



DIRECTORATE-GENERAL FOR EXTERNAL POLICIES OF THE UNION
POLICY DEPARTMENT

Arctic Governance: balancing challenges and development

REGIONAL BRIEFING 2012

Abstract

The Arctic region is experiencing major changes, which are occurring more rapidly than in any other region of the world, mainly as a result of global warming and climate change. Coupled with new technology, changes in the Arctic have rendered resources that were once well beyond our reach accessible. Commercial ships, for example, are now using Arctic routes each summer to shorten the length of their trips between continents; such routes that would have been impassable only a few decades ago.

The fragility of the Arctic environment and of its ecosystems has led to growing concern that they may reach a tipping point, after which they would simply collapse. The rising seas caused by melting Arctic glaciers are only one example of the relation.

More robust Arctic governance systems need to be developed soon, particularly as the UNFCCC discussions are not progressing as expected. For The Arctic Council, for example, should be given wider powers. Arctic governance will have to strike a balance between protection and development, and between respecting Arctic States and their inhabitants and recognising the legitimate interests of the rest of the world. Several Arctic States have issued Arctic strategy papers, and the European Commission will this month adopt its second Communication on the EU's Arctic policy.

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1 INTRODUCTION TO THE ARCTIC REGION

This briefing introduces some of the numerous challenges and development possibilities that the Arctic region faces today. While these are the principal subjects debated (openly or indirectly) in all Arctic governance instances, there are also other significant issues — notably the rights and future of Arctic indigenous peoples and the relevance of ongoing Arctic research — that are only treated briefly here. These will be the subject of future briefings.

1.1 Geographic considerations

Nearly everyone on the planet can conjure up a mental image of the Arctic and describe its location. Yet the political and/or scientific definition of the Arctic region is far from precise. Different physical or geographical views compete with one another, and some of these descriptions can be labelled politically incorrect, even when they are provided in good faith.

Everyone agrees that the North Pole and its surrounding area are part of the Arctic. However, for many reasons, the external boundaries of the Arctic region are far from well defined. For centuries, the Arctic region was synonymous with remoteness, for an area far from human advances. Yet the Arctic has become more enticing in the 21st century, and as a result the region's borders have been redefined closer to the south.

For many, the Arctic is defined by simple geography, just as the tropical areas of the world are those located within the two tropics. According to this definition, the Arctic region is the territory and sea located between the Arctic Circle (66° 33' 44" North)¹ and the North Pole; anything below the Arctic Circle is part of the sub-Arctic or temperate zone. This definition of the Arctic region has the advantage of being neutral.

Other descriptions of the Arctic region reflect on the concepts that we relate with the Arctic, for example that it is a cold region, and should be defined as the area of the northern hemisphere where the land and seas have a low average maximum temperature in the summer. According to this definition, the Arctic areas will only be those which have a temperature lower than 10° C during the warmest month of the year in the northern hemisphere (i.e. July) irrespectively of latitude. This excludes the large section of the Arctic region that benefits from the Gulf Stream across the Atlantic, i.e. a significant, European section of the Arctic. The map resulting from this definition has a quite irregular border — cutting Iceland in two, for example, moving beyond 70° North in Norway and extending as far south as 50° North in the Aleutian and other islands of the Bering Sea between Alaska (US) and Kutchootka and Kamtchatka (Russia). In administrative terms, this definition would imply that only three territories of the world would be entirely Arctic: Greenland, the newest Canadian territory of Nunavut and the Svalbard Islands of Norway. Any other Arctic territory (and obviously any Arctic country) would be divided by this definition.

¹ The Arctic region would be whatever land or sea lay North of the latitude 66° 33' 44" North of the Equator, the same way that the Antarctic region would be all territories and sea to the south of the latitude 66° 33' 44" South of the Equator

There are several other possible Arctic definitions based on natural features, such as the tree-line (north of which trees and certain flora do not grow), the permafrost extension (by which almost half of Siberia would be Arctic)², etc.

There are also Arctic definitions that are linked to human geography, including one that argues that the Arctic region is the area traditionally inhabited by Arctic indigenous peoples, i.e. the ethnic groups that are considered part of Arctic cultures. This definition also produces an irregular map, including large parts of East Russia, Canada and Alaska (US) that are located well south of the Arctic Circle. Membership in RAIPON (the federation of Arctic indigenous peoples of Russia) would matter in such a definition, drawing on a very broad range of ethnic groups and cultures, some living at latitudes corresponding to Central Europe.

To complicate things further, the Arctic is mainly an oceanic region, although surrounded by — and composed of — extensive masses of land. In this sense, the Arctic region is not as extreme as the Pacific region, where the surface of the land is minimal compared to the expanse of the sea: The Arctic is the smallest and the closest (most encircled) ocean in the world and therefore the landmass surrounding the Arctic Ocean represents an integral part of the Arctic region. In other words, the Arctic region is made up of a centrally located ocean and surrounding land, as opposed to the Antarctic region, which is by definition a continent (also centrally located) surrounded by oceans. Yet the — primarily oceanic — Arctic region has been populated by human communities with rich cultures for thousands of years, while the predominantly continental region of Antarctica has only welcomed its first human stable 'inhabitants' — mostly scientists — in recent decades. These distinctions between the Arctic and the Antarctic are important, as they relate to discussions about the ownership of the Arctic region(s)³.

1.2 Political and social considerations

Although they have had turbulent histories, the Arctic States were among the first to acknowledge the importance of the Arctic indigenous peoples. This process began late in the twentieth century — before the launch of similar discussions in other parts of the world with indigenous populations. Often, the discussion was initiated because large countries with limited populations, such as Canada, needed to prove the exercise of sovereignty over their vast northern territories, and sovereignty can hardly be proven without a permanent human habitation.

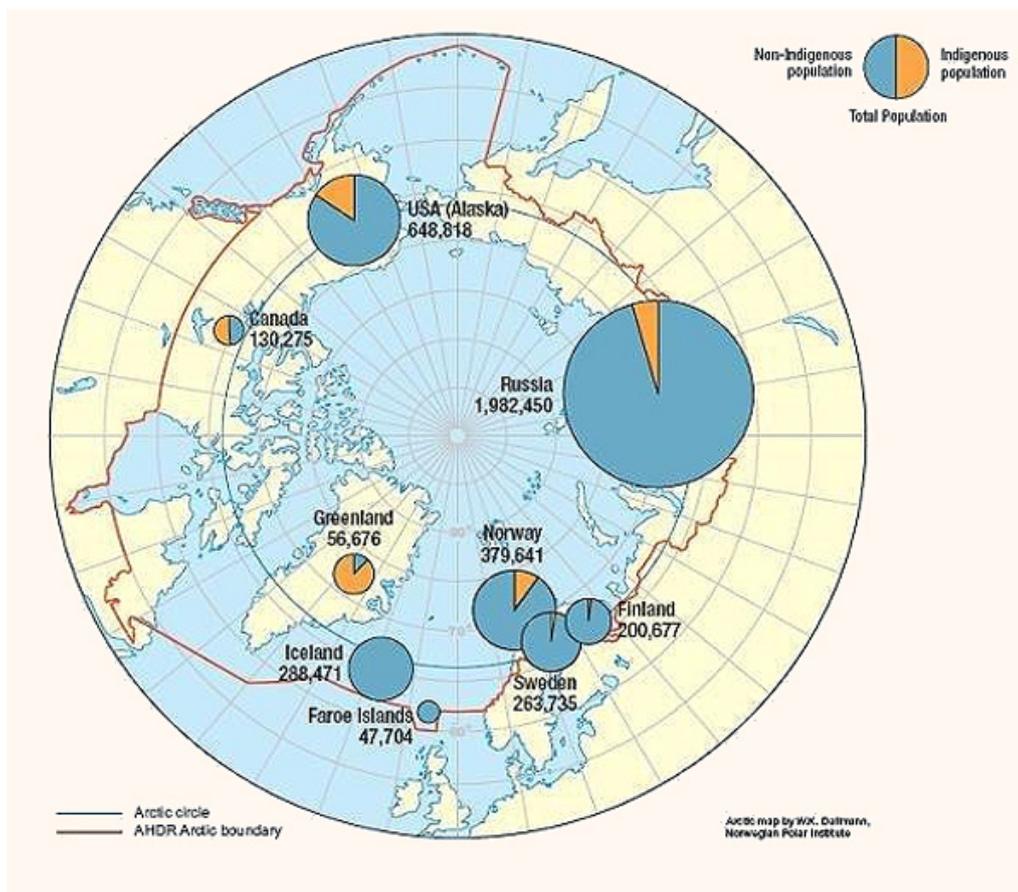
In the last quarter of the twentieth century, the Arctic States anticipated that their populations would participate in a single pan-national project, not forcibly (as had often been the case in the past) but through a voluntary integration of different peoples and cultures across borders. While this represented a logical development in multicultural societies such as Canada, an evolution also occurred in more unified societies, as in Scandinavia. This integration has advanced at different speeds in different Arctic countries, although there has generally been a gradual acceptance of central authorities that embrace indigenous peoples within the political and social structures of different States, thereby averting separatist movements. In Canada, for example, Arctic indigenous people often feel more 'Canadian' than do other groups of indigenous peoples in the south of the country. The case of Greenland — where Greenlandic sentiment for a future State is strong — is not an exception to this trend, because Greenland, unlike Canada, was considered a Danish territory rather than a part of 'mainland Denmark'.

² The Arctic Portal, <http://www.arcticportal.org/>, probably the most comprehensive website on Arctic issues, provides an interesting interactive map in which many of these definitions can be visualised.

³ Other distinctions between the two polar regions relate to biodiversity (in both land and sea life) in each of them.

Although the Arctic remains one of the world regions with the lowest population density, the population living permanently in the Arctic region has grown dramatically over the course of the twentieth century and is continuing to do so today. Arctic populations were boosted in the early 1900s in Russia and Scandinavia by adventurers and people who sought to shed the social and political constraints of their regions and cities, and in Alaska and Canada by fortune seekers looking for gold. This influx of people from southern latitudes to the Arctic region was then reinforced by the forced movement of political opponents of Tsarist and Soviet Russia, and later — particularly during World War II and the Cold War — by military and support personnel and their families. The city port of Murmansk, the biggest in the world north of the Arctic Circle, located in the Russian part of the Barents region, is the best example of such Arctic urban development linked to military requirements. Today, the reasons behind Arctic migration are much like those of the past. As during the gold rush, the Arctic's resources provide the principal draw. First fishing, hunting and, more recently, mining were magnets enticing the southerners in Arctic countries to move north. More recently, oil and gas — and again shipping — have provided further impetus to move to the Arctic in the 21st century. The movement has particularly affected the Barents region and Alaska (US) although other areas such as Greenland and the north of the Russian Far East have also seen an influx.

