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The increased strategic importance of the High North and its security implications for Iceland

Gustav Pétursson

September 2009

HÁSKÓLI ÍSLANDS

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Leiðbeinandi: Alyson J. K. Bailes

Nemandi: Gustav Pétursson

Kennitala: 070779-2939

Abstract

The melting of the Arctic ice is opening new shipping routes through the Arctic as well as making Arctic resources more accessible and thus increasing the strategic importance of the Arctic region. This change carries with it a new set of threats and risks in the dimensions of military, political, economic as well as societal and environmental security. Iceland, like other Arctic countries, must find ways to deal with the multi-dimensional security threats and risks associated with these changes. Iceland, whose greatest security threats are in the dimension of environmental, economic and societal security, can respond to these threats and risks through international cooperation with other Nordic countries, most notably Norway and Denmark as well as NATO, the European Union and the Arctic Council.

Preface

The origin of this thesis has its roots in my B. A. thesis at the Department of Political Science of the University of Iceland. The topic of that thesis was what options Iceland had in security and defense matters after the departure of the U.S. forces from Iceland and the closure of the Keflavik naval base. The theoretical perspective of that thesis rested solely in the realms of the state centric approach that defines security as being simply the security of the state.

After beginning my M. A. studies in International Relations at the University of Iceland I was introduced to the concept of non-state security while attending courses taught by Alyson J. K. Bailes on the subject. When it came to choosing a subject for my M. A. thesis I wished to build on my previous work in security and defense studies as well as being able to touch on a new subject from a different perspective. Therefore the increased strategic importance of the High North and the security implications for Iceland through a multi-dimensional security approach became my subject of labor for the last four months.

I would like to thank Alyson J. K. Bailes for instructions during this project. Without her help and warm guidance this project would probably never have materialised. I would also like to thank Bergrún Arna Óladóttir for being a source of encouragement and who is due to give birth to my son in a month time. I would also like to thank my daughter, Katrín Valgerður for being the eternal ray of sunshine and joy that she is.

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1 Introduction

For the last 20 years the strategic importance of the High North has gone through some dramatic changes. During the cold war the North-Atlantic marked a dividing line between the western and eastern powers. The Soviet naval base at Murmansk on the Kola Peninsula serviced a large fleet which was viewed as a threat by the western powers as it could break into the North-Atlantic and disrupt the sea lines between North-America and Europe. In order to counter the threat the western powers constructed a radar installation system which stretched from Greenland, through Iceland and south towards the U.K.

After the collapse of the Soviet Union and the end of the cold war the strategic importance of the northern region diminished significantly. The mostly US-manned NATO naval base in Iceland which played a pivotal role during the cold war saw constant reductions in personnel and equipment throughout the 1990s until it was finally closed down in the autumn of 2006. In recent years, however, the Northern region has again been gaining increasing attention, although this time the reason is not (yet) the result of increased militarization in the region by conflicting superpowers.

The rise in importance of the High North is the result of global warming and the ensuing melting of the ice in the north, which will possibly cause radical changes in the way we perceive and exploit the resources of the High North.

The receding ice in the High North has two major implications for this region, which has so far mostly been absent from the struggle of global power-play: namely Arctic shipping and better access to natural resources. As the Arctic ice recedes the dream of Arctic sea-lines through the North West Passage as well as the Eastern Sea Route between the North-Atlantic and the Pacific has been rekindled. The new shipping routes are believed to decrease dramatically transport time as well as shipping costs between Europe and Asia, but along with increased shipping traffic comes the risk of accidents at sea which may put people's lives at risk as well as having negative effect on the environment.

The melting of the ice will make oil and gas reserves in the northern region become more easily accessible for extraction and processing than before. A survey carried out by the U.S. Geological Survey put the estimate of oil reserves in the High North as amounting to 25% of the total undiscovered oil reserves in the world.[1] Norway and Russia have already started extracting oil and gas in the northern oil and gas fields of the *Snowwhite* and *Sthokman*

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[1] Donald L. Gautier, et al, "Assessment of Undiscovered Oil and Gas in the Arctic", *Science* Vol. 324 (May 2009).

areas and will possibly look further north in the near future. The new accessibility of natural riches in the region may possibly increase tension which could in turn lead to conflict as the states that have interests in the region race to exploit them.

The rising strategic importance of the High North because of these changes demands increased attention, as well as careful policy formulation, by the countries which are within the High North or bordering the area. Already Iceland, Denmark and Norway have formed national approaches to the High North, while Russia and the U.S. have revised their policies in response to some of the changes just mentioned, and the European Union and NATO have begun to define their institutional positions.

This thesis seeks to answer three research questions in order to explore the increased strategic importance of the High North and the resulting security implications for Iceland. These questions are: In what way is the strategic importance of the High North changing? What risks and threats does that pose for Iceland? And what cooperation can Iceland seek to minimize these risks and threats?

The theoretical groundwork of the thesis is discussed in chapter two, and is based upon the theories of neorealism and institutionalism about the anarchical international system and cooperation between states in such a system. As the challenges in the High North are of a security nature it is necessary to establish a firm theoretical basis in the field of security studies to analyse the challenges and opportunities in the High North. The discussion and definitions of security applied here are drawn from the works of what has been known as the Copenhagen school, notably those of Barry Buzan and Ole Wæver, which have deviated from the traditional military perspective on state security and discuss security in terms of dimensions that include economic, ecological, environmental, and societal security as well as traditional military threats and vulnerabilities.

Chapter three addresses the environmental changes that are occurring in the Arctic region. Rising Arctic temperature means that the Arctic ice begins to retreat and for the last twenty years or so the volume of the Arctic ice has receded with increasing speed. This chapter also explores the issues of Arctic resources as well as Arctic shipping, asking in what way climate change and its effects are increasing access to natural resources within the Arctic and how the melting of the Arctic ice is making shipping through the North West Passage and the Eastern Sea Route more viable.

Chapter four brings us to the threats and risks that are associated with changes in the High North. The concept of security in this connection cannot simply be viewed from the traditional state- centric perspective of military security as the threats and risks that states and

societies are faced with originate also in other dimensions. In this chapter the different dimensions of security defined by Buzan and Wæver and the threats and risks associated with them are applied to the High North. The dimensions of security that are discussed are military, political, economic as well as societal and environmental security.

Chapter five takes further the discussion in chapter three, as it brings together the conclusions from the multi-dimensional security analysis of the High North and applies them to Iceland. The risks and threats to Iceland that result from the changes in the High North are viewed through the prisms of the different dimensions of security, as well as assessing which dimensions pose the greatest threat to the security of Iceland.

Chapter six discusses international cooperation in the High North with a focus on how Iceland can react to minimize the risks while at the same time exploiting the advantages that the High North has to offer. The international actors in the High North that are identified as being of value to Iceland in this context, and with whom an increased cooperation would provide added value to Icelandic interests, are Norway and Denmark, the Arctic Council, and (as players whose role is just starting to be defined) the European Union and NATO.

Chapter seven offers brief conclusions, and in particular draws together the various priorities and guidelines that have emerged for a future Icelandic strategy on High Northern challenges.

2 Different theoretical perspectives

This chapter deals with the definitions and evolving nature of security, moving from the state-centred realism approach which deals primarily with military security, towards the increased prominence of a societal security concept which highlights other security threats, e.g. environmental and economic threats. In this chapter the prominent IR theories will be discussed in order to build an initial theoretical case for the security importance of the High North for Iceland.

2.1 Realism and neorealism

Classical realism as an IR theory has its roots in the views of the Greek philosopher Thucydides (460-404 B.C) about human nature. According to him man is selfish and power-maximising by nature, and the same applies to states as they reflect only the human attributes of their subjects. Human nature thus provides which is the reason why international politics are a struggle for power where there is no place for law and justice. The 17th century philosopher Thomas Hobbes also made human nature a topic of discussion in his work *the Leviathan* which was published in 1651. Hobbes was himself under influence from the writings of Thucydides and in *the Leviathan* he put forward three propositions about human nature. Hobbes believed to begin with that all men are equal in the sense that the weakest can defeat the strongest one, either with deceit or by forming an alliance with other men. The relations of men are carried out in a state of anarchy and what drives them on is a combination of competition, self-doubt and dreams of grandeur.[2] Anarchy, according to Hobbes, arises from the fact that there is no authority above men that can settle disputes between them and therefore the risk is always present that all disputes between men can develop into a war of all against all.

The works of classical modern-day realists as those by Hans Morgenthau are to an extent shaped by the ideas of Thucydides and Hobbes about human nature and the anarchical characteristics of the international system. Morgenthau believed that most attributes of international politics such as competition, fear and war are based on subjective laws which can be explained by reference to human attributes: therefore it is important to acknowledge that these laws exist, and form policies that factor in the faults of human beings. International

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[2] Jack Donnelly, "Realism," in Scott Burchill ed., *Theories of International Relations* (New York: Palgrave, 2005), p. 33.

politics according to Morgenthau are a struggle for power, a struggle that can be explained by several factors; first of all by the nature of man and his desire to maintain his position in life, secondly by the autonomous state which monopolises the use of force in the international system, and thirdly by the anarchical nature of the international system which lacks the supranational power to end competition between sovereign states.[3]

Within the academic world of classical realism there can be said to be two dominant schools of thought. Defensive realists think that states in the international system should exercise self control and restraint in their interactions with other states and that their policy formulation should emphasise these traits, whether these interactions are diplomatic, military or economic. Such prudence is required to minimize distrust between states and thereby reduce the likelihood of a conflict between them. Offensive realists on the other hand think that the anarchical nature of the international systems means that states can never be certain about the intentions of other states. Therefore they should use every opportunity to improve their comparative position and increase their power in relation to other states, even though the basic goal of each individual state is simply to maintain its own independence.[4]

A new school of thought began to emerge within the realist tradition in the late 1960s which, unlike classical realism, did not consider that conflict in the international system was caused by human nature but rather saw it as the effect of an anarchical international system that feeds envy, fear and insecurity. The neorealist or structuralist political theorist; Kenneth Waltz defines the international system as consisting of three components which are the organizing principle, the differentiation of units and the distribution of capabilities. The organizing principle includes both the anarchical nature of international system which is devoid of supranational authority and the hierarchical domestic structure of the individual states. The individual sovereign states are the units of the international system and what matters in the interaction of these units is the distribution of capabilities: in other words, what decides important matters of the international system such as war and peace is the distribution of power between the sovereign states.[5]

Under these theories, the anarchical nature of the international system and the lack of a supranational authority mean that the international system is a self-help system where the states can only rely on themselves to ensure their own well-being and prosperity. As a means to an end, states seek to form a balance of power against other states rather than to form a

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[3] Karen A. Mingst, *Essentials of International Relations* (New York: W. W. Norton & Company, 2008), p. 65.
[4] Ibid, p. 66.
[5] John Baylis and Steve Smith, *The Globalisation of World Politics* (New York: Oxford University Press, 2006), p. 169.

lasting alliance, as states have no guarantee that a former alliance member will not turn against them after a common foe has been vanquished. Small and weak states may however be compelled to form an alliance with more powerful states if they believe that they can not form a credible balance of power against other states.

The realist and neorealist conception of what constitutes power is the aggregated capabilities of the state (i.e. military, economic and political strength all together),[6] producing a result that is both relative and absolute. What is most important for a state is how much power it has in comparison with other states. The significance of relative power in combination with the anarchical nature of the international system reduces the leeway for cooperation between states: not only do they have to focus on their possible absolute gains from cooperation with others, but they must also be mindful of the possibility that this cooperation between them may cause a change in the balance of power between the parties. If such a shift of power is feared, then it is better to forego international cooperation than undermine one's position of power within the international system.

Neorealists are not blind, however, towards the fact that international cooperation between states has increased steadily since the end of the Second World War and has perhaps reached its pinnacle with the integration process of the European Union, where member states share some of their sovereignty with each other. Increased international cooperation between states -according to neorealists- is the result of a state's gaining hegemonic status in the international system which guarantees its stability and thereby opens the door for peace and security. To maintain stability in the international system, the comparative superiority of the state must then be maintained.[7] The hegemonic stability theory sheds light on how the foundations of the open liberal international economic system of the western world were laid down, with the Bretton Woods agreement in 1945 being concluded under the auspices of the U.S. as a result of the latter's predominant position in the post-war international system. On this view, the current liberal system will continue to thrive as long as the U.S. maintains its position in the international system or if another state assumes that position and at the same time wishes to maintain the stability of the system. At the same time, some neorealists predicted that the end of the cold war and the collapse of the Soviet Union would lead to

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[6] Kenneth N. Waltz, *Theory of international politics* (Massachusetts: Addison-Wesley, 1979), p. 129-131.
[7] Robert O. Keohane, *After Hegemony*: *Cooperation and Discord in the World Political Economy* (New Jersey: Princeton University Press, 2005), p. 31.

instability and even conflict between European countries, because of the disruption of the balance of power i.a. through the reunification of Germany.[8]

Neorealists acknowledge the fact that states choose sometimes to work through institutions, but they believe that the institutions and the rules that they strive to uphold simply reflect the distribution of power in the international system. The most powerful states in the system create and shape institutions so that they can maintain their share of world power and possibly increase it. Institutions in the neorealist sense are therefore arenas for states to act out power relationships. A prime example would be NATO, which according to realist thinking was basically a manifestation of the bipolar distribution of power in Europe during the Cold War. It was this balance of power which kept the peace, rather than NATO as such. NATO was simply a tool for the U.S. to deter the Soviet Union, and did not matter in its own right, as institutions have no independent effect on state behaviour.[9]

Cooperation between states is not impossible on this view, but there are limits to it as states are not willing to cooperate with other countries if that means risking the balance of power and undermining their comparative power towards other states. Sometimes however, states have no choice but to seek cooperation from other countries even though by doing so they increase the comparative power of the stronger state. This is especially true in the relationship between weak and strong states as the former sometimes have no choice but to seek external help in order to ensure their safety, or in the words of Michael Handel in his book *Weak states in the international system*: "Weak states must learn to "draw on" or "borrow" the strength of other states. They will try to manipulate and commit, if they can, the strength of other states (mostly great powers), in order to secure their own interests."[10] Such cooperation can take the form of a formal alliance such as NATO, the Balkan League of 1912, and the Warsaw Pact, or such ties can be informal as was the case with the U.S. and South-Korea in 1950. In the realist world the essential choice for most weak states is not whether they should enter an alliance with a stronger power, but rather how they can secure themselves the external aid of another powerful state, how they can commit the other power to support their interests and how to make sure that the promised help will arrive when needed, while all the time trying to avoid becoming too dependent on the goodwill and support of the strong power.[11]

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[8] Rober O. Keohane, "Institutionalist Theory, Realist Challenge," in David A. Baldwin ed., *Neo-realism and Neo-liberalism*: *The Contemporary Debate* (NewYork: Columbia University Press, 1993), p. 287.

[9] John J. Mearsheimer, "The False Promise of International Institutions," *International Security*, Vol. 19, No. 3 (Winter 1994/1995), p 13-14.

[10] Michael Handel, *Weak States in the International System* (New York: Frank Cass, 1990), p. 120.

[11] Ibid, p. 122.

2.2 Neoliberalism/Institutionalism

Within the liberal school of international relations there are a number of perspectives which are based on the core values of liberalism, including Commercial Liberalism, Republican Liberalism, Sociological Liberalism and Institutionalism/Neo Liberal Institutionalism. The supporters of Commercial Liberalism believe that free trade and free markets will lead to peace and prosperity between states; this position is often taken by financial institutions, international corporations and the largest trading countries of the world. The proponents of Republican Liberalism believe that liberal democracies are more likely to respect the rights of their subjects and less likely to go to war with other democratic states. The research focus of Sociological Liberalism is the interaction of societies and their increased interconnection: as societies become more interdependent it becomes harder for them to stay outside of international cooperation, as well as to wage war against each other or behave in other undesirable ways, as the increased co-dependence also increases the costs for them should they do so.[12]

Institutionalism (Neoliberalism) has its roots in liberal theories and especially the convergence theories of the post-war period. Institutional theorists believe that power in the world is more diffused today than it was because other actors than sovereign states have entered the arena, for example international organizations, multinational corporations and non-governmental organizations. These new actors along with the states are more dependant on each other than before, and this complex interdependence translates into an international system characterised by four factors:

- Increased connection between states and non-state actors;
- Eroding of the line between traditional security and other sectors such as economic issues and the environment;
- The recognition of a multilayered system of communication between actors in the international system regardless of traditional state borders;
- Diminished importance of military power as a tool in relations among states.[13]

The tenets of realism and neorealism became increasingly criticised in the early 1970s as scholars pointed out that there are forces such as trade, personal contact and communications,

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[12] John Baylis and Steve Smith, *The Globalisation of World Politics* (New York: Oxford University Press, 2006), p. 213-214.
[13] Ibid, p. 213.

as well as non-actors at work in the international system, that are not under the control of the state, and ignoring these factors would leave out an important component of the international system.[14] According to institutionalists, states are rational actors that always seek to maximise their own interests. They therefore see the benefits of cooperation when common interests exist and consequently emphasise their absolute rather than comparative gains from the process. In other words, a given state is not so concerned about how much the other side gains, whether in absolute or comparative terms. Cooperation between states is indeed not without its problems, but states will support and maintain international organizations if they believe that they provide added value in terms of change to protect their interests in the international system. Defining international institutions as "persistent and connected sets of rules, formal and informal, that prescribe behavioural roles, constrain activity and shape expectations",[15] institutionalists rejected the realist view that such creations are simply an extension of state power. They pointed out that international organizations also have an independent effect on how governments function within them. The representatives of a member government must adjust themselves to the functioning of the organization, as it is the organization that dictates the flow of business transacted under its auspices. This means that the definitions applied by the organization, for example regarding which issues cluster together and which should be considered separately, will in turn determine the nature of interdepartmental committees and other arrangements within governments. In the long run international organizations will therefore affect how government officials will define the set "issue area".[16]

When it comes to encouraging international cooperation states are faced with a number of problems: for example, how to provide incentives for cooperation so that cooperation is rewarded over the long run and defection is punished, how to monitor behaviour so that cooperators and defectors can be identified, and how to apply rewards for cooperation and retaliation against defectors. Even though institutions do not enforce rules in a hierarchical sense they have an important part to play when it comes to fostering cooperation. Institutions reinforce and institutionalize the act of reciprocity and thereby delegitimize defection and make it more costly for participants. Institutions also make it easier

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[14] Jospeh S. Nye, Jr. and Robert O. Keohane, "Transnational Relations and World Politics: An Introduction," *International Organization*, Vol. 25, No. 3 (Summer, 1971), pp. 329-349.

[15] As defined by John J. Mearsheimer, "The False Promise of International Institutions," *International Security*, Vol. 19, No. 3 (Winter, 1994/1995), p. 8. As well as John G. Ruggie, "Multilateralism: the Anatomy of an Institution," *International Organization*, Vol. 46, No. 3 (Summer, 1992), p. 570.

[16] Robert O. Keohane and Joseph S. Nye Jr, "Transgovernmental Relations and International Organizations," *World Politics*, Vol.27, No. 1 (Oct., 1974), p. 51

for states to establish a reputation for consistency in reciprocity, which may become a valuable asset since states are more willing to make agreements with others states that can relied on to meet cooperation with cooperation. Institutions can thus facilitate cooperation by making it desirable and easier to gain a good reputation.[17]

When common interests are at stake and states see the benefits of cooperation, they must be mindful of the possibility of cheating by the other side. This problem can be highlighted by the well known "prisoner's dilemma". Let's say that country A and B have reached an agreement to reduce their nuclear arsenals by half, as by doing so they can reduce tension in their relations and rid the world of some dangerous weapons without disrupting the balance of power. Even though the ideal outcome for A and B in union would be compliance for both countries, the best outcome for country A would be to cheat and keep its weapons while B complied, thereby tilting the balance of power in its favour, and the same goes for country B. Yet if both countries A and B where to cheat they would be in the same position as if no agreement had been reached.

Institutionalists acknowledge that non-hegemonic cooperation is difficult, as it takes place among independent states that are motivated by their own conception of self- interest rather than by a devotion to the common good. But institutions are nevertheless worth constructing because their absence or presence can determine whether governments can cooperate effectively for common ends. Institutions reduce uncertainty in relations between states which may make agreement possible in future crises, as well as facilitating possible future cooperation in fields that were not thought of at the time of their creation.[18]

2.3 Neorealism and Institutionalism: A comparison

It can be said when comparing neorealism and institutionalism that the differences of these two theories evolve around six issues which are: the nature of anarchy, international cooperation, comparative and absolute gains, prioritization, the intention and capability of states, and the importance of international institutions.[19]

Neither camp disputes the anarchic nature of the international system, but they differ over the extent to which anarchy shapes behaviour of states. Neorealists believe that

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[17] Robert Axelrod and Robert O. Keohane, "Achieving Cooperation under Anarchy: Strategies and Institutions," *World Politics*, Vol. 38, No. 1 (Oct., 1985), p. 250.

[18] Robert O. Keohane, *After Hegemony*: *Cooperation and Discord in the World Political Economy* (New Jersey: Princeton University Press, 2005), p. 247.

[19] David A. Baldwin, „Neoliberalism, Neorealism and World Politics," in David A. Baldwin ed., *Neo-realism and Neo-liberalism*: *The Contemporary Debate* (NewYork: Columbia University Press, 1993), pp. 4.

institutionalists downplay the importance states attach to their own survival in an anarchic international system, while institutionalists respond by pointing out that it is exactly the anarchic nature of the international system that drives states to establish international organizations to bring order and predictability to their behaviour. Institutionalists also criticise neorealists for focusing too much on the anarchic nature of the international system and thereby ignoring the importance of interdependence which materialises in the context of globalization and international organizations. Neorealists take the view that international cooperation is more dependent on state power, and harder to establish and maintain, than institutionalists believe, while institutionalists hold that international cooperation is possible as long as the states have common interests and think they will benefit from the cooperation. The reason for this different perspective, as has been mentioned before, is that neorealists and institutionalists view cooperation through different eyes. Neorealists emphasise the importance of relative gains, so that while state A benefits from cooperation it must always be mindful of whether state B gains more in relative terms as that would strengthen state B at its own expense. Institutionalists do not share this view as they believe that states prioritize absolute gains in international cooperation and care little about whether other states that they negotiate deals with, or cooperate with in international organizations, gain relatively more from the cooperation.

Neorealists and institutionalists agree about the importance of traditional security, defined as the security of the state and its economic well-being, but their emphases are different. Neorealists focus on the anarchical nature of the international system which for them is a self-help system and they accordingly focus on security, relative power and survival. Institutionalists on the other hand focus more on economic well-being and on other spheres were cooperation between states is more likely than in hard security matters.[20]

Neorealists and institutionalists also disagree about the intentions and capabilities of states, and this is understandable when we consider the different spheres that these theoretical perspectives focus on. Neorealists focus mainly on the power of states and how it is distributed among the units of the international system while institutionalists focus much more on the intentions and choices of states in the international system. Finally neorealists and institutionalists differ about the importance of international institutions. Neorealists, as mentioned before, believe that institutionalists overemphasise the importance of international institutions and have too much faith in their ability to influence state behaviour, while

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[20] Robert O. Keohane, *After Hegemony*: *Cooperation and Discord in the World Political Economy* (New Jersey: Princeton University Press, 2005), ch. 4.

institutionalists think that international institutions have a valuable function in furthering and supporting cooperation between states in the international system.[21]

2.4 The evolution of the security concept

The theories of neorealism and institutionalism were put forth and developed to describe a bipolar international system characterized by a balance of power between the two superpowers of the U.S. and the Soviet Union. Both of these schools of thought share the state-centric view of security where security in international relations is viewed simply as security of the state, and this is understandable as through the ages each state has been made insecure by the existence of others. This point is highlighted by the "security dilemma" that states can find themselves in, when policies they implement to increase their security automatically and inadvertently decrease the security of other states. This can happen for example when one state's budget for defense is increased or a state makes a technological breakthrough that enhances their defence but can also be used for offensive purposes.[22]

The neorealist state-centric approach was the prevailing view during the Cold War and was not questioned much during most of that period. The ambiguity of the term "national security" was however highlighted by Arnold Wolfers in the early 1950s in his article "*National Security as an Ambiguous Symbol*" which was published in Political Science Quarterly in December 1952. Wolfers builds on the view of Walter Lipmann who had defined the term national security, nine years earlier as "a nation is secure to the extent to which it is not in danger of having to sacrifice core values, if it wishes to avoid war, and is able, if challenged to maintain them by victory in such a war".[23] This implies that security rises and falls with the ability of the nation to deter an attack or defeat it. Security can therefore be seen as a commodity, which a nation can strive to have more of, or may conclude that it needs less of it. Security, according to Wolfers, in objective terms measures the absence of threats to acquired values while in a subjective sense, it represents the fear that such values will be attacked. It is important to note that a risk of future attack can never be measured objectively,

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[21] David A. Baldwin, „Neoliberalism, Neorealism and World Politics," in David A. Baldwin ed., *Neo-realism and Neo-liberalism*: *The Contemporary Debate* (NewYork: Columbia University Press, 1993), pp. 4-9.
[22] For elaboration see John Herz, "Idealist Internationalism and the Security Dilemma", *World Politics*, Vol. 2, No. 2 (Jan. 1950), p. 157-180.
[23] Arnold Wolfer, "National Security as an Ambiguous Symbol," *Political Science Quarterly*, Vol. 67, No. 4 (Dec., 1952), p. 484.

but is always dependent on subjective speculation and evaluation.[24] National security is therefore an ambiguous quantity which is always subjected to individual beliefs and fears.

