared that the Arctic belongs to no one state, and that cooperation between states will be the only way to prevent problematic developments.[22] Climate change acceleration and inter-state cooperation (not solely between Arctic countries) signal future political discussion.

We must, furthermore, consider the value of strategic policy making for future progress. Depending on the way in which they are drafted, strategies have two objectives, namely, domestic and foreign politics. Each aspect has its own value, whereby the time, goal and diction of the

paper must be analysed to ensure a better understanding and evaluation. A strategic document is a government guide and expresses long-term ambition and will. It establishes the grounds of principles, and provides a certain scope for implementation and execution. A regional strategy, such as that for the Arctic, is to be understood as a sub-strategy of a country's general strategy.

3.1 Russia in 2010 and beyond

Russia's resurgence in international politics is reflected in her Arctic policy[23] and increased activity in the area, especially in the western end of the NSR. Russia considers that her long-term development and competitiveness in the global market are critically dependent on the exploitation of the Arctic's natural resources, and if necessary she is prepared to defend her national right to them by military means. Russia's most important naval base is Severomosk, near Murmansk and Archangelsk, home of the Northern Fleet, which focuses naval attention on the capabilities required to operate in the area. A considerable amount of rhetoric is nevertheless given over to the insistence of peace and cooperation. By focussing on the western part of Russia's territory we do not thereby ignore the eastern part, an area of particular relevance for United States' and Canadian perspectives. Moreover, due to China's appearance on the Arctic stage in recent years, the eastern part deserves greater attention.

The world's most northern region occupies over twenty million square kilometres of land mass. In the early 1990s the largest northern countries – Russia, Canada and the United States – accounted for eleven million square kilometres and a population of nine million, seven million square kilometres and a population of 0.6 million and 1.5 million square kilometres respectively.

Since the break-up of the USSR, the northern region amounts to 65% of Russian territory (previously 49% of the USSR).

A mainstream trend can be discerned in the vast Russian territory and its 24,140 kilometres of Arctic coastline: to the West, the Barents and White Sea moving towards the East, to Siberia and to the Sea of Okhotsk. Though focusing on the west, we also include the east. The

centre, Siberia, does not fall within the purview of the present study.

The mineral resources in the Russia Arctic are the most important of the entire Arctic. After the Russian Revolution, the number of polar stations increased progressively from five in 1917 to more than 100 by 1970, providing meteorological and ice information. Since the 1950s, this region has played host to key industries and infrastructure relating to the Soviet nuclear deterrent, particularly in the Kola Peninsula.

3.2 In May 2009, Russia issued a national security strategy as approved by President Medvedev for the period until 2020[24]

The new strategy identifies threats and challenges within a broadly defined concept of security under chapter headings entitled 'National Defence', 'State Security and Civil Protection', 'Improvement of Living Standards', 'Economic Growth', 'Research, Technologies and Education', 'Healthcare', 'Culture', 'Ecology', and 'Strategic Stability and Partnership on Equal Terms'.

Considerably less attention is devoted to hard security threats. National defence tasks are described in relatively vague terms. Aside from confirming further reliance on nuclear deterrence and nuclear parity with the United States, the document avoids any wider-ranging discussion of Russia's nuclear policy. While reaffirming Russian opposition to any further eastward expansion of NATO, it documents a readiness to negotiate and develop relations with the Alliance.

The economy occupies a prominent place as a major security factor and has two significant weaknesses – the dependence of the Russian economy on exporting raw materials and foreign involvement in the Russian economy, particularly with respect to technology. Particular attention is paid to infrastructural development, above all in the Arctic and Far East. The document highlights the role of natural resources – some of which lie in the Arctic – that strengthen Russia's influence in the world.[25] This National Security Strategy is the framework for all regional strategies. The political will, as well-outlined in the security strategy, guides the Arctic strategy. It is, indeed, impressive to observe the extent to which

this superannuated way of developing the structure of strategies has been accepted and executed by the Russian government in recent years.

At about the same time, the Russian government adopted a new Arctic policy entitled *The Fundamentals of State Policy of the Russian Federation in the Arctic in the Period up to 2020 and Beyond*.[26]

The document clearly states the importance of the Arctic to Russia's economy with respect to both energy production and maritime transport. The objective is to make the Arctic the main strategic base for natural resources and to confirm Russia as the leading Arctic country. This entails the development of transport and communication infrastructures in the Arctic for the Northern Sea Route connecting Europe to Asia. To protect the country's interests, special Arctic military units are to be established the objective of which is to counter maritime terrorism, smuggling and illegal immigration and environmental protection.

3.3 The Federal Security Bureau (FSB) is to assume the primary role

That competition for dwindling resources worldwide may involve the use of military force is something that cannot be ruled out. However, "the basic national interests of the Russian Federation in the Arctic are:

a. use of the Arctic zone by the Russian Federation as a strategic resource base to provide solutions to the country's problems relating to social and economic development:

b. maintenance of the Arctic as a zone of peace and cooperation;

c. preservation of the Arctic's unique ecological systems;

d. use of the Northern Sea Route as a national, single transport communication by the Russian Federation in the Arctic.

Russia is seeking to conduct a rational and pragmatic foreign policy without costly confrontation, including a new arms race."[27] For Russia, the Arctic must remain a zone of peace and cooperation. As evidence of this, the longstanding maritime boundary dispute with Norway was re-

solved in September 2010 following 30 years of negotiations by a treaty which favours both countries in resource exploitation.

Despite these declarations and progress, Russia's neighbours are concerned by an increasing military and paramilitary presence in the Arctic and concomitant hostility towards the West. In July 2014, both the EU and the US imposed economic sanctions against Russia following the occupation of the Crimea. This has had a direct impact on major onshore installations and plans to further develop offshore drilling. Both neighbouring countries, along with other foreign companies, are currently facing major technical, logistical and financial difficulties, a situation which has discouraged foreign partners. Sanctions represent important and currently long-term impediment to technical cooperation with western countries and companies.[28] Maritime transport, the other priority of economic development, is set to be impeded by the lack of critical maritime infrastructure along the Northern route. Aids to navigation are a long-lasting concern, and reliable communication is a challenge throughout the Arctic Ocean. Until today, the Arctic Ocean remains an ocean with few navigational aids and uncertain communications facilities.

Moscow's 2008 Arctic policy nevertheless emphasised maritime law enforcement rather than a military build-up, and within the armed forces, the navy attracts more than 40% of the defence budget.[29] It also focused on enforcing shipping and fishing regulations and providing SAR capabilities. Russia's northern border includes almost 24,140 kilometres of coastline, including the islands, which is becoming more exposed as summer sea ice retreats and economic activity increases.

Although Russia has a coastal border guard, only a few of its ships are suitable for Arctic operations, and its ability to monitor its coast and EEZ and enforce regulations is limited. The Russian icebreaker fleet is composed of seven nuclear vessels: four "Arktika" class for the high sea, two "Taïmyr" class for shallow waters and the "Sevmorpout" for transport, and plans exist for a new nuclear icebreaker by 2016.[30] [31] More recent news about Russia's Flagship Icebreaker and its capacities and dual use options for military and civilian use were scheduled to be released at the end of 2019.[32]

As with other Arctic countries, meeting policing requirements represents a more immediate and pressing challenge than the rebuilding of military structures to meet comparatively notional security threats. Another possible forum for meetings and information exchange is the Arctic Coast Guard Forum.[33] The ACGF is an additional forum to the North Atlantic Coast Guard Forum and it offers an informal meeting ground for information exchange and the discussion of common training and education for all Arctic countries. This platform is where coast guards and navies can announce common goals commensurate with their intentions to demonstrate transparency and to initiate an increase in trust and confidence.

Russia is initiating major upgrades to its Arctic communications infrastructure and has invited Canadian firms to participate. The Artika-MS satellite communication system project will provide coverage of the Arctic region for mobile routing communication (air-traffic and sea-routes control for cross-polar and Northern Sea routes) and possibly a range of communication services.

Clearly, Russia intends to protect its interests in the Arctic and is competing not only with the other Arctic States, but other countries as well, particularly China. However, it is no less evident that the challenges in the North look extremely difficult for Russia to face alone and she will need to seek cooperation. A first step has been taken with Norway, but Russia will also need support from elsewhere to successfully develop its Arctic domain and northern region.

Before turning to a more detailed discussion of Russia's military capabilities in 2010 and subsequent years, a brief summary of this Arctic policy as set out in this document of 2009, would seem useful.

As in all other strategies of the member countries of the Arctic Council, we find here a clear and fundamental expression of the right of a sovereign state in relation to its territorial waters and the Exclusive Economic Zone.

3.4 Economic development, energy production and the use of the Northern Sea Route are the priorities of the Russian government

There is no doubt that Russia has the right to secure its territory and the EEZ since all other nations are doing the same. Having very similar national interests, which can be identified by analysing the Arctic strategies of the eight members of the Council, one may assume that these goals fully conform to all legal aspects.

A glance at their national policies clearly confirms this. In this respect, Russia's goals and ambitions are similar to other countries. However, as mentioned in the above, Russia is not only looking to secure its rights in the Arctic region, but is seeking acknowledgement as a major power and global actor. Bearing in mind this ambition as a core foreign policy objective, the Arctic Ocean and the entire joined landsite constitute a crucial aspect in achieving this goal.

The military has a difficult role in this process. This is closely connected to the so-called "spill-over" effects from global trends and Russian engagement in sensitive areas of tension, conflict and war. In view of the three major goals of the Russian Arctic policy, it is remarkable that military and civilian maritime services are in the region for securing Russia's national security concerns and are contributing to safeguard the build-up of industrial infrastructure. One related question in this connection is what kind of military capabilities are stationed near the Arctic Ocean, and what can be analysed from the numbers of assets and capabilities, manpower, training and education, and where these military efforts are based. Two very different tasks are being pursued in Russia's "dual-use" orientation: on the one hand it serves domestic demands in the build-up process of energy and resources exploitation, while on the other it serves as a military "deterrence" force.

3.5 A sidestep into the Baltic Sea

In the introduction to her paper *Russia's Arctic Policy – A Power Strategy and its Limits*, Marlène Laruelle writes, "Given close ties between the Arctic and Baltic areas, tensions between Russia and the West impact the polar regions, particularly in security and military matters. Nevertheless, unlike in the Baltic and Black Seas, these are low-intensity tensions, with the Arctic being spared direct conflict."[34]

Further reference to Laruelle will be made in this study at a later stage, but one comment about the Baltic Sea would seem pertinent here: the northern part of the Baltic constitutes part of the Arctic region surrounded by Sweden and Finland. Both countries are members of the European Union and are working on most security and defence issues very closely together with all other Baltic countries, including NATO members. Furthermore, tensions in both seas, the Baltic Sea and the Black Sea, have increased during the last ten years. Until 2010, the Baltic Sea and the entire region have benefitted from strong cooperation based on trust in all social and economic matters. Since 2010, however, maritime and air provocations have been occurring too often and have exceeded the number of similar acts during the Cold War period. Provocations are directed against Estonia, Latvia and Lithuania by cyberattacks and political pressure. Though not part of the Arctic countries, they are key members of the Baltic community.[35]

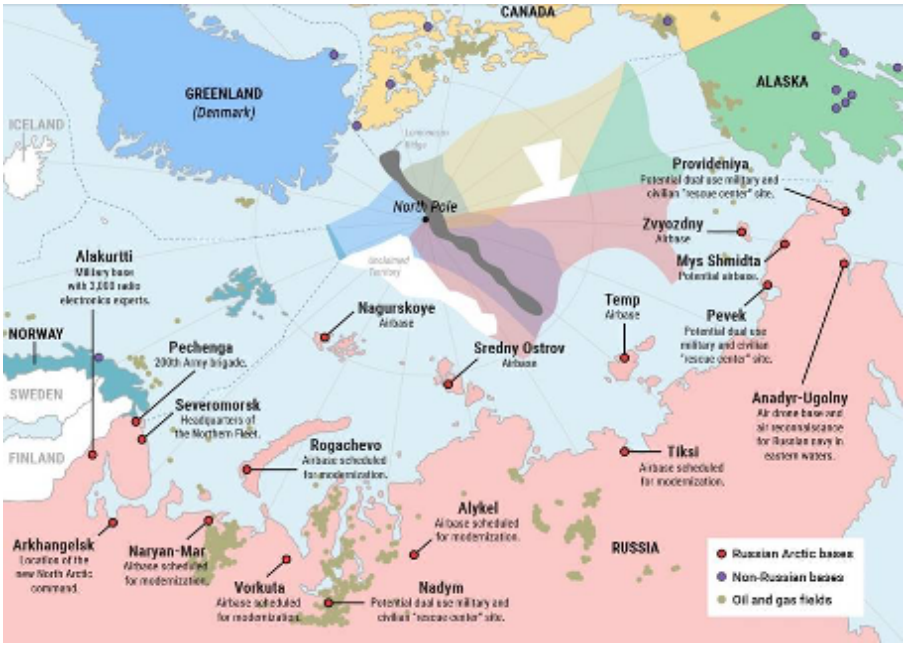
Thus, tensions are at least estimated as increasing "uncertainty". Russia's military equipment in the Kaliningrad Oblast is assessed as being a risk and threat to Europe by modern missiles and concomitant support systems.[36] This assessment is based on open source information, which covers western perspectives, but concludes with an estimate of the number and specific types of weapons that are a threat to the Baltic States and beyond. Finally, the question also concerns how to judge the military build-up, which began in the middle of the last decade. We have, however, considered the Baltic Sea as a part of the Arctic region, and assessing military growth in Kaliningrad as a part of the Russian Arctic military capabilities is thus relevant. Though reluctant to rate military capabilities and their purpose, the study does not

follow Marlène Laruelles' assessment, namely, that tensions are low, fragile and manageable militarily in either direction, as escalation and de-escalation. The Baltic Sea will remain part of the Arctic region and the capabilities are in a position to exert pressure on Arctic Council members and beyond. Kaliningrad Oblast is one of the factors that must be included in all evaluations relating to military aspects of Russia.

Focussing on the western side of Russia Arctic ambitions does imply the neglect the eastern side: but is an estimate of Russia's development from the 2009 strategy until the present as a consequent, step-by-step build-up of all three major pillars: economy, energy and transport on one hand, and military structures on the other. Russia's priority has been the western side. In retrospect, this has been a continuous and permanent process. And it came as no surprise in the form of an announcement of both policies in 2009. At the time, the Northern Sea Route was a kind of attraction to ship owners, politicians and to a great extent journalist of all western media, in both print and electronic media. The NSR was a facilitator for Russia both with respect to domestic and foreign affairs. Positive awareness was achieved, but it took more time to keep it in the headlines. Hence, the matter disappeared in the face of the situation in the Middle East, and of course, Russia's aggressions against Georgia, Crimea and East Ukraine.

Before going on to analyse and evaluate the political and military situation prior to 2020, a look at military capabilities in 2010 will facilitate understanding the implementation of the 2009 policies.

The figure shows the number and functions of Russia's Arctic bases and explains both the restoration and new founding of military bases. Without commenting on the number and capabilities of the bases, the study draws the attention to Alakurtti military base with its impressive number of "electronics experts", namely, a large number of experts for monitoring western communications and the capability to execute all measures of electronic warfare, including offensive electronic operations.



Russian military bases in the Arctic

Graph: Business Insider (Sources per BI: The Heritage Foundation, TASS, Sputnik News, RT, USNI, Moscow Times, Associated Air Charter, Barents Observer, Council on Foreign Relations, The Economist)

3.6 Security and defence, twins and overlapping responsibilities

Russia restarted missile tests in the north in 2007 and resumed surface, naval and air patrols in 2008.

Murmansk and the Northern Fleet will remain Russia's most important sea power assets, together with her Far East Pacific Fleet.[37] The Pacific Fleet headquarters is in Vladivostok, with additional home ports in Petropavlovsk-Kamchatskiy, Magadan, and Sovetskaya Gavan.[38]

The Russian Coast Guard, established in 2005, comprises part of Russia's Border Guard Service; it belongs to the Federal Security Service of Russia and possesses significant combat capability. The FSB has been mentioned earlier and should be recalled again due to its primary role in both security and defence.

3.6.1 The Russian Army

Russia's ground forces in the Arctic region include naval infantry and an army brigade on the Kola Peninsula. They are winter-trained, organized and equipped for operations in the north of Russia, but have, until recently been unable to operate in the most inhospitable regions of the Arctic. Russia planned to establish a brigade specifically equipped and prepared for "military warfare" in Arctic conditions by the end of 2011. The 200 motorized infantry brigades in Pechenga (on the border with Norway) is the first such unit. The brigade is used to test new snow and swamp-capable assets, such as GAZ-3351, for transport of personnel and cargo, or light amphibious TTM-3P and DT-3P.[39]

Units of the Russian Airborne Troops may be deployed in the Arctic as part of a permanent multi-branch contingent within the region. The Airborne Troops may include helicopter regiments by 2020, when the state arms-procurement program is concluded. Russia's airborne troops currently number 32,000 personnel in four airborne divisions, an airborne assault brigade, and a special forces reconnaissance regiment. Russia will deploy troops in the North to defend its interests in the Arctic region. According to Defence Minister Anatoly Serdyukov this is to be further expanded in 2021: "The General Staff is currently drafting plans to establish two such formations. Those plans should take into account deployment sites, armaments, number of servicemen and infrastructure." He added that the troops may be stationed in the northern Russian cities of Murmansk or Arkhangelsk, but other possibilities are also being considered.

3.6.2 Russian Air Force

Russia's air assets in the Arctic region consist mainly of aircraft that support the Northern Fleet or are stationed in northern Russia, along with some of the aircraft based in the Pacific. Many of these do not have sufficient range for operations in the Arctic area outside Russia, but 100 Navy operated, long-range Tu-22, Tu-142 and Il-38 maritime patrol aircraft have been conducting long-range surveillance missions over the Arctic since 2007.

According to *Izvestiya*, as claimed by a high-ranking source in the Air Force, Russia's current Minister of Defence, Sergey Shoygu, has overturned his predecessor's decision to base aircraft on Novaya Zemlya. The source claims that there are many reasons not to transfer aircraft from the mainland to the remote archipelago of Novaya Zemlya: the Russian Air Force has only about 100 MiG-31 planes, and many of them are in poor condition and require major repairs and modernization; the airport of Rogachevo is in no condition to secure safe take-off and landing for fully loaded MiG-31 aircraft, which weigh 46-47 tons when fully fuelled and armed, whereby the island's radar-location system is insufficient and needs supplementing by other planes.

3.6.3 Russian Navy, the northern and the Pacific fleet[40]

The two main fleets of the Russian Navy, the Northern Fleet and the Pacific (or Eastern) Fleet are located in the North. The Northern Fleet consists of eleven bases and shipyards. The main base is Severomosk, 25 km to the north of Murmansk. As of 2013, the composition of both major fleets consists of the following assets:

Together with Severomosk, there are Gazhievo, Sayda Bay, Nerpa, Severodvinsk, Vidyaevo (2), Zapadnaya Litsa – the most important nuclear submarine bases – Gremikha, Shkval and Sevmorput. The fleet consists of 42 submarines – nine SSBN, three SSGN, fourteen SSN, nine SSAN and seven SS – one aircraft carrier, two nuclear-powered cruisers, one Slava class cruiser and five destroyers.

The Pacific Fleet is based around Vladivostok and Petropavlovsk-Kamchatskiy. The fleet is composed of 22 submarines – three SSBN, five SSGN, 5SSN and eight SS – one Slava-class cruiser and five destroyers. Power projection capabilities are likely to increase with new amphibious ships. When commissioned, the first two Mistral-class LPH will be based with the Pacific and the Northern Fleets. As we know today, both Mistral-class ships do not form part of Russia's Navy but are part of the Egyptian Navy.

Only the Northern Fleet has a thick ice-breaking capacity with the large icebreaker *50 Let Pobedy*. Four small Project 97 icebreakers, capable of

breaking thin ice, serve with the Northern and Pacific Fleets.

The Border Guard Service operates three large, armed icebreaking OPVs in the North and two others in the Pacific. Over 20 civilian icebreakers, including several former naval ships, operate in the Arctic.

In November 2012, the government announced that by 2015 there will be ten new northern rescue centres: in Murmansk, Arkhangelsk, Naryan-Mar, Vorkuta, Nadym, Dudinka, Tiksi, Pevek, Providence Bay and Anadyr. Subsequent reports claimed that the centres might also have a military role.

3.6.4 Russia as soft- and hard-power actor in the Arctic

In the Polar Journal in 2014, Alexander Sergunin and Valery Konyshev published a comprehensive paper under the title *Russia in Search of its Arctic Strategy: between Hard and Soft Power?*[41]

The authors cover a broad spectrum of perspectives and views and follow the "double-faceted" Arctic strategy.

> "In contrast with the internationally wide-spread stereotype of Russia as a revisionist power in the High North, this paper argues that Moscow tries to pursue a double-faceted strategy in the region."

The different perspective represented in this paper and its attempt to answer the question of Russia's national interests, namely, of how the country can achieve these interests and by what means, is very useful. Published in 2014, the paper provides an explanation to the question.
"This paper aims to discuss the question whether Russia is really a revisionist power in the Arctic or, rather, it is a soft power that is interested in the region's stability and open to international cooperation in the region.

To answer this question several more specific questions should be addressed:

- What are the Russian national interests in the Arctic?

- What are Russia's bilateral relations with key Arctic and non-Arctic actors in the region?
- What is Moscow's political course within international organizations and for dealing with the Arctic issues?"[42] [sic]

They reflect the 2009 Policy and the Development Strategy of 2013, which was some form of implementation of the 2009 Policy. The focus of the latter is on the significance of the High North for Russia and the Russian Arctic Zone, RAZ. When placing "natural resource" and "developing transport systems" as priorities, they refer both to climate change and indigenous peoples.

In the section "strategic military importance", which is of relevance here, the significance of direct access to the Atlantic Ocean and the concentration of defence industry and infrastructure in certain regions, mostly on the Kola Peninsula, is also of value for this study. It clearly indicates Russia's sea-based nuclear deterrence, namely, its naval units. As we know from the naval part, this means primarily submarines, nuclear powered and nuclear weaponized. Constituting the core of Russian strategic deterrence, both capabilities are located at Murmansk and at Vladivostok.

SIPRI treated the subject in a particularly comprehensive study in 2016. *Russia's Arctic Security Policy: Still Quiet in the High North?* addressed the developing process and accounted of the period from 2000 to 2016. Published five years after the 2009 Russian Arctic policy, and three years later, in its 2013 publication on the implementation policy, it provides a broad and well-balanced view of Russian political and practical operations.[43] In essence, the study deals with Russia's security policy, and in the third section offers substantial insight into the thought and action behind it.

From our perspective, one milestone is represented by a statement made in 2008 by Prime Minister Putin.

The 2008 *Foundations of the Arctic Policy* lists "keeping the Arctic as a zone of peace and cooperation" as being among Russia's top strategic priorities. At the First International Arctic Forum in Moscow in 2010, Putin (Russian Prime Minister at the time) stated that:

> "Preserving the Arctic as a zone of peace and cooperation is of the utmost importance. It is our conviction that the Arctic area should serve as a platform for uniting forces for genuine partnership in the economy, security, science, education and the preservation of the North's cultural heritage. The speculations regarding the conflict in the Arctic lack real grounds."[44]

There is no reason to question this statement. It completely reflects the government's position towards the Arctic and the emphasis on achieving national economic goals. Security concerns were directed at the consequences of climate change, the problem of human beings and especially demographic development. In other words, security focused on understandable topics which endorsed the Prime Minister' statements in 2008. The overarching goal remains securing what has been and continues to be the chief priority, namely, sovereignty – the securing of the maritime border by naval and all maritime services and air assets.

Considering the length of this seaward border facilitates understanding the importance of a well-equipped border or coast guard for the execution of which the FSB is responsible. This national task of safeguarding and protecting territorial waters and securing national interests in the EEZ is, without doubt, consistent with all the intentions of the eight Arctic Council Member States. A return to increased capabilities, first and foremost maritime and naval, and to land and air capabilities for military and civilian operations within the territorial waters and ashore, is both legal and logical. Whereas threat perceptions may be similar or different to other Arctic countries, securing maritime infrastructure, ports, shipping lines, and legal aspects in the EEZ – all protective aspects of safety, security and defence – remain for the most part unspoken at common events, though they are generally accepted by all Arctic countries. Disputes about sea-bed claims are manifold and to date have remained unsolved, although the International Seabed Authority still remains accountable for them as mandated under the *United Nations Convention on the Law of the Sea*.

In the period in question, however, and prior to the announcement of the 2009 Russian Arctic Policy, the relation between Russia and most western countries began to change. The "August War" or the Russian

war and five-day occupation of Georgia has changed all western assumptions about Russia. The five-day war against Georgia, lasting from 8-12 August 2008, was a shock not only for the Caucasian region but for the Russian military as well, and a surprise for almost all western analysts.