In our century, in the context of an ever-developing world,, increasing human population and scarcity of resources, the ownership of Arctic land and sea has also become a sort of 'wealth insurance' for the future for both sovereign states and local communities. The European section of the Arctic region (including European Russia) remains by far the most populated area of the Arctic.



Map of AHDR Stefansson Arctic Institute, Iceland, showing a boundary of the circumpolar Arctic region as defined by the Arctic Human Development Report, including proportions of Indigenous and non Indigenous populations of the Arctic. Source: <http://www.rrh.org.au/articles/subviewnthamer.asp?ArticleID=1534>

1.3 Correctness and incorrectness when defining the Arctic and its characteristics

A few decades ago, the description of the Arctic as 'pristine' would have been easily accepted. The adjective was intended simply to evoke the vast white Arctic, quiet and beautiful — an image that fortunately still exists in many parts of the region. Such a vision of the Arctic was interpreted as complimentary, drawing on a sense that the Arctic was one of the 'last frontiers' of our planet. Yet today such a description has become politically incorrect in 'Arctic political circles'. The inhabitants of the Arctic — either Arctic indigenous peoples or Arctic inhabitants from other origins (often present for several generations) along with their State authorities — want rather to underline the fact that the Arctic is inhabited and *owned*, and that the Arctic regions of the Arctic States have the right to develop economically, just as that other regions of their countries have. Such an emphasis also serves to preclude the possibility that the climatic — and, to a certain extent, environmental — resemblance between the Arctic and the Antarctic regions induce an (international) 'Arctic Treaty' that – on the grounds of environmental preservation – might limit sovereignty or impose the sort of restrictions contained in the Antarctic Treaty System⁴.

More surprisingly, other term that is today beyond the red line of political acceptance is that of 'Arctic preservation'. For the same reasons explained above, 'Arctic protection' is an accepted term while 'Arctic preservation' raises mistrust among Arctic States representatives and even associations of Arctic indigenous peoples, as they want to stress their right to live in a dynamic region in evolution. These thin differences in the speech of Arctic meetings and conferences give a good idea of the susceptibility surrounding the debate on the future of the Arctic region.

However, at the same time some Arctic States representatives and some Arctic inhabitants — particularly members of indigenous peoples' groups — tend to express great concern with climate change, which is significantly affecting the region. Changes in the Arctic environment also have an enormous impact on the rest of the world, just as the reverse is true. How to strike a balance between Arctic challenges and Arctic economic and social development (a word that has replaced 'opportunity', which has also been banned from Arctic speech) is the main question faced by organisations and international gatherings dealing with the Arctic. Such a balance — or the search for the ideal Arctic sustainability — represents the principal goal of all official Arctic strategies published so far, including the EU Arctic policy. Therefore this briefing contains a first chapter on Arctic challenges before it delves into issues related to Arctic development. The note will then conclude with an examination of the principal current streams of Arctic governance. The second European Commission Communication on the Arctic is about to see the light this month and therefore is not analysed here.

⁴ The Antarctic Treaty was signed in Washington on 1 December 1959 by twelve countries. The total number of Parties to the Treaty is now 50. <http://www.ats.aq/e/ats.htm>

2 ARCTIC CHALLENGES

2.1 The Arctic and climate change

This briefing does not discuss the question of whether climate change is happening or whether it is caused by human actions. These discussions belong to the past, and today the scientific community and most political elites recognise that the answer to both questions is 'yes'. New questions are more urgent: how quickly are these changes taking place? What are and will be their effect? How do the various factors causing changes (including natural ones) interact? What measures should be taken to mitigate and adapt to climate change? For now, it is clear that the climate change effects in the Arctic region are more dramatic and fast-paced than those in the rest of the world (including Antarctica). As certified by the scientific community, the Arctic region is warming more rapidly. But, this phenomenon is also visible to Arctic inhabitants and even to regular visitors. The region provides an early warning of what may come to the rest of the world in the next decades, as well as a test of the ways in which we may react — by fighting, mitigating, or adapting — to climate change. The problem of Arctic (and global) warming will continue throughout our lives, since we are today experiencing the effects of greenhouse gas emissions of previous decades: There is a substantial delay between the release of emissions into the atmosphere and the effects they produce. As a result, even if the negotiations of the UN Framework Convention on Climate Change (UNFCCC)⁵ are finally successful producing solid and broadly respected rules and policies to limit alter our use of fossil fuels, the Arctic will keep warming for an extended period of time.

As most people now know, human-driven climate change is causing the ice in the Arctic region to melt. The seas across the world will rise, flooding coastal areas and low islands, where much of the world's population live. Such a phenomenon has occurred in the past, though not in the history of humankind: the melting of polar ice due to natural (or at least not human) action has previously caused such changes to continents and islands. However, coastal flooding and even coastal submersion is just one type of challenge that will arise.

2.2 Melting ice

As the Arctic Region is mainly an oceanic region, much of its ice is composed of sea ice (unlike the ice in Antarctica, which lies principally on land). The fact that so much Arctic ice is sea ice means that the retreat of the polar sea ice cap — particularly noticeable in the summer — will not cause a rise of the sea levels across the planet. This melting will not increase the total volume of water in the world, as the ice was in the water (just as melting ice cubes in a drink do not cause the level of liquid to rise). However, the impressive speed with which sea ice is melting in the Arctic Ocean causes additional concerns: when white sheet of ice is replaced by the darker coloured ocean, the area absorbs rather than reflects the heat of the sun. This means that the reduction of sea ice in the Arctic has an intensifying effect on the global warming process, particularly during the summer period, when the ever smaller area covered by ice is exposed to long hours of sun per day. According to the (US) National Snow and Ice Data Centre (NSIDC)⁶, last September (2011) the surface of sea covered by ice was 4.33 million km², compared to the

⁵ <http://unfccc.int>

⁶ <http://nsidc.org/about/> Located at the University of Colorado

average of 6.71 km² during the period 1979-2000⁷. Although the ice cap surface was even smaller — a record 4.17 million km² — in 2007, the loss of total sea ice has not abated when measured in terms of ice thickness rather than surface reduction. Measuring sea ice thickness is more complicated and imprecise, and has only been incorporated into the general assessments relatively recently — an example of how far we are from satisfactorily understanding Arctic changes and how urgently we must grant more resources to international Arctic research. In the last decades Arctic sea ice has continuously become thinner and 'younger', falling into an 'accelerator' vicious circle. Surrounded by more moving waters, the thick ice is unable to recover the following over and under a thinner layer of new ice.

The major threat from melting ice in the Arctic Region comes from ice sheets over land — not over the sea — and particularly from the large, thick ice cap over Greenland, which is the world's second largest on land after Antarctica. Because the ice cap over Antarctica is not melting at a rapid pace, the melting of Greenland's ice cap is considered one of the most serious threats caused by climate change. The cap there is so large (+/- 2 400 km long and +/- 1 500 km width) and so thick (2 to 3 km) that its complete melting would cause a rise of the sea level across the world of up to 7.2 meters⁸, submerging many regions across the planet. These worrisome consequences would not occur suddenly but the scientific community agrees that the process is advancing gradually. The challenge lies in predicting its speed in order to apply appropriate measures in the most exposed and overpopulated areas of the world — Bangladesh, for example - and when will we be reaching a point of no-return (when the melting of the Greenland's ice cap would become irreversible). The rise in sea levels is already perceptible in coastal areas of the low Pacific and Indian Ocean islands, where the agricultural land and fresh water aquifers have been contaminated by sea water. Some of these islands may not be suitable for human habitation in a few decades, becoming the first sovereign countries to disappear as the result of climate change. Their populations are already witnessing migratory fluxes to neighbouring countries⁹.

Another outcome of Greenland's melting ice cap is the alteration in ocean biodiversity. However it would be more worrying if ocean currents are severely modified by this large input of fresh water at a different temperature. The Gulf Stream, running from the Gulf of Mexico and crossing the North Atlantic Ocean to the Barents Sea, is a vital contributor to the temperate climate that we enjoy in Europe; the mixing of waters of different salinity and temperature at its north end keeps works as a moving engine. Other areas of the world located at such high latitudes do not enjoy the same benefit, and without the Gulf Stream, large areas of Europe might come to resemble Northern Canada or Siberia¹⁰.

⁷ Measurements are made in September because it is the month of the year when the least surface area is covered by sea ice in the Arctic.

⁸ Estimation of the International Panel on Climate Change (IPCC) <http://www.ipcc.ch/>

⁹ The Alliance of Small Islands States (AOSIS) was set up by the small island states of the Pacific ocean, the Indian ocean and the Caribbean Sea to call for their survival as viable States <http://aosis.info/>

¹⁰ As examples, Vladivostok at the Russian Far East is at a similar latitude than Bilbao in Spain, and Gothenburg in southern Sweden is at a similar latitude than Churchill at the shores of Hudson Bay in Canada famous for its polar bears sightings

The scientific community is divided in its predictions, but agrees on the need to reinforce international Arctic observation to gather better and more reliable data. The broadly praised 2004 Arctic Climate Impact Assessment (ACIA)¹¹ determined that the area of the Greenland ice cap that has experienced some melting was 16% greater in 2002 than it had been in 1979. Since the Assessment, nearly all studies have confirmed that more ice is melting, and more quickly, where the glaciers meet the sea. This is primarily due to the greater 'lubrication' of liquid water under the glaciers. Glaciers in the Svalbard islands to the north of Norway have retracted so rapidly that a marked difference exists between the landscape that appears in photographs from thirty or forty years ago and today. The increasingly rapid melting of Arctic glaciers may free larger icebergs into the sea, reaching southern latitudes and threaten navigation safety.

2.3 Permafrost thawing

The thawing of permafrost on Arctic lands poses further challenges. Permafrost covers large areas of the north of Russia, Alaska, Canada and the Greenland coast. Whether continuous or not, permafrost is an Arctic feature that has existed for thousands of years, covering the land with a permanent layer of iced soil as thick as four meters; it is an integral part of the Arctic ecosystems. All scientific studies indicate that the Arctic's permafrost is thawing, although once again the speed of the thaw and the forecast are contested, basically due to insufficient data. Permafrost thawing causes land to degrade, drains lakes and creates new wetlands, changing the Arctic ecosystems in unexpected ways. In coastal areas, the thaw also weakens the consistency of the land, making it more vulnerable to erosion from the sea (This has already occurred most notably along the north coast of Alaska). Permafrost also contains large proportions of CO₂, and as it thaws greenhouse gases –including the dangerous methane - are released to the atmosphere, contributing to global warming. The total potential CO₂ that could be released from terrestrial permafrost is huge¹².

Permafrost thawing is already causing significant damage to infrastructures in the Arctic. The foundations of Buildings which were considered solidly built move, winter roads and railway tracks become unreliable and oil and gas pipelines need to be often repaired. The funding required to repair these damages could have been used for upgrading the infrastructure – so much needed in the Russian oil and gas conveyors – giving a first-hand evidence that investing in fighting and mitigating climate change is more efficient and less costly than coping with its effects.