Robert Jervis in the 1970s brought attention to the interdependent elements of security relations and pondered, among other things, on whether the concept of a regime could be applied to issues of national security as well as to the relations of the two superpowers. Jervis defined a security regime as "those principles, rules, and norms that permit nations to be restrained in their behavior in the belief that others will reciprocate".[25] Although the incentive for such cooperation may exist, the obstacles are equally great in the field of security because of the security dilemma. Security regimes are therefore especially valuable as well as difficult to achieve, because the fear that the other partner is violating or will violate the common understanding provides a powerful incentive for each state to strike out on its own - even though both partners would prefer the regime to prosper.[26]

As the old order of the Cold War began to crumple, the edifice of the state-centric approach to security began to show some cracks, and scholars began to debate the meaning of the security concept that had privileged the state and emphasized military power. Ken Booth pointed out in 1991 that:

> Until recently the security problematic was well–focused. A group of people like us, turning up at a conference like this, could predict what a speaker would talk about if "security" was in the title of a talk. It is not long ago when such issues such as Cruise, Pershing, SDI and the SS-20 made strategists out of all of us, and gave President Reagan sleepless afternoons.[27]

According to Ken Booth the pressure to update and broaden the concept of security comes from two sources. To begin with, the problematic nature of the traditionally narrow military focus of security has become increasingly apparent for a number of reasons: The escalating arms race between the superpowers produced a higher level of destructive power but not a commensurate growth of security; inter-state wars are in decline while wars within states are on the increase; and countries have suffered in many ways from the heavy burden placed on economies by extravagant defence expenditures.

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[24] Ibid, p. 485.

[25] Robert Jervis, "Security Regimes," *International Organization*, Vol. 36, No. 2, International Regimes (Spring, 1982), p. 357.

[26] Ibid, p. 358.

[27] Ken Booth, "Security and Emancipation," *Review of International Studies*, Vol. 17, No. 4 (Okt.., 1991), p. 315.

The second reason to revise the security concept comes from the fact that the daily threat to most nations and most people's lives does not come from a neighbour's army but from other challenges such as political oppression, overpopulation, ethnic rivalry, economic collapse and terrorism, and the destruction of nature as well as crime and disease. In many instances it is the policies and inadequacies of the state itself that are the primary source of threat to people's security as the state apparatus is unable or unwilling to address these challenges adequately. [28]

2.5   The approach of the Copenhagen school to security

Even though it is widely agreed upon that the concept of security needs revising there is not a consensus on exact definition among various scholars. John E. Mroz defines security as "the relative freedom from harmful threats",[29] Laurence Martin defines security as being the "assurance of future well being",[30] while Barry Buzan acknowledges the many contrasting views on and definitions and simply notes in his book *People, States and Fear* that security is:

> In the case of security, the discussion is about the pursuit of freedom from threat. When this discussion is in the context of the international system then security is about the ability of states and societies to maintain their independent identity and their functional integrity. Its bottom line is about survival, but it is also reasonably includes a substantial range of concerns about the conditions of existence.[31]

The distinction Buzan makes between the security of the state (National security) and society is quite important, as the security of society and the individuals who live in it cannot bee viewed as simply an extension of state security. Often these two levels of analysis are in harmony but in some instances, such as in repressive totalitarian regimes or dictatorships, the state turns against the individual to ensure the survival of the regime. History is littered with such examples and in modern times we can look towards the Mugabe regime in Zimbabwe or the North Korean hermit kingdom to find examples of states where the security of the state and the security of individuals within society do not go hand in hand.

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[28] Ibid, p. 318.

[29] John E. Mroz, *Beyond Security*: *Private perception among Arabs and Israelis* (New York: International Peace Academy, 1980), p. 105.

[30] Laurence Martin, "Can there be National Security in an Insecure Age?" *Encounter*, No. 60, Vol. 3 (1983), p. 12.

[31] Barry Buzan, *People*, *States and Fear* (Colchester, ecpr classiscs, 2007), p. 37.

The opposite of security is insecurity which reflects a combination of threats and vulnerabilities. The distinction between threats and vulnerabilities in security studies is quite important as states can attempt to increase their security by reducing their own vulnerabilities or by lessening or preventing threats. National security policy makers are therefore presented with the options of focusing inward, and seeking to reduce the vulnerabilities of the state itself, or outward and seeking to reduce external threat by addressing the source of the threat. Identifying such threats is difficult for states in itself, as actual threats are impossible to measure and may not be realized in advance: the terrorist attacks on the World Trade Centre and the Pentagon in 2001 caught the U.S. government completely off guard as such an act by a non-state actor had not been foreseen.

When an issue becomes a matter of national security a process of "securitization" occurs, meaning that the given public issue is presented as an existential threat that requires emergency measures thereby justifying actions that may go outside the normal bounds of political procedure.[32] Among the spectrum of public issues there are items that are defined as non-politicized matters as well as politicized ones. Non-politicized matters are issues that the state does not deal with, and that are not in any other way made an issue of public debate. Politicized issues are on the other hand issues that are part of public policy requiring government decisions and resource allocations or, more rarely, some other form of communal governance. What issues are politicized varies from state to state as well as over time: Iran and Saudi-Arabia for example politicize religion while France and Italy do not. Environmental issues which were not politicized(in this sense) some decades ago have now become politicized in many states and are also increasingly being securitized, as environmental challenges such as climate change and melting of the ice caps are seen as an existential threat to some of mankind. How to differentiate between normal challenges and threats to national security, and exactly where to draw the line on which issues get to be legitimately defined as national security problems, is a matter of political choice rather than objective fact. Setting the bar too low brings the risk of paranoia, aggressive policies, waste of resources and distortion of domestic political life, while setting the bar to high carries the risk of not preparing adequately, for when disaster strikes.

Both Buzan and Wæver regard the possible sectoral divisions of security as "views of the international system through a lens that highlights one particular aspect of the

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[32] Barry Buzan, Ole Wæver and Jaap de Wilde, *Security*: *A New Framework for Analysis* (London, Lynne, Rienner Publishers, 1998), p. 23.

relationship and interaction among all of its constituent units".[33] The purpose of distinguishing such sectors is to analyze different types of interaction that pose a threat to national security, and it is to be expected that the threats identified and therefore the appropriate responses will differ according to what sector we are viewing. Buzan and Wæver categorise five sectors of security which are:

1. *Military security* which concerns the two-level interplay of the armed offensive and defensive capabilities of states and state's perception of each other's strategic intentions;

2. *Political security* which concerns the systems of government, the organizational stability of the state and the ideologies that give them legitimacy;

3. *Economic security* which concerns access to the markets, resource and finance necessary to develop and maintain acceptable levels of welfare and state power;

4. *Societal security* which concerns the ability of societies to reproduce their traditional patterns of culture, association, language and religion and national identity as well as customs within acceptable conditions development; and

5. *Environmental security* which concerns the maintenance of the local and the planetary biosphere as the essential support system on which all other human enterprises depend.[34]

Barry Buzan goes deeper into the different sectors of security in *People, states and fear* and the following discussion is based heavily on his analysis.

Military threats belong to the most traditional national security concerns. Military threat poses a risk to all parts of the state as it can result in the distortion or the destruction of institutions as well as subverting, repressing or possibly obliterating the idea of the state. Military threats are usually given highest priority in national security policy making, given the dramatic consequences that can result from military action whereby all the accomplishments of a society in various fields such as industry, art and politics can be destroyed by military force. A defeated society is also completely at the mercy of the conqueror and subjected to his will, which can range from bringing a new government to power to the massacre of the population and resettlement of the land. The level of military threat varies and can range be from harassment of fishing boats to punishment raids,

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[33] Ibid, p. 27.

[34] Barry Buzan, "New Patterns of Global Security in the Twenty-First Century", *International Affairs*, Vol. 67, No. 3 (Jul., 1991), p. 433.

territorial seizures and full invasions or assaults on the population of the state. Military threats can also be indirect where the use of force is not applied against the state itself but rather towards external interests, such as threats to allies, shipping lanes and the supplies of important natural resources such as oil. Simply by threatening the use of force a state crosses a certain threshold which separates the traditional competitive interplay of economic, political and societal sectors from the all-out competition of war. The existence of this threshold goes a long way of explaining why states put such great emphasis on military security even though threats in other sectors appear to be more immediate and greater.[35]

Political threats are aimed at the organizational stability of the state; their purpose may be to pressure the government on a specific policy, through overthrowing the government, to disrupting the political fabric of the state in order to soften it up before a military attack. The state is essentially a political entity so political threats may be feared as much as military ones, especially in the case of weak states. It is important to distinguish between political threats that are intentional and those stemming from structural origins. An example of a structural threat to political regimes was the case of the eastern bloc countries whose governments collapsed in the late 1980s- without external action- as the existence of the political system they represented was viewed as an anachronism by their citizens.

Societal threats can be hard to disentangle from political ones as language, local culture and religion play their part in the idea of the state and may need to be defended or protected against seductive or overbearing cultural imports.[36] The biggest problem with societal threats as a national security issue is that most of them occur within states, Buzan's definition of societal security, as has been mentioned before, is about the sustainability within acceptable conditions for evolution of traditional patterns of language, culture and religious and ethnic identity and customs, and it is clear that threats to these values come much more often from within states than from the outside. Internal societal threats according to Buzan can be said to be symptomatic of weak states, but they cannot be counted as national security issues except in cases where they precipitate conflicts between states. Such an instance was for example witnessed in the Balkan wars of the 1990s when Bosnian Croats were uprooted by Bosnian Serbs in Bosnia which played a part in the conflict between Serbia and Croatia. The concept of societal security has also been developed by other scholars than

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[35] Barry Buzan, *People*, *States and Fear* (Colchester, ecpr classiscs, 2007), p. 107-108.
[36] Ibid, p. 110.

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Buzan and Wæver.[37] Societal security in that context is viewed as centring attention on the sets of threats and risks that lie close to the individual citizen and the workings of society as a whole. This approach covers a wide range of issues, transnational as well as national non-military threats, such as crime and terrorism as well as natural and non-intentional risks.[38] This approach to societal security is very similar to the sectoral approach of Buzan and Wæver as it brings attention to non-military aspects of security, whose main executors and owners are not the armed forces and the ability of society to deal with those threats through international cooperation and community-building that is independent from military alliance relationships.[39]

Economic threats are difficult to handle within the framework of national security, partly because the idea of economic security is hard to reconcile with the normal condition of actors in a market economy, which is characterised by risk, uncertainty and aggressive competition. The market must instil the fear of failure (eg bankruptcy) into actors if the system as a whole is to be expected to deliver wealth and welfare effectively. But if actors must be insecure to function appropriately, what can economic security mean in the context of the free market? A wide range of economic threats fall within the rules of the market and can therefore not warrant invoking national security.[40] Even though economic threats are hard to define as a threat to national security, it is possible to identify a number of linkages which have clear implications for national security, such as the links between economic capability on the one hand and military capability, state power, and socio-political stability on the other. The relationship between the economic sector and military capability is well understood as the military capability of the state rests on the industrial base which is able to support the armed forces. This means that major powers need an industrial establishment that is able to manufacture the high-tech weaponry needed in today's wars. The power of a state in the international system is to an extent dependent on its economic strength which has implications for its national security. If the economy of a state declines then so does its overall power in the international system: this was for example the case with Great Britain which had by far the world's highest GDP per capita in the 1870s, but saw its power in the international system decline throughout the 20th century as other countries surpassed it in this

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[37] See for example Alyson Bailes and Þröstur Freyr Gylfason, "Societal Security and Iceland," *Stjórnmál og Stjórnsýsla*, Vol. 4, No. 1 (2008) http://www.stjornmalogstjornsysla.is/images/stories/eg2008v/alyson08.pdf (Accessed 20 July 2009).

[38] Alyson Bailes and Þröstur Freyr Gylfason, "Societal Security and Iceland," *Stjórnmál og Stjórnsýsla*, 1. tbl. 4. árg. 2008. http://www.stjornmalogstjornsysla.is/images/stories/eg2008v/alyson08.pdf (Accessed 20 July 2009) p. 25.

[39] Ibid, p. 25.

[40] Barry Buzan, *People*, *States and Fear* (Colchester, ecpr classiscs, 2007), p. 112-113..

measure.[41] The third linkage involves economic threats to domestic stability which can occur when a disruption occurs in the flow of trade and finance in states with open free markets. The reason why this may be considered a national security issue is that socio-political structures of developed states have become dependant on sustained growth rates and economic specialization in the international market place, and thus disturbances in the economic system can undermine domestic political stability.

Environmental threats warrant the national security stamp to the extent that they can damage the physical base of the state to the point of threatening its institutions and identity. There are three types of relationships which fall within environmental security, namely:

- Threats to human civilization from the natural environment that are not caused by human activity. This includes volcanoes, earthquakes, meteorite strikes and concerns about a natural swing back into a cycle of glaciations;

- Threats from human activity to the structures or natural system of the planet, when the changes made seem to pose existential threats to some or all of human civilisation. Examples are greenhouse gas emissions and various forms of environmental exploitation such as dumping or extraction beyond the carrying capacity of smaller ecosystems, which in turn threatens the economic base of the states involved;

- Threats from human activity to the normal system or structures of the planet when the changes made do not seem to bring existential threats to civilization. The depletion of various mineral resources may be put in this category if these resources can be replaced by technological advances, as by the shift that was made from copper to silicone in the electronics industry.[42]

Within the sphere of environmental security the second category is the most relevant one as it depicts a circular relationship of threat between civilization and the environment where the process of civilization cannot be separated from the manipulation of nature. This circular relationship is to a great extent the result of the explosive growth of world population as well as increased economic and industrial activity in the latter half of the 20th century. Many ecological threats are trans-national as activities within one state have an effect in another, such as pollution in rivers or oceans by one state which affects its neighbours, and they can

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[41] Gregory Mankiw, *Principles of Economics*, (New York: Harcourt College Publishers, 2001), p. 531.
[42] Barry Buzan, Ole Wæver and Jaap de Wilde, *Security*: *A New Framework for Analysis* (London, Lynne, Rienner Publishers, 1998), p. 79-80.

have serious consequences especially for states whose economies depend heavily on resources that can be easily spoiled by pollution.

The range of different sectors of security and the interactions between them highlight the complexities of national security. As soon as one deviates from the traditional state-centric approach to national security, where the aim is reduced to being safe from military threat, then a wide array of threats and vulnerabilities materialises. In this thesis the theoretical perspectives of neorealism and institutionalism are all indispensable, while the sectoral approach to national security must be applied in order to analyze what changes are occurring in the High North, what threats they have in store for Iceland, and how Iceland can seek to minimize the threats and exploit the advantages.

3   The High North

The concept "High North" is used to refer to the Arctic region which consists of the Arctic Ocean as well as the northern parts of the surrounding land masses. There are several definitions of what land areas to include within the Arctic, which are used extensively and can be interchangeable.

Figure 1   *Definitions of the Arctic*[43]
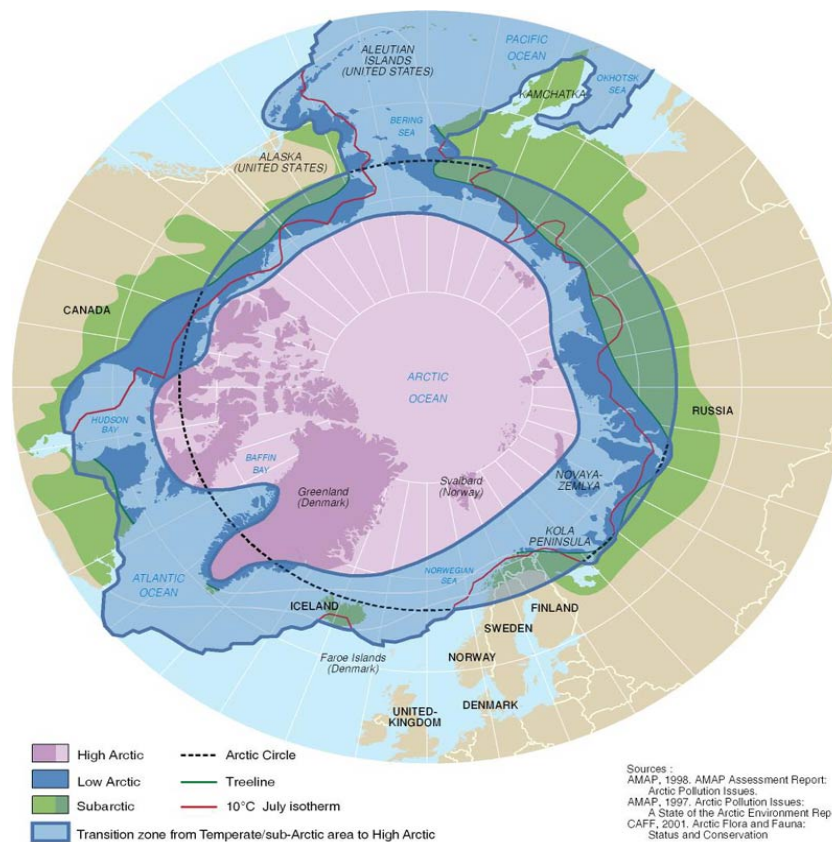
Figure 1 shows the demarcation of three different definitions or zones of the Arctic which are all in their own right useful. The High Arctic includes the Arctic Ocean and covers land mass that is mostly frozen over, such as the Greenland ice-cap, while the low Arctic extends to the northernmost areas of the surrounding land masses which have some vegetation. The third definition of the Arctic region sets its boundaries as the area with a July isotherm below 10º C.

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[43] UNEP/GRID-Arendal, Definitions of the Arctic, *UNEP/GRID-Arendal Maps and Graphics Library*, http://maps.grida.no/go/graphic/definitions_of_the_arctic (Accessed 1 July 2009).

During the Cold War the High Arctic would have been the transit route for Intercontinental Ballistic Missiles (ICBM's) as they would have hurled towards their targets in the U.S. and the Soviet Union in the case of a nuclear war. But the low Arctic and the North-Atlantic also had a role to play in the cold war. The sea between Greenland and Iceland as well as the sea between Iceland and Norway were important strategic hotspots, demarcating the spheres of influence of the Soviet Union and the western powers and providing the main expected break-out route for Soviet naval forces in a war. A system of radar stations was set up in Greenland, Iceland and the U.K. (the so called GIUK gate) in order to monitor activity of the Soviet Northern fleet in the North Atlantic. Iceland played a pivotal role during the cold war as the purpose of the NATO naval station in Keflavik was twofold: first and foremost it protected the country from an attack during wartime, but during peacetime the station and its personnel monitored the activity of Soviet submarines, ships and airplanes in the area around Iceland. Any deviation from the established pattern of activity could then be interpreted as a sign of something unusual taking place and a possible warning.[44]

Soviet interests in Iceland and the surrounding area during the cold war can be interpreted through the frequency of Soviet "visits" during that period. In 1966 fighter jets from the naval station intercepted Soviet planes three times a month on average, while in 1968 the frequency of such interceptions had risen to 14, or one every other day.[45] In May 1981 the Commander of the NATO naval base in Iceland, Admiral Richard Martini, made a presentation to the Independence Party's Varðberg Society about the increase of Soviet military activity in the waters and sea around Iceland. According to Admiral Martini the interceptions of Soviet reconnaissance bombers entering the Icelandic Military Air Defence Identification Zone (MADIZ) had increased sharply, in addition to a 63% increase in submarine deployments through Icelandic waters since 1976, and an increase of 120% if just nuclear submarines were counted. Admiral Martini also showed a declassified infrared photography film of Soviet surface ships transiting waters about 50 miles from Iceland.[46]

Soviet military activity in the North Atlantic dwindled as the 1980s neared their close. The activity of Soviet submarines in the Atlantic fell to a level of "very few" according to the Commander of the U.S. North-Atlantic Command, when testifying before the U.S. Senate

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[44] Albert Jónsson, *Ísland Atlantshafsbandalagið og Keflavíkurstöðin* (Öryggismálanefnd, 1990), p. 56.
[45] Benedikt Gröndal, *Iceland from Neutrality to NATO Membership* (Bergen: Universitetsforlaget, 1971), p. 88.
[46] Michael T. Corgan, *Iceland and is Alliances, Security for a Small State* (New York: The Edwin Mellen Press, 2002), p. 159.

Military Committee.[47] The frequency of Soviet military airplane detection within the Icelandic MADIZ also reduced significantly. In 1985 170 Soviet planes were intercepted by fighters from the naval station but that number fell in the following four years. In 1989 when the Berlin wall collapsed and the Communist regimes in Eastern Europe were toppled one by one, a total of 65 Soviet planes were intercepted within the Icelandic MADIZ.[48]

The collapse of the Soviet Union brought an end to the bipolar international system which was characteristic of the cold war. The ideological tug of war between the U.S. and the Soviet Union was over and the strategic importance of the North-Atlantic and the High North evaporated almost overnight. The U.S wasted no time in responding to the changed importance of the High North: already in 1993 the number of fighter jets stationed at the NATO naval station in Keflavik was reduced to 12 from 18, and AWAC surveillance airplanes were no longer permanently stationed at the base. For what remained of the 1990s the U.S. kept reducing its presence in Iceland, and made adjustments in 1993 and 1996 to the bilateral defence agreement dating from 1951[49] between Iceland and the U.S. Negotiations began in 2005 between the U.S. and Icelandic authorities about distribution of costs which accrued because of the running of the Keflavik base. Those negotiations where not fruitful and in March 2006 the U.S. authorities unilaterally announced that they would remove all their personnel from Iceland before 30 September 2006, thereby in effect closing down the naval station as it was predominantly manned by U.S. personnel. The Icelandic authorities took over the running of the Keflavik airport and all the installations of the naval station except a telecommunication centre of the U.S. army near Grindavik, for which the U.S. was to remain responsible.[50]

The closure of the naval base was understandable from a realist position. The U.S. had emerged from the cold war as the only remaining superpower and as such, a hegemon in the international system. It had new priorities in regions outside Europe and saw no value in keeping a presence in the High North after the collapse of the Soviet Union. But there were- and still are-other forces at work in the High North which the realist mentality of the cold war did not take into consideration; forces that could quite possibly thrust the High North back into the arena of strategic importance once more.

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[47] Albert Jónsson, *Ísland Atlantshafsbandalagið og Keflavíkurstöðin* (Öryggismálanefnd, 1990), p. 74.
[48] Ibid, p. 74.
[49] Article IV of the defence agreement from 1951 stipulates that the number of personnel at the NATO naval base in Keflavik must be subject to approval by the government of Iceland.
[50] A report by the Minister of Foreign Affairs Valgerður Sverrisdóttur about Foreign- and International Affairs, (Put before Alþingi at the 133. Legislative Assembly 2006-2007), p. 9.
http://www.utanrikisraduneyti.is/media/Skyrslur/Skyrsla_utanrikisradherra_um_utanrikismal,_16.11.2006.pdf (Accessed 20 June 2009)

3.1   What environmental changes are occurring in the High North?

For the last 100 years or so the temperature of the planet has been rising, and today there is an international scientific consensus that most of the warming over the last 50 years is attributable to human activities and caused by increased release of carbon dioxide into the atmosphere. The continued addition of carbon dioxide and other greenhouse gases into the atmosphere will, according to the Intergovernmental Panel on Climate Change (IPCC), increase the average global temperature of 1.4 to 5.8˚C.[51] This rise in temperature will in turn cause climate change which may include shifts in oceanic and atmospheric circulation patterns, an accelerating rate of sea-level rise, and wider variations in precipitation. In combination these changes are expected to cause wide-ranging consequences such as significant impacts on coastal communities, plant and animal species, water resources and human health and well being.[52]

The security implications of climate change are quite daunting. Different regions will be affected in different ways, but the overall impact is likely to increase the vulnerability of areas that are already troubled by conflict. Crop yields will most likely be reduced not only by direct weather changes but also by salination of coastal areas, increased frequency of pest and disease outbreaks due to climate-driven changes in species range, and desertification. The impact of global warming will vary among, and within, the regions of the earth, and its effect on each region must be considered by analyzing local factors such as: how adequate is the infrastructure of the affected states to deal with the changes? Are the countries landlocked or islands? - and so forth. For the poorest countries on the globe including most countries in Africa, the loss of livelihoods and competition for resources can possibly cause large scale increases in the number of refugees as well as migrants and internally displaced persons, which in turn could create a humanitarian crisis in those countries already at risk of conflict or under economic and environmental stress, and thus could lead them into increased conflict or even state failure.[53]

The Arctic is perhaps the region which is going to be the most affected by global warming as its defining features are that of sea ice, ice sheets and continuous permafrost. The Arctic is also the home of populations that have adapted to the harsh environments of the region, so global climate change will have an impact on both physical and societal systems.