It should be noted here that from a military perspective there were "lessons learnt", which underlined obvious deficiencies in military proficiency, especially in command and control and related skills, such as communication, intelligence and reconnaissance. An analysis of Russian military deficits remains beyond the scope of the present study, but the visible weaknesses in military key capabilities and the gap between nuclear capabilities on one hand, and the lack of material and trained soldiers with conventional warfare skills on the other, was clearly apparent.

But the strategic implications of the War against Georgia also became visible in the Arctic region. In order to solve a "Russian problem" in one region, far away from the Arctic, Russia ventured that this military operation could have the first spill-over effect. Waging a war to secure its national interests against an independent country represented the first war in Europe after 1945. This was and continues to be the common perception of all western countries with respect to Russia's attack on Georgia.[45]

Having learnt from military experience, the decision was taken to intensify modernisation of the Russian military, including military and civilian security capabilities in the Arctic.

3.6.5 Russia's security concerns: United States and NATO

Russia's security concerns were very simple, and it's view of NATO remains unchanged: for Russia, NATO was and continues to be the second adversary after the United States.[46]

From 2008 to 2013, the only state-related security concerns expressed by Russian officials related to the growing NATO activity in the Arctic. In 2010, Dmitry Medvedev, then Russian President, stated that Russia was watching NATO's increased activity in the Arctic "intently and with some concern." As President Medvedev stated in a joint press conference following Russian-Norwegian talks in Murmansk, in September 2010, "In my opinion, it is quite possible to do without

NATO in the Arctic, because this is the part of our common wealth that, strictly speaking, has nothing to do with military tasks. We can quite cope there with the help of those means of economic regulation, international documents that we sign. At the same time, of course, NATO is pursuing its own policy. This policy is determined by the alliance itself. In any case, the Russian Federation, of course, is looking at this kind of activity with such serious tension. Why? Because after all, this is a zone of peaceful cooperation, economic cooperation, and, of course, the presence of a military factor always at least raises additional questions. If we talk about the prospects for cooperation, then certainly the prospects for cooperation in this area have nothing to do with the escalation of the presence of the North Atlantic Alliance in this Arctic region. It seems to me that we may well cooperate on another base. But I emphasize again: of course, this is a question that NATO itself decides for itself. We would like the Arctic cooperation zone to be peaceful, calm, and so that we agree there like we just agreed with our Norwegian friends."[47] [sic]

In attempting to identify one possible cause for the increased tensions, we note that the first was the war against Georgia and the logical consequence thereof, namely, the bad experience with respect to the modernisation and prioritization of military forces. Such modernisation is necessary and is consistent with national security interests. On the other hand, it makes no sense to classify NATO as an adversary in the Arctic Ocean. According to available open sources, there are very few seminars and meetings that deal with NATO in the Arctic. The acticle in "Open Democracy" is one rare exception.

3.6.6 An ambiguous role: NATO in the Arctic

Conditions in the Arctic, in the 21st century, are replete with territorial claims and lucrative opportunities. What role should NATO play in balancing the security implications for an increasingly accessed High North?[48] The present article constitutes an early drafting of the topic. And naval or air operations have not taken place, were neither planned nor directed by NATO.

NATO became more active following an extended period of negotiations to achieve a common goal for exercises and operations. This began after the publication of Russian concerns.[49] Thus, NATO will remain the historical adversary and will be used as an easy way to accept explanations for domestic concerns, as well as for appealing to people in the West who hold different opinions and who oppose NATO and its member states. By way of an answer to questions about hard and soft power, NATO's recently increased power projection exercises have been answered by Russian and Chinese exercises and an information campaign targeted at western societies and governments.[50]

One example of a major NATO exercise is "Cold Response", held partly within the Arctic Circle, though the area of operation was held ashore, in Norway and in the North Atlantic Ocean. This was executed in 2014. NATO's naval life exercises had been held at a rather low level, which though of concern to all member countries, were caused by safety and security operations in the Indian Ocean and the Mediterranean Sea.

NATO has seldom undertaken such exercises. The attention the BBC awarded to it in 2014 failed to gain broad public attention. These exercises had been conducted for decades in two ways, namely, as a life exercise, engaging NATO and often other interested countries, and as computer-assisted exercises executed by NATO staff. They were commonly used, whereby exercises were reduced during the period in which NATO shifted its focus to Afghanistan operations, operations at lower-end skills and the reduction of tensions in other areas of the globe, as the BBC report outlines:

> "Cold Response: NATO exercises in the Arctic Circle: Nato's Cold Response exercise involves thousands of soldiers from 16 different countries training together in the Arctic Circle. Following the Western withdrawal from Afghanistan, the military alliance is returning to the type of winter warfare drills that were used during the Cold War. This exercise was scheduled before the current tensions in Crimea. Anna Holligan travelled to Bardufoss, in northern Norway, 400 km (250 miles) from the Russian border, to find out how the military prepares for possible conflict in a cold environment."[51]

3.6.7 NATO, the United States, Canada and the European Union are responding to Russia's new policy

The situation has changed since 2014, and due to several factors, there has been an increase in military activities, which are set continue in coming years. The most important changes will be dealt with in the following passages of the present study. This focus on the military is, of course, not a replication of Cold War situations, even when some actions, provocations and misbehaviour at sea and in the air, tempt analysts and journalists to thus interpret the situation. In the final analysis, the Arctic Ocean is different: the build–up of special Arctic capabilities and the training of troops, the combination of military and civilian services as a result of modernisation efforts, have impressed NATO and the European Union which would not have been achieved merely by political and military assessments. The Russian build- up of forces both facilitated European and the United States' refocusing on the Arctic as a high priority and the demonstration of military and civilian capacities. The European Union's strength is its economic and scientific power. Military means are being given more attention and funding since Russia's hybrid war against the Crimea and the war against the Ukraine. The original role of the EU will remain, but member states are endorsing the build-up of European military capability. Whereas NATO will remain the military option, a form of interest sharing in the Arctic Ocean, for example, has not been overlooked, and will thus play a coordinating and not competitive role with NATO.

Russia's perception is different, and the widening gap of misunderstandings is a risk, and a real and present danger. "On June 1 2020, Colonel-General Sergei Rudskoy, Chief of the Main Operational Directorate of the General Staff (MOD GS) of the Russian Armed Forces, presented a briefing on the situation of military activity of the United States and its NATO allies near the Russian borders. 'The Ministry of Defence of the Russian Federation constantly monitors and records the high-level military activity of the United States and its NATO allies near our borders,' said Sergey Rudskoy."[52]

Analysing the statement, published soon after the NATO/US joint operation BALTOPS 2020, has shown that it has prompted consid-

erable reluctance by Russia and a very selective and reductive view of NATO participating countries, which have been conducting these exercises for years. In the early 2000s Russia was invited to act as planer and parcticipant. All such attempts to establish trust and confidence ended following Russia's war against Ukraine. Canada, the country with the second longest Arctic coastline and a close ally of the United States' in military affairs in the Arctic Ocean, has significantly increased governmental attention. Though Canada's national interests do not correspond to those of the United States in all areas, they approximate them with respect to the military assessment related to the Arctic Ocean.[53]

With strategic and conventional naval forces in the Arctic and Pacific oceans, it is difficult to understand Russia's concern about NATO's interest and presence, both in the Arctic Ocean and the Baltic Sea. NATO has been conducting military exercises in the Arctic Ocean and in the vicinity thereof from the outset. During NATO's engagement in Afghanistan, exercises have generally declined, whereas medium or large-scale life exercises have been practically non-existent in the northern region. Whereas the increase in the latter since the middle of the last decade was justified, on one hand by weak military experience in medium and large-scale multinational exercises, and on the other by Russia's war in the Crimea and the Ukraine, the demand by NATO member states has very clearly been to resume military life exercises.

NATO follows the same security and defence principles and ideas, as set out in Russian documents, could thus come as no surprise for strategic and operational thinkers. Knowing that Russia has an experienced military staff and excellent strategic thinkers, it must have been expected that NATO is at least interested in what Russia wants to achieve in combining soft and hard power. In sum, NATO and the United States were for a long time – almost until the final year of the Obama Administration – evidently seldom engaged in Arctic issues. Furthermore, until 2014, western priority concerns involved security issues caused by climate change and not by Russian military build-up.

NATO is not a simple organization that dictates to its members what to do and how to do it; it is an alliance of 28 sovereign nations in Europe

and America. Clearly, the way the Soviet Union/Russia has guided the Warsaw Treaty Organisation has been transmitted to the United States as NATO's major contributor.

NATO functions differently, and the Russian leadership, civilian and military, is aware of these differences. The same holds for the European Union.

This apparently cultivated "misunderstanding" makes it easy for Russia to blame NATO. Both sides, NATO and Russia, are in danger of misinterpreting the distinction between statement and action.

3.6.8 Russia's military modernisation and its Impact on the Arctic region

Following the war against Georgia in 2008, the need for reorientation and comprehensive military reform became clearly visible to the global community. An analysis of the modernisation process lies beyond the scope of the present article, but in view of Russia's present capabilities one initial assessment would be that what the process has achieved is considerable, and the priorities on certain capabilities, whether technical (including information-technology, and/or training and education) has improved military standards. This is above all the case with modernized and partly new weapon systems, which deserve attention and increase tensions both globally and, more specifically, in the Arctic region.

In a correlation, issued in January 2020 by "Russia matters",[54] a brief estimate of the different geographical and strategic aspects for the modernisation and the actual status of forces is useful. We focus here on the Russian side.

3.6.9 Russia and the Pacific

"Russia's Pacific Fleet remains a formidable opponent, and recent military reinforcements in the Sea of Okhotsk and the Kamchatka peninsula could become a problem for the freedom of access and military operation of US naval assets. Russia's Pacific Fleet comprises fewer than 20 active submarines (roughly one-third of Russia's sea-based nuclear deterrent), large surface vessels (including one guided missile cruiser) and powerful air defense systems."[55]

The Pacific Ocean will be dealt with in greater detail in the discussion on China and its ambitions for the Arctic – both within and outside Russia – at a later stage of this study. Here, we concentrate on the western side of the Russian Arctic.

3.6.10 Russia's military position in the western part of the Arctic Ocean and ashore

An initial and brief look at Russia's military capabilities and its long Arctic coastline of 24,140 kilometres shows a special challenge for all tasks relating to safety, security and defence. We must distinguish, furthermore, between the strategic dimension and conventional perspectives on the subject of defence. Some forces are committed to nuclear deterrence, some have a dual function, whereas most are equipped for Arctic Ocean and Arctic land operations. When evaluating this aspect of Russia's military capability, it is easy to observe Russian pre-dominance.

For Russia, the High North is one strategic arena for proving their military power, both as deterrence and for the defence of their own interests by way of a comprehensive undertaking. As mentioned in the above, the combination of "soft and hard-power" is crucial. When investigating this European part of the Arctic, it became obvious that the military has a decisive role to play. Even with its impressive build–up, the military must protect economic plans. Over the foregoing ten years, all major endeavours were dedicated to assembling a strong Arctic service so as to achieve this support and thus signal to the West that this is 'our' claim, and so do not interfere.

The organisation into four separate military districts and the Northern Fleet, has focused on the distribution of forces with an emphasis on the Northern Fleet's skills and expertise.

Moreover, Russia clearly sees the High North as a strategic as well as an operational priority, having created a new, fully fledged Arctic military district in late 2019.

In a significant report entitled *Russian Military Capability in a Ten-Year Perspective – 2019* the FOI, the Swedish Defence Research Agen-

cy, drafted the following report for the Swedish Ministry of Defence in December 2019.[56] The report's abstract read:

> "The report finds that Russia's authoritarian domestic policy and anti-Western foreign policy will continue. Recognition as a great power and establishing a sphere of interest in its neighbourhood will remain main objectives. The impressive pace of improvement of the Armed Forces in the past decade is probably not sustainable. Instead, the next ten years will consolidate previous achievements, notably the ability to launch a regional war. Strategic deterrence, primarily with nuclear forces, will remain the foremost priority. Towards 2029, Russia may only significantly increase its military capability further by sustained political support for determined policy implementation."

Compared to the enumeration of major weapons systems of 2013, the following systems are worth mentioning:

In this connection, we must acknowledge that naval forces also include components of air and ground forces, which provide a joint capability for wide-ranging operation.

The Northern Fleet is still short on state-of-the-art surface ships; the program has changed from bigger units to smaller and more flexible units. The arming of surface combatants has been increased: missile systems, such as P-800 Oniks and Kalibre NK are standard equipment for types designed as corvettes-type units. Both fleets, the Baltic and the Northern Fleet should be considered. In addition, air force units must be seen as powerful assets. This does mean that counting numbers of assets is a way to determine military skills. Obtaining an idea as to the availability and degree of readiness would provide a rather reliable picture of the current situation.

The FOI report is compiling most open resources information. When compared to Jane's basic diagnosis, such information can provide a rather serious assessment.

The composition of bigger ships is one Kirov nuclear powered guided-missile cruiser, one Slava cruiser, one Gorshkov frigate and approximately four Udaloy anti-submarine destroyers.

In addition to these naval surface forces, the number of submarines is essential: the six ballistic missile submarines (SSBN), which form part of the deterrence strategy not engaged in Arctic Ocean matters, but which operate in the Arctic Ocean ought to be mentioned in this connection. Climate change provides new geographical conditions and an open Arctic Ocean for new operations, one's own and foreign. Planting Russia's flag on the Pole had symbolic value for Russia, but was also, albeit for different reasons, a signal to the global community.[57]

The fleet of deployable submarines, not new assets, but still in active service, four cruise missile submarines (SSGNs) and nine nuclear-powered attack submarines (SSNs) represent a remarkable and mixed naval force.

In addition, we know about four special mission submarines (SSANs) and up to five conventional attack submarines. We should add to this, furthermore, the four large landing ships which comprise the core of amphibious warfare capabilities. This is a new capability for the Northern Fleet. What is new is the operational exchange of forces between the fleets and common exercises together with Chinese naval forces two years ago in all four oceans – the Atlantic, Baltic, Arctic and the Pacific.

Intense air assets also form part of the Northern Fleet, and even under a different command and control system, the range of skills is broad and covers long-range to coastal defence. Air defence encompasses regiments equipped with S-300 and S-400 air defence missile systems and fighter aircraft for local or regional air dominance, consisting of Su 33 and MiG 29 fighter aircraft. Most of the S-300 and S-400 missile systems are deployed in the Western Military District and with the Northern Fleet. Fifteen S-400 and 7 S 300 are stationed on the west side of the Arctic shore.

The FOI's excellent Order of Battle tables provide a recently researched contest, and provides a good insight into the capabilities of Russian forces as a whole, as separated into military districts and special locations.

In the appendices to Chapter 2, "Appendices A2.1–6 Armed Forces – 2019 Order of Battle" offer a very detailed and comprehensive description from page 45 onwards, which is supported by maps and a summary of weapons systems.[58]

Nagurskoye Military Complex on Franz Josef Land
Photo: Russian Ministry of Defence

For the purposes of the present study it is important to note that this concentration of the Northern Fleet's assets in the vicinity of Arkhangelsk and on the Kola Peninsula, serves both strategic and operational aspects: the access to both the Atlantic and Arctic Oceans. Having already dealt with air defence in the above, one should also mention army–like forces, whether naval, infantry or special forces. These forces must be assessed not only by numbers but primarily by their availability and professional skills, as well as the logistic and technical support at their disposal.

One of the lessons learned from the Cold War era is that the training and education of personnel is a challenge for military leaders around the globe. Both joint and combined operations require high-standard material status and a permanent training to solve the man-machine interface. Technical availability represents one further problem for all the world's navies.

Days at sea or hours of flight are useful criteria for measuring the expertise and skills of soldiers and officers of the Russian Northern Fleet. What we know is an increased transiting of naval forces and an increase

of exercises, but what we are unable to evaluate is the performance of ship crews in real-time operations, except for interceptions and unusual behaviour, which may be referred to as provocation at sea. Joint and combined operations are difficult and extremely challenging when not exercised permanently.

Before moving on from the military section, there is one development which began in 2013/14 that should also be included, namely, the careful drafting and implementation of plans to establish an Arctic Command and its co-location to the Northern Fleet's staff.

This implementation ought to be considered in connection with the growing tensions and risks which began with Russia's annexation of Crimea in 2014. Again, the occurrence of a spill-over of a crisis into the Arctic scenario.

This parallel, resolute act in the Arctic could be understood as a threat towards the US, NATO and the EU so as to prompt Russia's preparedness to respond adequately in the case of rising tensions and threats in their own territorial waters and EEZ. The command was a signal and it was deliberately co-located to the Northern Fleet, whereby there were no noted intentions in the eastern Arctic. In recent years of military development, the decision to retain it as a special operations command at a time of increasing tensions and risks resulted in it becoming an additional command in its own right, and with specific responsibilities.

Barents Observer, as one of the permanent and serious analysts on all matters pertaining to the Arctic Ocean, noted a very important change in Russia's Arctic Command structure, which became valid in January 2021:

> "Valid from January 1st, 2021, the Northern Fleet will have the same status as Russia's four other military districts, the June 5 decree reads. Today, Russia's military is divided into four districts; the Western, Southern, Central and Eastern. With the move, the Republic of Komi, Arkhangelsk Oblast, Murmansk Oblast and the Nenets Autonomous Okrug will be part of the Northern Fleet Command and no longer belong to the Western Military District. This is the first time in Russian history that

> a fleet becomes equal in command to a geographical military district. Since 2014, the Northern Fleet became the Joint Strategic Command of the Arctic, including onshore military installations along the Northern Sea Route. Since then, the Northern Fleet has not been part of the Western Military District. The Command is headquartered in Severomorsk on the Kola Peninsula and its current commander is Vice-Admiral Aleksandr Moiseyev. Geographically, the Southern, Central and Eastern military districts remain unchanged. Putin gives his government a deadline until October 1st to prepare a plan for fulfilling the country's new military-administrative division."[59] [sic]

At the same time, Russia has reopened and modernized approximately 50 closed military stations since 2014. These latter had been downsized or closed after the collapse of the Soviet Union. These military stations include air bases, radar stations and border protection bases.

In accordance with a search and rescue agreement, which had been signed in 2011 and which required implementation by all signatories, some of these reopened military stations have a clear, dual task and are equipped to fulfil them. This *Arctic Search and Rescue Agreement* is the first legally binding instrument adopted under the auspices of the Arctic Council.[60] As this is an achievement for civilian-military purposes, other actions are purely military.

The stationing of an Arctic Brigade and the deployment of new hypersonic missiles in the Arctic zone and in Kaliningrad Oblast on the Baltic Sea, are also concerns, as are additional, special technical assets such as drones, surface and subsurface assets.

This concludes the study of the military section. An outline should focus on the different roles implemented and exercised in the Arctic Ocean and ashore in Russian military districts.

The first these is nuclear deterrence, and there is no doubt that the Russian perspectives of this deterrence is directed against the US and NATO and towards Europe as a whole. NATO includes Canada, and due to its national and the alliance interests, the Canadian view is to increase its military and dual-use capabilities.

The second task is to possess and maintain all military capabilities at a high degree, all conventional forces at sea, in the air and ashore. Joint-operations capability is the objective. Since 2007, these parts of the Arctic forces have been separated into two halves, eastern Arctic forces and western Arctic forces. Currently, each deal with rather different scenarios and their tasks must be clearly defined. The eastern part is engaged in the further development and protection of the access to the Northern Sea Route and the support of all activities in securing national sovereignty. The primary military capabilities are the navy and air force. Maritime surveillance and information-sharing tasks, creating a maritime awareness and appropriate operational readiness are the core tasks.[61] The major role of the western part, the Northern Fleet, is to keep access to the Atlantic open and to provide military presence in Arctic Ocean, the Atlantic and Baltic Seas. The role of all these Arctic forces is to prepare and execute presence and military skills in these complex and awkward environments. The importance of well-trained soldiers of all ranks, of serious logistical planning and the best material achievable for routine tasks, only demonstrates how challenging other tasks are and will continue to be. Assessing technical capabilities is easier than estimating skills and professional performance.

The third function is the domestic role. The latter involves securing the Arctic Ocean for national purposes and acting in many military stations in cooperation with the civilian and the Arctic's most influential Russian administrations. Experience shows that this is not affected merely by order, whereby cooperation between military, paramilitary and civilian authorities is a substantial and time-consuming process.

3.6.11 Russia's possible options

For Russia there are several options for the future; bearing in mind the rapid pace of change these can be discussed and evaluated. For Russia, the centre of gravity is Europe, whereas for China it is the Indo-Pacific.

Russia is continuing its present course of action by way of temporary and close economic ties with China; this is bolstered both by military

exchange and cooperation in arms development. The adversaries are the US, NATO and the EU. The Arctic is the area in which this could be carried out.

In anticipation of the Arctic Council chairmanship, one further option would be to change domestic policies and to first adjust the unbalanced relation between economy and ecology, and from there to improve foreign policy with the US, NATO and the EU, namely, as a step- by-step approach towards the West. Even though this may seem unlikely in the medium-term future, it nevertheless remains an option.

A third option is to increase escalation towards the West by all means, such as in supporting regimes such as Syria, Belarus and other states in close proximity by way of strategic communication and manipulation of NATO and EU unity. Carrying out such an option in a loosely coordinated system with China would create confusion to the advantage of both Russia and China.

The fourth option is that the close cooperation with China in the Arctic and in other global matters is developing into a subtle dependence on China, and thus in the medium term becoming the second power in this relationship.

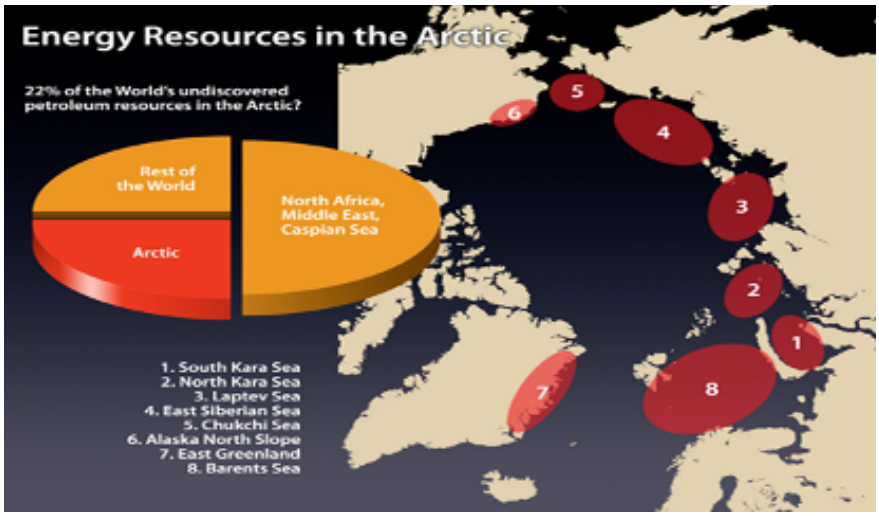
These are the various options, though some admix of the one or the other is also conceivable.

4
Economy, the absolute primary issue for Russia

After having described the military situation and the rebuilding of new and reopened facilities, it is now time to consider the economic aspect of Russia's national ambitions and goals. This is without doubt the core of Russia's current and future ambitions. All other aims have ancillary supporting functions for the achievement of such goals.

We now turn to the economy, more specifically, transportation, resources and, as far as possible, with aspects of energy, albeit that they are to be considered as intimately connected. One may well claim that from the standpoint of the present three aspects dominate all Russian ambitions, namely, oil and gas extraction, with a growing emphasis on LNG, the Northern Sea Route and the relationship with China.

The introduction to this study made reference to the number of criteria which require investigation: "The study identifies climate change, economic, political, technological, and military related aspects." This list does not reflect Russia's priorities and the tangible imbalance between economy, climate change and environmental protection requires consideration. Evidently, climate change, the sheer distances in the vast Arctic region and the ongoing sanctions against Russia are dominating factors. Knowledge of naval and maritime services in other regions shows that the coordination of sea-bound traffic is the most important transportation asset. A reliable and technically updated communication and navigation system is vital, indeed is the backbone to the entire system of transportation.



Energy Resources in the Arctic
Belgian Defence College, Arctic seminar, 128 DivMar 18 December 2013

4.1 The Northern Sea Route and North West Passage

Besides Russia, other Arctic countries with oil and gas resources include the USA, Canada, Norway, Denmark and Greenland. For transportation, both sea routes are possible for national and for international business. Traffic is to be seen as transitional traffic, as destination traffic and as shuttle traffic. All three kinds are to be judged differently, whereby destination traffic is nothing new, and Russia has the necessary substantial experience for national energy supply. This traffic is connected to the riverine system of oil and gas transport.[62] Traffic has been increasing in recent years and will continue to be used intensively. Transitional traffic is different and depends on reliable and cost-effective conditions, and on the still hard weather conditions. Shuttle traffic has two purposes, to increase transitional traffic and to maintain control and added value to Russia's economy by loading cargo on Russian ships with ice classes, completing the transit and reloading again. At very least, acceptance of this seems questionable.[63]

For our present purposes we focus on the NSR, but it must be noted that Canada and Russia, both influential members of the Arctic Council and the Arctic Five, maintain their respective sovereign rights to passage.