¹¹ ACIA was an international project of the Arctic Council and the International Arctic Science Committee (ISAC), which managed for the first time to draw the attention of the international political elite to the dramatic changes experienced by the Arctic region. <http://www.acia.uaf.edu/>

¹² An estimated amount of 1.7 trillion tons of carbon; methane in the atmosphere traps around 25 times more heat than carbon dioxide.

Permafrost map of the Arctic region



Source: UNEP, <http://maps.grida.no/arctic/>

2.4 Biodiversity alterations

Among individual species living in the sea, some will emerge worse and some better from climate change. In general, however, Arctic sea ecosystems as we know them today are likely to suffer. As temperatures rise in the Arctic Ocean, so does undersea plankton production, in some cases dramatically: according to the US National Oceanic and Atmospheric Administration (NOAA), plankton in some areas of the East Arctic Ocean close to Siberia grew 135 % between 1998 and 2009. The increase of plankton generally benefits fish, although the interaction between existing and new species in the Arctic means the final outcome is uncertain. Several Arctic fish stocks are moving north — as has been noted in Greenland and Barents Sea — and this migration is bringing both advantages and strains to other fish, sea birds and sea mammals that are higher in the food chain. Finally, the acidification of sea water — due to greater CO₂ in seas across the world, including the Arctic — has negative repercussions on fish and other sea life.

Arctic sea mammals are affected directly by climate change or through the increased human presence in the Arctic. The numbers of polar bears is rapidly declining, a direct result of the reduction of sea and coastal ice. Sea mammals are threatened by human activities increasingly carried out in the Arctic — fishing, for example, or noise produced by the growing traffic of ships (which harms whales). Arctic Sea ecosystems are being also affected by the influx of tourists, whose access to the region has been made easier. The catastrophic potential of oil spills along Arctic coasts — potentially more severe than in other areas of the world — was demonstrated as early as 1989, when the Exxon Valdez struck a reef not far

away from Anchorage in Alaska. Cleaning Arctic ice and coasts after an oil spill is arduous, slow work, and the local wildlife takes longer to recover.

The flora and fauna of the land in the Arctic is also undergoing change. In addition to the most tangible changes caused by thawing permafrost and retreating glaciers, further transformations are taking place: the Arctic is becoming greener as more flora grows, and the tree line¹³ is slowly moving north in several areas. In turn, these changes are increasing humidity, which, coupled with the warmer temperatures, is bringing more rain to a region that has been predominately dry. Modifications in the flora will inevitably herald changes in the fauna. Southern species of birds, mammals and insects are moving north into the Arctic, and in some cases they are being introduced by men willingly or by chance¹⁴

In general, biologists working on the Arctic, face questions similar to those posed by climatologists and other researchers: when will we reach the tipping point, when the damage to the Arctic ecosystems becomes irreparable? Again, the question can only be answered once more resources are devoted to Arctic observation and research.

2.5 Other challenges to the Arctic environment

Not all challenges to the Arctic environment relate to climate change. For example, the acid rain produced by industries of the northern hemisphere is carried north by wind currents and harms the trees of sub-arctic and arctic areas, just as the radiation from Chernobyl after the 1986 nuclear disaster moved to the north of the Scandinavian peninsula¹⁵. Additional forms of airborne pollution arriving from southern latitudes — the persistent organic pollutants (POPs) and heavy metals that are produced by pesticide, pharmaceutical and other industries — also harm people and animals in the Arctic. POPs are insoluble, volatile, able to travel long distances and frequently propelled by the wind and other natural processes towards the polar regions. Once in the Arctic, POPs enter in the food chain, ultimately reaching human beings. An increased number of birth defects noted in the Arctic in recent years, as well as the high number of hermaphrodite polar bears recently discovered, are thought to be related to these pollutants.

Not all environmental damage in the Arctic originates beyond the region. Important sources of ‘black carbon’ — pure carbon released into the atmosphere by poor combustion of fossil fuels — are located in the Arctic or sub-Arctic areas, and these local sources contaminate Arctic ice. Although black carbon has a relatively short travel range and remains in the atmosphere for much less time than the CO₂¹⁶, the damage when deposited on ice or snow is significant. Its effect is similar to the reduction of sea ice: the ice and snow become dark or even black and therefore absorb heat rather than reflect the sun. If the stoves, cars and ships used in the region for heating and transport needs of the local population were to follow strict technical standards, much of this problem would disappear.

¹³ The latitude above which trees do not grow.

¹⁴ A notorious case in the Arctic seas is the giant Arctic crab of the Russian Far East which has reproduced quickly in few years in the Barents Sea and is gradually moving south following the Norwegian coast as the local crab species are unable to compete with it.

¹⁵ Thousands of reindeer were slaughtered because they — like the lichens they ate — had been exposed to cesium and other radioactive particles.

¹⁶ A few weeks, as opposed to as many as 100 years.

The climactic paradox is exemplified by plans to build a large aluminium plant in Greenland, one of the places most threatened by climate change¹⁷. On the one hand, the plant would make impossible for the territory to meet its Kyoto Protocol obligations. On the other, the plant would facilitate Greenland's path towards economic self-sufficiency and future development. The political decision on whether or not to go ahead with plant construction should be taken this summer (2012).

2.6 The need for enhanced Arctic observation

The Arctic environment may not be facing one, single tipping point, as different geographical sectors face different challenges, each with its own tipping point. Still, the region as a whole may face a point of no return, beyond which a collapse in one area produces an acceleration in another, eventually causing a full breakdown. This, in turn, is likely to affect the rest of the world, as the Polar Regions are an integral part of our planet's climactic, weather and ecological system. To avoid such a catastrophe and to better understand the Arctic and avoid duplicating efforts, more decisive international action is required to support Arctic observation with augmented funding and international and cross-continental cooperation research. This would also require that the Arctic coastal states overcome their sense of propriety in certain domains; currently these countries are hyper-sensitive to the danger of becoming an 'internationalised' territory like Antarctica. In fact, the sovereignty of the Arctic coastal states is not contested, and it should be possible to strike a balance between their rights and legitimate, global concerns and interests. International Arctic research should be seen as a bridge between Arctic and non-Arctic countries. While it does not constitute a claim, it should not longer be considered an auxiliary activity now that the future of the planet depends on decisions based on this research.

The year 2007-2008¹⁸ was baptised the international polar year (IPY), an initiative warmly received by the international scientific community that added impetus to Arctic research. The IPY was organised through the International Council for Science (ICSU) and the World Meteorological Organization (WMO)¹⁹. Its final results — after a long process of verification — were discussed and made public at the Montreal Conference 'From Knowledge to Action' on 22-27 April 2012. The challenge today is how to maintain the international momentum to support Arctic observation and research. The questions are more urgent than ever, but those who have been the principal funders and supporters of this work are also today besieged by a serious economic crisis.

¹⁷ In 2007 an agreement was reached between the Greenland Government and a US aluminium producer to explore the possibility of building an aluminium smelter, taking advantage of Greenland's abundant hydropower potential and rich cryolite mineral deposits, but which would double the current CO2 emissions of Greenland.

¹⁸ The last IPY was held in the late 50s.

¹⁹ <http://www.ipy.org/>

3 ARCTIC DEVELOPMENT

3.1 General considerations

'The potential opening of the Arctic as a result of climate change is a seminal event. A region that has generally been understood as being outside the current global affairs is becoming central to them'. This is how the EU Institute for Security Studies and the US National Intelligence Council begin their assessment on the Arctic in their common publication 'Global Governance 2025'²⁰, reflecting a widespread view that the Arctic changes have to be seen as both a source of challenges and opportunities. This view is formulated in various ways –expressing different grades of concern on the protection of the Arctic and making their statements more or less politically palatable. But in the end an ideal balance between adopting measures against the threats faced by the Arctic and taking a gradual advantage of the Arctic resources to use them the world's growing needs (allowing at the same time the deserved development of the Arctic region) is what the greater part of the population and political authorities are seeking; including the majority of those living in the Arctic region itself. The majority of the scientific community, however, tends to be much more alarmed than optimistic about the possibilities offered by the opening.

A reasonable private sector view of the possibilities offered by the changing Arctic has been recently given by the interesting 2012 Lloyd's and Chatman House study on the 'Arctic Opening'²¹, which arrives, among other, to the following conclusions:

- Rapid and disruptive change in the Arctic environment presents uneven prospects for investment and economic development.
- The Arctic is likely to attract substantial investment over the coming decade, potentially reaching USD 100 billion or more.
- Significant knowledge gaps across the Arctic need to be closed urgently.
- Arctic conditions will remain challenging and often unpredictable.
- The environmental consequences of disasters in the Arctic are likely to be worse than in other regions.
- The politics of Arctic economic development are controversial and fluid.
- Governance frameworks in the Arctic should continue to develop in their current direction and be reinforced where possible.
- Risk management is fundamental for companies to work safely, sustainably and successfully in the Arctic.

Moreover the extraction or use of Arctic resources will be attractive to the private sector depending mainly on the evolution of three different factors and on the interaction between them:

- The technology that makes the activity feasible, both for the human and economic conditions in a harsh environment²².
- The prices of those resources or services in the world markets, as compared from the same offer coming from other regions.

²⁰ 'Global Governance 2025: at a critical juncture', NIC & ISS, September 2010

²¹ 'Arctic Opening: Opportunity and Risk in the High North', various authors led by Charles Emerson, Lloyd's and Chatman House, UK, 2012

²² The temperatures in the Laptev Sea, at the Central Siberian north coast go down to 50°C in winter

- The national and international regulations applicable, the States and Regions incentives and - in a larger scope - the reliability provided by international political environment, i.e. by the Arctic governance.

However using the future tense of the verb when referring to the use of Arctic resources (as I did above) is only partially fair, as a significant extractive, fishing and transport activity has already been going on in the Arctic, particularly during the last few decades. If this future tense is still commonly used is not so much a habit of the past but a way to underline that the reserves and possibilities offered by the Arctic resources are huge.

Nevertheless, solid and well sustained studies on the perspectives of Arctic economic development tend to undervalue or even miss an aspect that may become crucial: Unless a common international agreement is found on seriously fighting globally climate change, the economic benefits of Arctic countries and of world-wide companies exploiting Arctic resources and accessing the to other economic activities in the Arctic, may soon not compensate for the overall costs directly caused by the Arctic warming, and subsequently by the global warming. World Bank cost estimations for adaptation and mitigation measures to climate change - which are considered optimistic by many - are in the range of USD 75 million to USD 100 million per year until 2050²³.

The two extreme positions on the use of Arctic resources are represented by:

- the 2008 Ilulissat Declaration²⁴ of the so-called five Arctic littoral States²⁵ (and its follow-up in Chelsea, Canada 2010), in which these countries emphasized that each of them is completely sovereign in their decision to exploit natural resources in their territories and seas and
- the Greenpeace campaign at the 2012 Rio+20 Summit, supported by renown stars, in favour of a UN declaration naming the Arctic region a planetary sanctuary, in which, among other, oil drilling and unsustainable fishing would be banned altogether²⁶.