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[51] For elaboration see IPCC. Climate Change 2001: Summary for Policymakers. http://www.ipcc.ch/pdf/climate-changes-2001/synthesis-spm/synthesis-spm-en.pdf (Accessed 20 June 2009)

[52] ACIA. Impacts of a warming Arctic: Arctic Climate Impact Assessment (Cambridge: Cambridge University Press, 2004). http://www.acia.uaf.edu (Accessed 20 June 2009)

[53] Alexander Nicoll, Climate Change: Security Implications and Regional Impacts, *Strategic Survey 2007* (London: Routledge, 2007), p. 55.

The current warming period which began in the 1960s has seen the surface temperature in the Arctic rising continuously, with the summer of 2007 being 2˚C above the average surface temperature relative to the 1961-1990 period, and thereby the warmest one ever recorded.[54] The current warming covers the entire Arctic and extends south to the mid latitudes, with few exceptions such as the Bering Sea region which saw below-average temperatures in the winters of 2006 and 2007. This caused the winter ice extent to return to its long-term average, although the summer ice of 2007 and 2008 retreated far to the north.[55]

The atmospheric circulation in the Arctic is characterised by two general patterns which oscillate, a phenomenon known as the Arctic Oscillation (AO). It is possible to measure the Arctic Oscillation against an index with values ranging from -3 to +3, each extreme indicating the dominance of a specific pattern. A positive AO index means a pattern of stronger winds, higher winter temperature and less sea ice in the Arctic region while a negative AO means the opposite.

Figure 2 Patterns of Arctic Oscillation from 1977-2005[56]
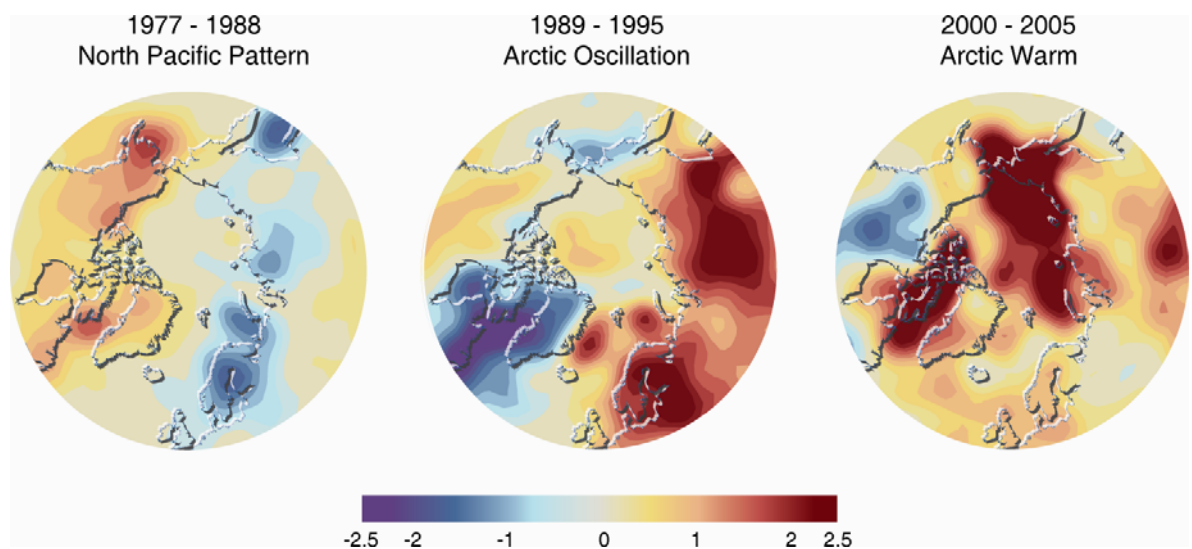
In figure 2 the temperature rise in the Arctic in the last decades is quite visible. From 1977 to 1988 the Arctic temperature was quite constant with some positive AO patterns on the western part of the northern hemisphere, and some negative AO patterns on the eastern part, while the High Arctic did not see any changes in Arctic Oscillation at all. The period from

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[54] AMAP 2009, *Update on Selected Climate Issues of Concern. Arctic Monitoring and Assessment Programme* (Oslo: Arctic Monitoring and Assessment Programme, 2009), p. 2.

[55] Ibid, p. 2

[56] UNEP/GRID-Arendal, Arctic temperature anomaly patterns, UNEP/GRID-Arendal Maps and Graphics Library, http://maps.grida.no/go/graphic/arctic-temperature-anomaly-patterns (Accessed 10 July 2009)

1989-1995 saw some changes as the western part, including Greenland and the north-eastern parts of Canada, was now seeing a negative AO trend with accompanying lower winter temperatures and more sea ice, while the eastern part of the northern hemisphere saw a period of milder winters, higher winds and receding sea ice. The period after the beginning of the new millennium has been characterised by increasingly high temperatures and a positive Arctic Oscillation. This applies to both parts of the northern hemispheres as well as the High Arctic.

Figure 3 Arctic sea ice minimum extent in September 1982 and 2008[57]

Median minimum extent of ice cover (1979-2000)
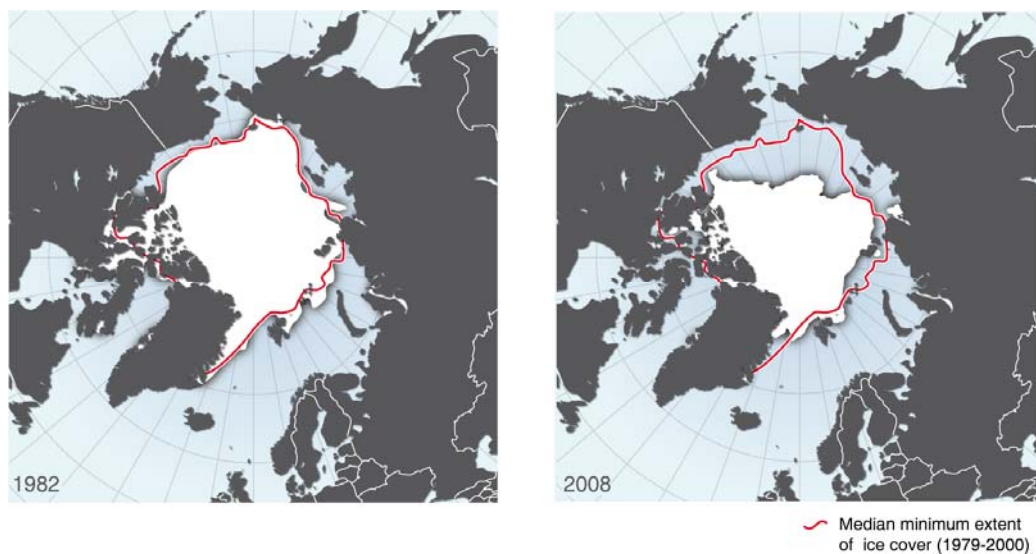
The effects of the Arctic warming are most dramatically visible in the melting of the Arctic ice. Each month in 2005 except May showed a record minimum sea ice extent in the northern hemisphere compared with the period 1979-2005. The extent of the sea ice cover is usually at or near its highest in March and its lowest in September. In March 2005 the ice extent was 14.8 million km² while in September that same year the ice extent was 5.6 million km². In comparison the average ice extent for March and September for the period 1979-2005 was 15.7 million km² and 6.9 million km² respectively.[58] This development is made quite clear in figure 3. The red line indicates the average minimum extent of the ice cover for the period 1979–2000. This figure compares the Arctic sea ice extent in September for the years 1982 (the record maximum since 1979) and 2008. The ice extent was 7.5 million km² in 1982 and

[57]UNEP/GRID-Arendal, Arctic sea ice minimum extent in September 1982 and 2008, *UNEP/GRID-Arendal Maps and Graphics Library*, http://maps.grida.no/go/graphic/arctic-sea-ice-minimum-extent-in-september-1982-and-2008 (Accessed 10 July 2009)

[58] Richter-Menge, J., J. Overland, A. Proshutinsky, V. Romanovsky, L. Bengtsson, L. Brigham, M. Dyurgerov, J.C. Gascard, S. Gerland, R. Graversen, C. Haas, M. Karcher, P. Kuhry, J. Maslanik, H. Melling, W. Maslowski, J. Morison, D. Perovich , R. Pryzbylak, V. Rachold, I. Rigor, A. Shiklomanov, J. Stroeve, D. Walker, and J. Walsh, (2006) State of the Arctic Report. NOOAA OAR Special Report, NOOAA/OAR/PMEL, Seattle, WA, p. 15.

only 5.6 million km² in 2005 and down to 4.3 million km² in 2007; the retreat of the ice cover was particularly pronounced along the Eurasian coast.

The Arctic vegetation zones include northern part of the boreal forest, tundra and polar deserts. The increased warming of the Arctic is expected to have a profound effect on the vegetation of the region.

Figure 4 Shift in climatic zones, Arctic scenario[59]

Figure 4 shows the projected change in the climatic zones of the Arctic region according to the ACIA report on the impacts of global warming. The rising temperature favors taller and denser vegetation and therefore it is expected that the climate change will encourage the expansion of forests into the arctic tundra, and the tundra into the polar deserts as well as causing the Arctic permafrost to recede much further north. This development will vary around the Arctic but where favourable conditions such as suitable soils exist, the changes will most likely happen this century. Where these benign conditions do not exist the process is expected to take a longer time. The vegetation changes, along with the rising sea level, are projected to shrink the tundra area to its lowest extent in at least the past 21.000 years and

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[59] UNEP/GRID-Arendal, Shift in climatic zones, Arctic scenario, UNEP/GRID-Arendal Maps and Graphics Library. http://maps.grida.no/go/graphic/shift-in-climatic-zones-arctic-scenario (Accessed 10 July 2009)

thereby reduce the grazing area of land animals that depend on the tundra and the Arctic habitats for their survival.[60] The expected reduction of the tundra, the expanding forest and the receding permafrost are all expected further to amplify global warming. The reason behind this is that the forest reflects less sunlight back than the tundra, and as the newly forested areas shield snow covered areas from the sunlight, they thereby reduce the amount of sunlight the snow can reflect back. The thawing Arctic permafrost means that methane which is currently sealed underneath the frozen ground will be released into the atmosphere; and although the effects of vast methane release because of permafrost thawing remain largely uncertain in both the short- and long term, methane, like carbon dioxide, interacts with molecules in the atmosphere and as such contributes to global warming. The release of methane from gas hydrates locked in permafrost is expected to be a very slow process as most gas hydrates are at a considerable depth and would therefore not be affected by the near-surface thawing in the short term. Another factor is that the methane would most likely be oxidized as it moves upwards hundreds of meters of ground before reaching the surface and it could thus reach the atmosphere as carbon dioxide and water rather than methane.[61]

3.2   The increased strategic importance of the High North

The strategic importance of the Arctic evaporated more or less overnight after the end of the Cold War, and its status of irrelevance in international relations would probably have remained if climate change had not affected the region so dramatically. The melting of the Arctic ice may possibly open up sea-routes through the so called Northwest and Northeast passages as well as making the vast natural resources in the Arctic region more accessible, which will increase the strategic value of the region. Suddenly the Arctic, which has seen little human activity throughout history, may be on the brink of a mad dash for resources by its littoral states as the region is believed to contain vast amounts of natural resources such as oil and natural gas as well as valuable metals such as nickel, coal, copper, tungsten, lead, zinc, gold, silver, diamonds, chromium, titanium and manganese.[62] The following subchapters will discuss these drivers and aspects of change in more depth and assess their importance for the region.

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[60] Impacts of a warming Arctic: *Arctic Climate Impact Assessment* (Cambridge: Cambridge University Press, 2004), p. 46.
[61] AMAP, 2009 *Update on Selected Climate Issues of Concern. Arctic Monitoring and Assessment Programme* (Oslo: Arctic Monitoring and Assessment Programme, 2009), p. 11-12.
[62] Arctic shipping 2030: *From Russia with Oil, Stormy Passage, or Arctic Great Game?* (Report 2007-070, 2007), p. 16.

3.3 Arctic resources

The Arctic, as previously mentioned, is believed to contain vast amounts of natural resources. A recent study carried out by the United States Geological Survey (USGS), concluded that about 30% of the world's undiscovered gas and up to 13% of the world's undiscovered oil may be found within the Arctic region; most of these resources are offshore and under less than 500 meters of water.[63] It is worth noting however that the survey carried out by the USGS is based on a probabilistic, geology-based methodology, which means that there are some uncertainties about the exact amount of oil and natural gas in the region. While geo-physicists and geologists may argue as a result about the precise amount of natural resources present, the fact remains that the Arctic is now being viewed by its littoral states (and others) as an energy region whose riches are increasingly becoming more accessible.

Energy exploration and development in the Arctic is nothing new; commercial oil activity in the Arctic began in the 1920s at Norman Wells in the Northwest Territories in Canada. The Russian, Canadian and the U.S. authorities, began extensive gas and oil exploration after the end of the Second World War in their northernmost regions, and by the 1960s large oil and gas reserves had been discovered in the Yamalo-Nenets Autonomous Okrug and the Nenets Autonomous Okrug in Russia, on Alaska's North Slope, and in the Mackenzie Delta in Canada. Production in Arctic Russia began in 1972 in the Yamalo-Nenets region which extended to the Nenets region in the 1980s, while production in Northern Alaska began in 1977 following the completion of the Trans-Alaska Pipeline system. By the 1980s and the 1990s oil and gas activities had extended further in the Arctic: Canada had by this point developed Bent Horn, a small field in the islands of the High Arctic which was later decommissioned after 10 years of successful oil extraction. Alaskan exploration extended offshore which lead to the development and production of new nearshore fields, while Norwegian offshore oil and gas activity has reached the Barents Sea. Today about 10% of all oil produced in the world, and about 25% of its natural gas production, comes from the Arctic region although almost all of it is onshore. Of these amounts, about 80% of the oil and 99% of the gas currently comes from the Russian Arctic.[64]

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[63] Donald L. Gautier, et al, "Assessment of Undiscovered Oil and Gas in the Arctic", *Science* Vol. 324 (May 2009).

[64] AMAP, *Arctic Oil and Gas 2007* (Oslo: Arctic Monitoring and Assessment Programme, 2008), p. 14-17.

Figure 5 Industrial development in the Arctic[65]
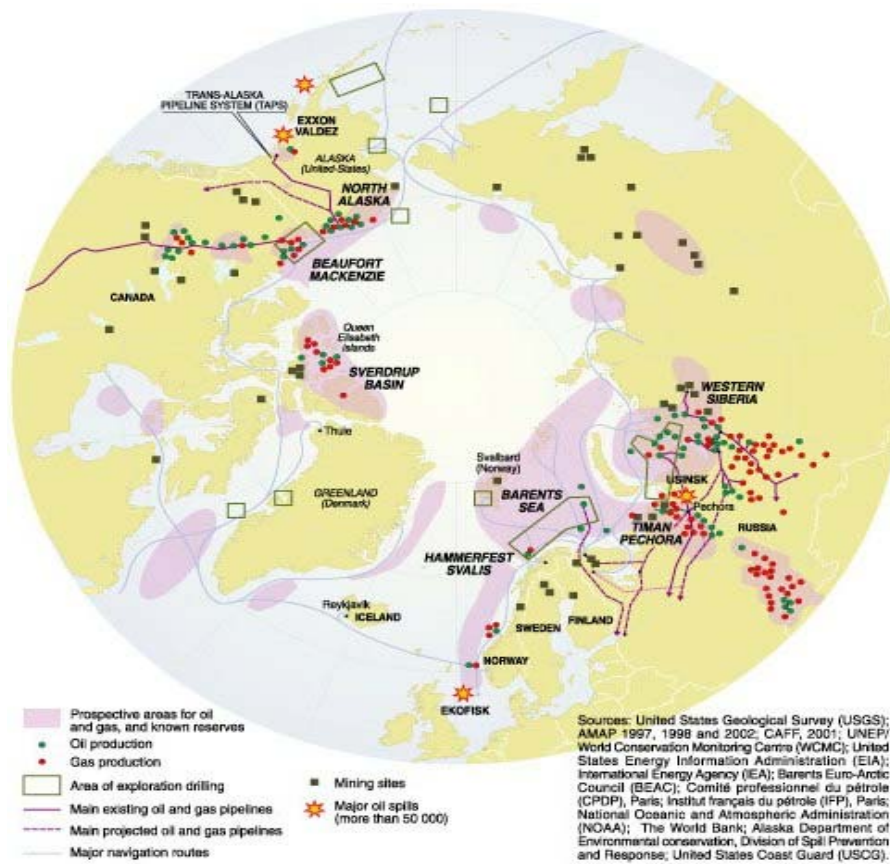
The Norwegian company, StatoilHydro currently runs the only operational offshore gas field in the European Arctic: the Snow White field in the Norwegian Barents Sea. The Snow White gas fields were discovered in 1984 but it was not until 2007 that production started, as extraction did not become commercially viable until the beginning of the new century. The Prirazlomnoye oil field in the Russian Pechora Sea will most likely be the first offshore oil field in the European Arctic: extraction is expected to start in 2010 but there are some doubts about whether that projection is going to be accurate as opening of the field has already been postponed a number of times.[66] As already noted, the natural resources within the Arctic region are not evenly split between the Arctic nations. Most of the gas reserves in the Arctic and possibly in the world are to be found in the Russian Shtokmanovskoe gas field in the

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[65] UNEP/GRID-Arendal, Industrial development in the Arctic, *UNEP/GRID-Arendal Maps and Graphics Library*, http://maps.grida.no/go/graphic/industrial-development-in-the-arctic (Accessed 23 July 2009)

[66] Kristine Offerdal, "High North Energy: Myth and Realitties," in Sven G. Holtsmark and Brooke A. Smith-Windsor, ed., *Security Prospects in the High North: Geostrategic Thaw or Freeze?* (Rome: NATO Defence College, Research Division, 2009), p. 161-162.

Barents Sea. Its reserves total reportedly around 3,200 trillion m³ of gas and more than 31 million tons of gas condensate.[67]

Russia has thus the most abundant energy resources within its Arctic territory and is by far the biggest energy exporter among the five countries that are drilling for oil and gas in the Arctic. One third of Russia's gas resources and 12% of its oil resources are located on the continental shelf, according to Russia's Ministry of Natural Resources (MNR), and two thirds of these resources are believed to be located in the Barents and Kara Seas. The biggest company in the Russian energy sector is the state-owned Gazprom, which accounts for approximately 87% of Russian gas production and controls the biggest share of Russian gas reserves as well has having an export monopoly.[68] Gazprom has divided the continental shelf into four regions which are:

- Pechora Sea: Includes the Prirazlomnoye and Dolginskoye regions, as well as structures close to them;
- North-Eastern Barents Sea: The Shtokman area and satellites;
- Ob and Tazov Bay: Severo-Kamennomsykoe, Kamennmyskoe-More and others;
- Kara Sea: Offshore section of Kharasavey and Kruzenshtern as well as the offshore fields of Leningradskoe and Ruzanovskoe.[69]

Of these areas the Pechora Sea is the only one which will be predominantly used for oil extraction, while the other areas in West-Siberia are mostly reserved for gas extraction. The order of development has been determined by the distance to existing infrastructure, size of resources and optimization of industrial development. Offshore oil production will begin in the Pechora Sea, followed by extraction in the Shtokman field which will start in 2013-2014 to fill up the Nordstream pipeline (being laid across the Baltic to Germany) and help meet the growing demand for Liquid natural gas (LNG) in the Atlantic region. The largest field in Ob-Tazov will begin to see production in 2015-2017 and extraction in the Kara Sea will begin around 2028-2029 after onshore fields on the Yamal peninsula have peaked.[70]

Total Canadian Northern oil reserves were estimated in October 2007 to be 1,665 million barrels of oil and 886.7 billion m³ of gas. The Beaufort Sea and Mackenzie Delta are

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[67] Frédéric Lasserre, "High North Shipping: Myth and Realitties," in Sven G. Holtsmark and Brooke A. Smith-Windsor, ed., *Security Prospects in the High North: Geostrategic Thaw or Freeze?* (Rome: NATO Defence College, Research Division, 2009), p. 185.

[68] Arild Moe and Elana Wilson Rowe, "Northern Offshore Oil and Gas Resources: Russian Policy Challenges and Approaches", FNI Report (June 2008), p. 9.

[69] Ibid, p. 10.

[70] Ibid, p. 10.

believed to contain about 1,020 million barrels of oil while an estimated 334 million barrels of oil and 493 billion m³ of gas, are to be found in the Sverdrup basin in the Canadian archipelago.[71]

3.4 Arctic shipping

The melting of the Arctic ice and increased resource-based industry in the High and Low Arctic, means that there will be increased shipping activity in the region. In past times the fabled Northwest Passage remained elusive as an alternative sea route to the bountiful Orient, given that it was ice clogged and those who attempted to cross it had the nasty habit of dying, and thus the possibility of Arctic sea lines was more or less abandoned. In 1969 the *S.S. Manhattan* was sent through the Northwest Passage by oil companies to assess the feasibility of transporting oil through that route. The *Manhattan* completed the journey with the assistance of ice-breakers, but the route was deemed impractical and prohibitively expensive by the oil companies which opted for an Alaskan pipeline instead.

The rapid retreat of the Arctic ice has rekindled the dream of Arctic sea lines. The argument goes that the melting of the Arctic ice will not only open up access to vast natural riches of the Arctic, but the Northwest Passage (over North America) as well as the Northern Sea Route (over Eurasia) will be opened up for ships to transit. By doing so, shipping would be offered a short-cut slashing existing oceanic transit times by several days and thereby saving shipping companies and navies thousands of miles in travel. The Northwest Passage would for example shorten a travel from San Francisco to Rotterdam by 2.000 nautical miles, making the trip 25% shorter than the current route via the Panama Canal, while the Northeast Passage route would reduce the sailing distance from Rotterdam to Yokohama from 11.200 nautical miles - via the current route through the Suez Canal - to only 6.500 nautical miles, thereby shaving 40% off the transit route. By factoring in costs such as fuel, canal fees and other various expenses the Arctic routes could cut the cost of a single voyage by a large container ship by as much as 20%,[72] and these savings would be even greater for the huge transport ships which are unable to fit through the Suez and Panama Canals and are forced to sail around the Cape Horn and Cape of Good Hope. These Arctic highways will also offer an alternative route for commercial and military ships, which can then avoid sailing through the

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[71] Frédéric Lasserre, "High North Shipping: Myth and Realitties," in Sven G. Holtsmark and Brooke A. Smith-Windsor, ed., *Security Prospects in the High North: Geostrategic Thaw or Freeze?* (Rome: NATO Defence College, Research Division, 2009), p. 186.

[72] Scott G. Borgerson, "Arctic Meltdown, The Economic and Security Implications of Global Warming," *Foreign Affairs*, Vol. 87, No. 2 (March/April 2008), p. 70.

politically unstable waters of the Middle East and the pirate infested-waters of Somalia and the South China Sea.

Figure 6 Northern Sea Route and the Northwest Passage compared with currently used shipping routes[73]
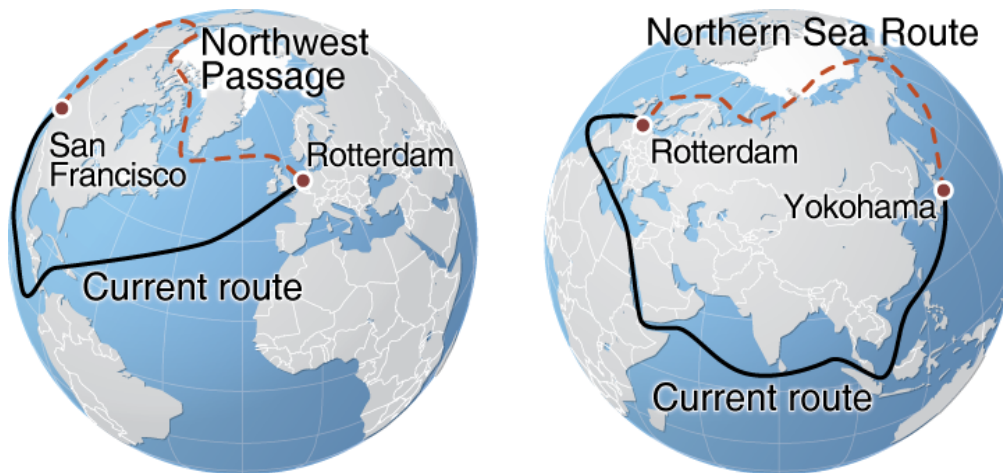
The existence of Arctic routes would also increase competition between the Suez and Panama Canals, and thereby create pressure to reduce current Canal tolls. Shipping chokepoints such as the Strait of Malacca would no longer dictate global shipping patterns and thus Arctic sea routes would have the effect of furthering international economic integration.[74]

It is worth noting at this point that there may be some over-optimism and/or deliberate hype associated with this vision. The proposition that Arctic shipping will reduce the sailing distances between trading hubs of the world, and thereby spur a trading boom, is only half true. To start with, the saving in transport distance using the Northwest Passage or the Northern Sea Route is mostly advantageous for transits that have both a northern origin and a northern destination: the further south the harbours are located, the less and less becomes the advantage of the northern routes. For example, the transit distance between New York and Hong Kong is 21,260 km by using the Panama Canal but 18,140 km through the Northwest Passage, while the transit distance between Barcelona and Hong Kong is 14,693 km through the Suez Canal and Malacca, but 18,950 km by sailing through the Northwest Passage.[75] In

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[73] UNEP/GRID-Arendal, Northern Sea Route and the Northwest Passage compared with currently used shipping routes, *UNEP/GRID-Arendal Maps and Graphics Library*, http://maps.grida.no/go/graphic/northern-sea-route-and-the-northwest-passage-compared-with-currently-used-shipping-routes (Accessed 3 September 2009)

[74] Ibid, p. 70.