The study has so far dealt with two aspects: nuclear waste, as one underestimated threat to all activities in the Arctic, and the modernisation of the military as a whole, with a special focus on the Western District and Northern Fleet.

This approach has been pursed for two reasons: the lack of an Arctic Council or meeting format for military aspects on the one hand, while on the other, the ambiguous role of the Russian military in the Arctic region, at sea and ashore. Knowing how important military strength is for Russia as an overarching framework, hard and soft applications are at stake: the power of the military has a supportive role for the development of all economic goals. The richness of resources, which have a global importance, and the need for exporting them is closely connected to the future development of Russia and its aspiration to become or be accepted as a global actor.

Arctic economy is one, if not the only, priority for Russia, where at present most national circumstances favour the achievement of this goal. The division of the economy into transport, resources exploitation at sea and ashore and the energy complex, is one way to approach the subject. But the scale and interconnection of these topics makes this very difficult.

4.2 Indigenous peoples, international agreements

Evidently, the focus on economic and military means follows historical precedent. Lower priorities for indigenous people and environmental issues have a long narrative. In 2007, Russia abstained from voting for the *United Nations Declaration on the Right of Indigenous Peoples*.[64] This, and subsequent measures did not conform to international treaties and conventions. The rights of indigenous people are limited in Russia's north. It is doubtful that this will change any time soon, where the economy and environmental issues are constantly addressed at meetings as topics of equal significance though inappropriately implemented. The report by Survival,[65] an independent organisation which cares for indigenous people, notes the closing of the Centre for the Support of Indigenous People of the North by the City Court of Moscow. These court deci-

sions have also hit similar organisations. This attitude contrasts with all other partners in the Arctic Council and beyond.

Conversely, Russia has signed and supported three agreements dealing with topics of common interest: a catalyst for international agreements.[66] On three occasions, the Arctic States have negotiated legally binding agreements under the auspices of the Arctic Council. These aim at enhancing international cooperation on issues related to maritime search and rescue, marine oil pollution, and Arctic scientific cooperation respectively:

- the *Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic* (signed 2011);
- the *Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic* (signed 2013);
- the *Agreement on Enhancing International Arctic Scientific Co-operation* (signed 2017).

One further, very important agreement was signed by Canada, China, Denmark (in respect of the Faroe Islands and Greenland), the European Union, Iceland, Japan, South Korea, Norway, Russia and the United States (signed 2019). The agreement seeks to establish a joint programme of scientific research and monitoring to advance understanding of the ecosystems of the Central Arctic Ocean and, in particular, to determine whether there are fish stocks in this area that could be harvested sustainably.[67] Although four agreements are the common interest of all signatories, their crucial implementation, control and exercise is limited. This reluctance will continue unless a solution is found to halt Russia's war-waging in other global areas and the sanctions withdrawn. On the other hand, we submit that agreements are possible and have a value for the future.

All four agreements are of substantial significance for the Arctic Ocean and encourage further agreements which would help to re-establish trust and confidence, at least in some fields of common interest. The first two agreements have a direct impact on all transport-related issues, and so this study begins with an analysis of transport, on sea, air and land.

The attempt to establish some fundamental principles for the 2012 Arctic Five statements are still valid:

1. Natural and social factors, such as the further increase of changes in the ice coverage and coastlines and, in this context, the future of the Gulf Stream are of utmost importance; the acceleration of ice recovery is undisputed.

2. Natural and economic factors as new trade routes and the exploitation of resources and tourism. Both the North-West and the North-East passages significantly reduce the distances to and from Asia, with a major potential impact on trade and environment. This observed impact is a major concern, and the balance between economy and climate change must be re-established.

3. Legal aspects and a common understanding of the *United Nations Convention on the Law of the Sea* (UNCLOS). Russia's practice of using UNCLOS interpretation to regulate the NSR by limiting passages to national shipment is a concern. On the whole, Russia complies with UNCLOS, unlike China, which uses it where convenient and ignores and violates it as it sees fit. To prevent tensions, this must be discussed in the Arctic Council.

4. Strategic factors, such as the ability to sustain a naval presence, including a comprehensive approach to maritime surveillance using both military and civilian assets.

   Search-and-rescue is one option for further cooperation and common exercises. Even accepting that western societies are not willing to accept failure in search and rescue operations as Russia does; Russia's needs lay in its economic or commercial reliability at sea.

5. The economy, including funding and investment, must be favourable to stakeholders, and the comparison of the costs for using the NSR with those of the Suez and Panama Canals is one argument for the success of the NSR as oil and gas prices are the

dominating factors, whereby the changes, as these occur permanently, do not promote the further use of the NSR.

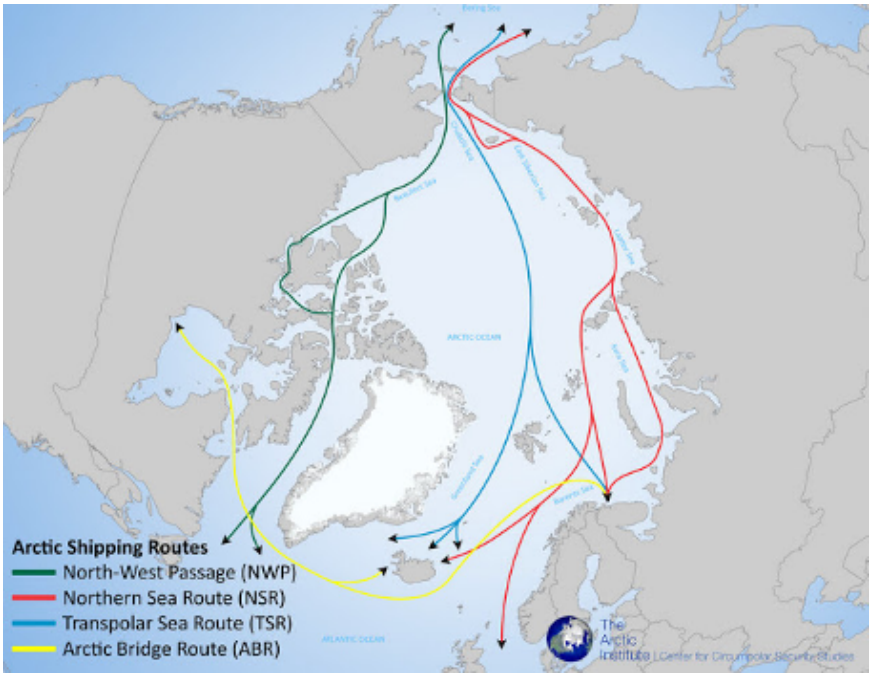
One new aspect is the prospect of Gulf Stream development: though essentially an environmental issue, it will effectively impact sea routes and access to the NSR.

4.3 Trade routes

Trade routes, and the NSR is one of the globally recognized "Highways of the Sea", and their further development is also an issue of common interest for Russia and the global shipping industry.

The German ship-owning company Beluga[68] conducted a trial in September 2009 and some others have followed;[69] the LNG tanker *Ob River* made the passage from Norway to Japan in November 2012, and was the first tanker loaded with liquid natural gas on this route. The tanker was accompanied by two icebreakers. In this review, some of the existing and unsolved challenges for Russia became visible: the first passages worked successfully, but transitional sea-bound traffic has not increased as expected. As mentioned, we must consider three travel options: west-east, east-west and designated traffic, sailing from west or east to a Russian port and back. The direct route across the Pole becomes more probable due to unexpected temperature increases and ice melting.[70] The idea of a "shuttle" service is fairly recent when compared to the traditional alternatives. It is doubtful whether this commercial idea stimulates transitional use. Administrative regulations and expanses must be an advantage together with shortened distances and the improvement of navigation systems along the NSR.

Transit cargo amounted to 37 passages in 2019 and lower numbers in the years before. But an increase in traffic was noted in the first half of 2020. The traffic list published monthly sends a clear signal and it is estimated that an increase will not occur significantly before climate change further reduces ice cover, improves navigational conditions, and offers more exciting conditions for passage.[71] This information is based on data from the NSR administration and observations by CHNL Information Office. Even with an increase of passages from 27, in 2018, to 37, in



Arctic Shipping Routes
The Arctic Institute, Center for Circumpolar Security Studies

2019, transiting the Northern Sea Route is still not the accepted business of the global shipping industry. Sanctions against Russia are one strong impediment, which could be solved by Russia. But it should be noted that the majority of ships sail under China's Shipping line COSCO.

"The cargo volume of transportation along the Northern Sea Route significantly increased in 2019 and amounted to 31.5 million tons. Recall that in 2018 this figure was 19.7 million, and in 2017 it was 10.7 million tons. The deliveries to ports in the water area of the Northern Sea Route amounted to 2 425.5 thousand tons, export of 28 408.5 thousand tons, and transit cargoes 697.3 thousand tons."[72] [sic]

More than 12,000 vessels use the Panama Canal each year and 18,000 use the Suez Canal. Acceptance of the NSR will increase not only due to accelerated climate change but by cost effectiveness and administration efforts. And oscillating gas and oil prices may also impact ship owners transiting decisions. The shipbuilding for NSR passages requires ice-class ships to open longer and safer transits, and permission for greater flexibility. For shipping companies' distance is important, but it is essen-

tially time which counts most with respect to decisions on investments like new ship designs with ice-class construction or new technology, such as new propulsion systems. The introduction of ice classes as one significant part of the Polar Code for transiting the NSR and the North West Passage (NWP) is based on an important agreement for the improvement of navigational safety with an international convention by the International Maritime Organisation (IMO).[73]

The key issue for the use of the NSR involves various criteria. Some of the latter, such as navigational safety and national regulations which both impede commercial interests and governmental interests are in Russia's hands and will be solved. These are domestic affairs, and most well-planned Arctic infrastructure and transport routes are currently being implemented.

Energy exploitation and processing, as well as transportation are undoubtedly the driving factors, together with access to other resources. Mining is another crucial resource. There are challenges of all kinds for transportation at sea, but it is necessary to achieve a level of Maritime Situational Awareness (MSA) that accounts for the complexity of the region and the responsibility to protect the maritime environment. We must be aware that maritime infrastructure, especially ports, will assume much greater importance and their role as a crucial point in the logistic chain will also effect changes to supply routes ashore. One of the prominent areas connecting shore and sea is the Yamal Peninsula and its significance for the NSR.

4.4 Yamal Peninsula

The study focuses on the Yamal-Nenets autonomous district or Okrug (YNAO), a part of Ural Federal District of the Russian Federation with a population of about 536,000 (2015) and that encompasses 769,250 square kilometres, which is roughly twice the size of Norway. The district is considered the "Far North", with more than half of its territory located within the Arctic Circle.[74] The exploitation of gas and oil began in the 1970s and the oil and gas fields are the world's largest. The natural gas reserves in Yamal-Nenets account for 1/5 of Russia's total reserves.

Yamal-Nenets is essential to Russian energy and economic security. The region supplies approximately 90% of Russian domestic gas. In addition, gas and oil represent 30% of Russia's GDP and 50% of the state's budget as of 2018.

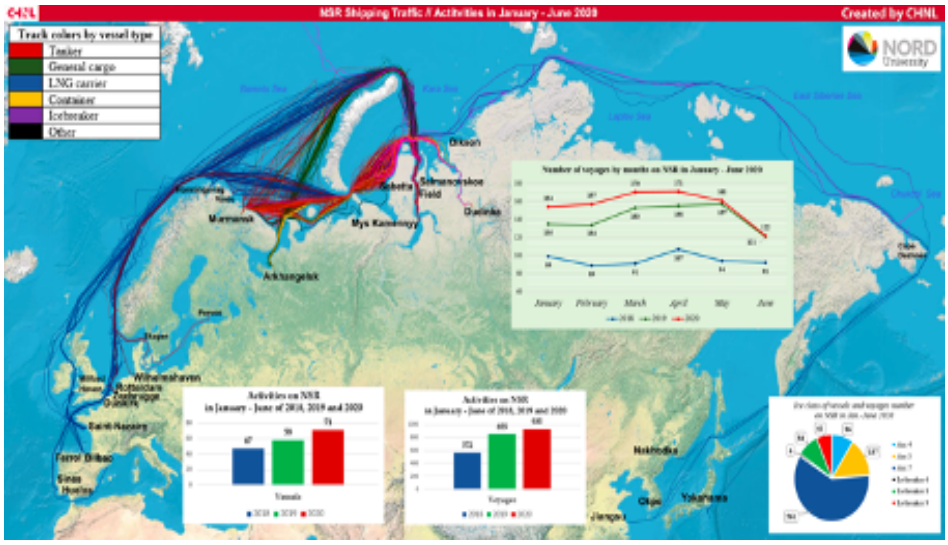
This is of importance for energy supply demands for safe and reliable port and transportation infrastructure and an appropriate transportation system for domestic distribution.[75]

Russia's economy is dependent on hydrocarbon production, and GDP growth or decline is affected by prices on the world market. Thus, state stability is also linked to natural resources.

The oil and LNG market in Russia is controlled by state oil companies. Three companies, Rosneft, Novatek, and Gazprom, are well known and operate under state protected conditions. All companies requiring access to the Russian Arctic, need to have at least five years' experience operating in the Arctic. Foreign firms are invited to invest in projects and can enter into partnerships with Russian corporations, though, as stipulated in the 2008 *Foreign Investment on Strategic Sectors Legislation*, holdings cannot exceed 50%. There are 32 oil and gas fields in the Yamal Peninsula, holding an estimated 26.5 trillion cubic metres of gas, 1.6 billion tons of gas condensate, and 300 million tons of oil.

A current picture of the situation is presented by the Northern Sea Route Information Service (see following page).

Gazprom states that its total gas production from Yamal in 2018 amounted to 87.4 billion cubic metres. The published objective is a continuous increase in the exploiting and exporting of gas, especially liquid natural gas (LNG), oil and mineral resources. "Oil and gas transportation systems in the Arctic include local and main oil and gas pipelines, transportation by railways and marine tanker fleet. The existence of the Northern Sea Route (NSR) and nuclear icebreaker fleet allows transportation of HC liquids (oil, gas condensate and liquefied gas) eastward and westward to the European, United States and Pacific Region markets. HCs are exported by tankers from several terminals of Murmansk, Vitino, Arkhangelsk, and Varandey seaports. In this case, the first three ports receive HCs by railway, which limits the traffic volume."[76]



Northern Sea Route (NSR) Shipping Traffic Activity, January to June 2020
Created by CHNL, North University

This statement dating from 2012 is, in principle though not in reality, still valid. The current situation signals the changes of delivery towards China and the velocity of building up the new gas and oil infrastructure on the Yamal Peninsular. The pipeline system providing transport and distribution is still an interconnected and fully centralized, controlled and managed system. The Russian economy is predominantly based on the exploitation of natural resources and, with the exception of military assets, production and manufacturing remains underdeveloped. Some of them are good for dual use, but goods production in conformity with international standards is weak.

The plan to concurrently develop an industry with which to reduce Russia's dependence on gas and oil production is more than questionable. Russia is the world's third largest producer of gas, oil and important minerals, like iron, copper, nickel, zinc and diamonds. While the major interest of both Russia and the global-community is the search for oil and gas, it ought not to be forgotten that minerals are also factor. The fishing industry in the Arctic Ocean completes the significance of all Arctic resources.

Having said that Russia is a more or less centralized country, when looking at responsibilities and competences we find a diverse reality. Maritime transport may be seen as one example of the diversification

of local and regional competences. The context of economic objectives is set out in several documents; it is divided among different ministries and their competences for energy and mineral resources and maritime shipping/transport executive administrations. There are three possible options for navigation which depend on the climate change, the Northern Sea Route, the North West Passage and the Pole Sea Route. According to scientific forecasts, the impact of global warming is at least twice as rapid as elsewhere. Consequently, the use of the NSR will be open in summertime.

A word of caution ought to be added at this stage: ice free does not imply safe navigation. The specific and dangerous weather conditions will remain irrespective of ice recovery and will challenge shipping with the danger of damage and losses.

Though beyond the scope of the present article, the opening of the Pole Route expected in 2050 is realistic.

4.5. Legal aspects for NSR and NWP

The NSR and WSP are currently subject to disputed legal deliberations with respect to the conditions of freedom of navigation. While Canada and Russia have different geographic situations, they have similar attitudes towards the international or global use of their passages. Meanwhile, this must be solved. The expected Pole Sea Route will reduce the importance of this issue significantly. It will reduce transitional sea traffic on the NSR and NWP by shortening the distance and the range of influence of both Canada and Russia.

Today's agreements and conventions thus set the standards for all three sea routes, and Canada and Russia will seek approval for their perception of UNCLOS. Whatever happens or is agreed upon, the process is underway and the role of the Arctic Council to solve present and future challenges remains an open issue.

Without a legal framework based on the existing UNCLOS regime, difficulties will not only remain but will intensify tensions and potential conflict. A transparent and clear framework will enable international

governance. The issue of "good governance at sea" has so far not been touched upon but remains one of the International Maritime Organisation's key assignments tasks. One achievement by the IMO for Arctic transport is the *Polar Code*.[77]

This *International Code for Ships Operating in Polar Waters* is specifically designed to make navigation in polar waters safer and more environmentally friendly. The code provides clear regulations for all seafarers navigating in the Arctic and is not limited to the passages. Safety measures include both internal ship safety and external environmental protection. These comprise the key duties and responsibilities of the *Polar Code*. In essence, external measures are the prevention of oil spills, estimated as one of the present dangers in shipping and onshore companies or maritime seaborne infrastructures. Russia's agreement to the *Polar Code* and to the need for training and exercising is an encouraging signal for environmental protection at sea.

Russia's Arctic legal agenda is not in compliance with a common Arctic governance objective.

The extensive international legal framework – primarily the 1982 *UN Convention on the Law of the Sea* and other agreements applicable to the Arctic, such as the four *Geneva Maritime Conventions* 1958, MARPOL 1973, SOLAS 1974, etc.[78] – has already been referred to.

UNCLOS maritime and airspace zones have been clarified and the fact that the US has yet to ratify UNCLOS has been pointed out very clearly. The Russian position on the disputed Exclusive Economic Zone has been clarified in the quotation from Article 234 of UNCLOS:

> EEZ in the Arctic: Article 234 provides coastal states with the right to adopt national legislation for the prevention of marine pollution from vessels in ice-covered areas within the limits of the EEZ.

Another unsolved issue is the continental shelf and Russia's rights to use part of this shelf. Russia claims that the Lomonosov Ridge, the Medeleev Ridge, as well as the Podvodnikov Basin, are underwater plateaus belong to Russia. The UN Commission on the Limits of the Continental Shelf (CLCS) musts decide whether the Russian claim

is acceptable. The outcome remains undecided.[79] Due to overlapping claims, the outcome is essential for Russia, as well as for Denmark (representing Greenland) and for Canada. But aside from these reciprocal claims, the long-term perspective of the Pole Sea Route has more implications for Russia, since it has the longest coastline and most resources in its own, nationally controlled waters and seabed. Were the Pole Sea Route to become traversable in twenty years or so, transitional traffic would disappear from the NSR.

Except for the Arctic sea route, the regulation of which is the responsibility of Russia, the NSR and the WSP are predictable sea routes; due to the resource's extraction in Russia and a lower priority to environmental protection at sea, the NSR is today the most-frequented transport route for destination traffic. Canada and Russia are responsible and are in the position to develop and issue national legislation as to when and how ships travel through both passages. As mentioned in the above, they are the administrators and thus define the standards. Determining standards for exploitation and transport exerts major influential power and it is imperative that this is kept in line with international law.

One obvious factor is the military passage, the so called "innocent passage" or what the US Navy refers to as "Freedom of Navigation exercises." In addition to the military, the air force and naval aspects, these national administrations exert a serious impact on domestic and foreign policy and on society as a whole. Today, Canada and Russia are the only administrators of the Arctic sea routes. Even with similar attitudes to the principle of sovereign rights and responsibilities, there are major differences on all questions pertaining to the use of the sea routes and the balance between environmental protection are thus set to remain.

The global community, and as the accountable international organization, the IMO, would assume responsibility for solving administrative challenges, which may result in a highly controversial political issue.

In essence, however, the same position with respect to the question of national rights for all countries, must be the issue of sovereignty; most other, no less important issues, are seen, judged and acted upon in completely different ways and for different reasons.

Contemporary issues, such as climate change and the rights and the acceptance of minorities may be understood in the distinction between Russia's policy- and decision-making on one hand, and Canada's actions in compliance with its Arctic and Northern Policy Framework on the other. Co-developed by indigenous, territorial, and provincial partners, the Arctic and Northern Policy Framework demonstrates Canada's commitment to working collaboratively. Co-development encompasses a broad spectrum of engagement and collaboration and enables partners to contribute in a variety of ways that reflects their own priorities and capacities. This inclusive approach will be extended to all implementation issues of the framework.[80]

This brief digression should help clarify why having a common objective with respect to the issue of sovereignty is not something that will undermine Canada's own path.

4.6 Part III of UNCLOS: "Straits used for international navigation" and innocent passage

The dispute surrounding the use of these territorial waters brings with it a certain scope for misinterpreting Article 45 of UNCLOS as it pertains to "innocent passages." This is a legal item which is difficult to understand for all those involved in the topic. The different interpretations of the appropriate articles remain a concern. It is also a very pragmatic issue. The dispute turns on the question of freedom of navigation on all oceans and littoral seas, and on the right of national jurisdiction within the territorial waters of all countries. This remains unsolved. To better understand one critical aspect of UNCLOS, a quote from "LawTeacher", written by a law student is helpful.

One scholar claims that the purpose of this right "lies in the fact that the whole world has a legitimate and necessary interest in being able to use the seas for the purpose of normal intercourse. 'Passage' is a word of motion, and in its proper use, it signifies continuous movement from one place to another. It does not imply any right to remain at rest on the track or to use it for any other purpose than that of transit. Innocent passage derogates from the authority and sovereignty which the coastal state exercises over

its territorial seas. Even those disposed to grant the coastal state full sovereignty over its territorial waters do not claim that its sovereignty is absolute. The essential question is: to what extent is the right of innocent passage an independent right, on parity with that of the sovereignty of the coastal state; and to what extent should it be deemed a subordinate right, perhaps even a grant, of the coastal state? The concept of "innocent passage" seems to be the result of an attempt to reconcile the freedom of ocean navigation with the theory of territorial waters. Many writers maintain that the coastal state exercises sovereignty; on the other hand, a minority deny the territorial character of the maritime belt and concede that littoral states work only in the interest of the safety of the coast, certain powers of control, jurisdiction, police, etc., but not sovereignty."[81] [sic]

This is and will remain a controversial topic and can only be solved by understanding between countries. The demand for "Good Governance at Sea" cannot be solved by bi-lateral or limited agreements without causing negative reactions in other parts of the Oceans throughout the world, and similar geographic circumstances. This is relevant to sea transport, but innocent passage for state-ships and especially for war ships is an additional controversial issue. For Russia, the use of so-called "hot spots" described as narrow shallows is of great importance.

The Baltic Sea, the northern area of which forms part of the Arctic region, has a narrow passage for departing and entering the sea through Danish territorial waters. Together with Sweden, Denmark elaborated a detailed and necessary package for transiting through its narrow and shallow waters, the so-called *Navigation through Danish Waters*, issued by the Danish Maritime Authority.[82] These regulations do not directly account for "innocent passage" topics, but ensure a regulated and controlled passage for all ships transiting Danish waters. The situation was evaluated at the height of the Cold War, as can be seen by a recently released, strictly confidential paper drafted in 1975 by the CIA.

Innocent passage of war ships, including submarines, was in the interest of Soviet Union and US navies. Denmark was very much engaged in keeping its sovereignty as a higher law than innocent passage.[83] While the substance of this paper is now history, it nevertheless bears semblance to current attitudes on the behalf of Arctic actors.

Finally, Canada and Russia are both involved in the issue of transit and innocent passage. Administrative measures must be accepted by foreign governments and commercial companies. Insofar as companies are state-owned, this might be manageable. Stakeholder and consortia compare what Russia and Canada provide in terms of service and safety benefits, and compare distance reduction with costs in the time generated by coastal administrations.

4.7 The Northern Sea Route (NSR)

Existing traffic and growth forecasts encourage investments in port and seaway infrastructure.

From 10.7 million tons in 2017 to 26.4 in 2020, with an anticipated 80 million tons in 2024 represents more than a remarkable increase of cargo.