3.2 Gas and oil

Oil and gas come today immediately to our minds when thinking about Arctic resources. In today's world of a predominantly use of hydrocarbons as source of energy, with an ever increasing energy consumption, with energy costs raising and with so many concerns about the gradual exhaustion of oil and gas fields in traditional extractive regions, the Arctic region, with its presumed large reserves logically becomes an important potential source of energy which can contribute significantly to maintaining global economic growth.

However the order in which we refer to undiscovered reserves of Arctic hydrocarbons has to be reversed: It is firstly gas what is to be found in large quantities in the Arctic, while oil comes only second. The famous 2008 'circum-arctic resource appraisal' carried out by the US Geological Survey on Arctic hydrocarbons²⁷ provides the most accurate prediction made up to date of these reserves, estimating that 30% of the world's undiscovered reserves of natural gas are supposed to be under Arctic lands or

²³ Article on Climate Change, Cold Comfort at 'The Economist', 16-22 June 2012, UK.

²⁴ Declaration of the Arctic Ocean Conference, Ilulissat, Greenland, 27-29 May 2008
http://www.oceanlaw.org/downloads/arctic/Ilulissat_Declaration.pdf

²⁵ i.e. Denmark (on behalf of Greenland), Norway, Russia, US and Canada. The lack of invitation to Iceland for this meeting surprised many analysts.

²⁶ BBC, 21 June 2012 'Rio+20: Sir Paul backs Greenpeace Arctic campaign'.

²⁷ <http://pubs.usgs.gov/fs/2008/3049/>

seas, as well as 13% of the world's undiscovered oil reserves. This should be in principle also good news for the fight against climate change because burning natural gas releases significant less quantities of CO₂ to the atmosphere than oil does. However, the continuous focus on the search for oil and the risk of an environmental disaster in the Arctic sensitive environment while extracting them are also important elements to take into consideration when analysing overall future scenarios.

Several European Union member States have been partly dependent on Arctic hydrocarbons already for many years. Some of the first branches of the oil and gas pipelines that connect into the main conveyers running from Russia to Central Europe²⁸ originate in areas of the Nenets territory or the Yamal-Nenets Okrug, located respectively at both sides of the Urals' extreme north edge. Similarly the offshore production of Norwegian gas and oil - so important for the EU energy security- initially came from the North Sea in the 70s, but it moved north gradually along the Atlantic coast, up to the Barents Sea and therefore to the Arctic Ocean. The Norwegian gas and oil fields discovered in the 1990s, at the top of the Scandinavian Peninsula - like Snohvit - developed impressively transforming the nearby towns and cities, like the port of Hammerfest, attracting the most sophisticated unmanned technology for seabed extraction and developing the industry of liquefied natural gas (LNG) to facilitate its transport by sea-carriers. Norway has a policy of gradually opening new sea lots for offshore drilling after long periods of impact assessment studies and open discussions; however there have been significant tensions between the local fishermen and the companies wishing to explore the seabed of the beautiful Lofoten islands²⁹.

The potential resources of the gas and oil of the Shtokman field under the Russian waters of the Barents Sea is the subject of innumerable feasibility calculations, because the gas and oil world prices have not yet reached a level to openly sustain such a risky enterprise of tapping reserves located much deeper, at around five hundred kms off the Russian mainland coast and surrounded by much harsher climatic conditions. However the extraction offshore at the Barents Sea (and inland under the soil of the Russian part of the Barents region) progresses continuously, facilitating an increasing number of joint ventures between Russian, Norwegian, and big international gas and oil companies, primarily because Russian companies need them, not just for investment purposes but to overcome as well their often too narrow know-how. The signature of the maritime delimitation agreement between Russia and Norway in April 2010 (and its quick ratification in both Parliaments) after forty years of border disputes, opened new avenues for a fertile cooperation between the companies of the two countries in exploiting gas and oil at the Barents Sea³⁰.

Russia sees its Arctic offshore gas and oil reserves as a key strategic asset for the country's future. Around 70 percent of the Russian oil and natural gas reserves are most probably located in its continental shelf. The Russian government hopes that by expanding the production offshore in the Arctic its companies will be able to sell hydrocarbons also to the Asian continent and therefore not remain only dependent on its European customers. The then Prime Minister Vladimir Putin - about to become again Federal President - announced on 16 April 2012 a - politically significant - drastic cut of taxes and export duties on Arctic hydrocarbons and Arctic mineral resources, and justified so saying

²⁸ this main conveyer goes back as long ago as to the times of the Soviet Union, when in the 70s the first cross-European pipelines were built.

²⁹ On 11 May 2012 the Norwegian opposition leader Erna Solberg, who's leading in opinion polls ahead of next year's election, said that she would be willing to open these areas for exploration <http://www.bloomberg.com/news/2012-05-10/>

³⁰ On the sidelines of the St. Petersburg annual forum in June 2012, the Russian Rosneft and Norwegian Statoil companies signed agreements to jointly participate in tenders for the development of the Norwegian part of the Barents Sea, as well as to jointly develop five oil fields in the (North Caucasus) Stavropol region.

that shelf exploration will create 'a new high-tech industry that could attract as much as \$500 billion in direct investments during the next 30 years'³¹.

Arctic oil and gas production in (US) Alaska and Yukon (Canada) began also long ago and became soon commercially viable thanks to the early building -in the 1970s- of a main pipeline coming to the mainland US directly from the Arctic, the Trans-Alaska pipeline³². In general American Arctic basins and lands -including Greenland - are meant to be more oil-prone than the European Arctic areas of Norway and Russia, where gas is much more abundant. The Obama administration, after imposing briefly a moratorium on offshore Arctic exploration, seems to be now more open to the Alaskan pressure in favour of opening new Arctic areas for drilling. In fact the Trans-Alaska pipeline is now operating at less than a third of its capacity³³.

The successive governments led by the Canadian Prime Minister Harper are also encouraging oil and gas companies to invest in Arctic offshore projects, hoping to provide a basis of development in the lethargic economies of the northern territories. The -low level - territorial dispute between Denmark and Canada in 2005 concerning the uninhabited Hans Island³⁴ of 1.3 km², located in the Nares Strait between northern Greenland and Arctic Canada (Ellesmere Island), had the background of the potential findings of oil deposits in the island and the surrounding waters.

Greenland, in the long run, is also expected to produce important amounts of oil. However Greenland has its own obstacles: its bigger reserves are thought to be located around its Eastern coast which has worse climatic conditions and is much less populated.

Analysts regard the extracting of oil and gas by the so-called³⁵ 'Arctic Five' coastal States as a mean for them to achieve both economic and political goals³⁶. However despite all the good prospects for Arctic gas and oil reserves, the safety, regulatory, economic and political risks³⁷ attached to these operations would make their commercial operations in the near future to be restricted to those areas adjacent to where drilling has already been carried out already. In terms of potential investment, the forecast is that Arctic gas and oil industry will absorb only a small fraction of the total world's investment over the next 10-20 years in this sector³⁸. Offshore drilling is still dangerous in the Arctic: Arctic storms, ice drift, low temperatures, darkness in winter and the world's scarcity of vessels adapted to polar conditions - including the few numbers of powerful ice-breakers - are significant challenges for offshore drilling in the climatically harsh Arctic areas. Furthermore for offshore drilling, the use or the support of existing infrastructure at a reasonable distance - including search and rescue infrastructure - is often a deciding factor on whether or not to explore and to open new offshore fields. With all these varied elements in mind it is not surprising the fifteen-year minimum time delay which oil and gas companies estimate

³¹ United Press International (UPI) 16 April 2012

³² i.e. not just connecting several sources (Arctic or not) to the main exporting pipeline, as it is the case with Russian exports to western and central Europe.

³³ Article on Hidden Treasure, at 'The Economist', 16-22 June 2012, UK

³⁴ Throughout 2005 the flag of one country was replaced by the other's flag as soon as expeditions were on shore.

³⁵ Iceland from a geographical perspective -along with other considerations- should have been considered an Arctic coastal State as well

³⁶ *To Drill or Not to Drill: Arctic Petroleum Development and Environmental Concerns*, Andreas Østhagen, the Arctic Institute Centre for Circumpolar security Studies, March 2012, Washington US

³⁷ As well as the 'geological risk' or chance to find enough crude oil or natural gas to make the field economically viable.

³⁸ 'Arctic Opening: Opportunity and Risk in the High North', various authors led by Charles Emerson, Lloyd's and Chatman House, UK, 2012

between the opening of a new territory with confirmed reserves and the beginning of its commercial exploitation.

The EU Arctic policy has taken a 'precautionary approach' from the beginning: The 2008 Commission Communication on the EU and the Arctic Region that launched the EU Arctic policy stated that 'support for the exploitation of Arctic hydrocarbon resources should be provided in full respect of strict environmental standards, taking into account the particular vulnerability of the Arctic. The EU edge in technologies for sustainable exploitation of resources in polar conditions should be maintained'³⁹. This line of seeking a balance between environmental precaution while maintaining EU interests and EU technological competitiveness was supported by the 2008 and 2009 Council Conclusions on the Arctic, as well as in the EP (Ghaler) Report on a sustainable EU policy for the High North of January 2011. The forthcoming Commission's second Arctic Communication this year is not expected to bring major changes to this policy line.

3.3 Mining

There have been full-fledged mines exploited in the Arctic region for more than one hundred years, particularly on coal and high value mineral ores like gold. The close relationship between Arctic economic and political interests can possibly be best demonstrated with the high number of signatory States of the 1920 Svalbard Treaty⁴⁰. This is even more so with the competition that since the 1920s has been going on between Norway and Russia for the Svalbard coal mines and the presence of population from both countries in this Arctic archipelago of Norwegian sovereignty, but subject of a status that allows the exploitation of its resources to any signatory party.

Other traditional mine in the Arctic is the big and deep iron mine of Kiruna, in Sweden's Norrbotten, which has given over the XX century such a good world-wide reputation to Sweden's iron ore 'exports. The mine is still the biggest underground iron ore mine in the world and its success is currently forcing the city of Kiruna itself to move some kilometres away to avoid the collapse of its buildings under its increasing hollow soil.

The largest nickel production in the world comes also from the Arctic, i.e. at the sites of the Norilsk Nickel company in the Kola and the Taymir Peninsulas. Russian Arctic also produces platinum and palladium among other minerals.

In Canada's North-West Territories there are important mines of diamonds and a large iron mine is scheduled to be open on Baffin Island in 2013. To the West, in Yukon, there were mining operations of copper and gold since the beginning of the XX century. After a long period with little mining activity across the Territory, in 2007 the large copper-gold Minto mine was opened with a successful output. In the US, Alaska produces significant quantities of zinc, lead, copper and gold which are sold not only in the internal US market but also overseas, representing more than a third of the State of Alaska's exports.