[75] Frédéric Lasserre, "High North Shipping: Myth and Realitties," in Sven G. Holtsmark and Brooke A. Smith-Windsor, ed., *Security Prospects in the High North: Geostrategic Thaw or Freeze?* (Rome: NATO Defence College, Research Division, 2009), p. 193.

the latter case the distance between Hong Kong and Barcelona by the present route is significantly shorter than by using the Northwest Passage.

Even when some saving is achievable by using the Arctic routes the fact remains that they will always present specific difficulties. Drifting ice will be a problem for navigation as the ice breaking up in the springtime will drift into sea channels and even possibly clog up certain straits in the Northwest Passage. Shipping companies will be left guessing as to when they can begin services in the spring time and when they must suspend shipping in the autumn, as the Arctic sea routes will still be ice covered during the winter. All this makes the prospect of shipping through the Northern routes less reliable than the current transit routes. Navigating a cargo ship through these waters would require a strengthened hull, powerful ice spotting radar, and an experienced crew and special equipment for dealing with icing and other hitches associated with traversing in Arctic waters.[76]

The Northwest Passage has until recently seen little shipping traffic but the Northern Sea Route across Eurasia is a different story. Arctic shipping here has been a reality for quite some time now and has been increasing for the last decades, although that activity is not directly related to the receding Arctic ice. The Northern Sea Route is a set of marine routes stretching from Kara Gate south of Novaya Zemlya in the west to the Bering Strait in the east. A number of these routes are along the coast and make use of the main straits through the islands of the Russian Arctic. The Northern Sea route (NSR) was developed by the Soviet Union as an important national waterway during the early 1950s to the late 1970s, and since 1978-1979 the NSR has been open for year-round traffic which peaked in 1987 with 331 ships on 1,306 voyages.[77] The NSR was formally opened to non-Russian ships in the summer of 1991, and since then an NSR administration has been created and the International Northern Sea Route Programme launched to promote the usage of the NSR by leasing cargo space aboard the Soviet SA-15 icebreaker cargo carriers. The initial optimism about the future potential of the NSR for maritime transport between Europe and Asia proved hasty, however, as the volume of transport declined steadily during the 1990's. In 1987 the volume of transported goods peaked at 6.579 million tons but in 1998 that amount had fallen to 1.458 million tons before gradually rising to 2.13 million tons in 2007.[78]

Approximately 6,000 individual shipping vessels were reported operating in the Arctic during 2004. Almost 50% of these ships were cargo vessels while bulk carriers made up of

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[76] Ibid, p. 195.

[77] AMSA, *Arctic Marine Shipping Assessment 2009 Report* (Oslo: Arctic Council, 2009), p. 44.

[78] Ole M. Johannessen and Lasse H. Pettersson, "Arctic Climate and Shipping," in Gottemoeller, Rose and Tamnes, Rolf, eds., *High North High Stakes*, *Security, Energy, Transport, Environment* (Bergen: Fagbokforlaget, 2008), p. 104.

about 20% of all shipping. Not surprisingly, the most significant types of activity in the Arctic according to the "*Arctic Marine Shipping Assessment 2009*" (AMSA), in the year 2004, were community re-supply, bulk cargo, fishing vessel activity and tourism.[79] The following discussion about Arctic shipping is based heavily on the "*Arctic Marine Shipping Assessment Report 2009*".

Figure 7 Tug/barge traffic during 2004[80]
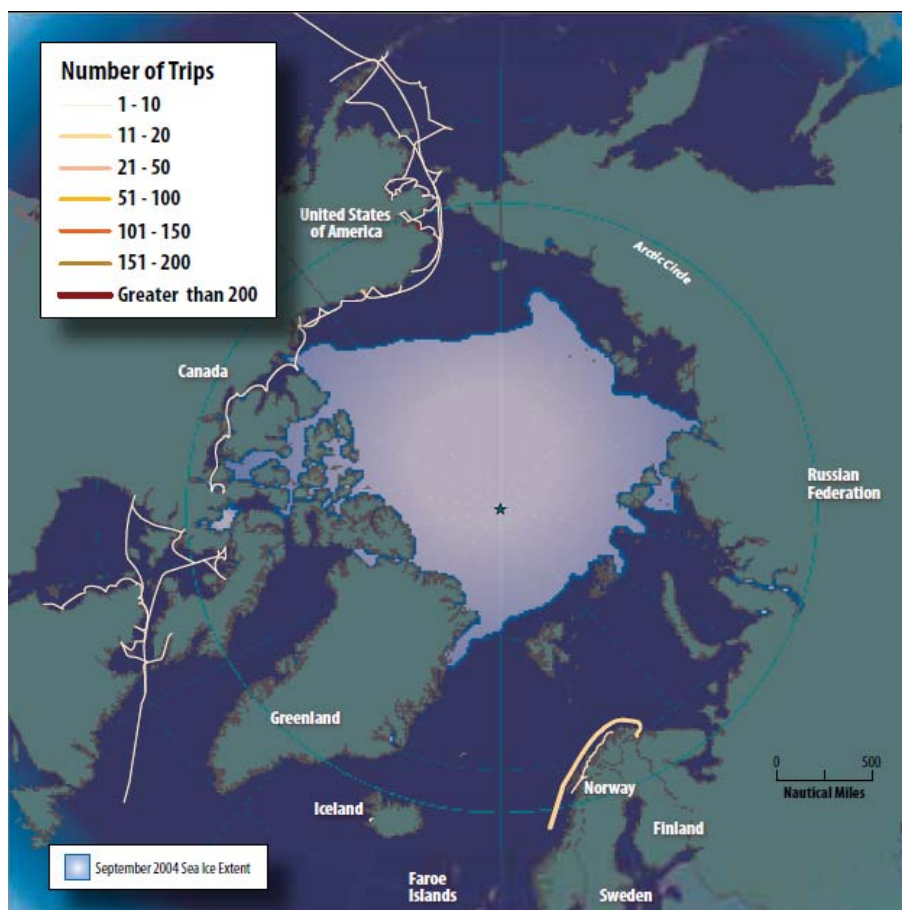
Community re-supplying is sometimes referred to as coastal Arctic shipping. This activity is the basis for most ship traffic in isolated areas such as Greenland, eastern Russia and the Canadian Arctic. Re-supply shipping is the lifeline for many communities that have limited or no road access and limited or no ability to receive heavy aircraft. Most of the communities that are serviced are ice-locked for parts of the year and therefore they rely on shipping during the summer for their fuel, dry food, building material and other goods. A system of tug/barge trains is mostly used in Arctic Canada and Alaska, but also in Northern Norway, to re-supply communities and also to transport commodities such as oil, gas and various types of ore.

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[79] AMSA, *Arctic Marine Shipping Assessment 2009 Report* (Oslo: Arctic Council, 2009), p. 73.
[80] Ibid, p. 75.

Some of the world's most abundant fishing grounds are in the Arctic and therefore it is not surprising that a significant share of shipping activity consists of fishing vessels. According to AMSA, the amount of fishing activity in the Arctic is most likely underestimated since there are regions in the Arctic where commercial fishing is known to be going on but no data have been submitted to the AMSA database. The AMSA database also does not include small fishing vessels.

Figure 8 Arctic fishing vessel activities in 2004[81]

Fishing in the Arctic is confined to specific areas as figure 8 shows. Most of it takes place in the Bering and Barents Sea, around Iceland and the Faroe Islands and down the west coast of Greenland. The fishing areas are divided into Large Marine Ecosystems (LME), which are geographical entities based on various ecological criteria, each comprising large sea areas with distinct hydrography, bathymetry, productivity and trophically dependant fish population.[82]

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[81] Ibid, p. 77.
[82] Ibid, p. 77.

One of the fastest-growing shipping activities in the Arctic is passenger vessel activity taking such forms as small and large cruise vessels, ferry services and any other vessels where people are transported. The type of shipping activity in the Arctic depends on the specific location. For example in Alaska and the Canadian Arctic, ferries are not the transportation of choice and all passenger traffic at sea is for marine tourism, while in Iceland, Greenland and Norway, some of the passenger vessel traffic consists of ferries carrying people in and out of coastal communities. Some passenger service is handled by ships which double as ferries and cruise ships such as the ferry *Norræna* which sails from Iceland to mainland Europe and the Hurtigruten service around Norway.

Figure 9 Arctic passenger vessel traffic 2004[83]
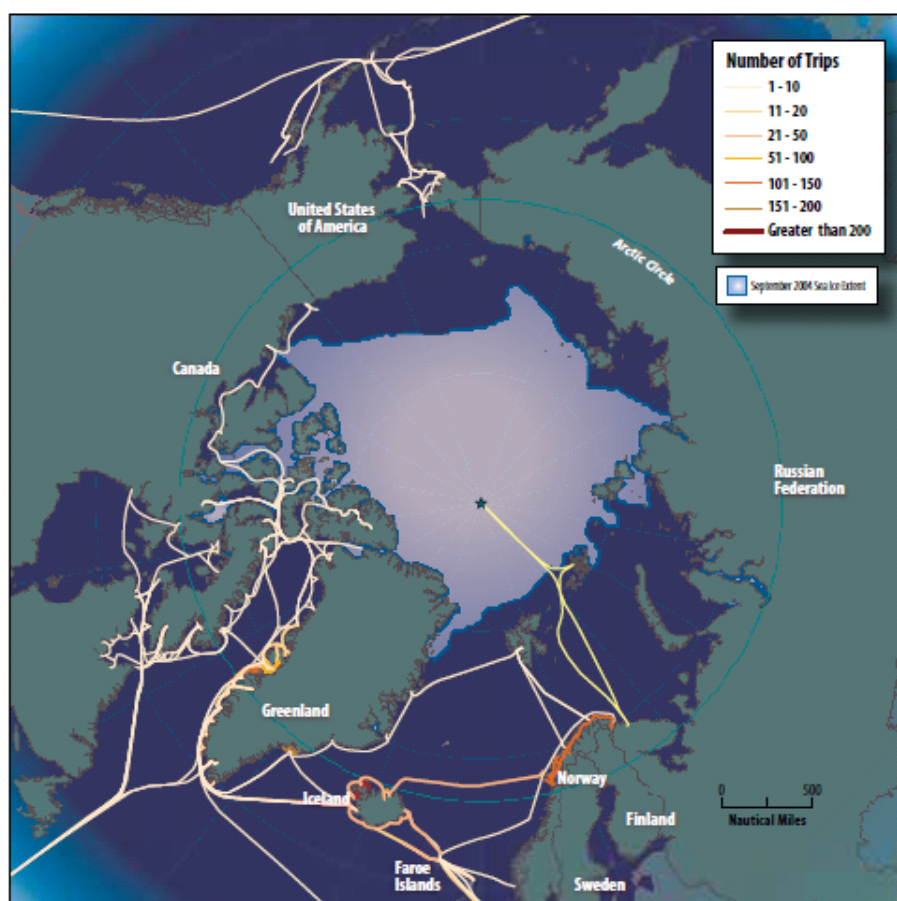
The heaviest passenger vessel traffic is along the Norwegian coast, the coast of Iceland and the coast of Greenland and Svalbard as is illustrated in figure 9. The largest proportion of the Arctic tourism industry consists of marine-based tourism, whether in terms of geographic range, type of recreational activity or number of persons. The type and size of tourist vessels

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[83] Ibid, p. 78.

that are used in Arctic tourism vary in size from small expedition-style ships that hold less than 200 persons up to large luxury cruise liners that can hold above 1,000 passengers. The number of tourist ships traversing the Arctic waters has been increasing dramatically in the last years as is evident in table 1.

Table 1 Cruise ships arrivals in Greenland ports and harbors 2003-2008[84]

Year	Arrivals	Number of cruise ships	Average number of arrivals/ship	Average passenger capacity/ship
2003	164	14	13	490
2004	195	24	8	468
2005	115	25	5	714
2006	157	28	6	546
2007	222	35	6	671
2008	375*	39*	10*	641*

*= Estimates for 2008 (full data not available at time of printing)

The number of cruise ship arrivals in the ports and harbors of Greenland has tripled from 2003 to 2008 and the average passenger per ship has also risen, which indicates that not only is the number of tourist ships sailing in the Arctic rising, but their average passenger capacity is rising to. The *AMSA* report estimates that more than 1.2 million passengers travelled to Arctic destinations in 2004 aboard cruise ships and by 2007 that number had more than doubled.[85] One of the more alarming aspects of marine arctic tourism is that most of these cruise lines are not constructed for traversing Arctic waters, and they are known to intentionally travel close to the shore line and the ice edge to view the wildlife in close proximity, both of which factors increases the risk of accidents.[86]

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[84] Ibid, p. 79.
[85] Ibid, p. 79.
[86] Ibid, p. 79.

4   Dimensions of security in the High North

The increased human activity we are witnessing in the Arctic region as a result of Arctic resource extraction and increased Arctic shipping, offers opportunities but not without increased threats and vulnerabilities. The following discussion will analyse these threats and vulnerabilities using a multi-dimensional security approach. Exploring the different dimensions of such a comprehensive definition of security can offer a deeper and richer understanding of the threats and vulnerabilities that states, man and the environment are faced with in the Arctic region, than the traditional state-centric approach can offer. The multi-dimensional security approach applied here is based on the work of Barry Buzan and Ole Wæver and for present purposes distinguishes five primary dimensions, namely: military, political, economic, and societal as well as environmental security.

4.1   Military security

The valuable natural resources along with the possibility of increased shipping through the Northwest and the Northeast Passages would seem to make the Arctic region the ideal crucible for conflict, at least from the realist perspective. The realist view would be that a region with such vast resources and potential is bound to cause a race among its littoral states, as they try to grab as much land as possible to further their influence and power within the Arctic region. Access to Arctic resources would then translate directly into increased power within the international system since it would enhance the successful states aggregated capabilities, including economic, political and military strengths. This situation could prove especially dangerous in the Arctic as-subject to what is said below on UNCLOS- there are currently no overarching legal or political structures that can be relied on to provide a basis for the orderly development of the region or to mediate political disagreement over Arctic resources or sea-lanes. On this view, the Arctic could become an arena for military build-up as each state tries to guard its interests in the region, which would in turn increase the possibility of a disagreement escalating into armed conflict.[87]

This analysis is in line with the realist perspective but it may be to simple and one-dimensional when being applied to reality. Those natural resource-rich areas within the Arctic region that will be tapped in the foreseeable future lie well within the specific 200 nautical-

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[87] See for example Scott G. Borgerson, "Arctic Meltdown, The Economic and Security Implications of Global Warming," *Foreign Affairs*, Vol. 87, No. 2 (March/April 2008) as well as Rolf Ekéus, "Military Security in the Arctic", *Arctic Security in the 21. Century Conference Report* (Simon Fraser University), p. 38.

mile Economic Exclusion Zones (EEZ) of various Arctic littoral states and there are a daunting number of technological as well as regulatory issues that need addressing before extraction can take place beyond the EEZ- thus reducing the possibility of an "Arctic race to resources" by littoral states.[88]

Figure 10 Arctic boundaries as of 2009: the solid lines are agreed boundaries, the dotted lines indicate boundaries that are not yet settled [89]
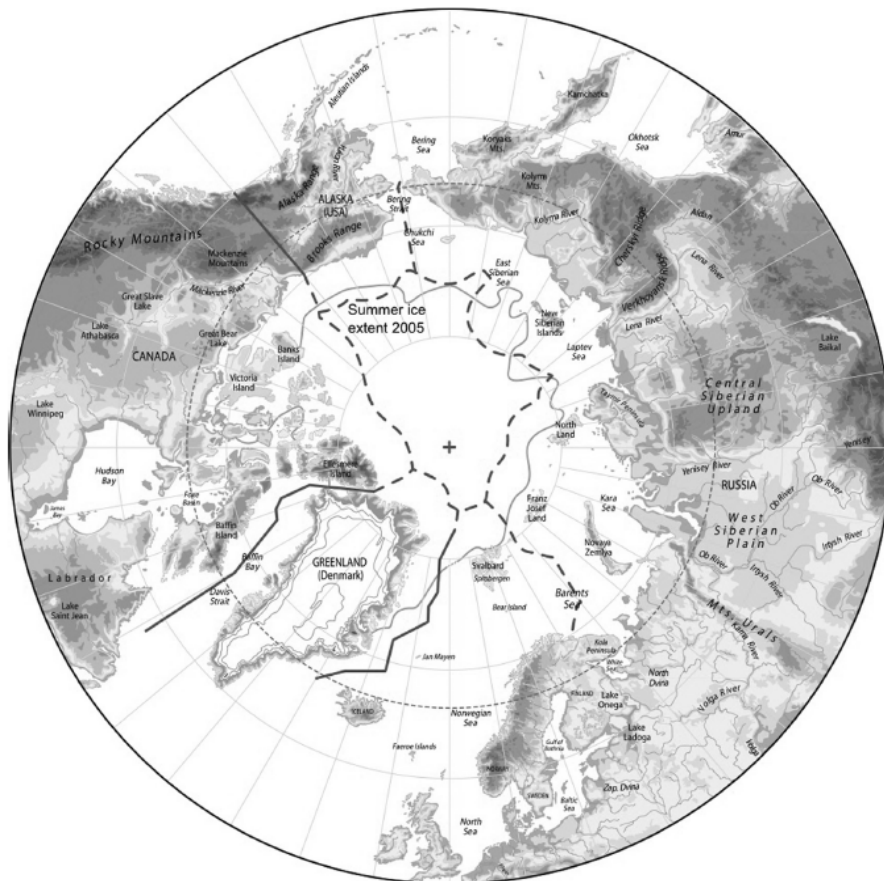
There are however some important exceptions where overlapping sovereignty claims in possibly resource-rich areas may cause tension between states. Most notable of these disputes are between Norway and Russia over EEZ delimitation in the Barents Sea and the status of Svalbard, between Denmark and Canada over the small territory of Hans Island, west of Greenland and a dispute between the U.S. and Canada about delimitation between countries in the Beufort Sea as well as the legal status of the Northwest Passage.

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[88] Oran R. Young, "Wither the Arctic? Conflict or Cooperation in the Circumpolar North," *Polar Record*, Vol. 45, No. 232 (2009), p. 75.
[89] Ibid, p. 78.

Russia, as has been previously mentioned, currently holds the biggest share of Arctic resources as 80% of Arctic oil and about 99% of Arctic gas is extracted in the Russian Arctic. Much of this extraction takes place on the Russian side of the resource-rich Barents Sea. At the same time Norwegian gas and oil companies are developing oil and gas fields on the Norwegian side of the Barents Sea, as many Norwegians see resources in that area as the future for the Norwegian energy sector.[90] The Russian and Norwegian authorities have held formal talks about the delimitation of a boundary since 1974. The Norwegian position is that the boundary line should be drawn according to the equidistant principle, while Russia favours a delimitation line drawn along a sector line which runs from the end-point of the land boundary to the North Pole. The resulting disputed no-mans-land is 175,000 km² in extent and runs from the outer limit of the territorial waters, between Novaya Zemlya and Svalbard and into the Arctic Ocean. In 1978 an agreement was reached between Norway and Russia for enforcement of jurisdiction in fisheries matters, within this so-called "Grey Zone" but the territorial delimitation between these two states in the energy resource-rich Barents Sea remains unresolved to this day.[91] Norway and Russia are also at odds over interpretation of the 1920 Svalbard Treaty, as Norway maintains that the sea bottom around the archipelago is a part of the Norwegian mainland's continental shelf while Russia holds the view that Svalbard has its own continental shelf.[92]

In 1973 the governments of Denmark and Canada reached an agreement on a continental shelf boundary which runs between Greenland and Canada through the Davis and Nates straits into the Arctic Ocean, but the boundary agreement excluded the small Hans Island in the Kennedy channel to which both Denmark and Canada make a sovereign claim. Although there are no known deposits of oil, natural gas or mineral resources on the island itself, there is some speculation that the seafloor under the surrounding waters could contain natural resources.[93] Both the Canadian and Danish authorities have made their interests in the Island quite clear with a series of visits. In 1984 the Danish Minister of Greenlandic Affairs; Tom Høyern, planted a Danish flag on the Island and the Danish military carried out expeditions there in 1988, 1995, 2002 and 2003, planting a Danish flag on Hans Island on

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[90] Kristine Offerdal, "High North Energy: Myth and Realitties," in Sven G. Holtsmark and Brooke A. Smith-Windsor, ed., *Security Prospects in the High North: Geostrategic Thaw or Freeze?* (Rome: NATO Defence College, Research Division, 2009), p. 158.

[91] Alf Håkon Hoel, "Jurisdictional Issues in the Arctic," in Gottemoeller, Rose and Tamnes, Rolf, eds., *High North High Stakes*, *Security, Energy, Transport, Environment* (Bergen: Fagbokforlaget, 2008), p. 44.

[92] Katarzyna Zysk, "Russia and the High North: Security and Defence Perspectives," in Sven G. Holtsmark and Brooke A. Smith-Windsor, ed., *Security Prospects in the High North: Geostrategic Thaw or Freeze?* (Rome: NATO Defence College, Research Division, 2009), p. 114.

[93] See for example Dianne Demille, "Denmark "Goes Viking" in Canada's Arctic Islands-Strategic Resources of the High Arctic Entice the Danes," *Canadian American Strategic Review*, (March 2005).

each of those expeditions. In 2005 the Canadian military carried out their own expedition to Hans Island, were the troops hoisted the Canadian flag as well as raising an Inkushuk, which is a traditional Inuit stone marker. This expedition was followed shortly after by a visit by the Foreign Minister of Canada; Bill Graham. The Danish government labelled the visit as an occupation and filed a formal protest and sent yet another military expedition to the Island.[94] In September 2005 the two countries reached an agreement to disagree and the issue of ownership over the island remains unsolved to this day.

If the Canadian and Danish authorities can not find a political solution to their territorial dispute, they may decide to seek arbitration by a third party, in which case an interesting scenario begins to unfold. The most likely third party for such arbitration would bee the International Court of Justice (ICJ) as it has been involved in settling many border disputes in the post-war period.[95] What the ICJ looks towards when settling a border dispute is whether there is any documentation of a territory's ownership. If that documentation is ambiguous then the Court looks at the customary use of the area by the disputing countries to see if either party has established effective control over the territory. An "effective control" is viewed by the court as a continuous administration and effective occupancy of the land: ideally the territory should be settled throughout and the natural resources of the area should be developed and used. The term has also been defined as a certain degree of political, military or administrative power deemed appropriate in the given conditions and varying from case to case according to circumstances.[96] For example, the ICJ awarded Malaysia the islands of Pulau Ligitan and Pulau Sipadan in a dispute between Indonesia and Malaysia on the basis that Malaysia had regulated the commercial collection of turtle eggs, established a bird sanctuary and constructed light houses in the islands.[97]

In the case of Hans Island the only treaty which the court could rely upon to determine boundaries is the Delimination Treaty of 1973 which, as mentioned before leaves out the border around Hans Island. The next step the court would take would be to determine whether a single nation had ever controlled the area encompassing Northern Greenland, Hans Island and Ellesmere Island, and whether that nation employed administrative boundaries that could

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[94] Christopher Stevenson,"Hans Off!: The Struggle for Hans Island and the Potential Ramifications for International Border Dispute Resolution," *Boston College International and Comparative Law Review*, Vol.30, No.1 (Winter 2007), p. 267.
[95] See for example Margaret P, Karns and Karen A. Mingst, *International Organization-The Politics and Processes of Global Governance* (London: Lynne-Rienner Publishers, 2004), p.124-125.
[96] Christopher Stevenson,"Hans Off!: The Struggle for Hans Island and the Potential Ramifications for International Border Dispute Resolution," *Boston College International and Comparative Law Review*, Vol.30, No.1 (Winter 2007), p. 270-271.
[97] Ibid, p. 271.

be translated into current national boundaries. The Canadian Arctic islands were British possessions until 1880 when they were transferred to Canada and it is unclear whether Hans Island was part of that transfer, while Greenland was clearly not a part of the British possession as the southern part of Greenland was under Danish rule and the Northern area around Hans Island was claimed by the U.S. until 1917.[98] The comparison between the Hans Island dispute and the territorial dispute between Indonesia and Malaysia becomes quite interesting at this point. If the ICJ should find that periodic military visits and the erection of stone markers constituted a sufficient exercise of control for an uninhabited rock in the High Arctic, then the genie would surely be out of the bottle as a precedent would be set for other countries seeking sovereignty over remote areas. The message would be that control over uninhabited area can be asserted by the state that can make the most visits, which could possibly trigger a land rush and an escalating militarization in the Arctic. This scenario, however, seems highly unlikely as it would increase uncertainty and reduce stability in the region which would be detrimental to the interests of all Arctic littoral states. It does highlight, however, the importance of states finding a mutually acceptable and non-violent political solution to sovereignty claims in the Arctic.