The NSR is the shortest route between Asia and Europe. On average, it is 35% shorter than the route via the Suez Canal. But distance is only one factor. Ship owners and transport management is also based on time. Time is a critical factor for container shipping and other time vital goods.

At this point, we should consider the role and work of the state agency responsible for the development of this seaway, the Northern Sea Route Administration (NSRA).[84] Until 2019, this administration was responsible for managing all traffic within Russian territorial waters and rivers. The decision to shift this to Rosatom as the future manager of Russia's Northern Sea Route was signed by President Putin in December 2018. Atle Staalesen's report entitled, *The Nuclear Power Company will Observe Russia's Arctic Shipping*, published 2 January, 2019 marked this significant change.[85]

Rosatom's new powers in the Arctic include development and operational responsibilities for shipping, as well as infrastructure and seaports along the northern Russian coast. The responsibilities of the Northern Sea Route Administration, which until now has operated under the Ministry of Transport, will now be transferred to Rosatom. The implications of this turn to Rosatom may be traced back to differing observations in the Russian government. The substantial increase in

destination traffic, and the increased attention of the Yamal Peninsular – especially its LNG production and transportation – may be the cause of this change.

With this change, whether Russia has decided to implement rules for the passage of foreign warships remains unclear. The sensitivity is acute on both sides, and the announcement of a 45-day advanced notification and ordered pilotage, are measures which require further discussion and agreement.

Warship transition through the NSR and the WSP are not openly discussed, and when compared to economic discussions, could be a used as a pledge depending on whether or not the political will inclines towards escalation. This is not, to be sure, a military issue even when the military, in this case naval ships, operate in accordance with political will. Rosatom and its companies are the major actors.

And Rosatom is the world's largest icebreaker company; Rosatomflot is the acting company with four nuclear powerplant icebreakers, two with twin reactors and two with a single nuclear powerplant. Yamal Nenets is currently of key importance. "Contrary to the predictions of some Western observers, Russia is in the process of succeeding in its energy bet on the Yamal Peninsula. Yamal LNG is now operating at full capacity, with annual production of 16 million tonnes of liquefied natural gas (LNG). A second extraction project, Arctic LNG 2 is currently under development in the Gydan Peninsula, on the other bank of Ob delta."[86] [sic] Supplying most of Russia's natural gas, The Yamal-Nenets and the Timan-Pechora/Barent Sea regions are of particular importance for the oil and gas industries. The Yamal LNG, or liquefied natural gas project, has been allocated $2.5 billion to create the largest and most complex LNG project in the world for natural gas extraction from the South Tambey Field reserves, amounting to two trillion cubic metres of natural gas.

In addition to oil and natural gas, the Arctic shelf contains a number of other mineral resources, such as zinc, copper, tin, nickel, diamonds, gold, and silver, and there are 25 centres of operative mines in the Russian Arctic. These rare minerals and metals are essential inputs for technology,

and their price recently rose as a result of the increased technological demands in the 21st century.

Fishing industries, furthermore, have a similar significance for economic resources. Climate change, for example, is pushing marine ecosystems and fauna farther north with warmer waters. Russia's coastline is the second largest in the world after Indonesia and yields in the Bering Sea are valued at approximately $600 million per annum.[87]

To complete this section, we can maintain that energy means oil and gas production, Russia's key economic sector, and that the Yamal-Nenets and the Timan-Pechora/Barents Sea regions are currently the largest and most crucial regions for Russia's future. Due to climate change, the NSR provides technical development and accelerated ice melting, and in the Arctic Ocean relative safe sea transport during the summer. Land pipeline systems are in operation and their contribution to transport has also increased. Due to the as yet uncertain navigational assistance and the limited space support by satellites for navigation and communication purposes, existing options offer far more seabound traffic than can actually be used currently. A recognised gap exists between possible traffic and existing traffic. The change in responsibility is driven by the political will to improve and increase necessary projects. The restrictions caused by western sanctions have forced Russia to improve and facilitate relations with China. Bearing in mind all intellectual arguments, it is the mistrust towards the West and the national political will to be accepted as a global player and global power which significantly impedes otherwise obtainable agreements. Russia must come to a decision about its own future, and it would appear that China is the present option.

From the position of western countries, using the NWP instead of the NSR offers little advantage for Europe and many disadvantages. For the United States, however, the NWP does offer significant advantages. Shanghai to New York via the NWP is 9,083 NM, namely, 15 % shorter than the 10, 58 NM via Panama. For the United States, Alaska could be better connected to the eastern coast, and transportation would become easier. For our study, Russia is the subject, and thus the NSR is of greater relevance. Insofar as Canada's NWP is considerably different in its economic status and development, the NWP is not a global concern as is

the NSR. From a security and defence perspective, together with the US it is of growing importance.

4.8 Climate change, ice melting, populations and safe navigation through the NSR

Although these terms tend to be employed interchangeably, global warming is just one aspect of climate change. "Global warming" refers to the rise in global temperatures mainly due to increasing concentrations of greenhouse gases in the atmosphere. "Climate change" refers to the increasing changes in the degree of climate over a long period of time – including precipitation, temperature and wind patterns.[88]

Russia, as all other seven Arctic countries, has paid serious attention to climate change and the ensuing consequences of such a change. Many discussions have taken place and scientific commitment is considerable. As set out in several principle papers, the analysis of development and necessary activities are clearly defined, and do not differ from equivalent papers released by other Arctic and non-Arctic countries. The important question about the issue "man-made" or "natural-made" has an impact on measures for lowering its impact, but the practical question is essentially about national priorities and the funding allotted to a future-orientated balance between economy and ecology.

4.9. The key subjects are oil, gas and transport: the balance between economy and ecology

Having covered oil, gas and transport for the Russian Arctic, and having pointed out, that all three are fundamental for Russia's economy and future development, among other things, all three represent risks for the environment, populations, including indigenous peoples and all species inhabiting Russia's North.

If we add permafrost and demography to these, we then have a comprehensive list of the range of concerns.

Owing to uncontrolled and dangerous evolution ashore and at sea, climate change for Russia signifies both a big chance for further devel-

opment and a limitation. Each of these trends are co-dependent and require strict and consistently balanced policy and monitoring. One consequence of climate change is the increased and accelerated melting of ice. This has a global impact and is not limited to the territory of Russia. Consequently, the responsibility to act in collaboration with the international community is evident. From the perspective of climate development, Russia, along with Canada and the United States as countries with global perspectives, have global and not only national responsibility. And China's Arctic claim as being a near Arctic State likewise implies a similar responsibility.

Russia has set out its viewpoint and policy in a general statement entitled *Principles of State Policy in the Area of Environmental Development of the Russian Federation for the Period until Year 2030*.[89]

This paper is not directed to any region or local area, but it formulates principles and objectives which cover almost all domains of environmental concerns. Its structure – commencing with "General Provisions" to "Strategic Objectives and Principles of State Policy in the Area of Environmental Development" is followed by "Main Tasks of State Policy in the Area of Environmental Development" and finishes with "Main Mechanisms of Realization of State Policy in the Area of Environmental Development" – follows a logical sequence and is thus an "all-purpose paper."

In principle, it is similar in content to papers drafted in many countries and by many agencies. It may well have been issued in any country, and the fact that the Arctic region and Siberia are not mentioned as special regions requiring particular attention signals an attention to environmental tasks on the one hand, but on the other the avoidance of urgently needed procedures and measures. What is missing is a decision about priorities for Russian regions. This could be a paper for the Arctic Council for narrowing the gap between ecology and economy.

One conclusion is that without the assistance of all parties, including the members of the Arctic Council, such ambitious principles would remain at the planning level without pragmatic and predictable impact.

As a reliable and serious guide through this topic, the Norwegian Polar Institute can provide data and insight into the scientific community responsible for climate change issues and environmental protection. The Norwegian Polar Institute focuses on the western part of the Arctic, on Svalbard and the Barents Sea.[90]

The Arctic is warming up at about twice the speed of the global average. The Arctic climate has a direct impact on global warming and is the core for cooling outside the Arctic Ocean. For the Arctic Ocean, ice melting and the increase of floating ice represent changes that impact upon shipping. Less ice means a darker surface, which then absorbs more solar energy and creates the albedo effect.

The Norwegian Polar Institute summarized the actual situation for the western part of the Arctic Ocean thus: "Arctic amplification is not the only evidence of rapid climate change in the Arctic. The floating sea ice cover of the Arctic Ocean is shrinking, especially during summer. Snow cover over land in the Arctic has decreased, notably in spring, and glaciers in Alaska, Greenland, and northern Canada are retreating. In addition, frozen ground in the Arctic, known as permafrost, is warming and in many areas thawing. Scientists first started to see evidence of changes in Arctic climate in the 1980s. Since then, the changes have become much more pronounced."[91]

4.10 Permafrost

Unexpected acceleration of climate change, as noted by scientific reports in recent years, has impacted shipping on the NSR and has also hit the land site. The melting of permafrost ashore is evident and has negative implications for ports and all maritime infrastructures, as well as on all buildings in different local and regional surroundings.

This rapid change of the local and regional environment is visible and is cause for concern. The number of people working on Yamal Nenets projects for a certain time, but who do not live in the community, is increasing. Growing awareness about the instability of housing and infrastructure ashore due to subsidence, has become a serious concern and has prompted a lack of trust and confidence in local, regional and

Permafrost Extent
National Snow and Ice Data Center

national administrations. While nothing new, it is confirmation of an ongoing thawing process which began in the early 1990s.

Many structures are built on piled footing with the permafrost as their foundation and are dependent on definite soil conditions and temperatures. In the last 30 years, over 300 buildings in Yakutsk have suffered serious damage owing to ground subsidence. Whereas, such impacts on infrastructure are foreseeable, they are gaining momentum, and new infrastructure is designed differently. However, the most recent reports by the Moscow Times and republished in *Barents Observer* describe a critical situation.

According to a new Morgan Stanley report published in the Vedomosti business daily, rapidly melting Arctic permafrost poses the greatest threat to major Russian energy producers' infrastructures and financial indicators.

Gazprom, Novatek, Alrosa and Norilsk Nickel – whose fuel tanks leaked after sinking into thawing permafrost in May 2020 and which resulted in a major environmental disaster – stand to lose the most from the phenomenon of carbon gas releases, and further fuels global warming.

"Climate change in permafrost areas, which account for about 60% of Russian territory, leads to the release of large amounts of methane and carbon dioxide, reduces soil stability and creates risks for infrastructure", Vedomosti quoted Morgan Stanley as saying Thursday. The investment banking company noted that average temperatures in Russia have risen by two and a half times the global rate since 1960 while Arctic temperatures have risen at three to four times the global rate since 2000. When compared to 1965, this heat reduces the bearing capacity of structural foundations in key hydrocarbon production regions by 25-75%. Around 90% of Russia's gas and diamonds, 30% of its oil and all of its palladium reserves are produced in areas covered by a thick layer of permafrost.

Consequently, according to Morgan Stanley's analytical report, these companies could feel the impact of climate change in the near future.

Gazprom's forecasted free cash flow for 2022, for example, risks being cut from $8.4 billion to $4 billion, while Nornickel's predicted 2022 dividends could halve to $1.1 billion".[92] [sic]

This article is important for several reasons. The primary issue concerns the direct link between climate change and the resultant increasing impact on permafrost and the subsequent financial consequences. Dealing with the implications on industrial aspects is one issue, but the consequences for people living and working with such uncertainties is another. The role of people, and most especially indigenous communities, is of great importance and should not be seen as an attempt to assist them to survive in protected areas. They have their assignments and duties which are based on their achievements and experience in surviving in a demanding environment. The future value for people in the environment is fundamental and neglecting their experience and knowledge would significantly reduce all other aspects.

"The indigenous communities are already subject to stress that restricts the harvesting and herding routines, some of which may be associated with climate change. For many Arctic communities, consuming food from animals is fundamentally important for survival and personal well-being. Indigenous people have reported a loss of vitality, a decline

in health, and decrease in personal well-being when they are unable to eat traditional foods. The potential impacts of climate change, thus include a concern for access to traditional food resources, and the social and economic well-being and the health and cultural survival of the indigenous people of the Arctic."[93]

This study has dealt with what, from our perspective, represent the most important aspects of the Russian Arctic. Thus, within the confines of the present contribution various otherwise significant factors have not been covered.

For Russia, fishery is an important part of its domestic and export economies. In the Arctic, fishery may experience benefits in the short-term due to higher water temperatures and increasing fish stocks. Agriculture may thus benefit by a more intensive sustainable agriculture.

Tourism is another factor, at least in the western part of the Arctic Ocean. The question as to whether and how the present situation prompted by the Covid-19 pandemic will impact sea-going tourisms remains open and unpredictable. With respect to the protection of the Arctic, less tourism has a beneficial and protective effect on the environment.

One further factor is that melting permafrost on land and on the seabed generates new tasks and is increasing old challenges, such as firefighting and oil-spill accidents, that have been occurring on a yearly basis.

The threat caused by the release of greenhouse gases must at least be referred to Russia, and thus finalizes the description of threats and challenges for Russia as being to date the most important actor in the Arctic region. The release of gas due to non-existing permanent frost in the Arctic has been as underestimated as the clearance of nuclear waste.

> "About one fourth of the Northern Hemisphere is covered in permafrost. These otherwise permanently frozen beds of soil, rock, and sediment are now not so permanent, but are thawing at an increasing rate. With the first signs of thaw, scientists rushed to monitor emissions of the two most influential anthropogenic (human-generated) greenhouse gases (carbon dioxide and methane). But until recently, the threat of the third

largest (nitrous oxide) has largely been ignored. Since the Arctic is warming at almost twice the rate of the rest of the planet, it is predicted that the permafrost will thaw at an ever-increasing rate. These warm temperatures could also bring more vegetation to the region. Since plants absorb nitrogen, they could help decrease future nitrous oxide levels. However, to understand how plants might mitigate the risk, researchers need more data on the risk itself. Wilkerson hopes researchers will be able to obtain this data at a faster rate, whether by plane, tower, chamber, or core, or preferably all four. 'This needs to be taken more seriously than it is right now', he claims. The permafrost may be stuck in a perpetual climate change cycle: As the planet warms, permafrost melts, warming the planet, melting the frost, and on and on. To figure out how to slow the cycle, we first need to know just how bad the situation is."[94]

Another annual challenge is the big fires in Siberia and the problem of how to fight them once detected. It is a huge problem for regional and central government.[95]

5
Conclusion

Russia's view of its Arctic region is positive and is set to remain with a set of long- lasting and unchanging priorities. Transport, resources and energy are the backbone of its economy, and the Arctic Ocean and Siberia provide such requirements in a unique way. This is the Russian perception.

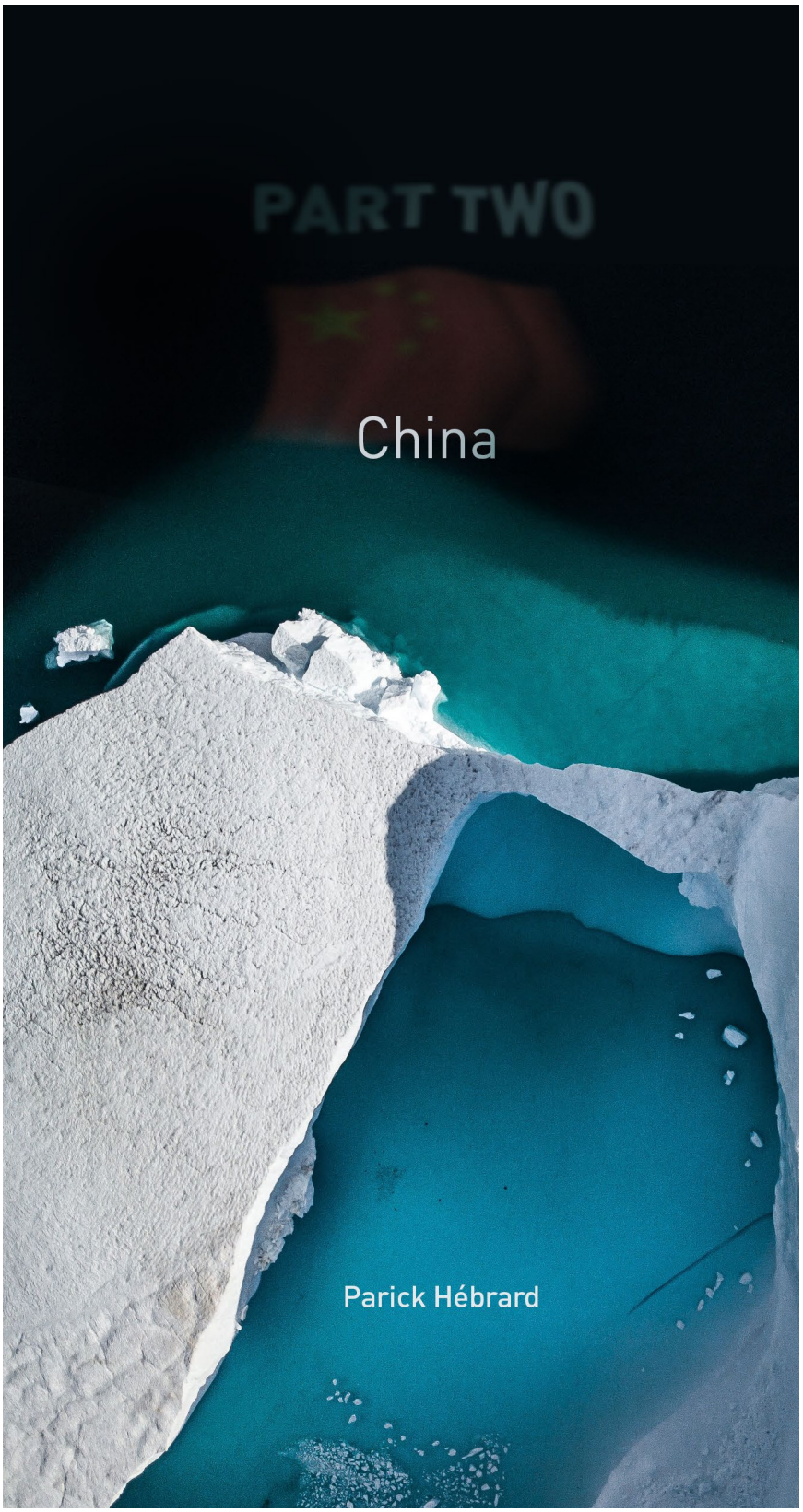
All other aspects are identified, and scientific research has a high degree of acceptance and support as well, but their findings and international cooperation and exchange of data do not find their way into the progressive pace of development of the "Big Three".

The gap between economy and ecology is growing and the impact is not national, namely, limited to Russia, but global. Nuclear waste disposal is already an international undertaking, with Russia in the lead. Since permafrost it is not sufficiently known and there are now up-to-date reports and documentation which reflect the pace of climate change and its deductions, this represents a field of activity requiring cooperation and knowledge exchange and implementation.

The urgency of these aspects must be recognised, and Russia must acknowledge that its position as the major Arctic country is accompanied by global responsibility. Military reform and its implementation provide a clear signal of Russian capabilities as well as what can be achieved in other sectors when determining priorities. Apart from strategic deterrence, which is a continuation of the Cold War era by means of new technology, the conventional Arctic forces, primarily the navy and air force, protect their national interests and are seen as defence forces. They support the national goal of the "Big Three". The FSB, and under

its control, the coast guards are expanding, taking on and executing tasks. The issue of free and innocent passage is yet to be solved and the wish to generate a solution favouring the acceptance of the NSR is in Russia's interest.

Compared to all seven members of the Arctic Council and most observer countries, Russia is not closing the gap between economy and ecology. It not caring sufficiently for the inhabitants of the Arctic region. All other countries have adopted policies and programs to ensure that their voices are heard and that they have equal rights. Although Russia may currently grant some short-term advantages, they will cause mid-and long-term problems for the future development of the economy. The chairmanship of the Arctic Council next year could be one opportunity for further cooperation on some specific topics, though should it prove to be one further arena for confrontation it could have a critical outcome. Ignoring the aspect of political and military power competition between Russia and China remains questionable. The role of China as Russia's temporary ally is uncertain and is bound to exert substantial influence on the agenda of Russia's chairmanship.


PART TWO
China
Parick Hébrard

Introduction

In her book *China as a Polar Great Power*,[96] Anne-Marie Brady, professor at the University of Canterbury in New Zealand explains how, within a few years, China has become a polar power. China does not, in fact, use the names Arctic and Antarctic. In Chinese, Polar translates as the compound word jidi, meaning "extremes of the earth." Thus, in Chinese, the Arctic is the "northern extreme", the Antarctic, the "southern extreme" to which they add the "third extreme", which is the Tibetan Plateau.

Although China's interest in the poles is recent, China sees itself as "a near Arctic state", as stated in its 2018 White paper. The polar regions constitute part of the common heritage of humankind, which means that all states have the right to participate in their governance and have access to non-littoral state rights.

The Chinese strategy in the extremes is a long-term vision, taking opportunities when available.

In this second part of the study we will briefly review China's history in the poles, before focusing on China's advances in the Arctic up until the publication of the White Paper in January 2018. This document will then undertake a detailed analysis, before addressing current developments and perspectives with the Arctic Silk Road and the consequences for the Arctic states.

Chinese scientists were involved in the first and second International Polar Years held in 1882 and 1932. In 1925, China signed the *Spitsbergen Treaty*, though China's State Oceanic Administration (SOA) was only established in 1964. Priority was given to the Antarctic with the creation of the National Antarctic Expedition Committee in 1981, and the signing of the *Antarctic Treaty* in 1983. Receiving 80% of funding,

the Extreme South receives the major part of research budgets and concentrates predominantly on polar expeditions – 36 in Antarctica, eleven in the Arctic (summer 2020)– and 80% on scientific research papers.

The official reason why China has started to show interest in the Extreme North is owing to the consequences of the evolution of the Arctic with respect to its agriculture and economic development, but also due to the strategic consequences of melting ice. The Arctic research program was formally launched in 1989 with the creation of the Polar Research Institute of China (PRIC) in Shanghai. China took its first icebreaker, the *Xue Long*, to Ukraine in 1994, and joined the International Arctic Science Committee (IASC) in 1996. The first Arctic expedition was conducted in 1999.

1
China's Arctic approach

During this period of thirty-odd years, China's approach to the Arctic was carried out without any official policy. Scientific research was the first of China's gateways to the Arctic, followed some years later by the development of its economic interests and greater political influence.

1.1 The Research Gateway

The official reason why China began to show interest in the Far North was due to the effects the evolving Arctic was exerting on its agriculture and economic development, as well as the strategic consequences of melting ice. China's official Arctic research program formally began in 1989 with the founding of the Chinese Polar Research Institute in Shanghai. From 1994, with the commissioning of their research icebreaker *Xue Long*, Chinese scientists were able to conduct expeditions in the polar areas. But the first visit to the Arctic occurred only in 1999, as priority was given to the Antarctica. Scientific publications regularly explained that climate change in the Arctic was the cause of environmental problems in China. This justified investment in Arctic research and the opportunity to cooperate with Arctic actors. Since 2003, as with other Arctic countries, China has been deploying temporary or permanent weather research stations on icebergs.

The first Chinese Arctic scientific research field station, Yellow River, was established in Ny-Ålesund, Svalbard, in July 2004. The station includes labs and can support 20-25 persons. "The labs support research in the fields of meteorology and space-earth measurements, glaciology, marine ecosystems and environmental and weather patterns. A roof-top observational platform enables the study of upper atmospheric physics.

Yellow River Station, China's first Arctic scientific research station, Svalbard Island, Norway
Source: china-embassy.org/eng/gyzg/t144196.htm - Xinhua Photo

China encourages field research, and thus annually selects scientists from a variety of universities and research organisations to conduct experiments at the Yellow River Field Station. Supported projects include ice core drilling and analysis, upper ionosphere physics, fish and phytoplankton community analysis and snow/ ice radiometric investigations".[97] In the same year, China established, together with South Korea and Japan, the Asian Forum for Polar Sciences.

Gradually, China increased the number of institutes working on polar sciences and has developed contacts with scientific communities in the Arctic states. The first Sino-Canadian Arctic workshop was held in 2010. Bilateral annual dialogues were established with Russia and the US in 2012, through universities and research institutes. In 2013, China initiated the China Nordic Arctic Research Centre (CNARC) in order to connect scientists from China, Sweden, Finland, Denmark, Norway and Iceland, also accepting observers from Russia and the US Chinese researchers participated in international seminars on the subject of environmental and climatic issues in the Arctic, which they progressively extended to encompass economic and geopolitical Arctic matters.

Again in 2013, the Polar Research Institute of China (PRIC) and the Icelandic Centre for Research agreed to jointly build an observatory, and

permanent observer status was granted to China by the Arctic Council along with other Asian countries. In the same year, the first cargo vessel of COSCO, the main Chinese shipping company, sailed from Dalian (China) to Rotterdam through the north-east route. In 2016, China started the building of a second icebreaker, its own, with the help of the Finnish company Aker Arctic.