The case of Greenland mining is of particular interest, as there are strong indications that the Territory containing large deposits of rare earth metals; and the latter are becoming of increasing importance for the production of electronic devices, communications and industries related to alternative energies. As the known world deposits of rare earth metals are becoming gradually depleted and China - by far the

³⁹ COM(2008) 763

⁴⁰ Currently forty two, the Czech Republic has done so as recently as 2006

main producer⁴¹ - is reducing their exports, the exploitation of the possible Greenland's deposits may attract substantial and rapid investments. Another interesting case of Greenland's mining prospects are that of its proven uranium deposits. Despite a zero-tolerance policy followed by Denmark since the 80s on mining radioactive minerals, the Greenlandic Parliament amended in September 2010 the legislative ban on uranium mining applicable to the territory. The amendment left the door open to grant uranium exploration and exploitation licenses but taken on a case-by-case basis. The Greenland Parliament amendment had an important political significance, as it was adopted just after the territory received from Copenhagen extended autonomous powers on resource management through the 2009 Self-Government Act.

There are environmental concerns over mining activities in the Arctic as well, because although in general the potential damage is considered to be lower than with oil spills, great amounts of surface and underground waters could be badly polluted. The past health serious consequences for populations living near some of the Arctic mines of Russia during Soviet times and the controversy around the images of the output produced by the treatment of oil sands in Sub-Arctic lands of Alberta in Canada, are evidence of the need to agree and implement environmental regulations of high-standards for Arctic mining.

3.4 Shipping

Shipping is the economic area where developments are probably happening at a quicker path in the Arctic. In late summer 2009 the big news headings were that 'two German merchant ships had sailed through the once impassable North East Passage after global warming and melting ice opened a route from South Korea along Russia's Arctic coast to Siberia⁴². Although the North Passage - also known as North East Passage - was officially open to navigation already in 1991, these two were the first large and non-Russian commercial vessels to complete the long passage from the Barents Sea until the Bering Strait with the sole clear objective to cut down transport costs from Asia's Far East ports to the European ports. Last summer (2011) thirty four vessels made the passage and eighteen of them did so under purely commercial reasons. One of them was the huge 162.000-ton Russian tanker Vladimir Tikhonov - the largest vessel so far to cross the passage- which made the record of needing just seven and a half days to cross it, despite carrying a cargo of 120.000 tons of gas.

Much has been said about the advantages of using either the Northern Passage, above the Russian northern coast, or the North-West passage across the Canadian Arctic archipelago reducing drastically the number of nautical miles to travel from European and East North American ports to the West North American and Far East ports. There are many ways to calculate the distance savings - depending on the ports of origin and destination - but they all provide astonishing figures: in brief, the use of the North West Passage reduces the distance from Seattle to Rotterdam by 25%⁴³ and the use of the North passage reduces 33% the distance from Tokyo to Rotterdam. The Arctic Passages have also the advantages of avoiding routes with dangerous piracy threats (particularly off the coasts of the Horn of Africa) and avoiding the costs of fees and waiting periods to pass through any of the two main world canals, Panama and Suez.

⁴¹ China controls more than 85% of the world's proven resources of rare earth elements and there are increasing fears that it is ready to use those exports as an economic and political tool.

⁴² The Telegraph, London, 11 September 2009. These news refer to two vessels of the Bremen- based Beluga company.

⁴³ Kingdom of Denmark, Strategy for the Arctic 2011 - 2020

However calculating only distance - and therefore fuel- savings is not accurate, as there are several other elements to be taken into consideration by a company before deciding to use the routes of any of these two Passages. The most obvious limitation is the short time-frame in the year during which the passages are navigable with a minimum of safety, always limited to the last part of the summer season when the ice is at its minimum peak. The North West passage has got a shorter time-frame because of thick ice remaining in the waters favoured by the closeness of the big land masses of the Canadian Arctic islands. Other limitations are the low speed that should be maintained in waters with ice, the need of pilots specially trained to face ice currents, the need to use specially-built vessels to navigate under polar conditions, etc.

Finally other economic considerations when deciding whether to use the routes of any of the two Arctic Passages are the higher insurance costs and the time required for the relevant administrations - particularly in the case of Russian administrations - to issue the relevant permits.

There have been also worrying indications over the years that the Russian authorities would like to maximize the country's benefits by making compulsory the use of Russian ice-breakers to escort ships in certain sections of the Passage or by requiring Russian specialized personnel to be hired in the ships crossing the North Passage in order to supervise their safe navigation. Keeping in mind the long years during which European airlines have had to pay to the Russian authorities for the rights to fly over Siberia⁴⁴, the prospects are not too bright.

As the Arctic waters will remain unpredictable in terms of drifting ice for many years and as these waters are among the worst chartered, the risk of an accident is becoming very real as the number of ships crossing the Passages grows every year. Russia is investing significantly to improve the basic infrastructure to provide a safer navigation through the North passage hoping that it will become an important source of income in the future. It has been announced that this year (2012) a single shipping management system in for Russian Arctic waters will be in place. Nevertheless the available ports and towns with some rescue capacity along the Passages - or situated at a reasonable distance are very few - and the ships have to travel long distances with no support of this type. On the other hand and with a more positive note, Arctic shipping has become a bit safer with the International Maritime Organisation (IMO) 2009 revised guidelines for ships operating in the Arctic -although they remain not compulsory - and with the signature in Nuuk, Greenland, by the eight Member States of the Arctic Council on 12 May 2011, of the 'Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic'⁴⁵.

The bulk of Arctic commercial shipping has been for many years - and it still remains so - to transport commodities between Arctic ports. This activity, together with fishing in Arctic waters, is what the large majority of ships do in the Arctic, and not to cross the long Passages. Russia started to promote in the nineties the use of Northern routes to carry goods and provide services to its isolated Arctic towns, communities and installations in order to reduce costs and ensure accessibility. This objective is maintained but Russia regards now the North Passage also as a key route for its future exports of hydrocarbons and other Arctic resources to Asian countries.

The increasing traffic of shipping in the Arctic causes also environmental concerns beyond the growing risk of accidents at sea. In principle the use of the Passages may well be beneficial to reduce the

⁴⁴ as Russia has not been a WTO member

⁴⁵http://arctic-council.npolar.no/accms/export/sites/default/en/meetings/2011-nuuk-ministerial/docs/Arctic_SAR_Agreement_EN_FINAL_for_signature_21-Apr-2011.pdf

greenhouse gas emissions by ships, as they need fewer days to reach their long-haul destinations. However, Arctic shipping - including notably the growing shipping between Arctic ports - contributes significantly to the spread of black carbon over the Arctic ice, with the negative consequences for global warming that we have seen in chapter 2 of reducing the sun-light reflection and letting the earth absorb more quantities of heat.



source: *The Economist*

3.5 Fishing

Fishing, along with hunting, has historically been the first reason for outsiders to visit the Arctic or settle in it⁴⁶. However fishing is not any more today the reason to move north. The importance of fishing for the economy and societies of the Arctic population varies. Among the Arctic indigenous peoples, the most sea-oriented have always been the Inuit, while the activity of several other groups⁴⁷ have traditionally been more focused on reindeer herding- or on that of its American cousin, the caribou. In modern times some European Arctic countries and territories have been heavily dependent on fishing in the past- like Iceland and to a lesser extent Norway - and their reluctance to share fishing grounds became one of the main arguments against joining the European Union.

⁴⁶ Arctic cod has been fished in today's Norwegian waters for approximately 10.000 years

⁴⁷ including the Sami living across Norway, Sweden, Finland and North West Russia.

Today, Greenland is the Arctic territory where the majority of its exports value (88%) depends on the fisheries economic sector (i.e. including the related processing industries) and particularly on shrimps. 2011 has been a particularly positive year for the Greenlandic fisheries sector - with a rise of 25% in the value of exports thanks to favourable world prices for certain species - but structurally speaking it remains highly sensitive to foreign developments. Moreover while shrimp stock around Greenland seems to be in good health, there are concerns about the traditional Greenland halibut. The seafood industry is also Alaska's largest exporter making up last year (2011) just under half of the state's total export revenues - i.e. outside the US. Icelandic fish industry exports represent around one third of their total value.

The state of Arctic fishing grounds is in general terms among the best in our world, where unfortunately overfishing is the common rule. The boosting of plankton in Arctic waters due to global warming, mentioned in chapter 2, is in principle good news for the expansion of life. However this does apply only for some species and not for all. More important perhaps, the movement north of the species that have traditionally been fished in the Arctic, like Atlantic mackerel, haddock and cod, are starting to cause tensions between governments; not only because their own fishermen do not catch what they expect but because international fishing agreements are based on the idea of a relative continuity of species in the same waters.

Fisheries are the cause of continuous - and relatively low level - tensions in the Arctic region. At the Barents Sea, where Arctic fishing is more common, certain Russian trawlers have often been blamed by Norway of illegal fishing. An incident in October 2005 reached the peak of this tension when two Norwegian Coast Guard inspectors were held against their will in the Russian trawler called Elektron which made its escape to the city of Murmansk to avoid being arrested by the Norwegian authorities. Furthermore, there is an international controversy on the rights of supervising the waters around Svalbard because the 1920 Svalbard Treaty refers to the use of resources of the archipelago by the signatory parties but it does not speak specifically about its waters; Norway argues that it has the right and the obligation to apply its own environmental rules on these waters because it has the sovereignty over Svalbard.

The European Union Arctic policy has taken its most robust position so far on the fishing sector, although limiting its focus to the part of the Arctic seas outside national jurisdictions. The 2008 Commission Communication on the EU and the Arctic Region proposed to 'put in place a regulatory framework for the part of the Arctic high seas not yet covered by an international conservation and management regime before new fishing opportunities arise... Until a conservation and management regime is in place for the areas not yet covered by such a regime, no new fisheries should commence.'⁴⁸ Very much in line with these wishes, in April 2012, more than 2,000 scientists from around the globe signed an open letter calling on leaders of the so-called five Arctic coastal countries to prevent the start of commercial fishing in international Arctic waters until scientific research can be conducted and management measures are in place⁴⁹.

⁴⁸ The 2008 European Commission Communication also states: 'It is a fundamental premise of the EU's Integrated Maritime Policy that each sea-region is unique and needs individual attention in balancing its uses in a sustainable manner'.

⁴⁹ The Calgary Herald, Canada 30 May 2012

<http://www.calgaryherald.com/technology/Taylor+Canada+must+protect+high+Arctic+fisheries/6703821/story.html>

3.6 Tourism

Tourism in the Arctic is growing quickly. Although prices remain high as compared to other destinations, there is a strong wish to see both the Arctic and the Antarctic, as they are among the few unspoiled areas of the world, benefitting of a great beauty and a different biodiversity. This expansion has positive and negative aspects. It helps the development of Arctic isolated communities and helps their integration in the world's economy, but at the same time it brings the associated risks to the Arctic environment and the possibility of accidents in remote areas.