The Arctic sea-lines through the Northeast- and Northwest Passages go mostly through uncontested areas. The Northeast Sea Route mostly traverses the Russian EEZ and in some areas within Russian internal waters. The Russian EEZ is not neutral ground in regulatory terms as Russian regulations on shipping along the Northern Sea Route, which are based upon article 234 of the UN Law of the Sea convention (UNCLOS), oblige ships sailing through to respect Russian regulations within Russia's EEZ.[99] The Sovereign status of the Northwest Passage is on the other hand contested. Canada maintains the position that the Northwest Passage, defined as the body of Arctic waters between the Davis Strait and Baffin Bay, rests solely within Canadian territorial waters while other countries, among them the U.S. take the position that these waters constitute an international strait and are therefore in international waters.[100]

The Russian Arctic is extremely important for the Russian economy as 20% of the Russian GDP is generated north of the Arctic Circle and as much as 22% of Russia's export

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[98] Ibid, p. 273.

[99] Frédéric Lasserre, "High North Shipping: Myth and Realitties," in Sven G. Holtsmark and Brooke A. Smith-Windsor, ed., *Security Prospects in the High North: Geostrategic Thaw or Freeze?* (Rome: NATO Defence College, Research Division, 2009),), p. 182.

[100] Alf Håkon Hoel, "Jurisdictional Issues in the Arctic," in Gottemoeller, Rose and Tamnes, Rolf, eds., *High North High Stakes*, *Security, Energy, Transport, Environment* (Bergen: Fagbokforlaget, 2008), p. 42.

earnings come from Arctic resources.[101] The current strategic importance of the Arctic region for Russia in combination with the fact that Russia is the only non-NATO Arctic Ocean country opens up the possibility of Russia- in this context too- clinging on to its cold war legacy of viewing the world through the realist perspective of zero-sum gains. This would inject new tension into the relations between Russia and other Arctic countries as Russia would see itself as being encircled by countries that were stark adversaries of the Soviet Union and thus of Russian interests, for the better part of the 20th Century. The Sabre-rattling tactics that would be diagnostic of such perceptions have indeed had their place in Russian actions in last years. Russian strategic bombers have renewed their training sorties into the Norwegian Sea and the North Sea as well as venturing into the Icelandic Military Air Defence Identification Zone, which they had ceased to do after the collapse of the Soviet Union. Russian government representatives frequently stress the vital role the Russian military plays in securing Russian economic interests in the Arctic, and the Russian Ministry of Defence announced in July 2008 that ships of the Northern Fleet would resume their regular patrolling of Arctic waters, including the waters around Svalbard.[102]

Mistrust of the U.S. and NATO is still very much alive among Russian policy makers and they have pointed to allegedly increased political and military pressure from the U.S. and NATO. It has for example been argued by Russian experts engaged in the formulation of Russia's maritime policy in the Western Arctic that the U.S. and NATO are seeking control and hegemony in all oceans of the world, with the aim to increase the threat from the sea against Russia, China and India.[103] This kind of mistrust towards NATO is also evident in Russian policy documents, for instance in the report of a State Council working group which pointed out in 2004 "…that Russia's military tasks in the High North should be planned in reference to NATO's military presence and activity."[104] Even if Russian attitudes towards the U.S. and NATO remain sceptical, however, this does not make the increased strategic importance of the High North and related tension between Russia and the U.S. and NATO in any way an equivalent of the ideological tug-of-war between the two superpowers during the cold war. Despite Russian scepticism about the intentions of the other Arctic Ocean states, which are all NATO members, the Russians' approach to their Arctic neighbors has so far

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[101] Sven G. Holtsmark, "Towards Cooperation or Confrontation? Security in the High North", *NATO Research Paper*, No. 45 (Feb. 2009), p. 7.

[102] Ibid, p. 8.

[103] See for example Katarzyna Zysk, "Russia and the High North: Security and Defence Perspectives," in Sven G. Holtsmark and Brooke A. Smith-Windsor, ed., *Security Prospects in the High North: Geostrategic Thaw or Freeze?* (Rome: NATO Defence College, Research Division, 2009), p. 112.

[104] Ibid, p. 112.

been to act in accordance with international law even while indulging in occasional sabre-rattling to remind the world that Russia is still a contender in world politics. Russia was one of the co-signers of the Ilulissat Declaration in May 2008 which affirmed the willingness of the Russian authorities to abide by the peaceful resolution of overlapping claims, and the importance of international law in this and other contexts has been repeatedly stressed by the Russian leadership for example such as in the annual addresses to the National Assembly by President Medvedev and President Putin during his term in office.[105]

When looking at the military security aspect of the Arctic Region it becomes quite clear that the extreme realist picture of the Arctic Region as a possible playground for vying powers, jockeying for positions to grab maximum resources by means fair and foul - whether that involves shrewd diplomacy or armed brinkmanship- is hardly accurate. Yet even though an Arctic land rush is not imminent, the Arctic states are well aware of the fact that they must watch the military dimension closely both to guard their own interests in the High North and monitor possible risks of provocation and escalation. The Russian authorities have been strengthening their military capability which includes the Northern Fleet stationed at Murmansk, as well as enhancing their overall military presence in the region.[106] The Norwegian Ministry of Defence has defined the northern regions as Norway's primary area for strategic investments, and has expressed the view that "…a robust Norwegian military presence contributes to the creation of predictability and stability in the High North."[107] The Canadian authorities state that their Arctic objectives are among others to "…enhance the security and prosperity of Canadians and especially those in the north as well as Aboriginal peoples, and to ensure and assert the preservation of Canada's sovereignty in the North,"[108] while the U.S. has been revising its policy in the Arctic to take account both of traditional (military) and non-traditional (terrorism etc) human threats.[109]

4.2   Political security

Political security is about the organizational stability of social order in a given state or community. Beyond this point the concept of political security can be stretched into whatever

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[105] Ibid, p. 106.
[106] See for example Katarzyna Zysk, "Russia and the High North: Security and Defence Perspectives," in Sven G. Holtsmark and Brooke A. Smith-Windsor, ed., *Security Prospects in the High North: Geostrategic Thaw or Freeze?* (Rome: NATO Defence College, Research Division, 2009),
[107] Norwegian Defence 2008 (Report by the Norwegian Ministry of Defence), p.7-8.
http://www.regjeringen.no/upload/FD/Dokumenter/Fakta2008_eng.pdf (Accessed 20 June 2009).
[108] The Canadian Parliamentary Information and Research Service, *Canadian Arctic Sovereignty* (January 2008), p.7 http://www.parl.gc.ca/information/library/PRBpubs/prb0561-e.htm. (Accessed 23 June 2009).
[109] National Security Presidential Directive and Homeland Security Presidential Directive, http://georgewbush-whitehouse.archives.gov/news/releases/2009/01/20090112-3.html (Accessed 13 August 2009).

we want it to be, aside from military security, as all threats and defences are constituted and defined by political process. Nevertheless in this context the concept of political security is about defending against political threats that are aimed at the organizational stability of the state. Their purpose may range from pressuring the government on a particular policy through overthrowing the government. Because the state is fundamentally a political entity, it follows that political threats may be as much feared as military ones. They may include threats to the integrity, independence, legitimacy or recognition of a political unit, such as the state, its political structures, processes or its institutions. Maintaining political security implies establishing order to stabilize the political arrangements and construct a frame where the units can jostle without posing a threat to each other, whether within the hierarchical state or the anarchical international system.

In the case of the Arctic we see a collection of states that do not face internal insurrection and breakdown of order on any plausible scenario. (Russia's major internal security problems are all in the South), and where possible changes of sovereign status such as a move by Greenland to complete independence have been provided already with a reliably peaceful framework. The risk of disruption by transnational agents such as terrorists or organized crime is also very low by global standards. Risks to local populations fall less in these dimensions and more, as will be argued below, into the areas of economic and environmental security- plus the issue of whether their share in local governance (especially within Russia) is adequate. The main issues of political security thus arise at the larger interstate level and relate to the lack or vagueness of a system for guaranteeing both the orderly conduct of relations among actors in a dynamic scenario and fairness for the smaller and more peripheral as well as the large and central players.

The Arctic Region has at the moment no single treaty as the Antarctic. The overarching legal regimes in the region are on one hand the United Nations Convention on the Law of the Seas (UNCLOS), which serves as a hard legal framework, and on the other hand the Arctic Council which, unlike UNCLOS, is a political organization using "soft" methods of consensus so that its decisions are not legally binding for the member states. UNCLOS is deficient not only in the sense of lacking instruments of power for its own enforcement, but also in that it does not address many of the issues which need to be dealt with in the Arctic such as environmental pollution and the effect of climate change on human settlements. The Arctic Council was formed to analyze, and hopefully provide a forum for the Arctic littoral states to address these problems. The mere existence of this forum does not however solve the political security issue of whether some states are more able to have a voice and enforce their

views within the Council, while smaller states - lacking the same leverage – may be essentially forced to accept the decisions handed to them if they want to be perceived as being reliable and consistent in reciprocity when it comes to international cooperation. In turn, from a realist standpoint, this absence of an overarching Arctic regime to deal with issues such as resource extraction and Arctic shipping might allow the larger states to bully the smaller Arctic states into accepting whatever arrangements on these issues best favour themselves. Therefore the form which Arctic governance takes in the future will be of the highest importance for the Arctic states and especially the smaller ones.

In May 2008 following the conclusion of an Arctic Ocean Conference held in Ilulissat, Greenland the representatives of the U.S., Denmark, Norway, Russia and Canada issued the Ilulissat Declaration which noted that:

> The law of the sea provides for important rights and obligations concerning the delineation of the outer limits of the continental shelf, the protection of the marine environment, including ice-covered areas, freedom of navigation, marine scientific research, and other use of the sea.[110]

The declaration further stated that the five Arctic states should remain committed to this legal framework and to the orderly settlement of any possible overlapping claims. Despite its limitations noted above, the United Nations Convention on the Law of the Seas (UNCLOS) serves in its own field as an overarching international legal regime that has been ratified by all of the Arctic countries, except for the U.S. which has stated in its new Arctic strategy the objective of ratifying it in the near future. Acceding to UNCLOS gives the coastal states the ability to proclaim either a 200 nautical mile EEZ, or control and sovereign rights over areas of their respective continental shelf, extending beyond the outer limits of their 200 nm EEZs, but never further than 350 nautical miles from established baselines, according to article 76 of UNCLOS .[111] Russia was the first country to file such a claim in 2001 followed by Norway in 2006 while Canada and Denmark are expected to file a claim of their own in the near future.[112] Coastal states do not have an automatic right to an outer continental shelf (OCS) beyond the traditional 200 nm EEZ. If states wish to assert a claim then they must comply

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[110] The Ilulisat Declaration, Arctic Ocean Conference, (Accessed 20 Agust 2009) http://www.oceanlaw.org /index.php?name=News&file=article&sid=77 (Accessed 13 August 2009).
[111] United Nations Convention on the Law of the Sea http://www.un.org/Depts/los/convention_agreements/ texts/unclos/unclos_e.pdf (Accessed 15 August 2009)
[112] Oran R. Young, "Wither the Arctic? Conflict or Cooperation in the Circumpolar North," *Polar Record*, Vol. 45, No. 232 (2009), p. 74.

with a certain set of rules provided in Article 76 of UNCLOS, were they must submit a set of data supporting their claim to the Commission on the Limits of the Continental Shelf (CLCS). Upon receiving the claim, the CLCS forms a sub-commission of seven members who make recommendations to the full commission for its approval. The Commission has made clear in its rules of procedure that it will not become engaged in political or legal disputes, to that effect the Commission has avoided OCS claims in offshore disputed territories or when claims of two or more states overlap one another. In such cases the problem can be overcome if the disputing states present a joint submission to the Commission in which they indicate that they have already reached an agreement.[113]

In the context of political security it may be interesting to look further at what UNCLOS does not address in the Arctic, since these dimensions include issues that the Arctic states will be compelled to deal with such as major environmental problems as well as stress on the indigenous people in the Arctic. Article 234 of UNCLOS addresses environmental protection on ice-covered waters to the extent that the article stipulates that "…coastal states have the right to enforce laws to prevent, reduce and control marine pollution from vessels in ice-covered areas within the limits of the exclusive economic zone."[114] With this important exception the UNCLOS makes no specific reference to environmental management of the polar oceans and seas, a topic which importance is increasing as the indigenous Inuit people of the Arctic are under increasing strain because of Arctic climate change (see below). Many Inuit communities in the Arctic are reliant on hunting, which has social and cultural importance for the Inuit communities as well as providing them with a substantial amount of their daily nutrients. Effects of climate change in the Arctic, such as unusual sea-ice and weather conditions have disrupted Inuit livelihoods and households and the increasing danger associated with hunting and travelling has even forced some Inuit to refrain from traditional hunting altogether.[115]

The international body which is most competent to address these issues in the Arctic is the Arctic Council which was formed in the 1990s in order to provide a high-level ministerial forum for discussion of issues of common interests among the Arctic countries. The Arctic Council evolved out of the Arctic Environmental Protection Strategy (AEPS), which was a program designed to identify Arctic environmental problems and develop action plans to

[113] Donald Rothwell, "The Arctic in International Affairs: Time for a New Regime?", *The Brown Journal of World Affairs*, Vol. 15, Issue 1, (Fall/Winter 2008), p. 245.
[114] United Nations Convention on the Law of the Sea http://www.un.org/Depts/los/convention _agreements/texts/unclos/unclos_e.pdf (Accessed 15 August 2009).
[115] James D. Ford, "A Priority for Action on Climate Change for Canadian Inuit", *Sustainable Development Law and Policy*, Vol. 8, Issue. 3, (Spring 2008), p. 25-26.

manage these problems. The problem with the Arctic Council, as mentioned before is that it is a soft law regime and therefore it does not impose legally binding obligations on to the Arctic states. The ability of the Arctic Council to represent with one voice the views of all of its eight member states is also being drawn into question as in May 2009 only five of the eight Council members were present at the Ilulissat gathering mentioned above. Iceland, Sweden and Finland were presumably not invited on the grounds that they do not have littoral territories and thus fewer concrete interests in the Arctic Ocean,[116] but all have made known their displeasure since.

4.3 Economic security

Economic security, as has been mentioned before, concerns access to the markets, resource and finance necessary to develop and maintain acceptable levels of welfare and state power. In the context of this thesis the concept of economic security becomes interchangeable with the concept of energy security as countries aim at gaining supplies from as many diverse sources as possible to avoid becoming to dependent on one source of supply.[117] Arctic resources and their extraction may prove to be a boon to the economies of the Arctic littoral states but with the promise of increased prosperity comes also the heightened sense of risks and threats. The bulk and value of oil and gas shipping makes states more vulnerable to incidents at sea, whether they are attributable to accidents or intentional sabotage. And there is also the question of who profits from these resources and to what end they may be used, as economic dependencies can be exploited for political means as most states are dependent on a secure supply of energy from world markets.

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[116] Donald Rothwell, "The Arctic in International Affairs: Time for a New Regime?", *The Brown Journal of World Affairs*, Vol. 15, Issue 1, (Fall/Winter 2008), p. 248.
[117] Geir Westgaard, "The Extended Concept of Energy Security," in Kjetil Skogrand, ed., *Emerging from the Frost, Security in the 21st Century Arctic* (Oslo: Norwegian Institute for Defence Studies, 2008), p. 74.

Figure 11 Arctic shipping accidents and incidents causes, 1995-2004[118]
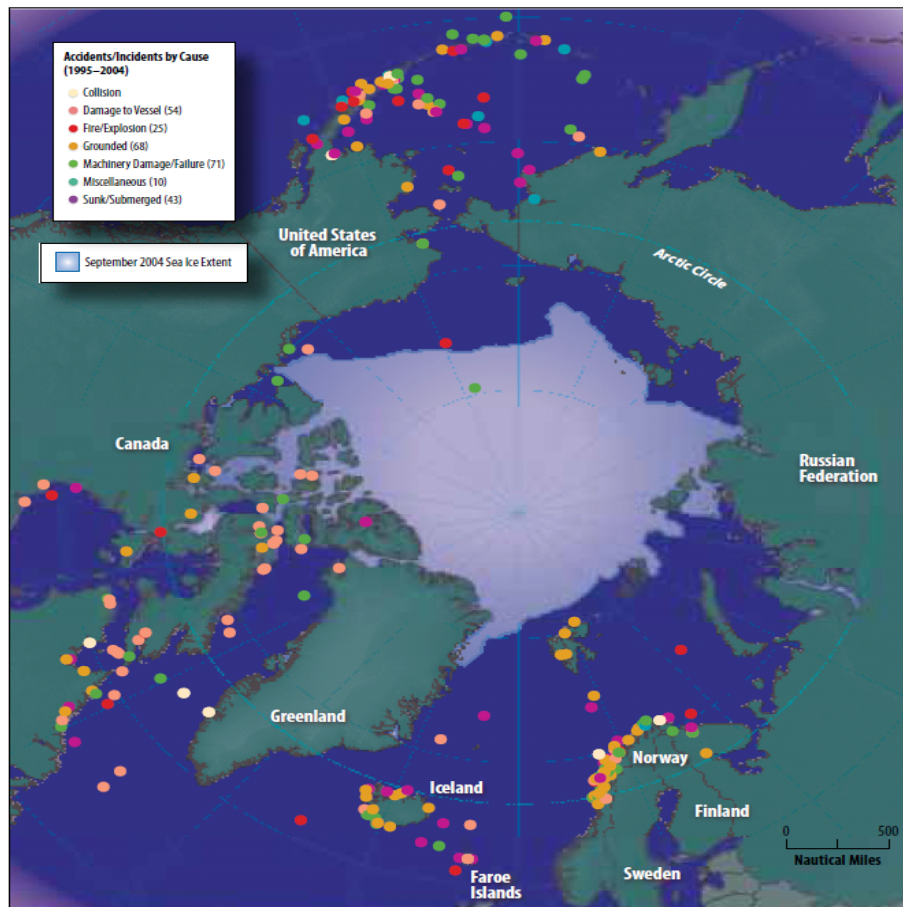
Oil and gas extraction in the Arctic is by no means an easy enterprise as those who wish to enjoy the riches must battle the harsh physical environment, such as severe cold, the presence of sea-ice as well as the alternating light/dark regimes of the High North which make for difficult working conditions. Arctic resource exploitation is made more difficult by the lack of infrastructure in the region which has implications for drilling, extraction and transportation of oil and gas as well as the support and security of working populations. The lack of infrastructure accompanied with the remoteness of the oil and gas fields in the Arctic, presents major problems when it comes to transporting the resources to markets. The most likely solution for transport of the greater part of Arctic resources to markets would be by shipping which raises another set of security issues with regard to transportation safety. Transport ships operating in the Arctic carrying Liquid Natural Gas (LNG) or oil, will require ice-strengthened hulls or ice-breaker services to accompany the ships.[119]

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[118] Ibid, p. 87.

[119] Kristine Offerdal, "High North Energy: Myth and Realitties," in Sven G. Holtsmark and Brooke A. Smith-Windsor, ed., *Security Prospects in the High North: Geostrategic Thaw or Freeze?* (Rome: NATO Defence College, Research Division, 2009), p. 169.

The Arctic has always been a dangerous region for sea-farers and a challenging environment when it comes to search and rescue as well as emergency responses due to the extensive geographic area and the relative low density of activity and response capability. The frequency of shipping incidents and accidents in the Arctic was mapped in the *Arctic Marine and Shipping Assessment 2009 Report*, commissioned by the Arctic Council for the period of 1995-2004. The total amount of incidents has remained relatively constant during that period at a level of approximately 20-30 incidents annually except for the peak year of 1996 when total number of shipping incidents in the Arctic reached 53.[120] The accidents and incidents are categorised by the type of incidents that occurred.

Shipping incidents in the Arctic, as figure 11 shows, are grouped into six categories which are: grounding, collision, damage to vessel, fire/explosion, sunk/submerged and machinery damage/failure. When looking at the geographic distribution of incidents and accidents in the Arctic for this time period, it becomes apparent that they tend to cluster around certain areas such as northern Norway, the coast of Iceland and the Aleutian Islands. Not surprisingly this is consistent with the traffic patterns in the Arctic. The areas which show the concentration of incidents are also the ones where the largest volume of vessel activity takes place.[121]

Apart from the risk associated with extracting and transporting resources to markets, the question about who profits from these resources is important when it comes to the economic/energy security of states. Russia, as already mentioned, is currently by far the biggest producer of Arctic gas and oil with about 80% of all Arctic oil production and 99% of all Arctic gas production, and is likely to maintain its predominant position given its vast reserves within the Russian Arctic. Gazprom and Rosneft, the two biggest oil and gas exporters in Russia play an important role in Russian foreign affairs. The government controlled Gazprom, as has been mentioned before, accounts for near 87% of Russian gas production as well as controlling a sizeable chunk of Russian gas reserves. The company has also a monopoly on gas exports as well as running the integrated trunk pipeline system. Russia's current president, Dmitry Medvedev served as the chairman of Gazprom's board of directors from 2000-2008 and as such took part in running the company and was involved in important international negotiations.[122] The status of Russia as the biggest exporter of Arctic resources along with Gazprom's unique monopoly on exporting Russian gas, means that

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[120] AMSA, *Arctic Marine Shipping Assessment 2009 Report* (Oslo: Arctic Council, 2009), p. 86.
[121] Ibid, p. 87.
[122] Nina Poussenkova, "At the Kremlin's Energy Service," in Gottemoeller, Rose and Tamnes, Rolf, eds., *High North High Stakes*, *Security, Energy, Transport, Environment* (Bergen: Fagbokforlaget, 2008), p. 59.

Russia could be in the position of transforming its resources into a political bargaining chip and thereby being able to exert pressure on states that are economically vulnerable as they lack access to energy resources.

4.4　Societal security

Societal security as defined by Barry Buzan and Ole Wæver concerns the ability of societies to reproduce their traditional patterns of culture, association, language and religion and national identity as well as customs within acceptable conditions development. In a wider sense the concept of societal security can be viewed as centring attention on the sets of threats and risks that lie close to the individual citizen and the workings of society as a whole. In the context of Arctic security the perspective of societal security focuses on the threats and risks to the Arctic societies which increased Arctic resource extraction and shipping may cause, such as development of new settlements and social instability and threats to the individual as well as disease.

Even though the Arctic is often depicted as a pristine wilderness it is important not to forget that for the last 15,000 years or so the Arctic region has been the home of indigenous people which have subsisted for thousands of years by exploiting the resources from sea and land as fishers and hunters.

The number of different indigenous groups within the Arctic and their linguistic groupings is highlighted in figure 12. In Alaska the indigenous peoples of the Arctic include the Inupiat, Yupik, Alutiiq and Athapaskans, in Canada and Greenland they are the Inuit and in Scandinavia the indigenous population is the Saami which also inhabit the Kola Peninsula in north-west Russia. In Siberia the indigenous population include the Chukchi, Even, Evenk, Nenets, Nivkhi, Itelmen and Yukaghir as well as some Yupik living along the far eastern coasts of Siberia.

Figure 12 Demography of indigenous peoples of the Arctic based on linguistic groups[123]

Traditional subsistence activities in the Arctic by its indigenous people centre around the hunting of marine mammals such as seals, whales and walrus, the fishing of salmon, Arctic char, and northern pike as well as other species as well as hunting of land mammals such as caribou, moose and bear. Hunting and the resources it is based on do not only provide the indigenous population with food and economic resources but also provide a fundamental basis for cultural survival and spiritual life as well as being a source of social identity. This is well illustrated by the oral histories, rich mythologies and animal ceremonialism which still prevails within the indigenous societies; contemporary native intellectuals such as artists, poets and writers as well as indigenous people's movements emphasize the strong cultural and spiritual bond between the natural world and people.[124]

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[123] UNEP/GRID-Arendal, Demography of indigenous peoples of the Arctic based on linguistic groups, *UNEP/GRID-Arendal Maps and Graphics Library*, http://maps.grida.no/go/graphic/demography-of-indigenous-peoples-of-the-arctic-based-on-linguistic-groups (Accessed 1 September 2009)

[124] Mark Nuttall, "Indigenous Peoples, Self-determination and the Arctic Environment," in Mark Nuttall and Terry V. Callaghan, eds., *The Arctic, Environment, People, Policy* (Amsterdam: Harwood Academic Publishers, 2000), p. 377.