So as to open Arctic doors, the Chinese cleverly adopted science diplomacy. China became a member of the International Arctic Science Committee (IASC) in 1996, going on to join the International Polar Year in 2007. Since scientists spend their life in their respective fields of research, they develop enduring relations with their counterparts from different countries. This "low profile" attitude offers several advantages: a better understanding of the area and on the effects of climate change, and trust in building through scientists' relations, thus permitting the expansion of research to other domains while, unnoticed, maintaining a growing presence.

Some analysts believe that China's scientific research is a political instrument used to exert influence, pointing out that the results seem meagre compared to the sums involved, or that most of it is spent on oil and gas interests. Norway criticizes Chinese research for not playing the game of scientific cooperation: Chinese scientists are reluctant to share their data, a rule applied by all the other delegations in Ny-Alesund. We also note, along with Frédéric Lasserre, that since 2008 the themes of scientific publications on the Chinese polar site have shifted from the environment to economic and geopolitical questions.

1.2 The Economic Gateway

China was also interested in Arctic shipping routes that reduce transport times and costs. It signed a long-term cooperation agreement for the transport of oil and gas products by the Northeast Route or Northern Sea Route, with Russia in 2010. It should be noted that "this agreement underlines that China does not contest the sovereignty claimed by Moscow over the internal waters of the Russian arctic archipelagos."[98] The COSCO-owned Yongsheng made the first transit via the North East

Route in August 2013. COSCO reports that 30% of its maritime traffic will pass through the northern routes in 2030, though this announcement has not been factually confirmed. In 2016, only six transits were recorded between Sabetta and China by the Russian administration of the Northern Sea Route. However, recent transits carried out by Yamal LNG's LNG carriers confirm the feasibility and time savings of around two weeks of transits via the NE road, with average speeds of 14 knots in summer and 6.4 knots in winter.

Foreign direct investment has a big impact in the Arctic. The amounts invested by China are estimated at 1,400 billion dollars in the period 2005-2017. The following table explains Chinese investments in the Arctic countries during the period 2012-2017.

China has engaged in Iceland and Greenland economies. Taking advantage of the 2008 financial crisis, it signed six cooperation agreements with Iceland including plans to establish an important commercial base there. In 2013, CNOOC was granted an oil license in Icelandic waters.

In Greenland, China is interested by the presence of rare earths, ores and uranium. Chinese companies have teamed up with Britain's London Mining to win the first tender for the iron mines of Isua. As London Mining was forced to declare bankruptcy in 2014, the license was transferred to the Hong Kong-based company, General Nice Development.[99]

Chinese companies are also exploring copper and gold mines in the south of Greenland. Beijing also offered its services for the construction of ports and airports. But in 2016, the Danish government turned down a Chinese offer to buy an abandoned naval base in Greenland and two years later a proposal to build new airports in Nuuk and Ilulissat. Beijing has also acquired equity interests in American or Canadian companies operating in Québec and Nunavut (Canada). In 2012, fifteen Canada-China joint committees or working groups were active, with several agreements and memorandums of understanding that covered climate change cooperation (2009), mineral resources (2009, renewed in 2012), and energy (2001, renewed in 2006 and 2012).[100]

In Russia, China National Petroleum Company signed a partnership in 2013 for the operation of three oil sites and acquired a 20% stake in

the Yamal-LNG liquefied natural gas project. In August 2015, it was Novatek's turn to sell 9.9% of its stake in Yamal to the Chinese fund Silk Road Infrastructure. Several agreements have been signed for the delivery of oil and gas as well as a gas exploration license to the Chinese company CNOOC (2014). These agreements provide that 80% of the equipment for these projects will be built in China (SIPRI). Beijing also participates in the construction of floating nuclear power plants developed by the Russians. But this collaboration worries some Russian officials who fear that in the long-term Chinese financial aid will allow Beijing to impose its own conditions.

The US Geological Service report (USGS 2000) made a first estimate of the oil and gas resources of the Arctic region. Based on more precise data, new studies (USGS 2008 and 2012) have since corrected the decline. The profitability of these fields, exploited in difficult conditions, fluctuates according to oil and gas prices. Falling prices in recent years have delayed the exploitation of the Prirazlomnoye and Shtokman fields in the Russian Arctic by several months.

1.3 The Governance Gateway

China participated as an ad hoc observer in two Arctic Council ministerial meetings, in 2007 and 2009. Its first demand for observer status in the Council was declined in 2009 because some Arctic states, such as Canada and Russia, were concerned by the growing number of pArcticipants in the Council. China was finally granted formal observer status in 2013, at the Arctic Council's ministerial meeting in Kiruna. As noted by Lincoln E. Flake, Russian officials were not very pleased by the decision and Prime Minister Dmitry Medvedev declared in an interview with the Norwegian broadcaster NRK that "Arctic states, lay down the rules here."[101]

An observer state, however, has very limited rights in the Council even when participating actively in the Working Groups. This was not acceptable for Chinese ambitions as a great power. Beijing wants to avoid being deliberately left out of the decision-making process in Arctic affairs. China enhances its presence in the Arctic by looking for ways to

CHINESE INVESTMENT IN ARCTIC LITTORAL NATIONS (2012-2017)

	GDP	Number of Transactions	Average Transaction Size (in USD)	Total Value (Billion USD)	% of GDP
Canada	$1.530 trillion	107	$442.1	$47.3	2.4%
Greenland	$1.06 billion	6	$33.4	$2.00	11.6%
Iceland	$20.05 billion	5	$30.8	$1.2	5.7%
Norway	$20.05 billion	17	$147.9	$2.5	0.9%
Russia	$1.28 trillion	281	$691.7	$194.4	2.8%
USA	$18.62 trillion	557	$340.6	$189.7	1.2%
Total		**884**	**$508.66**	**$449.66**	

Sources: U.S. Central Intelligence Agency, United Nations, RWR Advisory Group, CNA

increase its influence in polar affairs through active participation in the International Maritime Organization (IMO) for the elaboration of the IMO's *Polar Code* and in the International Seabed Commission. China was also very active in the adoption of the *Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean*.

This growing presence of China in the poles went almost unnoticed for several years. The interest in research was justified by the consequences of climate change in China itself; the prospect of a new northern waterway also had economic reasons, and investments made in different countries were welcome. The first document to show interest in this entryism of China in the Arctic was the work of Linda Jakobson in her paper *China Prepares for an Ice-free Arctic*, published by SIPRI in March 2010. Jakobson writes, "Although Hu Zhengyue, Chinese assistant minister of foreign affairs, has said 'China does not have an Arctic strategy', the country does appear to have a clear agenda regarding the Arctic."[102]

China's multiple activities and apparent ambitions in the Arctic have been pointed out in the media with suspicion.[103] The absence of a declared strategy and China's behaviour in the South China Sea have affected the trust in China's declarations and proposals. In 2017, Chinese initiatives in the Arctic were accelerated: the *Xue Long* performs the first circumnavigation of the Arctic Ocean in August, the construction of a second icebreaker is launched in Chinese shipyards, the Silk Road is extended to the Arctic and President Xi Jinping increases the number of trips to the Arctic countries.

Gang Chen, a researcher at the East Asian Institute, National University of Singapore, observes: "As an East Asian power that has neither Arctic coast nor the Arctic Council membership, China's open statement of not having a strategic agenda regarding the melting Arctic has been interpreted in dichotomous ways: some take it as a genuine expression from the Chinese government while others regard it as a tactic taken by the rising power to hide its real intention there due to its limited influence in the remote Arctic region. Such a divergence over whether China is following an Arctic strategy to secure its long-term economic interest or even geopolitical influence is analogical with, and to some extent, can be perceived as part of the early debates over whether China has a calculative grand strategy."[104]

It is in this context that Beijing decided to publish its *White Paper* on the Arctic so to define its objectives, but also to try to reassure its partners.

2
The 2018 *White Paper*

The *White Paper* on the Arctic, published in January 2018, sets out China's objectives in this region: to understand, protect, develop and participate in governance. Beijing, as a "near Arctic state", intends to participate in the economic and social development of the region and inscribed the Arctic in the Belt and Road OBOR initiative with the Polar Silk Roads.

Global warming opens up new prospects in the Arctic, both economic and strategic, the implications and interests of which go beyond the riparian countries alone. While coastal states have rights over their territorial seas, exclusive economic zones and continental shelves, in accordance with the *Montego Bay Convention*, some areas of the Arctic Ocean are part of the high seas and other states also have rights in scientific research, navigation, overflight, fishing, and the laying of submarine cables or pipelines. In addition, the development of commercial activities in this region will have an impact on the environment which goes beyond the coastal countries and concerns the entire international community.

As such, China, which is a "near Arctic state", a permanent member of the United Nations Security Council and a great trading nation, has interests shared with the rest of the world in the Arctic. She has also been involved for a long time in Arctic affairs, having signed the *Spitsbergen Treaty* in 1925, joined the International Committee of Arctic Sciences in 1996, built a station in Spitsbergen and carried out eight scientific expeditions with its icebreaker, the *Xue Long*. As permanent observer to the Arctic Council since 2013, China participates in scientific research activities and economic development of the region with its companies,

a development which will be reinforced by the "Silk Roads" initiative, both on land and at sea.

The objectives of China's Arctic policy are: to understand, protect, develop and participate in the governance of the Arctic in order to safeguard the common interests of all countries and the international community in the Arctic and to promote the sustainable development of the Arctic. While pursuing its own interests, China will consider the interests of other countries and the international community, as well as the importance of the protection and sustainable development of the Arctic. To achieve this, China will participate in Arctic affairs according to the following principles: "respect, cooperation, win-win result and sustainability."

"Respect" is the essential basis of China's participation in Arctic affairs: respect for the sovereignty of the Arctic states, the culture of indigenous peoples, but also the rights of non-Arctic states and the interests of the international community. This respect must be reciprocal. On this basis, China is ready to "cooperate" in all fields of activity to obtain results which will be a benefit to all and which combine the development and protection of nature.

China will continue to invest in Arctic research and promote international cooperation in this area. It gives top priority to solving environmental problems, above all to those concerning marine environment in the Arctic in order to protect the ecosystem. To this end, the exploitation of resources must be carried out in compliance with the laws and with the protection of the environment, whether for the development of maritime routes, for the exploration and exploitation of oil, gas and minerals or for fishing and living resources or tourism.

China intends to participate actively in the governance of the Arctic, which it wishes to improve. In particular, with the Silk Roads initiative, it seeks to increase international cooperation in the Arctic for the benefit of all. It does so at the global level by actively participating in the drafting of international rules on environmental or maritime issues; at the regional level, through its participation in Arctic Council working groups; bilaterally or multilaterally, by offering partnerships such

as those made with the United States, Russia and Iceland, or more recently, in 2016, with South Korea and Japan. China also supports the various platforms which help improve cooperation between countries on Arctic issues.

Finally, China calls for the peaceful use of the Arctic and is committed to maintaining peace and stability, protecting lives and property, and ensuring the security of trade, operations and shipping. As a great and responsible nation, China is ready to cooperate with all parties concerned to build a common future for humanity.

For China, the Arctic is one of the common goods of humanity. Although it does not have territories in the area, as such it requests recognition as one of the actors in this debate in accordance with the following principles: respect, cooperation, shared interest – a win-win result and durability.

In 2013, she was granted permanent observer status in the Arctic Council. It does not support the claims of coastal states – Canada, Denmark (for Greenland), Russia – on the North Pole on the pretext of the extension of their continental shelf. According to Rear Admiral Yin Zhuo: "The North Pole and the surrounding area do not belong to any state; they are part of the common heritage of humanity."[105]

"Respect" is the keyword of the *White Paper* invoked by China in the affairs of the Arctic zone, but this respect is reciprocal – respect for the rights of coastal states, respect for the freedom of other states outside the Arctic zone to operate in the area in accordance with the law, but also respect of the interests of the international community in the Arctic. "Arctic governance requires the participation and contribution of all stakeholders."

Increasing investment in the Arctic region and bilateral agreements with members of the Arctic Council are the "soft" methods used by China to participate in the governance of the Arctic.

2.1 Beyond Words

This summary of the *White Paper* has been translated into English from the original version. As noted by Anne-Mary Brady, however, "China has not been transparent about its intentions in foreign language materials; though if one can access the Chinese language discourse the policies and intentions are very clear. This reflects longstanding habits of CCP discourse management, whereby there is one message for foreigners and another for domestic audiences."[106]

For Jichang Lulu,[107] an independent researcher, the *White Paper* was "a product of the Party-state foreign propaganda apparatus."[sic] What has been written about climate change, environment, scientific research, alternative trade routes, resource exploration and exploitation, tourism, security, participation in Arctic governance...was already well known. But "the national security motivation and the Arctic's integration within larger polar maritime policy, both present in Chinese-language materials are left out of this document." [108]

"States from outside the Arctic region do not have territorial sovereignty in the Arctic, but they do have rights in respect of scientific research, navigation, overflight, fishing, laying of submarine cables and pipelines in the high seas and other relevant sea areas in the Arctic Ocean, and rights to resource exploration and exploitation in the Area, pursuant to treaties such as UNCLOS and general international law. In addition, contracting parties to the Spitsbergen Treaty enjoy the liberty of access and entry to certain areas of the Arctic, the right under conditions of equality and, in accordance with law, to the exercise and practice of scientific research, production and commercial activities such as hunting, fishing, and mining in these areas."[109] Although presented as a right shared by all states, outside the Arctic, these phrases amount to an unambiguous declaration of China's determination to be present and active in the Arctic by any means.

Respect for international laws is repeated several times in the *White Paper*; "in accordance with the UNCLOS" mentioned ten times. It also states that, "China will participate in regulating and managing the affairs and activities relating to the Arctic on the basis of rules and mechanisms."

As pointed out by several experts, "China pledged to abide by the UNCLOS international law, freedom of navigation and law of the sea principles. This seems to be contradicting China's behaviour in the South China Sea, in particular following the release of the award by the Permanent Court of Arbitration over the South China Sea case with the Philippines".[110] And "the Chinese position vis-à-vis the so-called Arctic Council and the Arctic navigability has been somewhat hostage to China's behaviour in the South China Sea. In other words, has China, which has always declined foreign interference (from both the United States and the *United Nations Convention on the Law of the Sea*) regarding its alleged sovereignty in the South China Sea, the legitimacy to come now and defend the application of the law of the sea on waters that Russia considers to be its? This is a curious, paradoxical and demonstrative position of realpolitik. In other words, China has no way to overcome the pressing need for access to resources and markets... What is at issue is whether, after all, Russia will, want to impose transit fees to Chinese vessels (and to those of other countries) that cross the Northern Sea Route. This is a sensitive situation because Russia and China are two great partners but, at the same time, two major competitors. And the issue of sovereignty, in the Chinese and Russian perspective, is not negotiable."[111][sic]

It is difficult for the international community to understand a reciprocal application of the UNCLOS that depends on Chinese interests and to trust its declaration.

One further observation linked to the UNCLOS is the concept of the common heritage of mankind, which covered the area mentioned in the *White Paper*. Anne-Marie Brady's citation in her book[112] was revealing with respect to Chinese ambitions, "As a Chinese military spokesperson once asked, 'China's population accounts for one-fifth of the world's population, so why shouldn't we get a fifth of the interests in the Antarctic and Arctic?'"

Article 137 of the UNCLOS on the legal status of the area and its resources states, "No State shall claim or exercise sovereignty or sovereign rights over any part of the Area or its resources, nor shall any State or natural or juridical person appropriate any part thereof. No such claim

or exercise of sovereignty or sovereign rights nor such appropriation shall be recognized." [sic] In order to enable future operations, an International Seabed Authority is responsible for attributing concessions to national companies and distributing financial and other economic benefits. To date, it has entered into 29 fifteen-year contracts for the exploration of seabed resources in the area. Only exploration rights have been issued to countries which have requested them, including China, but no exploitation rights on the high seas have been authorized.

A "mining code" is currently being drafted by the International Seabed Authority to regulate prospecting, exploration and exploitation of marine minerals in the International Seabed Area, which only applies to the exploitation of nodules.

The protection of the environment: On 28 April 2015, Hong Lei, a Foreign Ministry spokesperson declared,

> "China's construction projects have gone through years of scientific assessments and rigorous tests, and are subject to strict standards and requirements of environmental protection... Such projects will not damage the ecological environment of the South China Sea."[113]

But, on 12 July 2016, in its award[114] on the South China Sea dispute between the Philippines and China, the Permanent Court of Arbitration concluded in the chapter *Alleged Failure to Protect and Preserve the Marine Environment* (Submissions N°11 and 12(B)):

> "992. Based on the considerations outlined above, the Tribunal finds that China has, through its toleration and protection of, and failure to prevent Chinese fishing vessels engaging in harmful harvesting activities of endangered species at Scarborough Shoal, Second Thomas Shoal and other features in the Spratly Islands, breached Articles 192 and 194(5) of the Convention.
>
> 993. The Tribunal further finds that China has, through its island-building activities at Cuarteron Reef, Fiery Cross Reef, Gaven Reef (North), Johnson Reef, Hughes Reef, Subi Reef and

Mischief Reef, breached Articles 192, 194(1), 194(5), 197, 123, and 206 of the Convention."

More recently, Professor Eric Wolansky and Dr Severine Chokroun from James Cook University in Australia argue in a scientific paper that the disputed Spratly Islands in the South China Sea are in even more serious trouble than first believed. "The Spratlys are the sites of a military build-up and gross overfishing, mainly by China. Reefs and islands have been destroyed to construct military outposts to further territorial claims", claimed Professor Wolanski.

He also went on to remark that China does not provide scientists with access to the reefs it occupies, neither does it provide data on the health of coral and fish populations in these reefs.[115]

The arbitral tribunal and the scientific comments contradicted declarations by the Chinese government. Thus, what credibility can we give to the Chinese statements in the White Paper with respect to the protection of the environment? "China always gives top priority to resolving global environmental issues, earnestly fulfils its obligations under relevant treaties, and discharges its responsibility of environmental protection. China is actively engaged in improving the Arctic environment by enhancing the environmental background investigation of Arctic activities and the assessment of their environmental impact."

2.2 An Arctic Strategy: Part of a Global Maritime Strategy

China's Arctic *White Paper* is part of an integrated polar strategy. Resources interest, as repeatedly asserted in the paper, also applies to Antarctica; and the polar policy contributes to the maritime policy of a future maritime superpower. China has been pursuing a maritime strategy for three decades, the effects of which are becoming visible – it now has the largest fishing fleet, the second largest commercial fleet in the world (with Hong-Kong), seven Chinese ports are among the world's top ten. It is developing a chain of ports all around the Indian Ocean and the African continent for its economy and negotiates overseas bases. It is present in the Arctic Ocean with its scientists in the Svalbard

Islands, with a port in Iceland and mining prospecting in Greenland, on the Antarctic continent where it is opening a fifth scientific base. It is currently developing its oceanographic capabilities with exploration submarines reaching depths of 7000m as well as its spatial observation, communication, positioning (Beidou) and guidance capabilities. Finally, the Chinese navy has been expanding steadily for years. As the 2015 Chinese Defence White Paper explicitly says, "The traditional mentality that land outweighs sea must be abandoned, and great importance has to be attached to managing the seas and oceans and protecting maritime rights and interests."[116]

For some authors, this Chinese strategy was inspired by Mahan, for others by the Soviet strategy. Inspiration is apparently more complex. This strategy is an amalgam the Monroe doctrine, Sun Tzu's *The Art of War*, Mahan and the game of Go. The pawns are put in place by playing on all fronts and by taking advantage of weaknesses in the opposition. Once the positions have been acquired, it will undoubtedly be too late to discuss a law that China has developed in its favour. "So, the new strategic territories are the deep seabed, the Arctic and Antarctic, outer space and cyberspace. So, China is looking to where it can expand and where there are resources that it can access."[117]

Arctic countries have become more concerned by China's real intentions. Will China respect the existing legal framework in the Arctic or will it seek to modify the rules for its profit in the Antarctic for resources exploitation, as Chinese experts have clearly announced.

3
China's New Steps in the Arctic

Since the publication of the *White Paper*, China has increased its presence in the Arctic area. Having established scientific and economic relations with all the Arctic countries, including the United States and Canada, it has significant establishments in Greenland, Iceland, Norway (Svalbard) and Russia. Begun with research agreements on climate change and the environment, these relationships have gradually evolved into the economy, the use of new maritime routes and the possible exploitation of wealth. The data collections which are carried out are not only of scientific interest: the oceanographic data on the electromagnetic anomalies caused by the Northern Lights also have military purposes.

China's policies are summarized in the *White Paper*: "When participating in Arctic affairs, China prioritizes scientific research, underscores the importance of environmental protection, rational utilization, law-based governance and international cooperation, and commits itself to maintaining a peaceful, secure and stable Arctic order."

This section is devoted to the analysis of Chinese activities and establishments in the various Arctic countries and their evolution following the publication of the *White Paper*. Until 2017 welcomed by the global community, China has since been seen by the majority of the Arctic states as increasingly suspect and arrogant.

3.1 Deepening Scientific Research

Scientific research offers China a legitimate access to the Arctic and a diplomatic gate to establish and enhance cooperation with Arctic states.

The need for more knowledge on the effect of Arctic melting in China's homeland justifies China's expansionist involvement in the Arctic.

3.1.1 Organization of China's polar research

Until 2018, the State Oceanic Administration (SOA), in Beijing, was an administrative agency subordinate to the Ministry of Land and Resources, the ministry responsible for drafting laws and regulations concerning sea area usage, environmental protection, scientific research and island protection. It was also in charge of leading Chinese polar expeditions and administering polar affairs, under which two subsidiary bodies are involved:

- the Chinese Arctic and Antarctic Administration (CAAA), located in Beijing with about 40 permanent staff. The general function of the CAAA is to organise Arctic and Antarctic expeditions (CHINARE) and nationwide science programs, administering the related Arctic and Antarctic affairs, participating in international organizations and promoting international collaboration in the polar field on behalf of SOA;
- the Polar Research Institute of China (PRIC), founded in 1989 and located in Shanghai. It has about 230 permanent staff and in charge of SOA's Key Laboratory of Polar Science, logistics operations and data processing. PRIC is responsible for conducting some scientific programs, operation of the icebreakers and the daily station management, as well as managing the Chinese polar science database and the publication of an English language journal, *Advances in Polar Science*.

The China Institute for Marine Affairs (CIMA), part of the State Oceanic Administration (SOA), was in charge of research on international maritime law and China's ocean development strategy. There is also the Institute of Oceanology, a multidisciplinary marine science research and development institute in Xiamen University, Tongji University in Shanghai.

In September 2007, the Chinese Government launched a research project entitled Arctic Issues Research. The ten research topics included: Arctic

and human society, Arctic resources and their exploitation, Arctic scientific research, Arctic transportation, Arctic law, Arctic politics and diplomacy, military factors in the Arctic, China's Arctic activities, the Arctic's strategic position, and China's Arctic policy and recommendations. The research project, organized by the China Arctic and Antarctic Administration, was completed by 2009, but the reports were not made public.[118]

The diversification of the Chinese interests in the Arctic led to the proliferation of government actors in charge of Arctic affairs. No less than fourteen government agencies comprised the Chinese Advisory Committee for Polar Research.

In March 2018, by decision of the 13th National People Congress, the Ministry of Natural Resources (MNR) brought together under one roof the functions of the Ministry of Land & Resources, State Oceanic Administration and State Bureau of Surveying and Mapping. The role of the former SOA was assigned to different bodies. "The bulk of its work went to the MNR. Environmental protection responsibilities are now part of the Ministry of Ecology and Environment, while coastguard duties have been taken by the People's Armed Police."[119]

The name SOA has been retained and forms part of the MNR. Ongoing work with foreign partners will continue with the SOA. But the CAA and the PRIC were placed under the MNR.[120] Yang Huigen, Director of the PRIC, estimates that there are approximately 600 scientists and students in the Polar research community.

3.1.2 China's Arctic expeditions

The first Chinese icebreaking research vessel, the *Xue Long*, built at the Kherson Shipyard in Ukraine, entered service in 1994. With a crew of 34, it can host 128 researchers or passengers. The ship can carry one helicopter Kamov Ka-32 and an autonomous underwater vehicle.

A unique Chinese icebreaker until 2019, the ship was used primarily for Antarctica expeditions. Since 1999, the first Arctic expedition, the *Xue Long* has undertaken ten expeditions to the Arctic (1999, 2003, 2008, 2010, 2012, 2014, 2016, 2017, 2018, 2019).