Cruises are now often seen in Svalbard's or Greenland's fjords during summer, in places where you could barely see any human being a few decades ago. These are ships which carry large number of passengers and often -in view of the cost- of advanced age. These numbers represent a serious challenge for the limited capabilities of search and rescue services, in an environment where the chances of surviving depend on the speed to be rescued. Regulation on Arctic cruises is even more complicated than in other areas as they operate both international and national waters. However operators are gradually realizing that it is very much in their own interest to develop standard and accepted rules after several dangerous accidents near Antarctica and, particularly after the Arctic accident of the MV Clipper Adventurer in August 2010: this US small cruise specially prepared for polar conditions ran aground of a rock in the waters of Canada's Nunavut Territory and the Canadian Coast Guard needed two days to provide help. Although there were no casualties, the tough arguments on whether the rock was properly charted or not in Canadian maps showed the potential dangers of Arctic cruising.

Inland Arctic tourism, related to nature and sports is also being developed in the Arctic region. North Norway, North Sweden, North Finland, Iceland and Alaska have been tourist destinations already for many years, while other Arctic places, like Greenland, have developed tourism more recently. The tourism potential of Northern Russia is still very big and undeveloped.

3.7 Other economic activities in the Arctic

There are also other economic activities in the Arctic that we should not forget. On the one hand the traditional reindeer and caribou herding and husbandry - carried out for centuries by several Arctic indigenous peoples - is not only a way of self-subsistence but in many cases an industry in itself. Moreover this activity is an integral part of the Arctic cultures, particularly for the Sami.

Regular industrial development is also happening in the Arctic although at a different scale than in the rest of the world. However industrial development plans of the Arctic in the XXI century are often accompanied by public controversy due to environmental concerns.

As permafrost recedes the tundra – particularly in Northern Russia – would sustain an increasing number of plants. Although the little agriculture activity in the Arctic is today limited to a very short season and to a short range of products its output is growing, as seen in the increasing production of potatoes in Greenland, as the seasons extend.

4 ARCTIC GOVERNANCE

4.1 Arctic Multilateral Governance

4.1.1 Arctic Council

According to its founding Declaration of Ottawa in 1996, the **Arctic Council** is described as a regional forum for sustainable development, mandated to address three main pillars of the circumpolar Arctic cooperation: environmental, social and economic aspects.

Its eight members are Canada, the Kingdom of Denmark (with a delegation composed of Denmark itself, Greenland and Faroe Islands), Finland, Iceland, Norway, the Russian federation, Sweden and the United States of America. It is an innovative international body giving a high profile in its decision-making to the six associations of Arctic indigenous peoples, which enjoy the status of “permanent participants”. These are the Sami Council⁵⁰, the Inuit Circumpolar Council⁵¹, the Gwich'in International Council, the Arctic Athabaskan Council⁵², the Aleut Association⁵³ and RAIPON - The Russian Association of the Indigenous Peoples of the North.

There are six AC observers: Germany, Spain, France, Netherlands, Poland and the United Kingdom, all of them EU Member States and all of them with a long tradition of Arctic presence and with significant Arctic research programmes of their own. There are currently ten official applicants to obtain the status of observer, including one EU Member State - Italy - , the Commission - representing the EU, and important international players with large stakes in world transport, such as China, Japan and South Korea. The applications have not been discussed at the Arctic Council Ministerial meetings of Tromsø (Norway) 2009 and of Nuuk (Greenland, DK) in 2011 because the Ministers decided that they needed to agree first on the Council's own reform, including the introduction of criteria to accept or reject observers⁵⁴. There are several alleged political reasons behind this reluctance to accept specific new observers that affect the rest of the applicants, i.e. Russian traditional mistrust towards China, Norway's hopes to refresh relations with China after the disproportionate reaction of the latter against the granting of the Nobel prize to the dissident Liu Xiaobo, Canada's strong rejection to the EU ban on trade of seal products, etc.

Out of the various countries in the world showing an increased will to have an influence in Arctic governance, there are notably the BRICS countries - other than Russia. China, India and Brazil are developing an active diplomacy vis-à-vis the Arctic states. Among these, China is evidently the most energetic; the recent visit of China's President Hu Jintao to Copenhagen has been interpreted as much in EU terms (DK holds the EU Council Presidency) as in Arctic terms, including meeting the Greenlandic Prime Minister, Kuupik Kleist⁵⁵.

⁵⁰ The Sami people live in areas of Sweden, Finland, Norway and NW Russia)

⁵¹ The Inuit people (called in the past Eskimo) live in Greenland, north of Canada, Alaska (US) and the north bit of the Russian Far East

⁵² The Gwich'in and the Athabaskan peoples live in Yukon, Alberta (Canada) and Alaska (US)

⁵³ The Aleutian people live in the Aleutian Islands between Alaska (US) and the north of Russian Far East

⁵⁴ The criteria has been agreed since then and it is expected that it will be applied at the next Ministerial meeting, in Kiruna, Sweden, in may 2013.

⁵⁵ 'Demien Degeorges, 'China in Greenland: A challenge for the EU', EurActiv, Brussels, 21 June 2012;

The Arctic Council is chaired by one of its Member States, on a rotating basis, during two consecutive years. Currently Sweden holds the Chair (2011-2013) and it will be passed on to Canada next year (2013-2015), to be followed by the US. In the years without Ministerial meetings there are (since 2010) meetings of the Deputy Foreign Ministers. The last one was held in Stockholm on 15 May 2012 and the major decisions taken were:

- Approval of the Arctic Council Communication Strategy;
- Adoption of the final documents to establish a permanent Arctic Council Secretariat in Tromsø, Norway, on the basis of the provisional Secretariat set up by the three consecutive Scandinavian Chairmanships (Norway, Denmark and Sweden) between 2008 and 2012;
- Preparations for the next Ministerial meeting in Kiruna, Sweden in May 2013.

The Senior Arctic Officials (SAOs) meet twice a year, running the daily work of the Arctic Council. The Working Groups are rather independent of the Arctic Council although they report to it. These are: the Sustainable Development Working Group (SDWG), the Arctic Monitoring and Assessment Programme (AMAP), the Protection of the Arctic Marine Environment (PAME), the Conservation of Arctic Flora and Fauna (CAFF) and the Emergency Prevention, Preparedness and Response (EPPR). One of the main deliverables of the Arctic Council has been the Arctic Climate Impact Assessment Report, ACIA (related to AMAP / CAFF), in 2004 which had a large impact at political level across the world providing evidence of the rapid changes to come in the Arctic. ACIA has had several updates which predict an even quicker transformation of the region along this century.

The first ever binding agreement negotiated under the Arctic Council premises - on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic⁵⁶ - was signed at the margins of the 2011 Nuuk Ministerial meeting. Despite the evident international interest on this subject, third parties and “users” of Arctic shipping were excluded from the negotiation of this text.

The Conference of Parliamentarians of the Arctic Region (CPAR)⁵⁷ is a parliamentary body comprising delegations appointed by the national parliaments of the Arctic States (Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, U.S.A.) and the European Parliament. The conference also includes Permanent Participants representing Indigenous peoples, as well as observers. The conference meets every two years: the last and Ninth Conference was held in the European Parliament in Brussels on 13-15 September 2010 and the next one will be held in Akureyri, Iceland on 5-7 September 2012. The Standing Committee of Parliamentarians of the Arctic Region (SCPAR) is responsible for the work between conferences. One of the main priorities of the Standing Committee when it was set up in 1994 was to support the establishment of the Arctic Council. Since then the Committee has worked actively to promote the work of the Arctic Council where it sits and participates as an observer. The last SCPAR meeting has been held in Nuuk, Greenland, on 5 June 2012.

4.1.2 Other international bodies dealing with Arctic issues

The 1982 **UN Convention on the Law of the Seas (UNCLOS)** is considered to be a crucial pillar of Arctic governance. This is so because it is the main international code to deal with seas between sovereign States, but more importantly because, under its auspices, the Commission on the Limits of the Continental Shelf (CLCS) was set up. The latter is the body declaring whether a country can claim any area beyond the 200 nautical miles from the coast, internationally agreed as Exclusive Economic Zone.

⁵⁶ http://library.arcticportal.org/1474/1/Arctic_SAR_Agreement_EN_FINAL_for_signature_21-Apr-2011.pdf

⁵⁷ <http://www.arcticparl.org>

Once a country has ratified UNCLOS it has a period of ten years to make claims on an extended continental shelf. The CLCS is composed of twenty one members, experts in geology, geophysics or hydrography, appointed by the States Parties but acting in their individual capacity. The CLCS receives material submitted by the interested States sustaining their claim, and issues the final decision. As the Arctic Ocean is so small compared to other oceans in the world, it is very likely that the area which will be left free to full international management after the granting of extended continental shelves will be limited. Since there are conflicting submissions to the CLCS on the Arctic Ocean, the CLCS will have to rule as well on the iconic question on whether the geographic North Pole itself belongs to any country. Three countries - Russia, Denmark (Greenland) and Canada - claim that the extension of the Lomonosov Ridge, crossing below the North Pole, is linked to their continental shelves. However one Arctic state, the US, is still not a Party to UNCLOS, despite the recognised wish of different and consecutive presidential administrations; the US Congress tends to be reluctant to join international conventions and several of its Members do not see the advantages of ratifying any additional UN legal instruments which will be legally binding for the US.

Other organisations related to the UN family who are part of the Arctic governance are, among others, the **International Whaling Commission (IWC)**⁵⁸ and the **International Maritime Organisation (IMO)**⁵⁹. The IWC has tense annual meetings on the issue of whether whaling should be allowed to further species and on further quantities, despite the fact that several of these species are in danger of extinction. The 64th IWC annual meeting is being held now in Panama City (11 June - 6 July). The IWC meetings also divide the EU, as Denmark, defending Greenlandic interests, tends to deviate from the agreed EU common positions. The IMO issues guidelines for ships operating in ice-covered waters.

The Barents Euro-Arctic Council (BEAC)⁶⁰ is the only other Arctic intergovernmental body, along the Arctic Council itself. BEAC along with its twin, the Barents Regional Council, remains very much a small but rather successful organization, land-oriented - avoiding the energy and other contentious issues at the Barents Sea - and focusing on pragmatic cross-border cooperation between regions, cities, universities, indigenous peoples and other civil society. The organization is seen by Norway as essential in its relations with Russia and it supports significantly its finances and initiatives. Russian oblasts and territories in the Barents region (Murmansk, Karelia, Arkhangelsk, Nenets and Komi) are very keen to cooperate with their Finnish, Swedish and Norwegian counterparts and - up to know - have been enjoying a large comparative autonomy from Moscow for this type of dealings. The EU is much valued in the region because of its cross-border programmes and for the Northern Dimension Partnerships - which in the case of environment⁶¹ have managed to attract with relative small grants impressive amounts of funds for urgent infrastructure works in water, sanitation and nuclear waste in North West Russia. The European Commission is a founding member of BEAC since 1993 and actively participates in its high-level meetings - bi-annual Ministerial meetings and quarterly Committee of Senior Officials. Russia in general wants to maintain good links with the EU in Europe's High North (i.e. where the Northern Dimension policy and BEAC operate), but prefers to exclude the EU from circumpolar politics, following the traditional zero-sum Moscow concept on geopolitical zones of influence. Each BEAC chairmanship organizes a Barents Parliamentary Conference and a European Parliament delegation participates in them. The last one was held in Lulea, Norbotten in May 2011 and the next one will be held in Harstad, Troms, Norway in April 2013.