Arctic indigenous peoples are no strangers to societal threats as they have often been at the receiving end of assimilation projects by the governments of the Arctic littoral states. The rapid transformation of indigenous societies in the 1950s and 1960s was in part fuelled by oil and gas extraction which began after the Second World War in the High North, but also by various welfare projects which can best be described as paternalistic attempts at social engineering. The goal of these projects was to integrate the indigenous population into mainstream society. This involved suppressing the indigenous languages and sending the children into boarding schools where they were infused with foreign language and cultures, and in the process many lost fluency in their own language and as a result were alienated from their families and communities. The end result was that many of these children felt detached and alienated from the culture of their parents but also without a sense of belonging in the society which the governments of the Arctic states were trying to assimilate them into.[125]

The case of the Inuit community in Greenland is sadly rather characteristic of the development of indigenous Arctic communities. The Greenlandic Inuit society in the late 1960s and early 1970s had undergone a tremendous transformation from one which was based primarily on small-scale subsistence hunting and fishing to a modern export oriented economy. The majority of the Inuit population were now living in towns on the west coast which were fast growing, instead of the small settlements which were the traditional way of life. The settlements were organized around kinship and the movement to the towns resulted in the disruption of the kin-based grouping and thereby tore a rift into the social fabric of the Inuit community. The end result was that individuals experienced alienation, economic and social marginality as well as discrimination by the increasing number of Danes that who living in Greenland working as doctors, teachers, construction workers and administrators.[126]

For the last 30-40 years the indigenous communities of the Arctic have campaigned for increased autonomy and they have been quite successful in doing so. In Canada the separate territory of Nunavut in the Canadian Eastern Arctic was inaugurated in April 1999, thereby giving the native Inuit's a self-government within the limits defined by the Canadian constitution. The Inuit in Greenland gained home rule in 1979; by 1992 the home rule government had assumed control over taxation, health, industry, transportation, education and social services, and in 2009 Greenland became a sovereign nation within the Kingdom of Denmark.

[125] Yvon Csonka and Peter Schweitzer, "Societies and Cultures: Change and Persistence," *ADHR (Arctic Human Develpoment Report) 2004. Akureyri: Stefansson Arctic Institute*, p. 48-49.
[126] Mark Nuttall, "Indigenous Peoples, Self-determination and the Arctic Environment," in Mark Nuttall and Terry V. Callaghan, eds., *The Arctic, Environment, People, Policy* (Amsterdam: Harwood Academic Publishers, 2000), p. 385.

With the founding of the Arctic Council in 1996, the indigenous people of the Arctic region gained, through permanent participant status, access to an important forum on to which it is possible to bring attention to matters that are of social and political concerns to the indigenous communities of the Arctic region.

Increased Arctic oil and gas extraction and to extend increased Arctic shipping will involve development of new settlements, installations and increased activity in the High North. The relevance of this for societal security is that oil and gas activities are drivers of social and economic change, and as such can be a force for good or bad for the indigenous populations of the High North. Increased economic activity means more revenues to improve public services and raise the standard of living, but on the other hand the increased oil and gas activities may create further alienation and dislocation - which the indigenous populations have seen much of already - because of the rapid change which these activities bring to the communities. Increased human activity in the High North may also cause greater exposure to epidemic disease by the indigenous population as workers from outside the region will be brought in to work on oil and gas projects.[127] Increased Arctic resource extraction as well as increased Arctic shipping will increase the possibility of an accident occurring with implications for the wellbeing and survival of indigenous communities. The effects of the *Exxon Valdez* oil-spill in 1989 included for example psychological damage to the residents of the region as the relationship between the indigenous peoples and nature was disrupted. People were afraid to eat traditional foods because of the fear of tainting by oil and some people suffered from post-traumatic stress disorder as well as generalised anxiety disorder.[128]

In a wider sense the implication for societal security is that increased activity in the Arctic will increase the risk of accidents which highlights the importance of installation-safety issues while increased Arctic shipping increases the likelihood of an accident occurring that would threaten the lives of those aboard.

4.5 Environmental security

Environmental security, as mentioned earlier; concerns the maintenance of the local and the planetary biosphere as the essential support system on which all other human enterprises depend. The observed climate change, along with increased activity in the Arctic region, brings risks and threats to the air and sea and the animals and plants that live in the Arctic.

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[127] AMAP, *Arctic Oil and Gas 2007* (Oslo: Arctic Monitoring and Assessment Programme, 2008), p. 28.
[128] Ibid, p. 28.

These threats and risks will also have an impact on the human environment as it is directly influenced by changes in the local biosphere.

The Arctic region is one of the areas which have been affected the most by climate change: in recent decades the temperature in the Arctic has risen as much as 3.5˚C in eastern Siberia, central Alaska and north-western Canada.[129] Various persistent organic pollutants (POPs), and other contaminants such as heavy metal emissions are transported by air to the Arctic were they are deposited in the ice through precipitation.

Figure13 Pathways of contaminants to the Arctic[130]

Contaminants are also carried to the Arctic by ocean currents as well as river discharges from Russian rivers, although much more slowly than by air currents. Studies carried out in the late 1990s showed that POPs were present in parts of the Arctic devoid of human activities, thereby confirming the suspicion that the northern polar region acted as a sink for pollutants that had been transported over long distances. Many of these POPs such as PCBS are toxic and can harm both wildlife and people when they reach levels that are high enough in the environment.

In 2001 the Stockholm Convention was signed and it came into effect in May 2004 after ratification by 153 countries by March 2008 although the U.S. and Russia have yet to ratify the convention. The Stockholm Convention is an international legally binding instrument for managing POPs on a global scale. Currently there are twelve POPs governed by the Convention while further eleven have been proposed for addition to that list, and nine

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[129] AMAP, *Arctic Pollution 2009* (Oslo: Arctic Monitoring and Assessment Programme, 2009), p. 2.
[130] UNEP/GRID-Arendal, Pathways of contaminants to the Arctic, *UNEP/GRID-Arendal Maps and Graphics Library*, http://maps.grida.no/go/graphic/pathways_of_contaminants_to_the_arctic (Accessed 3 September 2009)

of these eleven have been found to meet the definition of persistent organic pollutants. Two protocols were developed under the Aarhus Convention on the Long-Range Transport of Air Pollution, which were both signed in 1998 and took effect in 2003. One of these protocols addresses heavy metals while the other covers sixteen chemicals. Their purpose is to identify bans and restrictions on emission of POPs and metals as well as establishing codes of best practice.[131]

Contaminant levels in the Arctic wildlife such as whale, seals, birds and fish are in most cases lower than in more industrialized and densely populated regions. Even though the contamination is lower in the Arctic the effect on the indigenous population is higher, due to the fact that the Arctic indigenous people are more exposed to contaminants through their traditional diet of Arctic wildlife. POPS and other contaminants such as mercury become stored up in Arctic wildlife which in turn are carried over into people by the consumption of contaminated animals. Traditional diet is the single most important predictor of containment exposure in the Arctic populations. This link is further established by the higher levels of POPS and metals in the bloodstream of indigenous people than in neighbouring non-indigenous local communities.[132]

Indigenous groups within the Arctic have different traditional dietary habits and therefore the indigenous groups are subject to varying exposure. Inland dwelling communities whose traditional diet consists of reindeer/caribou and freshwater fish have lower levels of contaminants in their bloodstream than those that live in coastal communities and whose traditional diet is mostly based on marine mammals and some bird species. Research findings of the AMAP, *Human Health in the Arctic* report which was published by the Arctic Council in 2009, indicated that food from marine mammals carries the highest levels of contamination but other marine foods such as Greenland shark, burbot, liver from Greenland halibut and birds such as fulmars and marine gulls, as well as their eggs, have a relatively high levels of contaminants.[133]

Figure 14 shows the percentage of samples among Arctic residents which exceeded Canadian health guidelines on the amount of PCBS in the bloodstream. It is interesting to note the difference between the samples taken from indigenous people and those taken from non-indigenous people in Iceland, the Faeroe Islands and non-indigenous settlements in the

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[131] AMAP, *Arctic Pollution 2009* (Oslo: Arctic Monitoring and Assessment Programme, 2009), p. 37.
[132] AMAP, *Human Health in the Arctic* (Oslo: Arctic Monitoring and Assessment Programme, 2009), p. 22.
[133] Ibid, p. 22.

Russian Arctic. The non-indigenous samples show much lower PCBS concentration within the bloodstream than those taken from indigenous peoples.

Figure 14 PCBS in the blood of Arctic residents[134]

Source: Arctic monitoring and Assessment Programme (AMAP), 2003. AMAP Assessment 2002: Human Health in the Arctic.
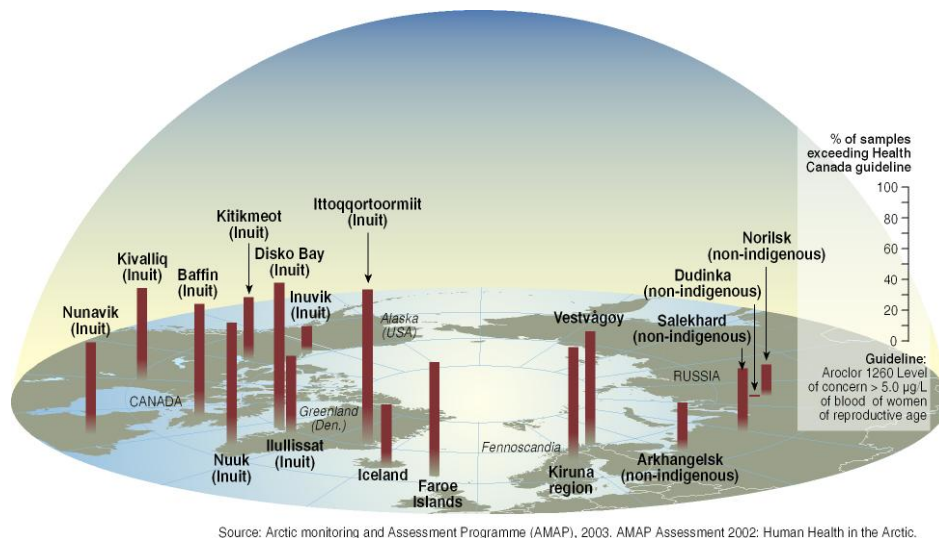
The oil and gas activities in the High north can affect the natural environment and the people of the Arctic in a number of ways: such as through physical disturbance of the environment and by toxicological effects on the environment and people through oil spillage on land or sea. The greatest effect of oil and gas activities in the Arctic on land so far has been physical disturbance as the gas and oil extraction has left physical footprints such as roads, pipe networks, gravel pads and airstrips. Migrating reindeer can be affected by debris and other material left on the land while construction usually requires the use of large amounts of gravel which is often extracted from riverbeds or deposits, in turn disturbing freshwater habitats and leaving scars on the tundra. Infrastructure in the Arctic can also affect a large area as vegetation can be affected by dust from roads a few hundred meters down-wind. As animals such as caribou and reindeer are known to change behaviour close to pipelines and roads, especially in areas with intensive industry activity the proximity of production facilities can affect reindeer herders and hunters by forcing the animals away from their preferred calving and feeding areas and usual migration paths.[135]

Another environmental concern for the land area is the risk of an oil-spill through pipeline leaks or other accidents which may occur. A large oil spill on land could have devastating effect on the fauna and wildlife of the affected area. A number of oil spill

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[134] UNEP/GRID-Arendal, PCBs in the blood of Arctic residents, *UNEP/GRID-Arendal Maps and Graphics Library*, http://maps.grida.no/go/graphic/pcbs_in_the_blood_of_arctic_residents (Accessed 3 September 2009).
[135] AMAP, *Arctic Oil and Gas 2007* (Oslo: Arctic Monitoring and Assessment Programme, 2007), p. 22.

experiments carried out in Alaska, Greenland and Canada showed that plants are directly affected by the spilled oil. Many plants simply die upon direct contact and in some instances the oil seeps into the root zone where it can continue to affect the plants long after the accident. Another alarming aspect of such an accident is that the most toxic components of the spilled oil can remain in the soil for decades and do not degrade unless they come into direct contact with the atmosphere.[136]

In the Arctic marine environment the risks associated with oil-spills are considered to be the largest environmental threats, as small diffuse release of oil can have substantial impact. Marine spills, as opposed to land spills are difficult to contain and may spread over vast areas, hundreds if not thousands of kilometres. Tanker routes and near-shore facilities are a greater risk to coastal damage than offshore facilities from which spills may disperse more widely in the ocean.[137]

The effect of an oil-spill on the wildlife such as birds, fish and sea mammals can be quite devastating. Birds can pick up oil on their breast feathers which is then transported to the nest and affect the eggs which are very sensitive to oil toxicity, as well as harming fledgling birds in the nest. Physical coating by spilled oil has the most impact on wildlife as it reduces the insulating qualities of feathers and furs so that that the affected animals can die of hypothermia. Animals can also ingest oil while licking their fur or preening their feathers which can lead to biological effects in both the short- and the long-term or even death. Fish tainted by oil has lead to closing of fisheries, decline in consumption of fish and reduced sales of fish. An oil spill could severely affect some northern fish species such as navaga, saffron cod, arctic cod and polar cod which spawn under the sea during wintertime. During spring the eggs hatch when plankton blooms begin and the larvae have food to eat, and an oil spill in such spawning areas could severely reduce that year's hatching.[138]

Other ship-based disturbances to the Arctic environment include: environmental impacts and disturbances from cruise ships, sound and noise disturbances as well as the introduction of invasive species. Cruise ship activity, as has been mentioned earlier is increasing in the Arctic and with it are associated risks and threats. There are numerous ways in which passenger ships can cause harm in the fragile Arctic environment. Among them are emissions of substances to the local air and sea, sinking and groundings and the inappropriate behaviour of passengers ashore. While at sea the average passenger ship releases a total of

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[136] Ibid, p. 23.
[137] Ibid, p. 24.
[138] Ibid, p. 25.

532,000 to 789,000 litres of sewage, 3,8 million litres of wastewaters from sinks, showers and laundries each week as well as considerable amount of solid waste.[139] The introduction and spread of alien species into foreign habitat can have ecological, economic as well as health and environmental impacts. There are essentially three methods by which alien species can be carried into foreign areas, in ballast water, through hull fouling which means contamination by organisms clinging to ships hull and in the cargo of ships as unwanted organisms can be entrained in the cargo.[140]

A frightening possible threat to the Arctic environment is that of radiation. This risk is especially acute in the Barents Sea because of Russian spent nuclear fuel and radioactive waste from nuclear powered ships of the northern fleet which is stored on the Kola Peninsula. The storage sites at Andreeva Bay and Gremikha on the Kola Peninsula have been notorious for lack of maintenance which has resulted in the leakage of radioactive water.[141] A new concern regarding radioactive threats in the Arctic is directly connected with climate change as the thawing of permafrost is likely to cause ground movements which threaten the structural integrity of buildings. The nuclear power plant of Bilibano is of specific concern as it is situated in a permafrost area and any ground movements could lead to the release of radioactive material into the environment. Another development which increases the risk of radioactive contamination is the Russian plan of developing floating nuclear power plants for use in the Arctic region. The idea is that such plants could be used to supply energy for oil and gas extraction in the Barents Sea.[142]

The different sectors of security and the various threats and risks which are associated with them do have interconnections with each other. Increased military presence in the region by one state shows commitments to its interests in the area, which in turn can enhance the states ability to exert pressure on and influence another country, which of course undermines the political security of the receiving state. One of the more important links between sectors of security is that which lies between the environment and the dimensions of economy and societal security. Manmade effects on the environment can for example damage the economy of Arctic littoral states by pollution of the sea and thereby damage rich fishing grounds. While environmental threats can threaten indigenous communities within the Arctic region through contaminants and the disruption of traditional living which centres on hunting and fishing the Arctic wildlife.

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[139] AMSA, *Arctic Marine Shipping Assessment 2009 Report* (Oslo: Arctic Marine Shipping Assessment, 2009), p. 137.
[140] Ibid, p. 150.
[141] AMAP, *Arctic Pollution 2009* (Oslo: Arctic Monitoring and Assessment Programme, 2009), p. 71.
[142] Ibid, p. 75.

5 What changes are going to affect Iceland and why?

Iceland has a singular position among other states in the sense that it does not have armed forces or a Ministry of Defense. The Ministry of Foreign Affairs has the executive power in matters of foreign affairs as well as those that pertain to matters of security and defense, according to Icelandic laws: although other branches of government are also involved such as the judiciary, the police, Coast Guard and the department of Public Security (Almannavarnir) at the Ministry of Justice. The Ministry of Foreign Affairs is also responsible for supervising and coordinating activities related to international cooperation in matters of security and defense.

The security interests of Iceland during the cold war were clearly defined as a NATO outpost lying on the demarcation line between U.S. and Soviet spheres of influence. The collapse of the Soviet Union and the end of the cold war marked a decisive point in international affairs. As the U.S. reached the conclusion that the strategic importance of the North Atlantic had diminished dramatically, and began to reduce its presence gradually in Iceland over the coming years, the Icelandic authorities were left with the question of what were the security and defence interests of Iceland in a changing world?

The Icelandic authorities seemed to have some difficulties in adjusting to the changed world as during the 1990s and up to 2006 they always stressed the importance of keeping a U.S. military presence in Iceland without ever actually carrying out an assessment of the country's security and defence needs.[143] In 1999 a report was issued by the Icelandic Ministry of Foreign Affairs titled: "*The Security and Defence of Iceland at the Turn of the Century*". The authors of the report acknowledged the fact that the concept of "security" has undergone changes since the days of the cold war as it has started to encompass more than just traditional military security. Or as the report put it: "…Because of changes in the international system, the concept of security has gained a more complex meaning as actions aimed at safeguarding the security of states are increasingly interwoven with foreign affairs in general such as trade, human rights and disarmament."[144] Permanent Icelandic security interests, according to the report, are determined by the geographic position of Iceland. Iceland's situation in the North Atlantic at the intersection of the sea-route between North-America and Europe should be viewed as creating permanent defence interests since the resources of the sea as well as the

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[143] See for example Valur Ingimundarson, "Öryggissamfélag Íslands og Bandaríkjanna, 1991-2006 frá óvissu til upplausnar," in Valur Ingimundarson, ed., *Uppbrot Hugmyndakerfis* (Reykjavík: Hið íslenska bókmenntafélag, 2008)
[144] *The Security and Defence of Iceland at the Turn of the Century*, A report by the Ministry of Foreign Affairs (Feb. 1999) http://www.utanrikisraduneyti.is/utanrikismal/varnar-og oryggismal/ (Accessed 20 August 2009), p. 9.

sea-lanes across the Atlantic have played an integral role in the prosperity of Iceland.[145] The report also argued that the lack of defence in any country puts its security as well as its neighbours at risk, and stated the authorities' view that minimum defences by land, sea and air are a vital necessity to satisfy the security and defence needs of Iceland.[146] This stance apparently weighed for little with the U.S. which consistently reduced its military presence in Iceland up to the closure of the Keflavik naval base in the autumn of 2006.

In the autumn of 2007 the then Foreign Minister of Iceland, Ingibjörg Sólrún Gísladóttir, commissioned a risk assessment report for Iceland, which was published in March 2009. The report can be viewed as a certain breakthrough, as it approached the concept of security as not only consisting of military security but also as encompassing environmental dangers, pollution, disease pandemics, and natural catastrophes as well as defence against terrorism.[147] This was a stark break from the static emphasis on the importance of credible military defences on land, sea and air as reflected in the report on the security and defence of Iceland published in 1999. The focus of the new report was to assess risks and threats which could cause existential threats to the population of Iceland, as well as bringing attention to organised crime and human trafficking which can undermine the security of the individual as well as society as a whole. The report also touches on threats and vulnerabilities related to the infrastructure of Iceland such as the security of the Icelandic power grid, communications and IT, as well as shipping security and pollution control.

The new security assessment report is closely linked to the developments in the High North. A chapter is devoted to this aspect and its concluding remarks are that a "…Possible Arctic race for resources, the effects of global climate change and the interconnectedness of energy security, shipping security and environmental security will have direct consequences for Icelandic security and defence matters."[148]

When assessing what changes in the High North are going to affect Iceland, the sectoral security approach is a valuable tool, as it allows an independent analysis of each sector to be combined thereby offering a multidimensional approach to security. Some dimensions will pertain to traditional "hard" security, that is defence of the state, while other dimensions of "soft" security focus more on the security of the individual and society, such as the concepts of societal and environmental security. The sectoral approach also sheds light on the interconnectedness of different sectors of security. Environmental threats which could

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[145] Ibid, p. 8-9.
[146] Ibid, p. 9.
[147] Áhættumatsskýrsla fyrir Ísland: Hnattrænir, samfélagslegir og hernaðarlegir þættir (Utanríkisráðuneytið, 2009), p. 5.
[148] Ibid, p. 52.

damage the marine life in the sea around Iceland would for example have direct implications for the economic security of the country as its economy is highly dependent on fisheries. In the context of the changes occurring in the High North, the relevance of different sectors of security varies as some have more pressing importance for Iceland than others. The following discussion will recall the dimensions of security explored in the previous section and consider their implications for Iceland.

5.1 Military security

Military conflict in the Arctic seems highly unlikely even though there are no overarching legal or political structures in the region to mediate political disagreements over resources or sea-lanes. The Arctic resources that will be tapped by the Arctic littoral states in the foreseeable future are well within the specific 200 nautical mile Economic Exclusion Zones (EEZ's) which reduces the possibility of an Arctic race to resources. Even though a mad dash for Arctic resources is not imminent, there are nevertheless some delimitation disputes between Arctic states in possibly resource rich areas that have not been resolved. Norway and Russia are at odds over delimitation in the Barents Sea and the status of Svalbard. Denmark and Canada have yet to settle their disagreement of ownership over the small territory of Hans Island while Canada and the U.S. disagree over delimitation between the states in the Beufort Sea as well as the legal status of the Northwest Passage.

Russia is the only non-NATO Arctic littoral state and therefore it is reasonable to assume that the Arctic dispute between Norway and Russia is the only one that could have the ingredients for escalating into some form of armed clash. Military build-up and muscle-flexing in the region, with the intent of asserting a claim, can translate into a threat to other states as military capability can be used either for defensive or offensive purposes. This risk would be heightened by Russia's sense of encirclement and distrust of NATO and the U.S., especially if it views the presence of NATO through the eyes of realism, i.e. as a tool in the hands of a power-maximising state whose gains can only be at the expense of Russia.

In the unlikely event of a tension escalating into a military incident then Iceland would affected, politically as a NATO member but it might also face physical dangers from the hostilities themselves or from a sudden surge of air and sea activity for monitoring and reinforcement purposes in its vicinity. Iceland could also be affected by associated non-military hostile action such as cyber-warfare, trade and travel blocks and disturbance of fisheries.

5.2 Political security

The Arctic states do not face internal insurrection or breakdown as do many states whose political security is threatened. The main issue of political security in the Arctic relates to the lack or vagueness of a system for guaranteeing orderly conduct of relations among actors as well as fairness for the smaller and more peripheral as well as the large and central players.

There is no single treaty in the Arctic as is the case in the Antarctic, and the closest thing to overarching legal regimes are on the one hand the United Nations Convention on the law of the Seas (UNCLOS) and on the other the Arctic Council which uses "soft" power of consensus as its decisions are not legally binding for member states. The Arctic Council addresses the problems of environmental pollution and the effects of climate change on human settlements. This absence of an overarching Arctic regime to deal with issues such as resource extraction and Arctic shipping might allow the larger states to bully the smaller ones into accepting whatever arrangements on these issues best favour themselves.

The possibility of the large states dictating the arrangements that suit them the best is very important for Iceland, as it may have interests which it is unable to further and defend if the large states are not constrained by legal frameworks where the small states have an equal standing and a voice. Iceland as other states must engage within the institutional frameworks that are in place if it wants to have its voice heard and be able to guard its interests in the Arctic region. The gathering of the Arctic Council at Ilulissat in the spring of 2008 was worrying in the sense that Iceland, Finland and Sweden were not invited on the grounds that they have fewer concrete interests in the Arctic Ocean than the other Arctic Council members. This raises the point that the international system is a self-help system and within that system the states must assert their own interests as no one does it for them.