ARCTIC EXPEDITIONS UNDERTAKEN BY THE *XUE LONG* (1999-2019)

Year	Dates	Travel	Research
1999	1 July to 9 September	Bering Sea Chukchi Sea Canadian Basin Tuktoyaktuk Bering Strait	Arctic climate Impact of water exchange between Arctic and North Pacific Oceans Ecosystems and living resources. 3 foreign researchers (Russia, Japan, South Korea)
2003	10 July to 26 September	Bering strait Chukchi Sea North Pole (80° North- 146° West) Bering Strait	Mechanism of Arctic water circulation Arctic sea/ice change and influence on air/sea exchange Carbon flux in the upper Arctic Ocean Interaction Arctic/Pacific Oceans Mechanism of Arctic climate variability Geo-biochemical processes in the Arctic Ocean Interactions between biological and physical processes of the oceans. 13 foreign researchers (US, Canada, Japan, Finland, Korea, Russia)
2008	11 July to 25 September	Bering Sea Chukchi Sea Canada Basin Bering Strait	The Arctic project, referred to as ARCTML (for the study of Arctic Change and its Tele-impacts on Mid-Latitudes), involved two Arctic expeditions (the third and fourth CHINARE expeditions in 2008 and 2010) in which scientists from Canada, Finland, France, Norway, and United States participated. International Polar Year 2007-09 12 foreign researchers (France, Finland, US, Japan, South Korea)
2010	1 July to 20 September	Bering Strait Chukchi Sea Beaufort Sea North Pole (near) 88.22 degrees North 177.20 degrees West Mendeleev Sea Ridge	Recorded changes in the ice surface and related environmental effects. With 120 scientists, from China (including one scientist from Taiwan), and seven scientists from Estonia, Finland, France, South Korea, and the United States.
2012	2 July to 27 September	Bering Strait NSR to Barents Sea Iceland (20 Aug) North Pole (near) Bering Strait	Geographical survey, Installation of an automatic meteorological station, Investigations on oceanic turbulence and methane content in Arctic waters 4 foreign researchers (France, Denmark, Iceland)

2014	11 July to 23 September	Bering Sea Canada Basin North (81° North – 156° West) Bering Strait	Conductivity, depth, temperature of the sea water Chemistry, marine life, geology, hydrology Geomagnetic data 6 foreign researchers (US, Russia, France, Germany)
2016	11 July to 26 September	Bering Sea Chukchi Sea Canada Basin	Marine meteorology, geology Surveillance of 7 ice stations while laying observation buoys. One US and two French scientists
2017	20 July to 10 October	Bering Strait Trans Arctic passage Baffin Sea North West Passage	Sea-ice concentration and thickness in comparison with satellite observations.[122] 3 researchers from Canada
2018	20 July to 26 September	Bering Sea Chukchi Sea Mendeleev Ridge, and Canada Basin	Physical oceanography, marine meteorology, sea ice, marine chemistry, marine biology, marine ecology, geology, and geophysics
2019*	10 August to 30 September	Bering Strait Chukchi Sea Canada Basin	Marine meteorology, chemistry, biology and geology

**The mission was accomplished by the oceanographic research ship* Xiang Yang Hong 01.[123]

Source: author

From one expedition every three, four or five years in the first decade of the century, the rhythm then accelerated to one expedition every year. It is no surprise that research in the last expeditions also focussed on oceanography for civilian and military interests with the use of UUVs.

In July 2019, the first Chinese built icebreaker, *Xue Long 2*, was delivered to the China Polar Research Institute. The ship was designed by the Finnish engineering company Aker Arctic and the 708th Research Institute of the China State Shipbuilding Corp (CSSC). With a range of 20,000 nautical miles, it can break through ice up to 1.5 metres thick, with an autonomy of 60 days. *Xue Long 2*'s first voyage was China's 36th Antarctic expedition in the second half of 2019, together with the *Xue Long 1*.

On 15 July 2020, *Xue Long 2* left Shanghai for the 11th scientific expedition to the Arctic and returned to Shanghai on the 27th September. Scientists aboard the ship plan to research Arctic biodiversity and ecosystems, ocean acidification and chemical environment, and new pollutants in areas including the Chukchi Rise, Canada Basin, and the central Arctic Ocean according to state media.[121]

China has announced its intention to build another icebreaker. China General Nuclear Power Group (CGN) invited bids for the design and construction of a nuclear-powered vessel, and China National Nuclear Corporation (CNNC) also published a tender notice in June 2018 related to the small reactor technology, which will be used to power the vessel.[122] However, in December 2019, at the China's International Maritime Exhibition in Shanghai, China's Shipbuilding Industry Corporation produced a model of a conventionally-powered icebreaker. With a displacement of 26,000 tons and the ability to break through ice three metres thick.[123]

Some experts have argued that a nuclear-powered icebreaker would pave the way for the power plant of the future Chinese aircraft carriers. Although the choice of icebreaker propulsion remains unclear, it will probably depend on state-of-the-art technology.

Chinese scientists from ten Institutes or Universities[124] are also participating in the MOSAiC, one-year expedition organised by the Alfred Wagener Institute onboard the German icebreaker *Polarstern*, which began in September 2019.

3.1.3 Satellites

China has launched several polar-orbiting satellites in cooperation with other countries and independently. These satellites have sensors for visible/near infrared spectrometre, thermal infrared radiometre, microwave radiometre and synthetic aperture radar, which significantly improve remote sensing capabilities.[125]

- CBERS-01/02/02B/02C/04 (in partnership between Brazil and China) investigates Earth resources with multi-spectral, moderate resolution and large swath imaging.

- HJ-1A/1B/1C (HuanJing, funded by the Ministry of Environmental Protection) is a constellation that investigates environmental conditions and forecasts hazard information.
- FY- 2E/2F/3A/3B/3C/3D/4A (FengYun, funded by CMA) is a polar-orbiting and geostationary constellation that provides measurements of atmospheric conditions. The first satellites of the series have been removed from service. The FY-1C, destroyed intentionally by a Chinese anti-satellite test, created a large amount of space junk.
- BNU-1 (funded by Beijing Normal University) is specifically designed to study polar climate and environment in rapidly changing polar regions by providing high-quality, high-frequency multispectral remote sensing data. On 16 June 2020, China's first polar observation satellite, Ice Pathfinder, launched its Arctic observation mission after having completed a similar mission in the South Pole.
- The BeiDou constellation provides positioning and navigation. The final satellite was launched on 23 June 2020. A Russia-China committee was established in 2015 by the Roscosmos Space State Corporation and Commission on China Navigation Satellite System with the aim of ensuring compatibility and interoperability of the two navigation systems – GLONASS and BeiDou, including mutual allocation of measuring stations within their respective territories. On 26 July 2019, Russia ratified the agreement between the Government of the Russian Federation and the Government of the People's Republic of China on cooperation in the use of GLONASS and BeiDou global navigation satellite systems for peaceful purposes.

China is also looking to develop satellite communications in the Arctic.

With its growing economic power, China has been able to increase polar science expenditures and activities over the last twenty years. As noted by several experts, the investment that China has made in polar sciences has expanded its pool of experienced polar scientists and the network

of polar research centres, with an increasing interest in polar resources, legal and strategic issues.

3.2 China's Arctic Research Relations

On 10 December 2013, the China-Nordic Research Center (CNARC) was established in Shanghai by ten Member Institutes, four Chinese and six Nordic, which all have capacities to influence and coordinate Arctic research. "CNARC's purpose is to provide a platform for academic co-operation to increase awareness, understanding and knowledge of the Arctic and its global impacts, as well as to promote cooperation for sustainable development of the Nordic Arctic and coherent development of China in a global context. CNARC's research themes include: (1) Arctic climate change and its impacts, (2) Arctic resources, shipping and economic cooperation, and (3) Arctic policy-making and legislation...CNARC shall meet on a yearly basis in form of China-Nordic Arctic Cooperation Symposium on a predetermined topic with regards to the Arctic research."[126]

With the exception of the CNARC, China is privileging bilateral relations with the other countries.

3.2.1 Canada

China has had long-standing scientific relations with Canada. The two countries signed a Memorandum of Understanding on environmental cooperation in 1993. It was renewed in 1998, 2003, 2010 and 2017. During the first Chinese Arctic expedition, the *Xue Long* navigated through the Canadian Basin and made an unannounced (in fact a miscommunication between Canadian agencies) port visit to Tuktoyaktuk in summer 1999. The first Sino-Canadian Workshop on the Arctic was held in February 2010 and biannually until 2018. It is interesting to note that during the 4th Sino-Canadian Exchange on the Arctic (May 2016), the question of historic rights was on the agenda – at the time also a hot topic in the South China Sea. Canada plans to build a high Arctic research station in Cambridge Bay, Nunavut, which interested China who asked to open a permanent outpost, preferably in Tuk-

toyaktuk. Deputy Director of China's Key Laboratory of Frozen Soil Engineering, Jin Huijun, said his research budget has funds to help the Canadian project.

The Meng Wanzhou affair has frozen relations between the two countries and the Hong Kong situation has fuelled mistrust.

3.2.2 Denmark

With respect to Greenland, China-Denmark relations are resource-oriented. China sent scientists from the Geological Survey to visit mineral sites. In 2014, Denmark and China signed a maritime technology and energy conservation agreement. China requested the implementation of a polar research base and a satellite ground station, though an agreement has yet to be reached. Growing Chinese presence and insistence has provoked the US to react by offering to enhance research collaboration with Greenland.

3.2.3 Finland

Relations with Finland began in 1979, with the signed agreement on economic, industrial, scientific and technological cooperation. China's interest centred on aspects of Finnish Arctic expertise. Aker Arctic participated to the construction of the Chinese icebreaker *Xue Long 2*. Finland also collaborated in the construction of the Station for Measuring Ecosystem Atmosphere Relations headed by the University of Helsinki in cooperation with the Beijing University of Chemical Technology and the Sino-Finnish Medical Research Centre in Chengdu, established in January 2018. The Academy of Finland has signed collaboration agreements with the Chinese Academy of Sciences, the National Natural Science Foundation of China and the Chinese Academy of Social Sciences which covers the humanities, culture, law, economics and social sciences. During President Xi Jinping's visit to Finland in April 2017 a new series of agreements were signed.

On 8 April 2018, China and Finland signed an agreement to enhance and cooperate on Arctic research. The countries are set to establish a joint research centre for Arctic space observation and data-sharing services. It

China-Iceland Arctic Science Observatory at Karholl, northern Iceland
Source: xinhuanet.com/english/2018-10/19/c_137542493_3.htm - Source: Xinhua| 2018-10-19 00:15:55| Editor: Yang Yi

will enhance cooperation on cryosphere research with satellites, which will provide information on climate research, environmental monitoring, and operational activities such as navigation in the Arctic Ocean.

3.2.4 Iceland

In August 2012, the *Xue Long* made a port call in Iceland, a few months after a visit by Chinese Prime Minister Wen Jibao and following the signing of an agreement on Arctic cooperation on economy, sciences, energy and technology. In 2013, President Ragnar Grimsson founded the Arctic Circle, an International Conference (ACIC) on Arctic co-operation, now the most important Arctic meeting, with around 1,500 pArcticipants from 50 countries. In the same year, the Polar Research Institute of China (PRIC) and the Icelandic Centre for Research (RANNIS) decided to jointly build an aurora observatory. In 2017, the Chinese institute proposed to upgrade the aurora observatory capabilities to include research on atmosphere, oceanography, glacier, geophysics, remote sensing and biology to which Island agreed.

The China-Iceland Arctic Observatory (CIAO) was formally opened in October 2018 (pictured above). The Arctic Observatory is governed

by a joint organizational and management committee, the CIAO board, with the support of an international Science and Outreach committee.

3.2.5 Norway

China built its first Arctic research station in Ny-Alensund, Svalbard, in 2004. A bilateral agreement on cooperation in science and technology between China and Norway was signed in 2008. At the first China–Norway dialogue meeting in June 2009, climate change and polar research were identified as the issues of strongest common interest. In summer 2010, China and Norway agreed to hold a follow-up dialogue in 2010. But the award of the Nobel Prize, in October, to a Chinese dissident froze relations between the two countries until 2016. In August 2017, Norway and China signed a joint Action Plan on cooperation in science, technology and innovation for the period 2017-2020, the objective of which was to strengthen research collaboration between industry and academia, promote knowledge transfer between research organizations and industries, and improve the research capacities of both countries by making optimal use of existing resources.[127]

3.2.6 Russia

The first terms of Sino-Russian cooperation were defined in the *Sino-Russian Treaty of Good-Neighbourliness, Friendship and Cooperation*, signed in 2001. This agreement marked both countries' willingness to undertake cooperative initiatives, especially in the energy sector. Another agreement, signed on 23 September 2009, was also designed to strengthen economic cooperation between both countries. China was aware that Russia did not favour the inclusion of non-Arctic states in Arctic governance affairs and proposed scientific and economic partnership until it was accepted as an observer in the Arctic Council in 2013. As Russia's relations with western countries deteriorated following the Ukraine crisis, Putin's policy turned to Asia. China took this opportunity to develop its partnership with Russia on Arctic affairs. On 10 April 2019, during the fifth International Arctic Forum in St. Petersburg, China and Russia agreed to establish the Chinese-Russian Arctic Research Centre to conduct joint research projects in

the Far North. The agreement provides the basis for numerous joint Arctic expeditions and research projects between the two scientific organizations. The joint research centre will lead projects to advance understanding of the climate, geology and ecology of the region and to preserve the region's natural diversity. But scientific partnership is not an alliance, and as Dmitry Tulupov, Senior Lecturer at St. Petersburg State University, says "the implementation of scientific research projects between Russian and Chinese partners will be limited only to those areas, which do not significantly impact the Russian military." [128]

3.2.7 Sweden

From the Swedish side, bilateral cooperation with China in the fields of climate change, energy and environment, telecommunication, public health and biotechnology is an example of high-priority areas. There is also a marked interest in cooperative research in social policies and welfare institutions. For the time being, however, Sweden has relatively under-developed research cooperation with China, although many Swedish actors cooperate with China at different levels. The Swedish Polar Research Secretariat is participating in CNARC fora.

A Chinese satellite ground station was built in Kiruna, in December 2016, in the vicinity of an ESA ground satellite station. Officially known as the China Remote Sensing Satellite North Polar Ground Station, the Kiruna facility is China's "first overseas land satellite receiving station." A Swedish defence agency has warned that this satellite station could be serving the Chinese military.[129] It is operated by the Institute of Remote Sensing and Digital Earth (RADI), an institute which is part of the Chinese Academy of Sciences, a government organisation.

3.2.8 The United States

In 1979, China and the United States signed the first agreement on cooperation in science and technology. The exchanges focused on an array of fields, fisheries, earth and atmospheric sciences, basic research in physics and chemistry, energy, agriculture, geology, health and disaster research.

However, cooperation has become complicated due to the tensions between the two countries, something which has had repercussions in scientific fields. The Arctic has not been a priority in US policy since the end of the USSR, and the former has had little involvement in Arctic affairs. There is some suspicion among US leaders as to China's real intentions in the Arctic. Relations between researchers were gradually restricted to international forums such as the Arctic Council or ACIC.

The Pentagon's 2019 annual report to Congress on China's armed forces devoted an entire page to "China in the Arctic" and drew a direct connection between Chinese civilian research and a "strengthened Chinese military presence in the Arctic Ocean, which could include deploying submarines."[130]

3.3 Rational Utilization of Arctic Resources

The Arctic resources cover the shipping routes, the exploitation of seabed resources (oil, gas, mineral and other non-living resources), fisheries and tourism. All this must be carried out while protecting the environment and addressing climate change (Chinese *White Paper*).

With the fifth of the world's population and the second world economic power, China has an imperative need for raw materials (oil, gas, minerals) to run its factories and maintain its growth with the ambition to become the first world power. The melting ice in the Arctic (and in Antarctica in the distant future) offers new resources opportunities that Chinese scientific teams have helped identify and that China intends to seize. Having become the first maritime nation with the first largest merchant fleet (including Hong Kong), it intends to be in a position to exploit and transport these resources.[131] "The utilization of sea routes and exploration and development of the resources in the Arctic may have a huge impact on the energy strategy and economic development of China, which is a major trading nation and energy consumer in the world. China's capital, technology, market, knowledge and experience is expected to play a major role in expanding the network of shipping routes in the Arctic."[132]

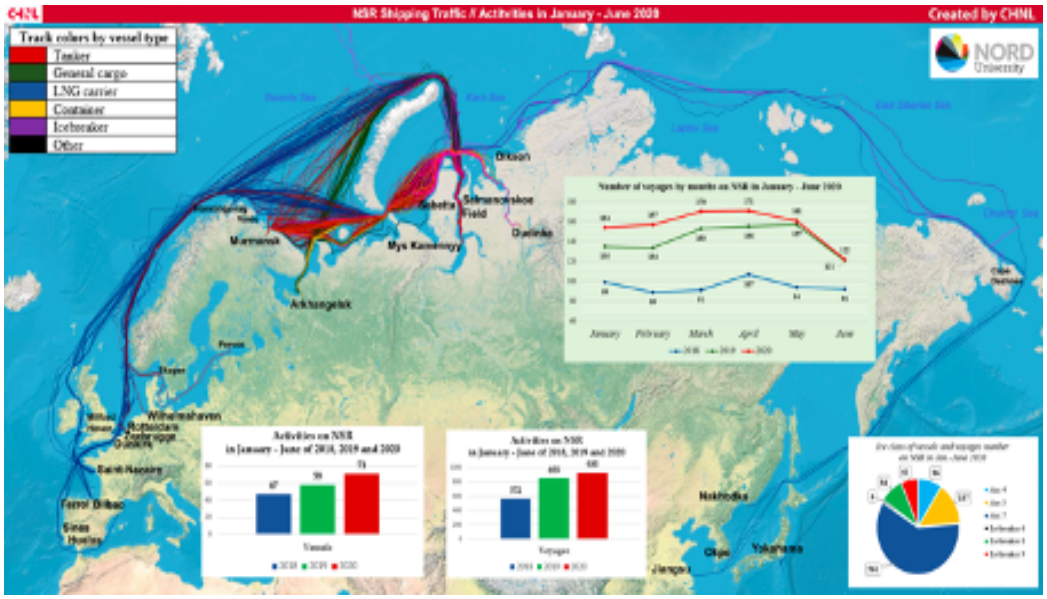
3.3.1 Arctic shipping routes

The Arctic sea routes offer advantages frequently mentioned in various studies: shortened distances, fuel economy, an absence of threats (pirates, terrorists). The disadvantages are also known: difficult weather conditions, uncertain and changing hydrography, few deep-water ports, the escort of an icebreaker obligatory for vessels which do not belong to the Ice Required category, higher insurance costs. Furthermore, the risks of blockade of the straits, such as Malacca, often invoked, are also present on the northern routes. Despite these dangers, many Chinese researchers have claimed in their writings that these Arctic routes are strategic, and that there will be significant maritime traffic in the near future.

There are three possible transit routes for trans-Arctic shipping: the Northern Sea Route (NSR), north of Russia, the Northwest Passage through Canada's Arctic Archipelago, and the Central Route across the North Pole. Regular use of the Central Route will need more ice retreat to be available. Due to depth limitations and moving ice, the Northwest Passage is still uncertain. A 2013 report by the US National Academy of Sciences does not foresee commercial use of this route before 2040. According to statistics released by the Canadian Coast Guard, in 2019, 27 ships made a full transit through the Northwest Passage. The total number of full transits in 2019 was fewer than in 2017, which saw 31 transits but there were only five full transits in 2018.[133]

In April 2016 the China's Maritime Safety Administration published a manual on navigation through the Northwest Passage in which it recognized that "the Canadian government considers the Northwest Passage as internal waters, and foreign ships are obliged to apply for a permit and to pay relevant fees." And China has requested permission to transit through the Northwest Passage for its research icebreaker.

"In September 2012, an official from the National Development and Reform Commission, attending the 15th EU-China Summit, asserted that 30 per cent of the cargo between China and Europe is expected to transit via the NSR 'in the future'. He even argued that, by 2030, about 50 per cent of the container traffic from traditional routes along Suez and Panama would be diverted to Arctic routes, NWP, NSR, or transpolar route."[134]

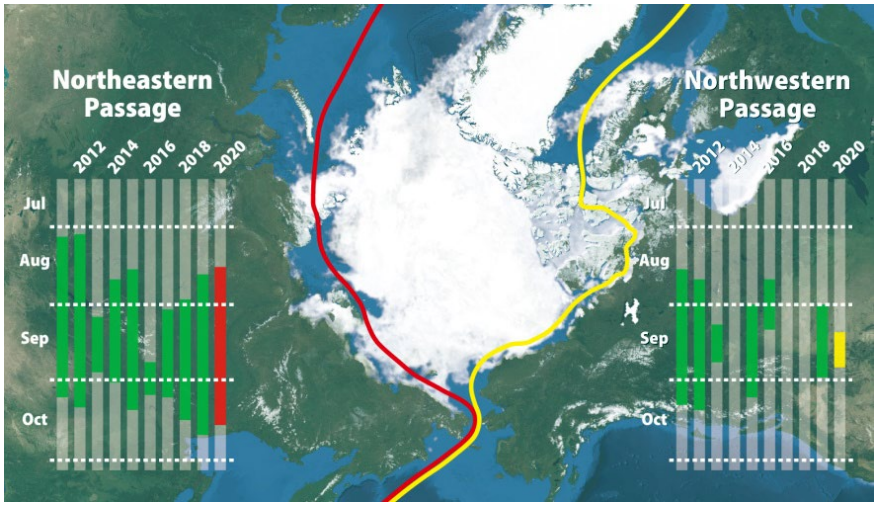


Northern Sea Route (NSR) Shipping Traffic Activity, January to June 2020
Created by CHNL, North University

In 2013, the shipping season on the Northern Sea Route (NSR) commenced on June 28 and concluded on November 28.[135] COSCO Shipping's first NSR transit was made by the M/V Yong Sheng. She transported 100,000 tons of cargo from Busan on August 17 bound for Rotterdam. The majority of the shipping was destination traffic. Only 30 vessels traversed the route with cargo in 2013.[136]

In May 2014, Vladimir Putin and Xi Jinping issued a joint statement on Russian-Chinese cooperation that included a Russian promise to facilitate Chinese shipping along the route. In July, a sailing guide to the NSR was released for Chinese vessels that included nautical charts, sailing methods and ice-breaking instructions.

But in 2014, no Chinese flag ship transited the NSR, not even destination shipping; in 2015, there was one, and in 2017, there were two. With the exception of COSCO, the other Chinese shipping companies have shown no interest in the Northern Routes. In fact, NSR remains a niche trade route with limited numbers of true transits and the majority of traffic originates in Russian waters.



Distribution of sea ice in the Arctic Ocean (as of 27 June, 2020), past open periods of shipping passages (green) and predicted open periods for 2020 (red/yellow)
Source: Hellenic Shipping News (hellenicshippingnews.com/northeast-passage-to-open-in-mid-august-northwest-passage-expected-to-open-in-mid-september/

With increasing ice melting along the Russian coasts and the development of Yamal LNG, the cargo volume of transportation significantly increased in 2019 with 31.5 million tons compared to the 19.7 million in 2018 and 10.7 in 2017. Twenty-nine transit vessels made 37 voyages through the NSR, seven of which belong to the Chinese company COSCO.

The trend has continued during the first half of 2020 (see previous page). In the first half of 2020, 71 ships made 935 voyages. The bulk of the transportation was made by tankers carrying oil products from the Arctic Gate terminal (228 voyages) and tankers exporting LNG from Sabetta (257 voyages).

The opening of the Northern Sea Route was expected in mid-August in 2020, slightly earlier than last year's opening on August 20th, due to high temperatures in the Siberian coastal area, and remained open until mid-October. The Northwest Passage is expected to open in mid-September following the melting of sea ice around the Canadian Archipelago. "Open" means a state in which the entire route can be traversed without entering any areas affected by sea ice.[137]

3.3.2 - The Belt and Road Initiative and the Arctic

On 29 May 2014, Putin created the Eurasian Economic Union which may be seen as a response to the Belt and Road Initiative (BRI) as defined by Xi Jinping in 2013. On 8 May 2015, in Moscow, the two Presidents agreed to link the two projects. In 2014, Russia and China had already signed a $400 billion deal to build a gas pipeline "Power of Siberia" from the Chayanda Field in Yakutia to China so as to provide the Chinese market with 38 billion cubic metres of gas each year. The first gas delivery started on 2 December 2019. Another pipeline project "Power of Siberia 2" currently being researched, would provide up to 50 billion cubic metres per year.[138]

In October 2015, deputy premier Dmitriy Rogozin, invited the Chinese to take part in the Arctic Sea Route and proposed the creation of a Cold Silk Road, explicitly linking the NSR to the Belt and Road Initiative.[139] In November, Sergei Donskoy, the Minister of Natural Resources and Environment welcomed the participation of Chinese companies to Russia's Arctic projects. On 14 May 2017, speaking at the One Belt, One Road conference, Putin again mentioned the idea. In June 2017, a new *Vision for Maritime Cooperation under the Belt and Road Initiative*[140] was published by the SOA, which was followed in November by President Xi's endorsement: "China and Russia should jointly develop and cooperate on the use of the North Polar sea route and build a Silk Road on the ice, President Xi Jinping told visiting Russian Prime Minister Dmitry Medvedev."[141]

Participation in the Arctic Silk Road was not limited to Russia. China sought to extend the proposal to the other Arctic states. China's Polar Silk Road (PSR) projects include Yamal LNG (2017), Payakha oilfield (2019), Zarubino port (2014), Arkhangelsk port with Russia (2016), Arctic Monitoring and Research Centre with Finland (2018), and Arctic Science Observatory (2018). All these projects were ratified, and some were already operational, with the exception of Arkhangelsk which is still at the planning stage.