⁵⁸ <http://iwcoffice.org>

⁵⁹ <http://www.imo.org>

⁶⁰ http://www.beac.st/in_English/Barents_Euro-Arctic_Council.iw3

⁶¹ <http://www.ndep.org>

4.2 Arctic policies and strategies

The Arctic States have rushed to adopt national Arctic Strategic documents in the XXI century, giving them different titles, affirming that the Arctic is an integral part of their respective countries and societies, underlining ownership, expressing environmental and other concerns and stressing that they have a regional and international view concerning Arctic issues. The interest for the reader therefore lays more on finding which area is stressed and how the concepts are formulated, always bearing in mind the specific political, economic and social framework of each Arctic State.

4.2.1 Arctic policies of Arctic States

Norway was the first Arctic country to adopt an Arctic Strategy in December 2006, naming it under the traditional term used in the country, the High North⁶². The Norwegian High North Strategy aims to create sustainable growth and development in the region following to three overarching principles: presence, activity and knowledge⁶³. The Strategy comprises seven policy priorities:

- exercise authority in the High North in a credible, consistent and predictable way
- be at the forefront of international efforts to develop knowledge in and about the region
- be the best steward of the environment and natural resources in the High North
- provide a suitable framework for further development of petroleum activities
- safeguard the livelihoods, traditions and cultures of indigenous peoples
- develop people-to-people cooperation
- strengthen cooperation with Russia

The High North Strategy highlights the value of an increased international collaboration – particularly with Russia and other neighbours - on resource exploitation, environmental management and research as a key tool to reach these goals⁶⁴.

In March 2009, Norway issued a revised version of the High North Strategy called 'New building blocks in the North'⁶⁵, which provides an unequivocal circumpolar scope beyond the traditional focus on the Barents Sea. Although the main policy goals remain unchanged, it includes a series of specific action points:

- Develop knowledge about climate and the environment in the High North;
- Improve monitoring, emergency response and maritime safety systems in northern waters;
- Promote sustainable development of offshore petroleum and renewable marine resources;
- Promote onshore business development;
- Further develop the infrastructure in the north;
- Continue to exercise sovereignty firmly and strengthen cross-border cooperation in the north;
- Safeguard the culture and livelihoods of indigenous peoples.

In a politically significant decision the Norwegian Army Headquarters was moved in 2009 from Stavanger in the south to the small town of Reitan - near Bodo – north of the Arctic Circle.

⁶² <http://www.regjeringen.no/en/dep/ud/Documents/Reports-programmes-of-action-and-plans/Action-plans-and-programmes/2006/strategy-for-the-high-north.html?id=448697>

⁶³ Kristine Offerdal, Norwegian Institute for Defence Studies, Geopolitics in the High North, Norway 2012

⁶⁴ <http://www.norway.org>

⁶⁵ http://www.regjeringen.no/en/dep/ud/Documents/Reports-programmes-of-action-and-plans/Action-plans-and-programmes/2009/north_blocks.html?id=548803

Russia adopted a national Arctic Strategy in September 2008, called ‘the fundamentals of state policy of the Russian Federation in the Arctic in the period up to 2020 and beyond’. In line with the traditional Russian view of the region, the 2008 Russian Arctic Strategy emphasizes:

- The place of Russia as leading Arctic power and
- The importance of the region for Russia’s economy, concentrating in the existing energy reserves and the development of maritime transport as key revenue sources.

The reference to the year 2020 is made to mobilize and engage the country in a deadline by which its Arctic regions would be consolidated among the top of national priorities and would become the main origin of Russia’s natural resources for both national consumption and exports. In brief, the Arctic is regarded as the source of Russia’s future wealth. The North Sea Passage has a prominent place in the Strategy and, accordingly, it gives high priority to the development of transport and communications infrastructure along the route.

The 2008 Russian Arctic Strategy maintains a conciliatory tone in its statements of international projection, stressing the concepts of Arctic cooperation and promotes the idea of the Arctic region as an area of peace in the world⁶⁶. However other important aspects for the Russian 2008 Arctic Strategy are: the definition of the Russian continental shelf limits by 2015 and the military expansion in the Russian Arctic areas in order to protect the country’s national interests. The military reinforcement in the Arctic is justified by the need to fight terrorism, smuggling, illegal migration and environmental protection.

The then Russian President Medvedev approved in May 2009 another important document to understand the Russian doctrine on the Arctic, ‘the Russian National Security Strategy to 2020’. The document updated and partly modified the 1997 and 2000 Russian national security concepts. As for the Arctic regions, the National Security Strategy reaffirms the security elements of the 2008 Arctic document and asserts that, in the long term, the international attention will be focused on geographical areas where the energy sources are located - notably the Barents Region and the Barents Sea, as well as other areas of the Russian Arctic. During the last years the Russian army has set up special forces and training programmes for Arctic conditions. The national Security Strategy also speaks of the need to reduce economic differences between Russian regions and refers in particular to the Arctic ones.

Denmark first adopted a draft joint Arctic Strategy with Greenland in May 2008 under the name ‘The Arctic at a Time of Transition: Draft Strategy for Activities in the Arctic Region’. It had two principal objectives: first, to support and strengthen Greenland's path towards self-government, and second, keeping Denmark as a whole as a major player in the Arctic.

The 2011-2020 Strategy for the Arctic of the Kingdom of Denmark⁶⁷ was adopted in 2011 by the executives of the three entities forming part of the Denmark’s Realm, the Government of Denmark, the Government of the Faroe Islands and the Government of Greenland. Its objective is twofold: first, to react and respond to the significant environmental and geopolitical change(s) in the Arctic and the growing global interest in the region; and second, to redefine a (new) position for the Kingdom of Denmark and strengthen the country’s status as a player in the Arctic⁶⁸.

⁶⁶ Katarzyna Zysk, Norwegian Institute for Defence Studies, Geopolitics in the High North, Norway 2012

⁶⁷ <http://um.dk/en/news/newsdisplaypage/?newsid=f721f2cb-aff1-4cf7-a3e7-14fda508690a>

⁶⁸ Lassi Heininen, “Arctic Strategies and Policies - Inventory and Comparative Study”. The Northern Research Forum & The University of Lapland, Akureyri, Iceland, August 2011

The Strategy concentrates on the human, development, and environmental aspects of the Arctic region, defining itself 'first and foremost (as) a strategy for development that benefits the inhabitants of the Arctic'. The Strategy also states that 'the Kingdom of Denmark will work for 'a peaceful, secure and safe Arctic; with self-sustaining growth and development; with respect for the Arctic's fragile climate; and in close cooperation with our international partners'. Among all these priority areas the human dimension – health and social affairs- in the framework of Arctic development, receives the outmost importance. Greenland is meant to develop 'new' industries in the Arctic –along with the classical one of fisheries - including hydropower, off-shore fossil fuels and other energy sources, mining and tourism. Shipping, and new sea routes across the Arctic region receive less attention than other national Arctic Strategies. The Danish Strategy establishes the explicit link between security and protecting the economic base of Greenland's economy. It also considers improving and building new infrastructure to reinforce maritime safety as a high priority and an urgent need.

Denmark would like to witness the resolution Arctic maritime boundary disputes in accordance with international law; the enhancement of maritime safety; and the enforcement of sovereignty and national security. The Arctic Strategy of the Kingdom of Denmark is the only one to mention the importance of NATO and it also stresses the relevance of the cooperation between the so-called five Arctic coastal States. The Strategy explicitly recognizes international law - highlighting the importance of the UN's Convention of the Law of the Sea (UNCLOS) - and of peaceful international cooperation in order to develop the Arctic region.

The Kingdom of Denmark's Arctic Strategy will have a mid-term evaluation in 2014 / 2015 and an update will be prepared in 2018 or 2019.

The **United States** strategic document on the Arctic Region was adopted as a Presidential directive at an odd moment of time, in January 2009, at the very end of the eight years of the George W. Bush Administration - just before the new elected President Obama would be sworn in. However the document was negotiated between the two parties and has been respected since then. The document reflects an increasing US interest on the Arctic region: including interest on the changes produced by climate change and their consequences, as well as giving praise to the works and activities of the Arctic Council. The US recognizes for the first time the 'broad and fundamental national security interests in the Arctic region'.

The US Presidential directive seeks a balance between an independent positioning when the US interests require so and international cooperation in Arctic matters. The perspective of national security –including homeland security - receives a particular attention. However the lack of a solid ice-breaker capacity in the US and the fact that, over the years, building it is not considered a priority, is often given as an example of the Washington's perspective of the Arctic as a far away matter, not as embraced into the national definition and character as it is in Canada.

The Directive is openly in favour of the Congress' ratification of the country's accession to the UN Convention on the Law of the Sea (UNCLOS). Other 'classical' aspects of an Arctic Strategy, like research, energy, environmental issues and transport are also covered by the directive.

Canada adopted its 'Northern Strategy: Our North, Our Heritage, Our Future'⁶⁹ in March 2009. As its name indicates, it is a strategy that first and foremost stresses that the Northern Territories are

⁶⁹ <http://www.northernstrategy.gc.ca/cns/cns-eng.asp>

unequivocally part of Canada; its first chapter is called 'Exercising Our Arctic Sovereignty'. As in the case of the Kingdom of Denmark's Arctic Strategy, the human dimension – including social and economic development – gets an outstanding attention, followed by environmental and governance considerations, including the element of 'Devolving (Northern) Governance'. The principle of devolving powers to indigenous communities – called 'First Nations' in Canada - is largely accepted in the country but its implementation and limits is always controversial. The element of international cooperation is not missing and treated at the end, but is clear from the outset that it is not the principal objective of this strategy prepared by - what is now known as- the Department of Aboriginal Affairs and Northern Development.

The main elements of 'Canada's Arctic Foreign Policy' are treated in a shorter separate 'Statement' adopted in August 2010⁷⁰. Its main goals are the international recognition of Canada's sovereignty and 'presence' in the Arctic region. The Statement also highlights the need to take a positive action to defend Canadian values in the Arctic. International cooperation, diplomacy and respect of international law are listed as the main tools to defend the agreed goals.