5.3 Economic security

The economic and the environmental dimensions of security in the Arctic region are closely linked together from the perspective of Iceland. Increased Arctic shipping because of Arctic resource extraction will invariably have implications for the economic security of Iceland as the oil and natural gas that will be shipped from the Barents Sea to markets in North-America will have to go through the Icelandic 200 nautical mile Economic Exclusion Zone. Shipments of natural gas from the Melkøya gas refinery outside Hammerfest in northern Norway have

already begun and by 2015 it is estimated that up to 50 million tons of oil will go through the Icelandic Economic Exclusion Zone in a total of 500 passages of fully loaded tankers.[149]

Increased oil and gas shipping through the Icelandic EEZ would increases the risk of a spillage whether caused by accident or intentional sabotage. What is especially worrying to the economic dimension of security is that the economy of Iceland is highly dependent on fishing and the rich fisheries that are within the Icelandic EEZ.[150] Any spillage that could damage the fisheries and taint the fish stock would pose a threat to the economy of Iceland. Iceland does not have at the moment preparation measures to deal with a large oil spill outside harbors and there is currently no Icelandic ship that is capable of pulling a large tanker to safety in the case of a malfunction or if a tanker should run aground. There is currently one ship under construction although three ships are believed to be needed to provide adequate safety response.[151] On the other side, there are some prospects of Iceland's own economy profiting from the construction of storage, service or trans-shipment facilities on its territory and even from discovery of oil and gas in its own EEZ: but such developments would need to be handled (in the light of the bitter experiences of 2008-9) in a way that ensured their financial and economic viability, adequate Icelandic control, a fair share of profits for Iceland, and a non-distorting, sustainable impact on the Icelandic economy, society and environment overall.

5.4 Societal security

Societal threats and vulnerabilities do not affect Iceland to the same extent as the less developed indigenous communities in the Arctic region. Increased activity in the Arctic would not bring threats to the ability of the Icelandic society to reproduce the traditional pattern of culture, association, language and religion and national identity, as it does risk doing for the indigenous communities of the Arctic.

Societal society in a wider sense can also be viewed as centring attention on the sets of threats and risks that lie close to the individual citizen and the working of society as a whole. Oil spillage could for instance contaminate the marine food source which would be detrimental to people's health as well as putting the food safety of Iceland at risk. Increased

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[149] Valur Ingimundarson, "Iceland's Security Policy and Geopolitics in the North," in Kjetil Skogrand, ed., *Emerging from the Frost, Security in the 21ˢᵗ Century Arctic* (Oslo: Norwegian Institute for Defence Studies, 2008), p. 85.
[150] Sea products accounted for 41% of Iceland's export earnings in 2007. The Icelandic Bureau of Statistics. http://www.hagstofa.is/Pages/982 (Accessed 10 September 2009).
[151] Áhættumatsskýrsla fyrir Ísland: Hnattrænir, samfélagslegir og hernaðarlegir þættir (Utanríkisráðuneytið, 2009), p. 99.

Arctic shipping is also a concern as well. In a short period of time the number of cruise ships visiting Iceland has risen from 20 to 80 and the number of passengers has grown from 10,000 to approximately 60,000 passengers. Emergency response and capacity in Iceland and Greenland are currently not able to deal with an accident in case it would be necessary to rescue hundreds or even thousands of people at risk at sea.[152] Iceland might thus face problems both in terms of its own people's way of life, and the blame it could face for not ensuring the security of all humans travelling in and through its area. A further question is what impact the increased human activity would have on current disease patterns and their impact within Iceland (people, animals and crops).

5.5 Environmental security

The containment levels of persistent organic pollutants (POPs) in the Arctic region are lower in most cases than in more industrialised and more densely populated regions. The effects of these pollutants on the people of the Arctic are nevertheless higher because of the importance which traditional diet has among indigenous people. As mentioned before, the concentration of these contaminants in the blood of Icelanders is among the lowest in the Arctic region and therefore not a reason to cause concern. The main environmental threat to Iceland as a consequence of increased activity in the High North concerns the risk of a spillage from a tanker close to the country or even further north in the Greenland Sea. A large oil spillage from example a sunken tanker could have tremendous effects on the marine biology. A large spillage of 10,000 tons or more during the spawning season could cause considerable damage in eggs and larva on an area of a few hundred km².[153]

Increased Arctic tourist shipping may also be of concern as the number of cruise ships in the Arctic is consistently increasing and with that comes a number of threats which have been mentioned before, such as the introduction of alien species into the Arctic region, pollution from sewage and wastewater as well as from solid waste.

The issue of a possible nuclear radiation in the High North is a frightening possibility whose relevance will only increase if the idea of floating nuclear power plants as a power source to oil and gas extraction projects becomes a reality.

The impact of all such contingencies on Iceland's environment would clearly be negative but it is especially hard to predict because we could expect it to be combined with

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[152] Ibid, p. 100.
[153] Fyrir Stafni Haf, a report by the Ministry of Foreign Affairs on opportunities related to northern shipping (Ministry of Foreign Affairs, 2005).

the local effects of global climate change. These are bound to bring changes for instance in sea currents, air circulation and weather conditions and the results could include higher frequency of extreme weather and certain kinds of natural disasters.

Military threats in the Arctic region seem rather unlikely while the dimensions of societal, economic and environmental threats, in the case of Iceland are all interlinked. Increased shipping in the High North, whether because of Arctic resource extraction or increased traffic by cruise liners, will put increasing pressure on Iceland to be able to monitor shipping traffic in the North Atlantic as well as having the capacitiy to be able to respond to those accidents that may occur. The dimension of political security can possibly gain more significance in the near future. Since the Arctic does not have any overarching legal structure as the Antarctic, the risk remains that countries on the periphery will be excluded from decision making in matters regarding the Arctic,if, as mentioned before, the larger states are not restrained by legal frameworks that give the smaller states an equal standing and a voice as the larger countries.

6 Cooperation in the High North

The purpose of this chapter is to analyze how Iceland can respond to and counteract those threats and risks in the High North that have just been identified as affecting it especially. Many of them are problems that Iceland clearly is not able to solve by it self and therefore it needs to cooperate with external actors to meet these challenges. The focus in the following discussion will be on the states and institutions that seem most suitable to fill these identified gaps in regard to different dimensions of security, and the threats and risks that may face Iceland as a result.

6.1 The Nordic Dimension: Denmark and Norway

Denmark and Norway have various interests in the High North which make them ideal partners for the Iceland to cooperate with. Denmark is responsible for the defence of Greenland and the Faroese Islands, as they are a part of the Kingdom of Denmark, although Greenland has recently become a sovereign nation and opened up a prospect of full independence. Denmark does so by maintaining a military presence in the region as well as signing a defence agreement with the U.S. in 1951, whereby the U.S. became responsible for defending Greenland. The U.S. currently maintains one base in Greenland; at Thule which plays a part in the U.S. missile-defence system.

The Danish maintain a command centre close to Narsarssuaq, in Southern-Greenland, as well as two minor outposts: The Daneborg and Station Nord. The Danish presence in Greenland consists of one large Coast Guard vessel with a helipad as well as three smaller vessels which also serve as ice-breakers and a surveillance aeroplane. In the Faroese Island there is one base in Mjørkadal at Straumsey, were a NATO-radar-surveillance station has been operated since 1963. On average there is one large Coast Guard vessel with a helipad and another smaller vessel tasked with surveillance within the Faroese 200 nautical mile economic exclusion zone.[154]

Norway has great interests in the High North as the future of the Norwegian energy sector is viewed by many to lie in the High North[155] and that region has been identified by the government as a high strategic priority. The Norwegian 200 nautical mile exclusion zone extends as well around Jan Mayen and Svalbard and it is the role of the Norwegian Coast

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[154] Fréttablaðið 11. nóvember 2006, Öryggisleit austur yfir haf.
[155] See for example Jakup M. Godzimirski," High Stakes in the High North. Russian-Norwegian Relations and their Implication for the EU," *Russie.Nei.Vision*, No. 25, December 2007. And "*Norwegian Defence 2008*," A report by the Norwegian Ministry of Defense.

Guard to monitor this vast sea area. To do so the Norwegian Coast Guard has at its disposal 21 coast guard vessel as well as six helicopters and two surveillance aircrafts.

Norwegian officials have been quite open towards cooperation with Iceland on matters of defence and security. Shortly after the departure of the U.S. from Iceland and the closure of the NATO naval base, the assistant Norwegian Minister of Defence, Espen Barth Eide, expressed the view in an interview with the Icelandic newspaper *Morgunblaðið* that it would be in the common interests of Iceland and Norway that a certain defense capability should be present at Iceland. He cited Iceland's strategic position at the transit route of liquid natural gas to the U.S and the fact that the countries share in all fundamentals the same interests in the northern seas, even though they may differ from time to time on various issues.[156] Iceland and Norway intend to cooperate on resource extraction from the so called Dragon Area, North-east of Iceland and the dispute between the countries regarding fishing rights in the so-called Smugan Area has been resolved.[157]

On the 26 of April 2007 the Foreign Ministers of Iceland and Norway signed a bilateral agreement on cooperation in matters of security and defense. Later that same day the Foreign Ministers of Iceland and Denmark signed a mutual declaration on further cooperation in the fields of security, defense and public safety. The purpose of the agreement with Norway and the Icelandic-Danish declaration was according to the Icelandic Ministry of Foreign Affairs to confirm the existence of common and mutual future interests regarding security issues in the North Atlantic, interests that could be the basis of further cooperation and coordination that would result in further security preparedness.[158]

The agreement between Iceland and Norway begins with the words that its goal is to confirm the political will of Iceland and Norway to widen cooperation between these states during peacetime in matters regarding defense, preparedness, safety and rescue in the North Atlantic. The increased cooperation between Iceland and Norway is based on the North Atlantic Treaty and the NATO membership of Iceland and Norway. The agreement between these states does not affect or concern the commitments that they have towards NATO.[159] The fields the agreement encompasses are:

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[156] Morgunblaðið 19. nóvember 2006, Mjallhvít er örlagavaldur í öryggismálum.

[157] Björn Bjarnason," Deja-vu at the North-Pole. Perspectives on Jurisdiction and Military Presence," in Kjetil Skogrand, ed., *Emerging from the Frost, Security in the 21ˢᵗ Century Arctic* (Oslo: Norwegian Institute for Defence Studies, 2008), p. 24-25.

[158] Press release from the Ministry of Foreign Affairs. http://utanrikisraduneyti.is/frettaefni/frettatilkynningar/nr/3621 (Accessed 10 September 2009).

[159] Agreement between Iceland and Norway on increased Cooperation in Security and Defense Matters. http://utanrikisraduneyti.is/media/Frettatilkynning/MOU_-_undirritun.pdf (Accessed 10 September 2009).

1) Information flow and education: Consultation will be held between public officials of the appropriate Ministries every six months. The relations between police and security departments will be strengthened. Norway intends to contribute to the education and training of Icelandic personnel in the fields of flight supervision, intelligence gathering and matters of security;

2) Search-and-rescue as well as public preparedness: Norway and Iceland intend to prepare agreements between appropriate Ministries, on among other things, sharing of information regarding surveillance with shipping, search-and-rescue and possible cooperation on equipment accusation as well as preparedness in the sphere of public safety;

3) Defence and security: Iceland and Norway, given consideration to mutual needs, intend to increase visits and exercises of special forces, naval and coast guard vessels, Norwegian fighter planes and surveillance aeroplanes to Iceland and in Icelandic sea and air space;

4) Planning and operations: the Icelandic and Norwegian authorities have set themselves the goal of increasing cooperation on planning and operations of air and naval forces in the sea around Iceland.[160]

The agreement also stipulates that Iceland and Norway intend to prepare a detailed technical agreement between the countries regarding necessary exercises in Iceland. The agreement between Iceland and Norway can be terminated by either party with a four month notice.

The joint declaration signed by Iceland and Denmark confirms the mutual political will of Iceland and Denmark to cooperate on matters of security and defence as well as public safety in the North-Atlantic area. Such cooperation, as is the case between Iceland and Norway, is based on the North Atlantic Treaty, the NATO membership of both countries and the obligations that are derived therefrom.[161]

The main goal of Iceland and Denmark as stated in the declaration is to promote stability and security in the North Atlantic. Both countries have common interests in the area which they intend to guard by their increased cooperation and this will be developed further by cooperating with other NATO member states.[162] Iceland and Denmark intend to fulfil that

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[160] Ibid.
[161] Mutual Declaration of Iceland and Denmark on Further Cooperation in the Fields of Security. http://utanrikisraduneyti.is/media/Frettatilkynning/Yfirlysing_Islands_og_Danmerkur.pdf (Accessed 10 September 2009).
[162] Ibid.

goal through consultation between Icelandic and Danish officials every six months on matters that concern mutual Icelandic and Danish interests in the fields of security, defence and public safety. Danish authorities intend to contribute to the training of Icelandic civilian staff in specific fields of expertise, although the declaration states that every specific instance of such contribution must be negotiated individually. Icelandic and Danish authorities will also explore the possibility of increasing cooperation between the two countries in international military and civilian operations and exercises, within the framework of NATO. The declaration also states that Iceland and Denmark should explore in a systematic way opportunities for mutual visits and participation in civilian and military training and exercises with Danish and Icelandic aeroplanes, helicopters, naval and coast guard vessels as well as special forces within the framework of NATO.[163]

The increased cooperation between Iceland and its Nordic partners, Norway and Denmark, was a response by the Icelandic authorities to compensate for its own vulnerabilities. Not only had Iceland lost the kind of minimum defense by land, sea and air that had been stressed as being important in earlier reports, but it had also lost the U.S. navy helicopter rescue unit which had been stationed at Keflavik naval base. The agreement with Norway and the mutual declaration of Iceland and Denmark are intended to fill the void left by the departure of the U.S. in the autumn of 2006.

These are bilateral arrangements: but wider Nordic cooperation on foreign and security policy may possibly be deepened in the near future as there seems to be willingness on behalf of the group of five Nordic states to increase such cooperation. A report presented at a meeting of Nordic foreign ministers in Oslo on 9 February 2009 by the former Norwegian Prime Minister; Thorvald Stoltenberg, can be viewed as an innovative approach to closer foreign and security policy cooperation between the Nordic states. The report's proposals which are 13 in total, encompassing six areas of possible cooperation between the Nordic states, put considerable emphasis on the importance of the High North and on the threats and risks associated with climate change and the increased strategic importance of the region. Proposals for increased cooperation to counter these threats and risks include Nordic participation (including Finland and Sweden) in air surveillance in the Icelandic aerospace, a joint Nordic maritime monitoring system, a satellite system and a Nordic maritime response force as well as a Nordic amphibious unit.[164]

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[163] Ibid.
[164] Nordic Cooperation on Foreign and Security Policy, proposals presented to the extraordinary meeting of Nordic foreign ministers in Oslo on 9 February 2009, p. 19.

In light of Iceland's location in an area that is likely to attract increasing attention, the report recommends that the Nordic countries should shoulder a share of the responsibility for air surveillance and air patrolling over Iceland. Such involvement is envisioned as taking place in three phases; the Nordic states could begin with deploying personnel to the Keflavik base to participate in the regular Northern Viking exercises, followed by taking on responsibility of some of the air surveillance in the Icelandic aerospace which is organized by NATO. Nordic cooperation on aerospace surveillance could thus become an example of cooperation between NATO member states and partner countries that have signed Partnership for Peace (PfP) – in this case, Sweden and Finland.

What has the most relevance for security in the High North is the proposed Nordic maritime monitoring system as well as the Nordic maritime response force. The maritime monitoring system should be civilian in principle and be designed for monitoring the marine environment as well as pollution and civilian traffic. The system could have two pillars, one for the North Atlantic, the Barents Sea as well as parts of the Arctic Ocean. There are certain limitations to the current Nordic systems of monitoring and early warning at sea. The responsibility for environmental and maritime monitoring is split between various national institutions and therefore it can be difficult to gain a satisfactory overview of a situation when an incident occurs. This is primarily because practices for sharing data vary, and because of the practical limitations of computer systems at national level as well as lack of information exchange and coordination between the Nordic countries, especially in a civilian context.[165]

The development of a maritime response force would be the next step after the implementation of a maritime monitoring system. The report points out that the Nordic countries, and particularly Denmark, Iceland and Norway are responsible for the monitoring and management of huge areas of sea, without the appropriate number of vessels for surveillance and rescue. This problem will only become more pressing in the case of increased Arctic shipping, therefore a joint rescue coordination centre should be established for the Nordic coast guards and search-and-rescue services. A joint Nordic maritime response force should naturally be equipped to deal with the incidents that can arise in the Arctic and among the requirements are icebreaker capacity which none of the Nordic countries presently have in the Arctic, although Finland and Sweden have such capacity in the Baltic Sea[166].

The Stoltenberg report also emphasises the importance of the Arctic Council and urges that all of the five Nordic states cooperate on Arctic issues within it and not just the Nordic

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[165] Ibid, p. 12.
[166] Ibid, p. 15.

Arctic coastal states. This can be interpreted as a sign of Nordic solidarity as the Nordic states share a common cultural heritage as well as interests in the region. Whatever the other Nordic states may think of the Stoltenberg report, it is Iceland's clear interests to support and pursue all its recommendations- and even if they can not be carried out exactly as proposed it may be possible to cooperate with a smaller number of Nordic partners to work for something similar.

To sum up: Iceland has since 2007 deepened its security and defense cooperation with Norway and Denmark in areas where it believes that it is vulnerable. The status of Greenland as a sovereign nation has the potential of altering the role of security actors in the High North. If Greenland seeks full independence from Denmark in the near future, than Denmark will cease to be a security actor in the High North as its interests in the North Atlantic will be confined to the Faeroe Islands. While one actor exits the stage another enters from the other side, but what kind of security measures can Greenland implement? It is likely to opt for increased dependence on the US but this does not necessarily mean any readiness by the US to extend the resulting arrangements further East. And how can Iceland, to make up for its internal weaknesses, draw external strength from a newly independent Greenland with a population of just 50,000? Such questions are only speculative at present but Iceland may possibly be faced with such a reality in 10-15 years.

6.2   Arctic Council

The origin of the Arctic Council can be traced back to the late 1980s and the so-called Murmansk Speech of then Soviet President, Mikhail Gorbachev in 1987. In his speech, the Soviet leader laid out six proposals to enhance regional cooperation in the Arctic. The first two related to the establishment of a nuclear-free zone in northern Europe and the reduction of military activities. The remaining six touched on the issues of confidence-building measures in northern seas, coordination of scientific research and civilian cooperation in developing natural resources as well as opening up the Northern Sea Route to foreign ships.[167]

The Murmansk Speech paved the way for increased inter-governmental cooperation in the Arctic which led to the Rovaniemi Process of consultation and the initiation of the Arctic Environmental Protection Strategy (AEPS) in 1991. The cooperation between the Arctic states that began with the creation of the AEPS marked a significant break from the cold war stand-off between the East and the West, as the cooperation that AEPS was meant to foster

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[167] Mikhail Gorbachev's speech in Murmansk at the ceremonial meeting on the occasion of the presentation of the order of Lenin and the gold star to the city of Murmansk. http://www.barentsinfo.fi/docs/Gorbachev_speech.pdf (Accessed 10 September 2009).

included cooperation in environmental protection and science as well as indigenous people's affairs. The AEPS was to become a forum for circumpolar cooperation for the eight Arctic countries in Arctic environmental issues and in this context it identified six general areas that needed attention: persistent organic pollutants, heavy metals, radionuclides, acidification and noise. Various working groups were set up to investigate the issues and create options for policy action.

Table 2 Arctic Council Participants[168]

Member-States	Permanent Participants	Observers		
		States	International Organisations	Non-governmental Organisations
Canada	Aleut International Association	France	Conference of Parliamentarians of the Arctic Region (SCPAR)	Advisory Committee on Protection of the Seas (ACOPS)
Denmark (+Greenland/Faroe Islands)	Arctic Athabaskan Council	Germany	International Federation of Red Cross and Red Crescent Societies (IFRC)	Association of World Reindeer Herders
Finland	Gwich'in Council International	Netherlands	International Union for the Conservation of Nature (IUCN)	Circumpolar Conservation Union (CCU)
Iceland	Inuit Circumpolar Conference	Poland	Nordic Council of Ministers (NCM)	International Arctic Science Committee (IASC)
Norway	RAIPON*	United Kingdom	Northern Forum	International Arctic Social Sciences Association (IASSA)
Russian Federation	Saami Council		North Atlantic Marine Mammal Commission (NAMMCO)	International Union for Circumpolar Health (IUCH)
Sweden			UN Economic Commission for Europe (UN-ECE)	International Work Group for Indigenous Affairs (IWGIA)
USA			UN Environment Programme (UNEP)	University of the Arctic
			UN Development Programme (UNDP)	Worldwide Fund for Nature Arctic Programme (WWFAP)

* Russian Association of Indigenous Peoples of the North

Source: David Scrivener

In September 1996 the eight Arctic countries inaugurated the Arctic Council in Ottawa, Canada. The purpose of the Council is to promote cooperation between Arctic states on common issues, most importantly issues of sustainable development and environmental protection in the Arctic, as well as to elaborate a sustainable development programme and to promote interest in Arctic-related issues.[169] To that end the AEPS programme was subsumed along with its working groups under the Arctic Council. Although the Arctic Council is an intergovernmental organization the indigenous population of the Arctic have, as mentioned

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[168] Lassi Heinien," Circumpolar International Relations and Geopolitics," *ADHR (Arctic Human Develpoment Report) 2004. Akureyri: Stefansson Arctic Institute*, p. 214.
[169] Declaration on the establishment of the Arctic Council. http://arctic-council.org/filearchive/Declaration%20on%20 he%20 Establishment%20of%20the%20Arctic%20Council-1..pdf (Accessed 10 September 2009).

before, a permanent participation status in the Arctic Council through various indigenous organizations. The access that indigenous people have to international cooperation through the Arctic Council is rare if not unique. It has given them a voice and a platform to discuss issues of human development and pollution in the Arctic on a intergovernmental level, even if the indigenous people's representatives are not on the equal footing as government representatives as they are also of course citizens of these same governments.[170]

The reason why the Arctic Council is important is because its role to build trust after the cold war between Russia and other Arctic states as well as promoting environmental protection and sustainable development in the Arctic. The Arctic Council is an attempt at the creation of a shared and cooperative Arctic region, and as such represents an important phenomenon in international relations and a new geopolitical approach, where control and security is not sought through the mere exercise of power but by achieving a socially secure and environmentally sustainable order.[171] The Arctic Council does so by getting the circumpolar Arctic states to cooperate as well as encouraging sub-regional cooperation and academic cooperation.

The work of the Arctic Council is carried out in six working groups that were originally established under the AEPS programme. These groups are:

1. Arctic Monitoring and Assessment Program (AMAP). Gathers and processes data about the origin and nature of pollution in the Arctic and its effects on the environment and the Arctic inhabitants with special emphasis on indigenous people.

2. Arctic Contaminants Action Plan (ACAP). Is involved in contingency plans in the field of pollution prevention with special focus on Russia;

3. Conservation of Arctic Flora and Fauna (CAFF). Is concerned with gathering information on Arctic biodiversity in order to develop preservation methods in the face of rapid climate change;

4. Emergency Prevention, Preparedness and Response (EPPR). Is a forum for consultation and cooperation among the Arctic countries on ways to prevent and respond to environmental threats and disasters in the Arctic Region;

5. Protection of the Arctic Marine Environment (PAME). Focuses first and foremost on preventive measures against marine pollution;

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[170] Lassi Heinien," Circumpolar International Relations and Geopolitics," *ADHR (Arctic Human Develpoment Report) 2004. Akureyri: Stefansson Arctic Institute*, p. 209-210.
[171] Ibid, p. 212.

6. The Sustainable Development Working Group (SDWG). Was established in 1998 and its function is to promote sustainable development within the Arctic Region. Many projects of the SDWG are in cooperation with other working groups as most projects touch in one way or another on sustainable development;

7. Arctic Climate Impact Assessment (ACIA). Its function is to gather scientific data on the effects of climate change on the Arctic and issue policy recommendations.

Iceland has been most active within CAFF, PAME and SDWG of the working groups within the Arctic Council. Iceland provides CAFF and PAME with office facilities in Akureyri as well as funding a share of the activities of the CAFF working group. During Iceland's chairmanship in the Arctic Council, the institute of Vilhjalmur Stefansson in Akureyri was responsible for publishing the "*Arctic Human Development Report*" - a project which was undertaken under the SDWG. Iceland has on the other hand been less active within ACAP as well as EPPR. Iceland has not attended ACAP meetings on the grounds that its work is primarily focused on pollution within the Russian Arctic. Iceland is also the only Arctic country which has not participated on a regular basis in the works of EPPR. The reason for this is primarily that EPPR's original function was concerned with response and search-and-rescue in ice-covered areas of the High Arctic.[172] In 2004 the functions of the EPPR's working group were extended to include preparedness and response to environmental threats and disasters in the Arctic Region, with the main emphasis on safety concerning extraction and transport of oil and gas as well as the transport of radioactive material and pollutants.