In other Arctic states and regions, Chinese companies are involved in energy and infrastructure projects. "Chinese investors have proposed

plans to construct the Arctic Corridor, a new railway link between Kirkenes, Norway, and Rovaniemi, Finland, as well as a tunnel under the Baltic Sea between Helsinki and Tallinn. If realized, these infrastructure projects would link China's Polar Silk Road to Eastern and Central European markets."[142]

Although local politicians are still supporting the project, the Sami representatives are strongly opposed to the railway, which would damage "traditional reindeer herding lands." On the other side of the Baltic Sea, the Estonian Intelligence Agency published a report in February 2020 highlighting the risks of a Chinese investment in the tunnel construction.[143]

Time is on China's side. For the time being, China fully respects the sovereign rights of coastal states, and accepts the shipping regulations that Canada and Russia have established for ice-covered waters adjacent to their coasts. Although navigation by polar routes would not be economically profitable in the immediate future, it allows China to familiarize itself with the Arctic, to access already available resources and to collect data useful to China for scientific, economic as well as military purposes. This presence strengthens its maritime power, gives credibility to its status as a "near Arctic state" and enables it to increase its influence on polar governance. But many shipping companies are refusing to transport in the Arctic for seasonal considerations and environmental concerns.[144] The International Maritime Organization (IMO) "is currently developing measures to reduce the risks of use and carriage of heavy fuel oil as fuel by ships in Arctic waters."[145] China may have to deal with the contradiction between the insistence on the protection of the environment outlined in White Paper, and reality.

Connectivity is the core of the BRI. To facilitate the growth of data-flow exchanges, a Finnish project called Arctic Connect plans to link Europe and Asia through a submarine communication cable on the seabed along the Northern Sea Route (NSR). A preliminary study was launched in 2015. In March 2016, the Finnish state-owned company Cinia Oy announced on the website that they had chosen the Chinese ICT company Huawei Marine's platform for building the Arctic Connect undersea data cable. Interestingly, in 2016, there were no objections to the project, neither from European countries nor the US

As the cable must also connect Russia and run alongside the Russian coasts, in June 2019 a MoU was signed between Cinia and the Russian company Megafon. An analysis, published by the Finnish government in 2019, highlights some difficulties: "However, at the moment financial institutions across the globe are eager to invest in prospective infrastructure projects. Therefore, Cinia does not expect acquiring funding to be a challenge as long as agreements with potential clients are in place…the project may yet prove to be challenging due to Russia's security concerns."[146]

Several experts, such as Frank Jüris, an Estonian researcher, have also warned about cyber risks: "With the construction of Arctic Connect, China would increase its defensive intelligence gathering capabilities… Chinese offensive intelligence gathering capabilities would also increase…In addition, the construction of Arctic Connect would enable China to implement underwater surveillance capabilities it has been developing through military-civilian fusion in the South and East China Seas."[147] The same concerns appear in an interesting report, *Arctic Connect Project and Cyber Security Control*,[148] published by the Finnish University of Jyväskylä with the participation of the Hokkaido University and NATO Energy Security Centre of Excellence:

> "Collection of intelligence from undersea communication cables, i.e. hacking or sniffing a fibre optic cable by tapping cable under the water or at a landing station had to be taken into the consideration. All the states through area which the cable is running, have interest, motivation and technical capabilities to collect intelligence information from these cables at least in the points, where the cable is on the land. Point-to-point encryption is one way to fight against the intelligence collection from undersea communication cables." [sic]

The report also signals that "no international treaties or any legal provision directly regulate the protection of submarine cables outside of the territorial sea," and recommend the adoption of a Global Convention on the Protection of Submarine Critical Information Infrastructure.

3.3.3 Oil, gas and mineral resources

China's interest in Arctic resources is no longer a secret. Chinese companies exploit oil and gas in Russia and minerals in Canada and Greenland.

3.3.3.1 Oil and gas

Canada

In 2013, CNOOC purchased the Canadian oil company Nexen which gave it access to oil sands and shale gas in western Canada. It has been integrated into CNOOC International since January 2019. In December 2018, CNOOC bid $300 million for two offshore exploration licenses in the Flemish Pass Basin. Drilling was postponed in March 2020 because of the pandemic, according to the company, which made no mention of falling oil prices.[149]

Iceland

China has no agreement for drilling in Norway's Arctic area, but in November 2013 the Chinese oil company CNOOC and the Norwegian, state-owned Petoro signed an agreement with the Iceland company Eykon Energy for the exploration of the Dreki sector in the Icelandic continental shelf. CNOOC owned a 60 percent stake, Petoro 25 percent and Eykon 15 percent. In January 2018, exploration stopped due to expensive drilling costs and insufficient results of oil drilling.

Russia

China and Russia have made several co-investments in several oil and gas projects:

- China National Petroleum Corporation (CNPC) and the Silk Road Fund (SRF) are co-investors in the Yamal LNG project, investing 20 percent and 9.9 percent of the capital respectively;
- CNPC and China National Offshore Oil Corporation (CNOOC) each invested ten percent in the Arctic LNG2 project, in April 2019. Three production trains are planned with the first gas delivery in 2023;

- China National Chemical Engineering Group and Russian firm Neftegaz holding agreed to develop the Payakha oilfield in June 2019.
- China also has two license areas on the site at which the rig is now located in the Kara Sea. The drill is on the Leningradskoye and Skuratovskoye fields, located along the west coast of the Yamal Peninsula.

Novatek has announced another LNG project in the Yamal region, which will be launched in 2022. Novatek also mentioned an order for a new series of Arc7 LNG carriers, the construction of which should be insured by Asian shipyards. Until now built by the Korean shipyard Daewoo Shipbuilding & Marine Engineering (DSME), some ships could be entrusted to the Chinese shipyard Hudong Zhonhua[150]. This will be another step for China in Arctic affairs.

United States - Alaska

Alaska's North Slope is one of the largest natural gas resources in the world. With a **trillion cubic feet of proven natural gas reserves,** and a potential resource of **another 200 trillion cubic feet of natural gas.**

China was interested in a proposed natural gas export project, known as Alaska LNG. Gas would be transported from the North Slope to the port of Nikiski through an 807-mile pipeline.

In November 2017, the State of Alaska and the Alaska Gasline Development Corporation (AGDC) entered into a Joint Development Agreement with a consortium of three state-owned Chinese entities, Bank of China, China Petrochemical and China Investment Corporation. The non-binding agreement provides a framework for negotiation regarding Chinese investment participation in the project as well as the purchase of some portion of the LNG produced. The agreement between AGDC and the Chinese partners was reaffirmed in October 2018, allowing negotiations to continue.[151] In May 2020, the US Federal Energy Regulatory Agency approved the Alaska LNG project[152] which is now looking for new investors, but LNG's low prices are not attractive.

3.3.3.2 Mining

At the 2012 International Polar year meeting in Montreal, Yang Huigen, PRIC Director, denied that China had any interest in Arctic mineral resources.[153] In 2015, a Chinese-language report from the Shanghai Institutes for International Studies (SIIS), stated: "with the rapid development of China's economy, China's demand for resources and energy continues to increase, and its dependence on imported energy sources is also rising. The Arctic region has abundant reserves of energy resources. There is great potential for China and Arctic countries to engage in energy cooperation and achieve joint economic development."[154]

China is looking for minerals all over the world. The polar areas and the deep seabed remain the last areas to have been barely, if at all, explored. Contrary to official rhetoric by Chinese officials, the researchers were not only interested in the effects of climate change. The abundant literature archived in the Chinese Academic Journal Database shows that Chinese geologists have established a detailed mapping of mineral resources in Canada and Greenland.

Canada

Canada was looking for investors to develop its mining sector. Due to harsh conditions in the Great North, private companies hesitated to participate without insurance on the return on investment. Moreover, the 2008 recession had severely damaged the mining companies. China seized this opportunity. The Chinese company Wuhan Iron and Steel Co. (WISCO) created a joint venture with a Canadian company to exploit a major iron deposit at Lac Otelnuk (Nunavik, Québec). In 2008, Jinduicheng Molybdenum Group acquired the Canadian company Yukon Zinc.

In January 2010, the mining firm Jilin Jien Nickel Industry Co acquired Canadian Royalties Inc. and invested nearly $800 million to exploit a nickel deposit located near Kangiqsu-juaq, an Inuit community also in Nunavik. The company Mineral and Metals group[155] (MMG) has opened two major zinc and copper mines near Coronation Gulf in mainland Nunavut (Izok Lake and High Lake) with a port at Grand Bay and a 350km road. Due to declining resource prices, they were built with a federal contribution.[156]

More recently, Chinese miners bought up small Canadian gold producers as gold prices have risen 35 per cent since the last year. In May 2020, Shandong Gold Mining Co. Ltd. (SD Gold), a state-run Chinese company, made an offer to buy TMAC Resources Inc. In June, Zijin Mining Group Co. Ltd. bought Guyana Goldfields Inc. If the second operation has been accepted, the first raised concerns over China's expanding presence in North Canada. SD Gold is awaiting approval for this acquisition, already approved by TMAC shareholders. According to experts, however, with current tensions between Canada and China, there is a strong possibility that Canada will block the acquisition.[157]

This decision could be linked to the *Canada-US Action Plan on Critical Minerals Collaboration* to secure supply chains for the critical minerals, signed on 18 December 2019.[158]

Denmark - Greenland

Greenland is also looking to resource development. International mining companies, several of which are Chinese, are exploring the island for minerals, waging that with climate warming the ice cover retreat will facilitate mining exploitation. To date, five mining exploitation licenses are active and 57 for exploration. In 2009, Jiangxi Zhongrun Mining joined Britain's Nordic Mining to search for gold in south Greenland. Chinese companies are involved in three main mining projects: Isua, Citronen Fjord and Kvanefjeld.

- ***Isua:*** The iron ore deposit of Isua is located in the south-west of Greenland. The first exploration license was attributed to London Mining (UK) and transferred in 2015 to the Chinese Company General Nice Development. Several deadlines are indicated in the contract:
    - By 2021, the company must submit a utilization and decommissioning plan for the project
    - Before 31 December 2021, the company must submit a document of financial capacity
    - Commencement of mineral exploitation, no later than 31 December 2025.[159]

Chang Xingguo, Deputy Director and a senior analyst of the international affairs and mining finance department with the China Mining Association, declared, that "Due to the high operational costs and strict environmental regulations in Greenland, Chinese companies have not finalized any agreement yet... With global iron ore prices starting to decline in 2014, interest in the Isua project from Chinese buyers has also started to wane...Though the quality of the iron ore is high, the project still doesn't have good profit potential."[160]

- ***Citronen Fjord:*** Citronen Fjord zinc-lead deposit is situated at the extreme North of Greenland. The closest locations are Station Nord, under Danish-command, a military and scientific station, and the town of Qaanaaq, close to the US Thule Air Base. The Australian Ironbark Pty Ltd exploration group controls the right to exploit the Citronen deposit to the year 2046. The lifespan is estimated at fourteen years. Its largest shareholders are Swiss Nyrstar NV with a nineteen percent stake, and British-Swiss conglomerate Glencore with nine percent. In January 2017, Ironbark appointed China Nonferrous Metal Industry's Foreign Engineering and Construction Co (NFC) to provide key equipment for the project, infrastructure and ancillary facilities. NFC has an option to acquire a 20 percent stake in the project. Shipment of the concentrates in the Greenland Sea will be a technical challenge and will be possible mainly in August. A Swedish services company will also participate. Although initially devoted to the European market, the presence of NFC will most likely divert the destination of the concentrates to China.[161]

- ***Kvanefjeld:*** There are six mines that have been identified in the Arctic with Rare Earth Element (REE) deposits: one in Alaska, three in Northern Canada and two in South Greenland: Kringlerne and Kvanefjeld.

  The Mineral Resources Authority of Greenland has been in dialogue with Tanbreez Mining Greenland, an Australian privately-owned company and Greenland Minerals, another Australian company, on the Kringlerne project since 2015.

> The Kvanefjeld project has been in Australian-based Greenland Minerals & Energy Ltd (GME) ownership since 2007. It is a multi-element deposit in which REE, uranium, zinc and fluor are to be extracted. In April 2014, GME announced a MoU with China NFC with the objective of developing a new REE supply chain. In September 2016, GME announced that Shenghe Resources Holding Co Ltd (Shenghe), a Chinese REE mining company, is set to acquire a 12.5 percent stake in Kvanefjeld rare earth. The agreement between the two companies offered Shenghe an option to buy up to 60 percent in the Kvanefjeld project, which would increase China REE's monopoly. Shenghe also became the largest stakeholder in GME, now Greenland Minerals Ltd (GML), with a 10.5 percent stake. On 21August, 2018, GML entered a non-binding MoU with Shenghe that encompasses the offtake of total output of rare earth elements from Kvanefjeld in either chemical or mineral concentrate.
>
> In 2019, Shenghe announced it has formed a joint venture with China National Nuclear Corporation to enhance methods for separating rare earth elements from uranium and thorium deposits at the Kvanefjeld site.162 This will strengthen China REE's monopoly and hamper the EU's access to REE.

As the Clingendael report points out, "Chinese investment has put significant pressure on the political relationship between Nuuk and Copenhagen. Greenland, eager to diversify its economy away from a dependence on the seafood industry and Danish financial aid, mainly sees the economic opportunities that arise from increased cooperation with China. Meanwhile, the Kingdom of Denmark has met Beijing's presence on the island with strong opposition, perceiving it as an infringement of Greenlandic sovereignty and, in turn, a potential security threat to the entire Kingdom." [163]

With the *Self-Government Act*, Greenlandic authorities may negotiate and conclude international agreements with foreign companies on mineral resources activities, including uranium, and aviation. However, the Danish government still has the responsibility of conducting Foreign Affairs and Defence and Security policies.

The changing wind in Denmark and China relations appeared with the Danish Government's decisions to turn down two offers from Chinese companies to buy the abandoned naval base of Gronnedal, Southwest Greenland, in 2017, and to expand the airports in Nuuk and Ilulissat, in 2019.

United States – Alaska

China is Alaska's largest trading partner. Minerals and ores are the second largest export commodity after seafood. China has invested in Alaska either directly or indirectly. In the state's mining sector, in 2009, China Investment Corporation (CIC), one of China's sovereign wealth funds, purchased a 17.5 percent stake in Teck Resources, the Canadian mining company that operates the Red Dog Mine, one of the world's largest zinc mines. In 2017, CIC sold off a portion of its stake in Teck, but still retains a ten percent holding in the company.

3.3.4 Fisheries

China has the world's largest fishing fleet. In its Arctic policy *White Paper*, China declares that the country wishes to utilize Arctic resources in a lawful and rational way, including fisheries in the high seas parts of the Arctic Ocean. Contrary to the Antarctic area, Chinese fishermen have showed little interest in fishing Arctic waters, though China has conducted research on marine sea life in the region. Chinese scholars were concerned about being excluded from discussions on fisheries management issues.

On 16 July, 2015, in Oslo, the *Arctic Five adopted the Declaration Concerning the Prevention of Unregulated High Sea Fishing in the Central Arctic Ocean* (CAO). The CAO binding agreement was finally published in June 2018 in English, French, Chinese, and Russian. The agreement would be signed by the Arctic five, the EU, China, Japan and South Korea, and will be in effect for 16 years and extended for an additional five-year period if the parties agree. To date, the agreement has not entered into force since China and Iceland signatures were missing.

A science-based management of fisheries is under discussion. The EU has taken a leadership role in the scientific commitments, creating a

consortium of European researchers to collect data on ecosystems in the CAO. The research group is currently taking part in the year-long MOSAiC expedition onboard the German icebreaker *Polarstern*. Later this year, it is likely to be part of the SAS-expedition with the Swedish icebreaker *Oden*.

Although China has banned fishing in the Ertix River, its only river that flows into the Arctic Ocean,[164] there is no evidence that it would feel itself committed to the CAO agreement in the future.

3.3.5 Tourism

"China supports and encourages its enterprises to cooperate with Arctic States in developing tourism in the region, and calls for continuous efforts to enhance security, insurance, and rescue systems to ensure the safety of tourists in the Arctic...China advocates low-carbon tourism, ecotourism, and responsible tourism, and hopes to contribute to the sustainable development of Arctic tourism." (*White Paper*)

The figures in Arctic countries show a very significant increase in the number of Chinese tourists to the polar regions. In Russia, for example, the small village of Teriberka, in Murmansk Oblast, along the Barents Sea, their number increased from 160 in 2013 to over 16,000 in 2019. In Yellowknife, Canada, their number tripled between 2016 and 2018, from 6,206 to 19,446, constituting more than half the number of foreign tourists.[165] In Iceland, the number of foreign tourists exceeded two million in 2017, or five times the local population. In Alaska, their number has practically doubled in 20 years. In Norway, the people of the Lofoten Islands complain about overcrowding in the summer. Cruises are increasing along the coasts of Greenland but traveling difficulties inside the country limit the number of visitors.

Despite the financial resources it generates, this growth has become unbearable for the local populations. As Torfi Finnsson, Director of the Reykjavik-based *Icelandic Mountain Guides*, says "Being Arctic and sub-Arctic like we are, our whole environment is fragile." "Between 80 and 90 per cent of visitors say they come to Iceland for the nature, but we're flooding these natural sites with tourists without protecting it. If

we spoil all our interesting nature by trampling it down, we destroy not only the reason people come to Iceland, but the ability of people to enjoy it when they are here."[166]

In February 2015, the Arctic Council's Protection of the Arctic Marine Environment (PAME) Working Group has published the *Arctic Marine Tourism Project* (AMTP). 'Sustainable Arctic tourism' is defined thus: "tourism that minimizes negative impacts and maximizes socio-cultural, environmental and economic benefits for residents of the Arctic". The AMTP best practice guidelines is a voluntary document encouraging action on behalf of the Arctic Council, the Arctic states and, in some instances, collaboration between the two. The question is whether this will be sufficient in the face of the economic interests at stake?

In the Antarctic, tourism has increased 770% over the last 26 years. According to the International Association of Antarctic Tour Operators (IAATO), during the 2018-19 summer in the southern hemisphere the number of tourists visiting the continent increased by 17% to a total of 51,000 people. In 2008, less than 100 Chinese tourists visited the southernmost continent. Ten years later, the number reached more than 8,000, making China the second largest source of tourists in Antarctica, after the United States, and 10.000 are expected during the 2018-2019 Antarctic season, according to the China Tourism Academy. That is to say, of every five visitors to Antarctica, one is from China.

IAATO has published standard operating procedures, which require that tour operators coordinate their itineraries (no more than one vessel visits a landing site), and no more than 100 passengers ashore at any one time. These procedures have been incorporated into *Antarctic Treaty Consultative Meeting Measure 15* (2009*): Landing of Persons from Passenger Vessels in the Antarctic Treaty Area*.[167]

China favours tourism in the polar areas as a means of convincing the Chinese of the importance of the Arctic and to be supportive of government policy. Tourists' narratives draw on their experience and understanding of this still preserved nature now in danger of disappearing. It is also a way to increase Chinese presence in the polar areas.

3.3.6 Conclusion

The title of the Clingendael report, *Presence before Power*, is a perfect definition of the strategy adopted by China in the Arctic, in the poles and, more generally, in the world. With the Belt and Road Initiative, it hopes to gradually gain control of world trade, as Britain and the United States had done before it. In the Arctic, its declared status as "near Arctic states", which it justifies by its meanwhile permanent presence, should enable it to influence any future decision.

Through scientific research and the search for resources, it is indeed a geopolitical vision that motivates Chinese policy. About ten years ago, Chinese companies were greeted with interest in the Arctic countries, which for the most part needed funds to develop their economies. The coming to power of Xi Jinping was a clear break in Chinese foreign policy, previously driven by the principle of "hide your talents and bide your time"[168] as adopted by Deng Xiaoping. The omnipresence of China in the Arctic, but also its economic entryism in most countries reinforced by the BRI, the intransigence in the South China Sea coupled with the contempt displayed before the decisions of the International Court of Arbitration and the now open assertion of its power accompanied by the rise of its military capability, have changed the attitude of certain countries worried about the Chinese hold on their economy and, through it, on their own sovereignty.

3.4 Law-based Governance

In 2013, China was granted observer status in the Arctic Council. In 2008, the *Arctic-Five Ilulissat* declaration reaffirmed the law of the sea as a solid foundation for responsible management of the Arctic Ocean and recalled their "sovereignty, sovereign rights and jurisdiction in large areas of the Arctic Ocean."[169] In 2011, the *Senior Arctic Officials (SAO) Report* issued in the Seventh Ministerial Meeting of the Arctic Council in Nuuk, Greenland, the introduction of new criteria for admitting permanent observers and outlined a role for their participation in the Arctic Council. This was integrated in an *Arctic Council Observer Manual*, adopted at the 2013 Kiruna Ministerial Meeting. "The primary role

of observers is to observe the work of the Arctic Council. Furthermore, observers are encouraged to continue to make relevant contributions through their engagement primarily at the level of Working Groups."[170] The Manual also mentions that "observer status continues for such time as consensus exists among ministers."

Since 2009, a growing number of academic publications were available in China, arguing that the Arctic Ocean cannot be considered as the exclusive preserve of the Arctic states even if they have the right to play an important role in Arctic affairs. As David Wright[171] suggests, "even though China is currently climbing the Arctic learning curve, it seems reluctant to acknowledge that it being a non-Arctic country, its influence in the Arctic and in Arctic affairs might be somewhat limited." In 2010, Rear Admiral Yin Zhuo's comments, as relayed by the official China News Service, expressed, "The Arctic belongs to all the people around the world as no nation has sovereignty over it."[172] Although it was not officially declared, China has hinted that it has the right to freedom of navigation in the Exclusive Economic Zones (EEZ) of the Arctic coastal states and high seas, a right to fishing and seabed mining and the right to innocent passage in the territorial waters of Arctic states.

For China, its legal perspective on the Arctic is founded on two primary legal documents: the 1920 Svalbard Treaty and the 1982 *U.N. Convention on the Law of the Sea* (UNCLOS), but it also refers to the Charter of the United Nations, recalling that it is a "permanent member of the UN Security Council" and of the International Maritime Organisation.

Several legal disputes oppose the Arctic countries themselves, some of which are also of interest to other countries. In addition to bilateral disputes over the boundaries of Exclusive Economic Zones (EEZs), the main disputes amount to three. These are:

- The application of UNCLOS to the *Svalbard Treaty*;
- Freedom of movement in territorial waters and the status of the North-West route;
- Claims concerning extensions of the continental shelf to the North Pole.

3.4.1 The *Svalbard Treaty*

The 1920 *Svalbard Treaty* applied to the islands as well as to territorial waters limited to three nautical miles (NM) at the time. The 1982 *Montego Bay Treaty* extended territorial waters to twelve NM and created EEZs that could extend up to 200 NM as well as a continental shelf.

Norway has agreed to extend the territorial waters of Svalbard from three to twelve NM, but considers the Svalbard Continental Shelf to be an extension of its own and belongs to it. As regards the EEZ, it set up a 200 NM Fisheries Protection Zone in 1977 in order to conserve fishery resources.

Most countries oppose Norway's interpretation of the intricacy of the two treaties, in particular its appropriation of the continental shelf. The dispute between the European Union and Norway over the snow crab fishery is, in fact, linked to this interpretation, with the EU refusing to set a precedent favourable to the Norwegian position.

Without being directly involved in the debates, Chinese jurists espouse the opponents' theses: "The conclusion (The *Svalbard Treaty* is applicable to the fishery protection zone and the continental shelf around Svalbard)" means that China, as a contracting party of the *Svalbard Treaty,* is entitled to enjoy the non-discrimination rights which are conferred by the treaty in these two areas."[173]

3.4.2 Freedom of navigation

UNCLOS gives the right, to foreign vessels, of innocent passage through territorial waters and free navigation through the EEZs and the High Seas, which is not the case within internal waters, where they must ask permission to the coastal states. Both Canada and Russia have contended that some parts of the Northwest Passage and the NSR are included in internal waters with the obligation for foreign vessels to request authorization from Ottawa or Moscow. The United States' opposition to both contends that the routes are international straits through which they have the right for transit passage.

Although defending freedom of navigation in the Arctic, "China maintains that the management of the Arctic shipping routes should be

conducted in accordance with treaties including the UNCLOS and general international law and that the freedom of navigation enjoyed by all countries in accordance with the law and their rights to use the Arctic shipping routes should be ensured" (The *White Paper*). China does not wish to damage bilateral relations, especially with Russia, and has adopted a sidestepping attitude by asking authorization to both countries to transit through the Northern routes. China's position also accounts for the US' protest on the Qiongzhou Strait, between Hainan Island and southern China homeland, which Beijing considers part of Chinese internal waters.

3.4.3 Extension of the continental shelf

Several Arctic countries still have disputes over the delimitation of their EEZ with their neighbour. Canada, Denmark and Russia have also requested an extension of their continental shelf to the North Pole. The three countries have submitted their dossier together with scientific data justifying their rights to the Commission on the Limits of the Continental Shelf (CLCS). The three claims on the North Pole rely on the Lomonosov Ridge, an underwater mountain that runs from Canadian Ellesmere Island near Greenland, to the Russian Siberian Islands the North Pole.

China's 2018 *White Paper* clearly stresses "China enjoys the freedom or rights of scientific research, navigation, overflight, fishing, laying of submarine cables and pipelines, and resource exploration and exploitation in the high seas, the area and other relevant sea areas",[174] meaning that the central Arctic Ocean is certainly high seas. China effectively opposes Russia's aspirations without comment.

In these three cases, China adopts a cautious attitude, sparing its interests and avoiding a probably sterile confrontation. This caution is not without ambiguity, however, which eventually leaves it the possibility to develop once its presence in the region becomes essential for some countries.

3.5 International Cooperation

3.5.1 China and Arctic governance

After its first candidacy as an observer for the Arctic Council failed in 2009, Chinese experts and officials expressed disappointment, but also criticized the way governance works in the Arctic. The *Nuuk Declaration* amplified its discontent and provoked strong reactions, not only from Chinese researchers, but also from some foreign experts.

"At the 2011 Nuuk ministerial meeting, criteria for new permanent observers were announced. While Chinese officials have not publicly commented on these, officials have privately expressed displeasure with some of the criteria: the stipulations that an applicant must have demonstrated the 'political willingness and financial ability to contribute to the work of the Permanent Parcticipants' and 'recognize Arctic states' sovereignty, sovereign rights and jurisdiction in the Arctic'. In contrast, Chinese scholars have publicly expressed indignation. Cheng Baozhi of SIIS criticized the criteria as meaning that member states of the Arctic Council have 'raised the political threshold in order to stop non-Arctic states interfering in Arctic [affairs]'. Another academic, Guo Peiqing, has stated that the decisions in Nuuk showed that 'Arctic states are announcing to the world: the Arctic belongs to the Arctic states. They reject the idea that the Arctic is a treasure of humankind."[175]

Kristopher Bergh, from SIPRI, has also mentioned the risks provoked by the Arctic Council's policy: "The Arctic Council is in danger of being perceived as an exclusive club, taking major decisions about the Arctic with little regard for the concerns and interests of non-Arctic states. The existing approach risks creating the conditions whereby non-Arctic states could simply disregard the arrangements, rules and codes of conduct that the Arctic Council creates for the Arctic and instead work outside existing frameworks."[176]

Peiqing Guo, Professor at the Ocean University of China, has also been clear in these observations, arguing that Arctic affairs could also be managed through other international organisations:" "New criteria (*Nuuk Declaration*) can be ranked as a rigorous and harsh requirement that is

unprecedented in the history of international organizations... However, the role and function of the Arctic Council is very limited. Its role and function can be replaced by many existing international instruments and organizations. For instance, Arctic fisheries are managed by FAO or regional fishery management organization, and navigation is controlled by the IMO, and outer continental shelf extension will be recommended by the CLCS. The Arctic Council is limited to environmental protection and search and rescue."[177] [sic]

China had also mentioned, *en passant*, its veto power as permanent member of the U.N. Security Council.

As shown in the above, since its acknowledged observer status in the Arctic Council, China has increased its economic and diplomatic relations with the Arctic states. As the Arctic Council rules did not offer the observer states real possibilities to participate in the debate, except through the working groups, China has decided to increase its influence by developing activities in the Arctic area with a scientific expedition every year (rather than every three to four years), the opening of a new scientific base in Iceland and the development of shipping, tourism and local infrastructures.

Although the notion of "near Arctic state" has been employed by Chinese scholars since 2012,[178] it was officially mentioned for the first time in the 2018 *White Paper*, which provoked interrogations and anxiety.

3.5.2 Relations with the Arctic states

China has developed bilateral Arctic partnerships with Arctic states with a relative success. With Norway, the relations have been frozen over six years following the Nobel-prize award to a Chinese opponent. They were renewed with the 2017-2020 agreement, prelude to a possible free-trade agreement in the near future.[179]

In collaboration with Russia, China is developing the Ice Silk Road by means of scientific and energy partnerships. China-Russia relations will be detailed in the next chapter. Scientific research and industrial exchanges continue to be developed with Finland, even if the railway project may be on hold for the moment.

Sino-Swedish ties have become tense over human rights policies and the recent Chinese sentencing of a Hong Kong-based Swedish bookseller. Denmark is also concerned about increasing Chinese investments in Greenland and concomitant potential security and sovereignty risks.

China's ties have worsened with Canada and Sweden.[180] Chinese relations with Ottawa deteriorated in December 2018 after Canadian authorities arrested Meng Wanzhou, Huawei's chief financial officer and daughter of Huawei founder. China's response was to arrest two Canadian citizens charged with spying. Relations have continued to deteriorate between the two countries ever since.

US-China relations have been deteriorating for several years. The geopolitical disputes over the China Sea, Hong Kong and Taiwan are accompanied by a growing military presence in the region, and the competition for world pre-eminence between the two states has opened an economic war and a restriction of relations between the two countries. The United States, which until now has shown little interest in Arctic affairs, has decided to adopt a more head-on opposition to the initiatives taken by China in the region, with the risk of strengthening the links the latter is currently developing with Russia.

The way China has taken an interest in Iceland and Greenland helps inform the approach used to develop its presence in the Arctic.

3.5.2.1 Iceland

Iceland considers itself a coastal country of the Arctic Ocean, even though it only has a tiny portion of its territory north of the Arctic Circle. But the request to be recognized as a coastal state was not considered by the "Arctic Five". In 2008, the global financial crisis hit the Icelandic economy heavily, resulting in the defaulting of its main commercial banks. Already a member of the European Economic Area and Schengen, Iceland applied for EU membership in 2009, but due to a disagreement on fishing quotas Iceland withdrew its candidacy in 2015. China seized this opportunity and provided it with $500 million in 2010 to rebuild its banking system. In April 2012, Prime Minister Wen Jibao travelled to Reykjavik to sign a framework on six bilateral

agreements, including a free trade agreement between the two countries – the first of its kind with a European country – as well as a treaty for Arctic cooperation in economic, scientific, energy and technological terms. The agreement was signed in 2013 and, on the same day, Iceland's President Ólafur Ragnar Grímsson founded the Arctic Circle, a forum that facilitates dialogue on Arctic governance issues.[181] Economic relations were established through the field of geothermal energy, recognition of Iceland's know-how, the oil Dreki exploration project, which was abandoned, an impressive Chinese embassy and the China-Iceland Observatory. One Chinese businessman's proposal, in 2011, to buy a large piece of land in north-east Iceland with the aim of building a port, was rejected by the Icelandic government.

In 2018, the Chinese ambassador to Iceland proposed that Reykjavik join the Polar Silk Road: "By considering signing the MoU on cooperation within the framework of the 'Belt and Road Initiative' between our two governments and other means, China and Iceland can further enhance practical cooperation in the areas such as trade of agricultural and fishery products, infrastructure construction in aviation and communications, green energy, Arctic affairs, tourism, education and people-to-people exchanges."[182][sic]

Iceland is a member of NATO but is the only country without an army. This Chinese proposal provoked a renewed interest in the United States, which had closed its military bases in 2006, and the successive visits to Reykjavik by Secretary of State Mike Pompeo and later Vice-President Mike Pence, who on this occasion declared "The United States is grateful for the stand Iceland took rejecting China's Belt and Road financial investment in Iceland." [183] This statement seemed odd since Iceland has yet to respond to this offer.

3.5.2.2 Denmark – Greenland

In Greenland, the 2009 *Self-Government Act*, provided the Greenlandic authorities with increased autonomy, including the possibility "to negotiate and conclude international agreements with foreign states and international organisations, which exclusively concern Greenland and entirely relate to the fields of responsibility taken over by Greenland."[184]

Chinese companies were already present in Greenland, but the new political status and the important natural resources of the island aroused the interest of Chinese officials who increased their meetings with their Greenlandic counterparts. The 2014 MoU, followed by the creation of a global rare earth supply chain which diverts the REE towards China, demonstrated the ability of the Chinese to modify the process to its advantage.

The government of Greenland is also looking to China for the realization of important infrastructures, some of which, as we have seen, were opposed by Denmark for strategic reasons. President Trump's proposal in August 2019, was considered a joke and the response of Danish prime Minister was clear "Greenland is not for sale."

Denmark is concerned about this entryism of China into Greenland and the possibility offered to Greenlanders to gain their independence. Research carried out by several archaeologists aimed at demonstrating cultural links between the Inuit and certain Chinese populations,[93] interested Chinese research institutes, and gave rise to a new narrative on the history of the Inuit people.

"Here, Greenlandic representations depict Danes as primarily power-hungry, dominant, efficient, materialistic and individualistic (Trondheim, 2002). In this identity landscape, the idea of 'authenticity' has gained a foothold. Arguably, early colonial notions of the natural Eskimo hunter, who either lived in harmony with nature or was corrupted by civilization (Pedersen, 1997), reverberate in the current Greenlandic identity discourses."[185]

In one of his articles, Damien Degeorges notes that "A takeover of Greenland can be done economically. According to an observer in Denmark, China's primary interest in Greenland is not about resources or the Arctic, but about competition with the United States. If China wanted to provoke the United States in its backyard, as part of the second act of confrontation between the two powers mentioned above, it would suffice to "acquire" Greenland through a few investments large enough to control *de facto* the Greenlandic economy. The stake in Greenland does not start at the stage of possible statehood, but is played

out now. Whether Greenland remains an autonomous territory or becomes a state, the stakes will remain unchanged."[95] Greenland's strategic position and its fragility, with its 57,000 inhabitants, make it easy prey in the struggle for power between China and the United States. Iceland and Greenland, which have intensified their relations in recent years, are undoubtedly key issues for the future of the Arctic. Denmark, with the support of the European Union and Canada, has announced a little increase in funding (€30 million yearly for the EU's Multinational Financial Framework 2021-2027).

The United States has had the Thule base located in the north-west of Greenland since 1941. The base is a strategic element in the North American Aerospace Defense Command (NORAD). Thule Air Base is strategically positioned for locating space threats over the Arctic region. As with Iceland, Chinese presence in Greenland is not welcome by the US government in a time of growing tensions between the two states; it opened a consulate in Nuuk on 10 June 2020. The coming months will no doubt show new evolutions in a region the US now considers as being of strategic importance.

3.6 Maintaining a Peaceful, Secure and Stable Arctic Order

"Promote peace and stability in the Arctic" is one of the five Chinese priorities announced in the 2018 *White Paper*. Calling for the peaceful utilisation of the Arctic, China "strives to reinforce cooperation with the Arctic States in maritime and air search and rescue, maritime early warning, emergency response, and information sharing in order to properly handle security challenges."[186]

Recent reports or declarations, mostly issued by US officials or military personnel, highlight the Chinese military threat in the Arctic. "China's words and actions raise doubts about its intentions",[187] claims US Secretary of State Mike Pompeo in a speech to Arctic Council delegates in Rovaniemi (2019). He cited an US Defence Department Report stating that "Civilian research could support a strengthened Chinese military presence in the Arctic Ocean, which could include deploying

submarines to the region as a deterrent against nuclear attack."[188] The Danish intelligence service revealed that Chinese research expeditions in the Arctic are not just a matter of science but serve a "dual purpose".

However, "There is currently little available evidence to suggest that China will pursue a military course in the Arctic similar to, or aligning with, Russia."[189] The most credible threat is mentioned in a US Coast Guard document. It is the challenge by China "to the rules-based international order around the globe [causing] concern of similar infringement to the continued peaceful stability of the Arctic region",[190] in reference to Chinese conduct in the South and East China Seas.

China's main goals are clearly a more advanced knowledge of the Arctic based on scientific research, capability development in Arctic technology and resources exploitation. But, at the same time, it is obvious that through these activities China seeks to enforce its perceived rights, protect its interests and increase its influence on Arctic affairs and governance. It is also evident that scientific research has a multipurpose objective, with civil and military applications.

With growing interests in the Arctic, China is also developing a security strategy that could be backed up by the military. The 2015 *National Security Law* (NSL) is the first official document to make reference to Arctic exploration. A paper, issued by the First Institute of Oceanography in 2018 in reference to the NSL, proposed the deployment of Chinese military forces to protect its interests in the Arctic.[191]

For the military the priorities rely on:

- knowledge and data collection presented as the key to build up dual military-civilian capacities on navigation and meteorology for the Arctic.
- Arctic navigation and satellite surveillance technology (as noted in Sweden)

Priorities which cannot be considered aggressive.

They also outline the creation of dual-use logistics facilities, participation in search and rescue and the training of military personnel.

Growing tensions between the Arctic states and official declarations led them to conclude "The Arctic may become the tipping point of new war"[192] and to the necessity for China to increase awareness of the security implications of its Arctic presence, as well as the need to devote resources to address them.

The deployment of military forces, including submarines, has been mentioned in several papers. In 2015, five surface vessels of the Chinese Navy (PLAN) transited to the North through the Bering Strait. Some PLAN officers mention the strategic interest in hiding nuclear submarines in the Arctic Sea. They simply forget that their only base is in Hainan, southern China, and that they must cross several straits before reaching their operation area. This does not mean that Chinese submarines will never navigate in the Arctic Ocean, but it will take some time before the PLAN establishes sufficient knowledge on underwater data. Russian support, if agreed, would constitute serious aid. In a Russian newspaper of May 2019, Alexander Shirokorad, a military historian, wrote[193] that Russia could provide communications and logistic facilities for Chinese submarines in the Arctic and proposed a joint Russia-China air and missile defence system for the Arctic.

More recently, according to RIA Novosti, both countries would have agreed to build a new conventional submarine together. The project would be coordinated by Russia's Federal Service for Military-Technical Cooperation.[194]

With the suspicion among Arctic states as to China's intentions, Beijing would be well-advised to proceed cautiously. "Carrying out military activities without being subjected to backlash from the Arctic littorals and international community" would be difficult. "And as long as China and Russia remain on friendly terms, the Arctic does not pose a direct threat to China with Russia functioning as its shield and protector."[195]

4
Conclusion

Without possessing a territory in the Extremes, China has succeeded within three decades to be one of the leading players in the Polar area. This spectacular rise was achieved by developing the hidden strategy it already employed to become a maritime power.

Not being an Arctic country, China initially sought to modestly justify its interest in the region through scientific research before proceeding to establish relations with the Arctic states. She seized the opportunities available to her by offering aid to struggling states and then step up co-operation to gain access to resources. In doing so, it gradually developed relations with all the Arctic countries, but also with organizations and observer countries, increasing its presence and multiplying economic agreements. The official Chinese discourse has remained very cautious about its ambitions, leaving its strategy somewhat blurred. It was only after being awarded the status of observer country to the Arctic Council, the limits of which it knew, did it begin to display requirements in terms of governance, requirements that could appeal to other observer countries subject to the same constraints.

Its economic expansion in the Arctic and around the world, the Belt and Road Initiative, an increasingly uncompromising attitude in the Chinese seas eventually alerted the international community and forced China to publish a *White Paper* in 2018. The scepticism that has settled on Chinese intentions, makes the economic and political relations it seeks to pursue with the Arctic states more difficult. The economic weight it represents still weighs on the decisions of the most modest countries, but the vigorous active entry by the United States, as decided by President Donald Trump, has forced it to rethink its strategy. The

rapprochement with Russia, not without ambiguity, meets the needs of its economy and can ensure the protection of its interests in the area. But it remains unclear whether Russia will support increased Chinese participation in Arctic governance.

Little attention is paid to the Third Extreme – the Tibetan Plateau – from which originate most of Asia's great rivers that flow to a dozen countries. China, by building giant dams and other diversion structures on those international rivers, is becoming Asia's upstream water controller. This action is arming Beijing with increasing leverage over the countries critically dependent on river flows from the Tibetan Plateau, as China refuses to enter into a water-sharing treaty with its neighbouring countries.[196]

China's future actions in the Arctic will provide valuable insight into how Beijing balances its role in international governance with its wider strategic interests. The Chinese win-win strategy in reference to the example of water-sharing leaves little room for optimism.

As Hubert Vedrine, former French Minister of Foreign Affairs puts it, "If China were to pursue a classic policy of power and a fait accompli; if it sought to become an 'Asian America', which, like it, would often be too one-sided, too polluting and why not, too, one day militarist without being as democratic as the United States; whether she aimed to reconstitute a bipolar world, this time around herself and the United States; if it claimed to impose on the world its own standards and conceptions, then no shock would be excluded, and everything would be to be feared."[197] [sic]

Conclusion

Finally, Russia and China, a common deal

Having worked on two very different major actors in the Arctic Ocean and beyond we may consider a common national interest and overlapping goals. Whether the global community would accept China's national demand to be recognized as a near Arctic state remains an unanswered issue. And if agreed on, what would be China's subsequent demands and requirements? The Chinese *White Paper* has a lot of very moderate and politically correct wording, as has been analysed in the study. China needs an Arctic country as a supporter for its further implementation of national goals in the Arctic, and this partner is Russia.

As a good reminder of China's self-understanding, this quotation from chapter two of the *White Paper* is striking: "China is an important stakeholder in Arctic affairs. Geographically, China is a "Near-Arctic State", one of the continental States that closest to the Arctic Circle. The natural conditions of the Arctic and their changes have a direct impact on China's climate system and ecological environment, and, in turn, on its economic interests in agriculture, forestry, fishery, marine industry and other sectors." [sic]

For international affairs, a more detailed look at what has been omitted in the present article is required. All arguments are valid for other observer countries, as well as the point about size having no support in international law.

Current relations between Russia and China may be described as a kind of alignment. This alignment could be temporary or could evolve into

an alliance. In some aspects, such as economy, transport and resources exploitation, we can identify a business relation between provider and customer. Scientific relations, especially the open exchange of data and knowledge works fine with Russia and is unreliable with China. The attitude towards indigenous peoples and their living conditions are pronounced and highly valued in official documents, but the right of open and transparent debate remains limited. When measures are taken, the outcome has limited effects on both countries' centralized governmental institutions. The case is different when it comes to regional districts and local communities. Here, there is room for progress, at least in Russia.

What are the motives and causes for both countries in the Arctic?

Firstly, we must recognize that both countries are currently facing increased domestic pressure due to limited medium and long–term economic perspectives. Both are led by personalities willing to act as nationalists and acting with governmental power in the case of domestic uncertainties. This both increases and is assisted by limited military or law enforcement authority, aggressive operation wherever it suits their purpose. All actions taken, both civilian and military, will be accompanied by strategic communication policies so as to deflect their own questionable actions. This is the political will in the Arctic Ocean already: for example, all Russian national regulations for the NSR are questionable as far as territorial waters are concerned. Reference to Article 234 of UNCLOS on ice-covered areas is to be noted even when the area is shrinking. This will become a critical question which must be solved through the Arctic Council. The US opposes both national positions, Russian and Canadian. They have not ratified UNCLOS which makes the search for a solution less easy.

It is a fact that all non-compliance policies are accompanied by strategic communication, both domestically and internationally. Both Russia and China have common interests in economy, research maritime infrastructure and safety of navigation. China is providing the funding which Russia urgently needs. In military matters, Russia is increasing its capabilities and China has been so far adopting a low-profile stance.

Secondly, clearly neither are as yet allies, but at best temporary partners with common adversaries, namely, the United States, NATO and the European Union. Both share these adversaries, both have regional tensions with important countries and not all of them are solved by power, whether economic or military.

Both have different timelines in implementing their national goals, Russia needs the fastest possible success by all means, and China has long-lasting and effect-taking thinking. But China needs safe and secure seaways, and the NSR already offers this today, perhaps only to a limited extent, but this will change for the better in due course. The NSR is an additional alternative route to the Suez and the Malacca Strait and is part of the Chinese global Silk Road initiative.

One crucial question is whether the current situation, with its limiting regulations on what is called "Freedom of Navigation", and these standing orders are to be dealt with. In fact, they exclude foreign commercial traffic. Are they judged as a temporary bargain or a new long-lasting potential conflict?

For Russia it amounts to the question of reducing its position as a provider of gas, oil and mineral resources to a limited number of customers. This development favours China and its way of doing business. In the end the present win-win situation in the Arctic would be in China's favour and would place Russia as a kind of "supplier" to China. Diversification of trade is based on global thinking in all economic fields. National or bi-lateral solutions are short-term merchandising and have a brief shelf life in a global world with a high rate of change.

Thirdly, the cultural difference in strategic thinking and implementation between Russia and China is visible and could be the cause for the risk of misunderstanding.

Both countries are based on centralized administrations and bureaucracies, which could not cope with the tempo of ongoing changes and necessary adjustments. The lazy management of the NSR is evidence of the slow progress during the last years. This is one representative example of almost all issues currently occurring in the Arctic Ocean and beyond when considering Russia.

All Arctic countries focus on securing their territorial rights; this is a permanent affair and will not change. What Russia and China have in common is the stabilization of their centralized systems and the overall power of their leaders. It is doubtful as to whether this also applies to their administrations.

Fourth, relations towards the members of the Arctic Council ought to be considered, and here Russia is confronted with very different views. The attempt to separate one or two members of the Arctic Council for a new common perspective is already happening and must be taken seriously. The same applies to observer countries. Svalbard and Greenland are prominent places for investment and cooperation in the North.

Most Arctic institutes, acting secretariats and the several non-governmental organisations have their say and will ensure their right to do so. The Arctic Council must increase relevant topics, relevant owing to the pace of change and the power comparison or completion, as frequently mentioned. The need for a forum in which military aspects can be discussed is necessary, along the lines of the already existing NATO–Russia Council. The founding of an equivalent NATO-China council for information exchange would be one encouraging way out of the present tensions. Another important member of the Arctic Council is Canada.

Canada, as the Arctic country with the second-longest coastline and the North West Passage has a great responsibility, both in the Council and beyond, in the form of working groups. In view of the rapidly changing political positions of the US, Canada's situation is difficult. Both Countries are related by vital defence agreements, with North American Aerospace Defence Command, NORAD, as key. This command functioned during the Cold War. But today, with the major changes in traffic and resources extraction and the shift of fishery activities to the north, the situation needs both rethinking and a modernisation and update of capabilities.

Fifthly, Russia has maintained strong relations with countries such as India and Vietnam to which it sells armaments, including submarines, both of which have strong disputes with China. It is important for both

Russia and China to foster and increase good and reliable relations to other major countries like India. And good relations to Vietnam and other important Asian countries build on longer lasting relations and will continue to be further developed. Asian countries are far more critical towards China and its overwhelming economic projects and military engagement in their vicinity than is Russia. Russia's traditional relations and influence could be used in the Arctic Council over the two years of Russian chairmanship. With respect to spill-over effects, Central Asia could become a part of the globe where Russia and China are not aligned. In an article dated 13 September 2018, the *Washington Post* cited the five things to know about Russia's Vostok-2018 military exercise. It would seem worthwhile mentioning that one of the objectives of this multinational exercise was to prove Russia's capability to at least secure its eastern borders. This was in 2018, and much has changed since then, especially with respect to military cooperation, but disbelief about more than alignment is appropriate.

Answering the question about the "threats or challenges to the global community" is as difficult as is the necessity for Russia and China to implement an adequate balance between ecology and economy. Both states are masters of strategy. The issues of common interest that do exist are better answered in a cooperative atmosphere. There are many more important issues that create tensions and partial threats to the global community. These include the strong political will of both countries to increase their global power and actions as based on their own national interests. The ability to replace standards for the global community is one part of becoming a global actor. The relationship between Russia and China will continue along pragmatic lines so long as their interests remain the predominant factor in their quarrels.

This represents a threat for the global community, and the fact that both are not the only actors with this wish by no means eases the situation. But as each side has the capability to inflict lethal harm on each other, it is to be hoped that wisdom will prevail.

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