The Arctic Council, as mentioned before, is an important organization because it promotes cooperation between actors in the Arctic region, including both states and non-state actors as evidenced by the observer statues of indigenous groups within the Arctic Council. This makes it important for any state with presence and/or interests in the region to have its voice heard within the Council, and that clearly implies a continuing or even increased Icelandic effort to use all relevant Arctic Council mechanisms. Although the Arctic Council is successful in fostering cooperation in the Arctic, however, it does not have any regulative powers and its decisions are therefore based on a soft law agreement between its members. The Arctic Council thus functions more as an advisory body to governments that are trying to

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[172] Ísland á norðurslóðum, Report by the Ministry of Foreign Affairs on Icelandic interests in the High North (April 2009), p. 16.

seek common solutions to common problems, while sensitive issues like territorial/legal disputes, security policy and military security are excluded from the agenda of the Council.[173]

6.3   European Union

The European Union (EU) is already an important actor in the Arctic region as three of the eight Arctic Council members: Denmark (on behalf of Greenland), Finland and Sweden are also EU members while further two Arctic Council members: Iceland and Norway are closely linked to the EU through the European Economic Area Agreement (EEA). It is safe to say that the EU will be directly affected by the altering geo-strategic dynamics that Arctic resource extraction and increased Arctic shipping are producing in the Arctic region. Much of the Arctic oil and gas that will be extracted by Russia and Norway will most likely go to European markets seeing how 60-75% of its gas imports and around 46% of its oil imports are exported from Russia and Norway.[174] The EU has considerable interests at stake in Arctic shipping as traffic through the Northern Sea Route will most likely be predominantly between European and Asian ports (traffic between Asia and ports on the eastern North American seaboard would logically traverse the Northwest Passage instead), while the opening up of the Arctic would also offer business opportunities to various companies within EU member states.

The Commission's proposal for a European Union Arctic Strategy which saw the light of day in November 2008 articulates EU interests as well as proposing action for EU member states and institutions. The EU Arctic Strategy revolves around three main policy objectives that are:

- Protecting and preserving the Arctic in unison with its population;
- Promoting sustainable use of resources;
- Contributing to the enhancement of Arctic multilateral governance.[175]

The strategy can be regarded as an attempt by the Union to approach the risks and opportunities within the Arctic region from a holistic point of view, as attention is given to societal and environmental dimensions of security as well as the traditional, state-centric, military and political dimensions. The EU's stress on the former is not only a matter of 'values' but reflects the fact that these (and the future of oil and gas business) are where it has the most practical clout.

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[173] Lassi Heinien," Circumpolar International Relations and Geopolitics," *ADHR (Arctic Human Develpoment Report) 2004. Akureyri: Stefansson Arctic Institute*, p. 214.

[174] Jakup M. Godzimirski," High Stakes in the High North. Russian-Norwegian Relations and their implications for the EU," *Russie.Nei.Visions*, No. 25, December 2007.

[175] Communication from the Commission to the European Parliament and the Council, *The European Union and the Arctic Region*, p. 3 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0763:FIN:EN:PDF (Accessed 10 August 2009).

Attention is given for the need to improve emergency response management within the Arctic region by increasing cooperation on prevention, preparedness and disaster response among the Arctic states. The strategy points out that the EU could have a role in increased human security cooperation, and pegs the Commission's Monitoring and Information Centre as being able to contribute to strengthening the disaster response capacity of the Union within the Arctic region.[176] The EU could also play an important role in increasing maritime shipping security in the Arctic region through its maritime surveillance capabilities. The Commission is already exploring the possibility, in liaison with the European Space Agency, to develop a polar-orbiting satellite system that would allow for better knowledge of ship traffic as well as faster reactions to emergencies.

The Commission's proposed approach to Arctic governance is that new legal instruments in the Arctic - such as a comprehensive 'Arctic Treaty' on the Antarctic model, favoured inter alia by the European Parliament - are not the correct tools to deal with issues at hand. (This reflects the view of the most concerned European nations since the same position was adopted in the 2008 Ilulissat declaration signed by Norway and Denmark.) Instead Arctic governance must rest on already existing obligations. UNCLOS must be at the foundation of any such system and any Arctic governing scheme must ensure security and stability, sustainable use of resources and open and equitable access as well as strict environmental management.[177] To this end the EU stresses the importance of the International Maritime Organization as well as the Arctic Council to which the EU has applied for observer status. The strategy also highlights the importance of not excluding any of the Arctic EU member states or Arctic EEA EFTA countries from dialogue and negotiations regarding the Arctic region. Although the EU can be viewed in the role of a facilitator between states with interests in the Arctic region, it nevertheless does not shy away from issues where the EU sees itself as having important interests. The importance of freedom of navigation and the right of innocent passage in newly opened routes and areas is stressed in the Commission document, which can be seen as a response to the Canadian position that the Northwest Passage lies within Canadian internal waters.

Although the EU has identified the strategic importance of the Arctic and has taken a large procedural step towards a strategy for sustainable development of the region with emphasis on environmental protection and sustainable exploitation, the fact remains that it does not have direct access to the area as none of the Arctic littoral states is an EU member – aside from Denmark which could lose that position relatively soon with Greenlandic independence. This may of course change if Iceland, which has applied for EU membership becomes an EU member in near future.

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[176] Ibid, p. 4.
[177] Ibid, p. 10.

If it enters it would bring a large area of the North-Atlantic under the legislative purview of the European Union, including the North Atlantic sea-routes that ships traversing the Northwest Passage or the Northern Sea Route towards Europe will have to sail as well as tankers carrying oil and liquefied natural gas to markets in Europe and North-America.

Pending such developments, for the moment the revamped Northern Dimension (ND) is the EU's own main tool to influence developments in the Arctic. The Northern Dimension serves as a cooperation framework between the EU, Russia, Iceland and Norway and covers a broad area from the European Arctic and the Sub-Arctic areas to the southern shores of the Baltic Sea. Its objective is:

> To aim at providing a common framework for the promotion of dialogue and concrete cooperation, strengthening stability, wellbeing and intensified economic cooperation, promotion of economic integration and competitiveness and sustainable development in Northern Europe.[178]

The ND can be a possible forum for Iceland to cooperate with the EU on matters of environmental protection and maritime safety as these fields are included among others in the priority sectors of the ND. Furthermore; the active participation of Norway and Iceland in matters relevant to the Northern Dimension is specifically articulated in the Northern Dimension Policy Framework.[179]

With or without full membership, what useful purposes could the EU's emerging High Northern role play for Iceland? Generally, the EU's presence in the Arctic might have the effect of alleviating possible military tension between Russia and other Arctic states. The EU's nature as a "soft" power means that Russia does not perceive it as being a military threat, but instead as a potential partner in dealing with common Arctic problems as well as a provider of funds for various Arctic projects which Russia can benefit from. The EU's vision of sustainable and responsible exploitation of Arctic resources would certainly leave room for cooperation with Russia both on oil and gas and on fisheries if both sides could observe certain basic standards of fair trading and reliability.

A number of EU countries that are not Arctic powers such as the UK, France and Germany are getting more interested in the Arctic region and especially the strategic implications of the dimensions of oil/gas and climate change.[180] It would be in the interest of Iceland if these

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[178] Northern Dimension Policy Framework Document, p. 3. http://ec.europa.eu/external_relations/north_dim/docs/frame_pol_1106_en.pdf (Accessed 10 August 2009)
[179] Ibid, p. 4.
[180] The UK is currently formulating an Arctic policy of its own and France has appointed an Ambassador to the Arctic region while Germany has interests in maintaining good relations with both Russia and Norway, two of its major gas suppliers.

countries would coordinate their approaches through a focused EU strategy instead of competing with each other; although Iceland should also consider what special value it could possibly gain from its relations with each of them that would complement the closer Nordic relationships discussed earlier.

The EU as it becomes more involved can be expected to stay robust in asserting its own important strategic interests in the Arctic, which boil down mainly to access to energy resources as well as free and open shipping through newly opened routes. But the EU has lot to offer within the High North in other fields than hard defence and power-play: it has for example a grip on norm-setting in a number of governance areas of relevance (environmental, shipping safety, infrastructure standards etc) through the EEA membership of all of the Nordic countries, as well as being the most obvious partner in the U.S. new course on climate change.[181]

Whether Iceland becomes an EU member in the foreseeable future remains to be seen, although such a move would most likely benefit Iceland in the context of Arctic security. With Iceland as a member the North Atlantic would become an EU sea, and the EU would be interested in improving the security and safety of the region and its transit routes as that would go hand in hand with increased energy security within the Union. Such a move would also enhance the political security of Iceland as it would be better situated to influence EU policy on the Arctic instead of residing on the periphery as it currently does.

6.4 NATO

The increased strategic importance of the Arctic region has been drawing NATO's attention in the area once again after the end of the cold war. It is quite understandable why NATO should be involved in the Arctic as all the Arctic littoral states except Russia are members of the alliance as well as five out of eight permanent Arctic Council member states. NATO is of course first and foremost a security organization that provides "hard" security to its member states, although its role has expanded since the end of the cold war as it has taken on crisis management such as peacekeeping missions in former Yugoslavia and Afghanistan.

Even though NATO is a hard security institution it has also a role to play in soft security cooperation in such fields as surveillance and search-and-rescue. The increased security and defense cooperation between Iceland and Norway and Denmark is, as has been mentioned before, based on the North Atlantic Treaty and the institutional framework of NATO. The same applies to the agreement between Iceland and the UK on increased cooperation between these two countries on matters of security and defense in the North Atlantic during peace-time, which the countries

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[181] Alyson JK Bailes," How the EU could help cool tempers over the Arctic," *Europe's World* http://www.europesworld.org/NewEnglish/Home/PartnerPosts/tabid/671/PostID/518/Default.aspx (Accessed 20 September 2009).

signed in May 2008. NATO has also taken on the provision of air surveillance within ~~the~~ Icelandic aerospace after the departure of the U.S. in the autumn of 2006. The surveillance involves NATO member states sending fighter jets to Iceland for a short period of time; this cooperation that began in March 2008 will last for three years and was kicked-off by France in May 2008 with the arrival of four Mirage 2000 fighter jets. Other NATO member states that have indicated an interest in participating in the air surveillance include Denmark, Norway, and the U.S as well as Spain and Poland.[182]

Iceland's increased activity within NATO and further cooperation with other NATO countries may be viewed as an attempt by Iceland to draw on broader allied support to make up for the departure of the U.S. and closure of the Keflavik naval base. But Iceland is not the only NATO member in the region that is pushing for increased NATO involvement. Norway has been quite adamant about getting NATO further involved in the region – in the right way of course. Norwegian government officials have stressed that NATO should not be viewed so much as a "tool- box" of military capabilities, but it is equally important as a political institution with a role to play in the High North. As the alliance is at the core of the security and defense strategies of all but one Arctic Ocean state, it can not avoid defining its role in the area.[183]

In January 2009 a conference entitled *"Security Prospects in the High North: Geostrategic Thaw or Freeze?"* was organized in Reykjavik by NATO with the support of the University of Iceland to discuss the security implications of the occuring changes in the High North and what role NATO could play in the region. The Chairman's conclusions stress the position that the High North is of enduring strategic importance to NATO and that the Alliance continues to have legitimate security interests in the region. The development of relevant responses to some of the High North challenges should therefore be included in the ongoing transformation of NATO.

The NATO position, as it appears in the resulting conclusions, is a cautious and balanced one that defines it as a priority to preserve the current stability in the High North as a region of low tension. The rule of law is seen as the prerequisite for peaceful regional development, while UNCLOS is pinpointed as the essential legal framework for international cooperation and activities in maritime areas.[184]

The conclusions give equal importance to the strengthening of international cooperation between relevant stakeholders in the High North. That includes the Arctic states as well as relevant institutions such as NATO, EU, the Arctic Council as well as the International Maritime

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[182] Press release by the Ministry of Foreign Affairs, Loftrýmisgæsla NATO við Ísland hefst í mars 2008. http://www.utanrikisraduneyti.is/frettaefni/frettatilkynningar/nr/3961 (Accessed 20 September 2009).
[183] See for example address by the Norwegian State Secretary Espen Barth Eide to the Defence and Security Committe, NATO Parliamentary Assembly, Oslo 23 May 2009. And a speech by the Norwegian Minister of Defence Anne-Grete Strøm-Erichsen to the Atlantic Council of Finland, 11 May 2009.
[184] Chairman's Conclusions, Seminar on Security Prospects in the High North Reykjavik, 29 January 2009.

Organization (IMO) and the Barents Euro-Arctic Council. Special attention should be paid to increased cooperation between NATO and Alliance members on one side and Russia on the other, through already established frameworks such as the NATO-Russia Council. Increased cooperation between the High North actors is all the more important since NATO acknowledges the fact that not all security risks and threats are best addressed by the Alliance: instead NATO should focus on where it can provide added value to regional security. The areas that NATO pinpoints as its fields of expertise are surveillance as well as resonse capabilities such as search-and-rescue at sea and disaster relief operation. NATO is already active in these areas in the High North as its air surveillance ans maritime situational awareness in the High North is already contributing to regional security in the widest sense.[185]

So far as an Icelandic judgement is concerned, it is fair to recognize thatNATO has certain valuble competences that can have a role to play in enhancing security in the High North. NATO is nevertheless a military alliance which Russia remains sceptical towards,[186] even though the Alliance's intentions in the High North are in no way sinister. This puts NATO in the difficult spot of adjusting its role as a security organization in the face of changing perceptions of what constitutes a security threat, while at the same time trying to persuade a major Arctic actor that its actions are not directed against Russia in a traditional cold war era power struggle. Iceland's as well as NATO's challenge with regard to Russia is therefore to utilise NATO's capabilities in the High North without drawing a new demarcation line through the North Atlantic where Iceland would sit uncomfortably on the border of separate zones of influence as it did during the cold war.

NATO's ideal role in the High North can be described as being twofold. First, NATO has at the moment valuable capabilities in surveillance and search-and-rescue which would contribute to increased security in the High North for all players; and secondly NATO exists as before to cover the member states' needs for military security. As such it has a role in creating a circumpolar strategic balance by holding back militarization of the region through appropriate military awareness and preparedness, thereby raising the threshold for any would be aggressor and reducing the temptation for any military adventure and provocation.[187]

Overall, the different institiutions and their roles in responding to the risks and threats that are associated with the increased strategic importance of the High North should be viewed as being able to complement each other as well as offering the possibility of some form of division

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[185] Ibid.

[186] See for example William D. Jackson," Encircled Again: Russia's Military Assesses Threats in a Post-Soviet World," *Political Science Quarterly* Vol. 117, No. 3 (2002).

[187] Alyson J. K. Bailes, "Options for closer Cooperation in the High North: What is Needed?" published in *Security Prospects in the High North: Geostrategic Thaw or Freeze?* Alyson J. K. Bailes et al (Rome: NATO Defence College, Research Division, 2009), p. 56.

of labor.[188] Of the eight Arctic Council members there are three that are also EU members, five in total that are members of the European Economic Area, while four of the five Arctic littoral states are also members of NATO. These different institutions have every reason, and the necessary means, to ensure a coordinated approach to the risks and threats in the High North. The Arctic Council and its nature as a "soft" institution serve a valuable function as a circumpolar forum for the Arctic states to address pollution and environmental threats as well as indigenous people's well being. By excluding "hard" security issues from the table the Council can foster trust and cooperation between members that would probably be much harder in a different forum.

NATO and the EU are equally suited to deal with separate sets of issues in the Arctic. NATO as mentioned before has valuable competances in maritime surveillance as well as search and rescue, but an increased NATO presence may on the other hand feed Russia's fear of encirclement and risk a demarcation of separate spheres of influence in the North Atlantic. This would not be in the interests of the stakeholders in the Arctic (including Iceland), not just bec<ause of risks of actual conflict but because many of the threats and risks in the Arctic region are transnational in nature and require widest possible cooperation. The EU on the other hand would be an ideal candidate to further sustainable development within the region by including Russia in cooperative projects through the framework of the Northern Dimension.

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[188] The "*Platform of Cooperative Security*" document adopted at the OSCE Istanbul Summit in November 19999 addresses the concept of "mutually reinforcing institutions." http://www.osce.org/item/17513.html. (Accessed 15 September 2009).

7   Conclusions

This thesis started by posing the following three research questions: In what way is the strategic importance of the High North changing? What risks and threats does that pose for Iceland? And what cooperation can Iceland seek to minimize the risks and threats?

The rising temperature, caused by climate change, in the Arctic region is having and will continue to have a profound impact on the region. The receding Arctic ice opens up the possibilities of Arctic sea lines that would shorten distances between ports in Europe and Asia, as well as between North America and Asia, by up to 40%, making the Arctic region the new gateway for commercial and military ships transiting between the continents. The melting of the ice in the North will also make Arctic natural resources such as oil and gas more accessible than before in a region that is believed to contain up to 30% of all undiscovered natural gas in the world as well as up to 13% of all undiscovered oil in the world. The opening up of the North West Passage as well as the Northern Sea Route, along with the region's vast natural resources, is likely to turn the area into one of hotly contested rivalry between the Arctic littoral states: - or at least, so it could be viewed by those prone to be more easily excited.

In reality, Arctic shipping is by no means an easy feat in itself, and there are many factors that must be taken into consideration before the commercial viability of these routes becomes a certainty. For a start, the saving in transport distance using the Northwest Passage or the Northern Sea Route is mostly advantageous for transits that have both a northern origin and a northern destination: the further south the harbours are located, the less and less becomes the advantage of the northern routes. Drifting ice will be a problem for navigation as the ice breaking up in the springtime will drift into sea channels and even possibly clog up certain straits in the Northwest Passage. Shipping companies will be left guessing as to when they can begin services in the spring time and when they must suspend shipping in the autumn, as the Arctic sea routes will still be ice-covered during the winter. Navigating a cargo ship through these waters would require a strengthened hull, powerful ice spotting radar, and an experienced crew and special equipment for dealing with icing and other hitches associated with traversing Arctic waters. All this makes the prospect of shipping through the Northern routes less reliable than the current transit routes. Arctic shipping activity in the form of tourist cruise liners has on the other hand been increasing in the High North for the last years.

Similarly the Arctic region is unlikely to be turned into a race-track by the Arctic littoral states as they jockey for position to grab as much resources as possible. The oil and

gas fields that are likely to be developed in the foreseeable future are all within the 200 nautical mile economic exclusion zones of the Arctic littoral states, and they are unlikely to quarrel over them as the delimitation lines between these zones are already settled (with some important exceptions such as the delimitation between Norway and Russia in the Barents Sea).

The strategic importance of the Arctic region is, nonetheless, definitely rising after having been rather irrelevant during the years after the end of the cold war. The Arctic shipping routes may surely hold a future promise for commercial shipping although not without addressing first the many problems that are associated with traversing the Arctic waters. Already about 10% of the world's oil and about 25% of its natural gas is extracted from the Arctic region. This percentage will most likely rise in the near future and thus make the Arctic region an increasingly important source of energy in the near future.

The risks and threats associated with the increased strategic importance of the High North have been assessed in this study by distinguishing five dimensions of security: military, political, economic, societal and environmental security.

Military conflict in the Arctic is highly unlikely but any tension that could possibly arise and escalate into an armed clash would most likely take place between Russia and some of the other Arctic littoral states. Russia is the only one that is not a member of NATO and Moscow views any NATO activity in the region with deep suspicion as it fears encirclement. In the unlikely event of a tension escalating into a military incident then Iceland would be affected politically as a NATO member, but might also face physical dangers from the hostilities themselves or from a sudden surge of air and sea activity for monitoring and reinforcement purposes in its vicinity. Iceland could also be affected by associated non-military hostile action such as cyber-warfare, trade and travel blocks and disturbance of fisheries.

The main issue for Iceland within the realm of political security is the present lack or vagueness of a system for guaranteeing the orderly conduct of relations among actors in the High North, and for ensuring fairness for the smaller and more peripheral as well as the large and central players in the Arctic. This absence of an overarching Arctic regime to deal with issues such as resource extraction and Arctic shipping might allow the larger states to bully the smaller ones into accepting whatever arrangements on these issues best favour themselves. Therefore it is important for Iceland to have access to the forums of decision making in matters regarding the High North, so that it can voice its interests and have a say on how the various issues regarding the High North are settled.

The dimensions of economic and environmental security in the context of the High North and Iceland are interlinked as the economy of Iceland is highly dependent on marine resources. Increased oil and gas shipping through the Icelandic EEZ would increase the risk of a spillage whether caused by accident or intentional sabotage. A large oil spillage from, for example, a sunken tanker could have tremendous effects on the marine biology. A large spillage of 10,000 tons or more during the spawning season could cause considerable damage to fish eggs and larva on an area of a few hundred km². Any spillage that could damage the fisheries and taint the fish stock would pose a threat to the economy of Iceland. Iceland does not have at the moment have contingency measures in place to deal with a large oil spill outside harbors and there is currently no Icelandic ship that is capable of pulling a large tanker to safety in the case of a malfunction or if a tanker should run aground. There is currently one ship under construction with this capability although three ships are believed to be needed to provide adequate safety response.

The increasing number of cruise liners in Arctic waters is of particular concern within the dimension of societal security. In a short period of time the number of cruise ships visiting Iceland has risen from 20 to 80 and the number of passengers has grown from 10,000 to approximately 60,000 passengers. Emergency response and capacity in Iceland and Greenland are currently not able to deal with an accident where it becomes necessary to rescue hundreds or even thousands of people at risk at sea. Iceland is thus faced with the problem of not only ensuring the security of its own people in the seas around Iceland, but also with having an adequate safety response capacity if the need should arise to rescue a large number of people on a stranded cruise liner. Failure to do so would not only mean a humanitarian disaster but could potentially damage Iceland's image and international partnerships, with consequential effects for its political and economic security.

This thesis has singled out five international actors or frameworks where Iceland could seek cooperation and/or influence in order to make up for its own deficiencies in capacity to address the threats and risks associated with the rising strategic importance of the High North. These actors are Norway, Denmark, and the Arctic Council as well as the European Union and NATO.

Norway and Denmark are valuable partners for Iceland as these countries have deepened their cooperation with Iceland in matters relating to security and defense after the departure of the U.S. forces in the autumn of 2006 and the closing of the Keflavik NATO naval base. This enhanced Nordic cooperation can nevertheless not be separated from NATO as it is based on the North Atlantic Treaty and the membership of Iceland, Denmark and

Norway of NATO. Sweden and Finland could possibly participate in the NATO air surveillance within the Icelandic aerospace through Partnership for Peace (PfP) which would deepen the cooperation between the non-NATO states of Sweden and Finland with NATO.

The Arctic Council's role is to build trust after the cold war between Russia and other Arctic states as well as promoting environmental protection and sustainable development in the Arctic. The Arctic Council is the only circumpolar forum that promotes cooperation between state actors as well as involving the indigenous people of the Arctic region. Iceland's activity within the Arctic Council's working groups has varied and in some it has not been active at all although Iceland would most likely benefit from a greater engagement. This relates especially to the working group on Emergency Prevention, Preparedness and Response (EPPR), a body that has since 2004 focused increasingly on preparedness for and response to environmental threats and disasters in the Arctic Region, with the main emphasis on safety in the extraction and transport of oil and gas as well as the transport of radioactive material and pollutants. Iceland's activity within the Arctic Council is also important for the political dimension of security as it is important for any state with presence and/or interests in the region to have its voice heard within the Council.

Iceland could possibly meet some of the challenges that it is facing in the High North through cooperation with the European Union, as the latter's new proposals for an EU Arctic policy emphasize the need to improve emergency response management within the Arctic region by increasing cooperation on prevention, preparedness and disaster response among the Arctic states. The EU's Northern Dimension (ND) can possibly be a forum for Iceland to cooperate with the EU on matters of environmental protection and maritime safety as these fields are included among the ND's priority sectors. Furthermore, the active participation of Norway and Iceland in matters relevant to the Northern Dimension is specifically provided for and stressed in the recently re-vamped Northern Dimension Policy Framework.

NATO's role in the High North, as mentioned before, is twofold. Firstly, NATO has at the moment valuable capabilities in surveillance and search-and-rescue as well as disaster relief operations, which would contribute to increased security in the High North. Secondly, NATO exists now as before to cover the member states' needs for military security. Iceland has looked increasingly in the direction of NATO, as an institution, as a source of external strength since the US withdrawal. NATO is responsible for air surveillance in the Icelandic aerospace, and the increased cooperation of Iceland with other countries on new aspects of security and defense – both in Europe and abroad – has been built up within the framework of NATO in line with its role as the predominant "hard" security institution of Europe.

This thesis has this identified a range of national and institutional relationships that Iceland could make use of, in new or more intensive ways, to guard against possible risks and dangers from developments in the Arctic and also to protect its positive interests (e.g. in sustainable economic exploitation). All the suggested options involving the five actors discussed here are in principle compatible with each other, and could also be developed without changing such fundamentals of Icelandic policy as the non-possession of armed forces. As pointed out, however, certain more significant changes such as obtaining full membership of the EU should in principle make such an Icelandic strategy even more effective. It would be interesting, although it lies beyond the purpose of the present study, to discuss whether the present Icelandic system of decision making and external policy implementation – as well as the political background and nature of public opinion – are suited to formulating such a strategy clearly and carrying it through in a cost-effective and ultimately successful way.

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