In 2009, the Canadian Parliament officially renamed the North West Passage for maritime traffic through its Arctic archipelago as the 'Canadian North West Passage' in a move full of national and international political significance. Canada claims that the Passage is done through its internal waters and that, due to its special environmental vulnerability, it requires a strict control by its authorities. On the contrary the US does not recognise this Passage as Canadian internal waters but as an international strait. The Passage has been often crossed by US navy vessels who however notify the Canadian authorities but only under information grounds. Although the EU Arctic Policy does not take any position on this issue in its basic documents, the statement of the 2008 European Commission Arctic Communication defending the UNCLOS principles of freedom of navigation and the right of innocent passage was received with open mistrust in Ottawa.

The Canadian Government has recently stepped up scientific research and military exercises in the Arctic region as a way of asserting its sovereignty rights over the Northwest Passage. Canada has plans to develop deep water ports in the North West Passage – Nanisivik and Resolute Bay in Nunavut – but they will require a great deal of investment. The Government plans to build a fleet of ice-breakers which was announced in nationalistic speeches a few years ago have been recently turned into a more realistic fleet of ships with Arctic equipment being currently built. The recent reinforcement of the 'Canadian (Arctic) Rangers - a unique combination of traditional Inuit knowledge and modern military technique – should be interpreted in the same lines.

The **Finland's** Strategy for the Arctic Region was adopted in June 2010⁷¹, in what was interpreted as an 'Arctic awakening' of the Finnish foreign policy. The Finnish foreign policy has traditionally focused on the Russian relations and on attracting EU attention on Northern European issues – like the EU Northern Dimension policy – but not precisely on circumpolar questions. This can be understood by the fact that Finland lost its Arctic Ocean coast to Russia already in 1944.

The Strategy has a similar structure of the one followed by the first Commission Communication on the EU and the Arctic Region, placing upfront environmental considerations in the chapter called 'Fragile Arctic Nature'. The EU and the Arctic Region has even a chapter of its own in this Strategy. By adopting

⁷⁰http://www.international.gc.ca/polar-polaire/canada_arctic_foreign_policy-brochure_la_politique_etrangere_du_canada_pour_arctique.aspx?lang=eng&view=d

⁷¹ <http://forin.finland.fi/public/default.aspx?contentId=194146&nodeId=23&contentlan=2&culture=en-US>

this positioning Finland assume some political risks as an Arctic Council member and more generally in the context of multilateral Arctic cooperation, because the role of the EU is still contested by some Arctic actors⁷².

Arctic economic activities are the subject of the second chapter, highlighting Finnish know-how in and its suitable application in the Arctic region, particularly in the areas of ice and polar shipping and of Arctic sub-arctic forest management. Other chapters cover transport and indigenous peoples' issues. The Finnish Strategy recognises - among what it calls 'Arctic tools' - the Arctic Council as the main forum for Arctic policy. At the same time organisations more traditionally included among the priorities of the Finnish foreign policy, like Barents Euro-Arctic Council (BEAC) and the Nordic Cooperation, are praised. The EU Northern Dimension policy is expected to be developed and the long-standing Finnish proposal to establish an EU Arctic Information Centre in Rovaniemi, Lapland, is also stressed.

Sweden has adopted its 'Strategy for the Arctic Region'⁷³ only last year, in May 2011 when it was taking over the rotating biannual Chairmanship of the Arctic Council. There are no major innovations in the Swedish Strategy but it is well structured, focussing on three clear priorities which largely coincide with the programme of the Swedish Chairmanship of the Arctic Council:

- Climate and the Environment
- Economic Development and
- Human Dimension

Sweden seeks sustainability when exploiting Arctic resources and stresses the need to respect international law. Fight against climate change in the Arctic and in the entire world is mentioned in a prominent place.

As in the case of the Finnish Strategy, Sweden values the Arctic Council, Nordic Cooperation, BEAC, the Sami trans-national cooperation, etc. It also acknowledges UNCLOS and other UN Conventions applicable to the Arctic region. The European Union and its Arctic policy receives a much more limited attention when compared with the Finnish Strategy

4.2.2 The development of the EU Arctic policy

The EU has a clear Arctic vocation. Many of the EU policies and programmes have a direct or indirect effect in the Arctic, including research, environment, indigenous peoples, transport, maritime policy, fisheries and energy. The EU has also clear and vital interests in the Arctic region and in its governance; as examples:

- the only EU citizens that are considered indigenous peoples according to the UN definition are the Sami people of Finland and Sweden,
- almost 40% of the world merchant fleet is owned or operated by companies and residents of EU Member States,
- an ever increasing percentage of energy consumed in the EU comes from Arctic fossil fuels etc,

The EU Arctic policy has not been built at once; it is an ongoing process of gradual formulation, which started in 2008 and includes so far the following basic documents:

⁷² Lassi Heininen, University of Lapland in Geopolitics in the High North, http://www.geopoliticsnorth.org/index.php?option=com_content&view=category&layout=blog&id=38&Itemid=106

⁷³ <http://www.sweden.gov.se/content/1/c6/16/78/59/3baa039d.pdf>

- The European Commission Communication on the EU and the Arctic Region 768 (20/11/ 2008), which was the first regional approach undertaken following the EU Integrated Maritime Policy⁷⁴. The Council welcomed the Communication in December 2008.
- The Conclusions on the Arctic of the 2985th Foreign Affairs Council (08/12/2009), and
- The European Parliament Report on a sustainable EU Policy for the High North (20/01/2011).
- The European Commission and the European External Action Service (EEAS) are preparing a second Communication on the Arctic

The EU Arctic policy develops a coherent and comprehensive approach for the Arctic region, based on cooperation with the international bodies and agreements, Arctic States (EU and non-EU Member States), autonomous territories, the peoples living in the Arctic, and other stakeholders. It shows a large similarity with the policy documents issued by Arctic States in terms of priorities. The EU Arctic policy has three main policy objectives:

- Protecting the Arctic in unison with its population;
- Promoting sustainable use of natural resources;
- Contributing to governance in the Arctic through implementation of relevant agreements, frameworks and arrangements, and their further development.

The EU Arctic Policy provides as well a different strategic approach to Arctic policy. It does not contain sovereignty or defence perspectives and it was innovative in recognising that the sources of the problems faced by the Arctic region today are in the developed countries, including the EU itself.

Arctic research is the area in which the EU has provided the main financial support. The EU and its Member States together is the largest contributor to Arctic research and EU research has the additional added value that it is conceived to be international by definition, helping to set up useful and important networks of Arctic research beyond institutions of all continents. The EU Research Framework Programme alone has provided more than EUR 200 million in the XXI century. See annex II for the list of polar projects financed so far by the European Commission under the 7th Research Framework Programme, i.e. for the period 2007-2013. A new call for proposals, including polar projects will still be launched this year under the same seventh Framework Programme. The EU research plans for the next multiannual financial framework (2014-2020) will also finance projects of Arctic relevance.

The EU Arctic policy was launched at a difficult timing. The March 2008 High Representative / Commission paper on “Climate Change and Security” and the November 2008 Arctic Commission Communication triggered cold reactions by some third Arctic Ocean coastal States - notably Russia and Canada. These States, along with the other so-called Arctic coastal States were then in a rush to underline their sovereignty and Arctic ownership trying to extend their rights on the Ocean based on claims made at the UN Commission on the Limits of the Continental Shelf. Although the Communication and the Council Conclusions do not enter into these areas, they firmly defended the international maritime Law / UNCLOS solid principles of “freedom of navigation and innocent passage”. Moreover the Communication saw the light in a time which was not the best for our Arctic image vis-à-vis Arctic indigenous peoples and some Arctic third States i.e. when the drafting of the Regulation banning trade of seal products was being finalized. The latter, approved in summer 2009, includes an “Inuit exception” which was developed by the Commission in August 2010. However the exception is not considered credible by several associations of Arctic indigenous peoples. The Inuit Circumpolar Council (ICC) initiated a case in 2010 at the EU Court of Justice. Moreover, Canada and Norway

⁷⁴ Action 7.3 of the Integrated Maritime Policy Action Plan SEC(2007) 1278

complained at the WTO in 2010. Canada has decided in February 2011 to go further and call for a WTO panel.

Three of the Arctic Council member States are Members of the EU - Denmark, Finland and Sweden; EU relations with the Danish territory of Greenland are very close and affecting a huge number of areas; two other Arctic Council Member States - Iceland and Norway - are members of the European Economic Area (EEA) and (*as mentioned in point 4.1 above*) all current six Arctic Council observers are EU Member States. Nevertheless, the Arctic Council Foreign Ministers has decided twice (2009 and 2011) to postpone its final decision on the EU's application to become an Arctic Council formal observer⁷⁵. This blocking position has been promoted by Canada and the Russian Federation. Nevertheless the EU has always recognised the fundamental role of the Arctic Council in Arctic cooperation⁷⁶. The application remains active and there are good prospects that it will be finally accepted by all Arctic Council members at the next Ministerial meeting which will be held in Kiruna, Norbotten (Sweden) in May 2013, marking the completion of the Swedish Chairmanship of the Arctic Council.

All this difficult process for the EU to be recognised as an Arctic stockholder is even more surprising when we realize that the European Parliament has been a founder member of the Standing Committee of Arctic Parliamentarians (SCPAR) in 1993 and of the Conference of the Arctic Parliamentarians (CPAR) which meets every two years. The Chairman of the European Parliament Delegation for Switzerland, Iceland, Norway and the European Economic Area (SINEEA), MEP Pat de Cop Gallagher, is a full member of SCPAR. The last CPAR meeting was hosted by the European Parliament in Brussels in September 2010.

The EU has also acknowledged the special responsibility of Arctic States and autonomous territories, as well as the prerogatives of the Arctic Ocean States and territories, in line with the United Nations Convention on the Law of the Sea (UNCLOS).

SOURCES

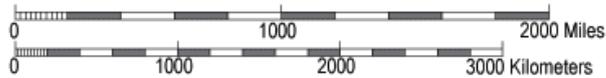
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- European Voice, Belgium
- European Commission (DG RTD, DG MARE) and EEAS

http://ec.europa.eu/maritimeaffairs/pdf/ActionPaper/action_plan_en.pdf

⁷⁵ I specify 'formal' observer because the European Commission delegation is usually admitted as 'ad-hoc' observer to the Arctic Council Ministerial meetings and those of the Senior Arctic Officials (SAOs), but it has to apply in each occasion.

⁷⁶ As a good example, the current 7th EU Framework Programme of Research gives a particular importance to Arctic issues and has provided the lead for one of its human health projects to AMAP, one of the Arctic Council Working Groups

Annex I: Map of the Arctic Region



Arctic Map

source:

<http://www.arctic-map.com/arctic-map.gif>



European
Commission

Annex II: EU Polar Research projects under the Seventh Framework Programme (2007-2012)

Collaborative Research Projects Targeting The Polar Regions 2007-2012 Seventh Framework Programme – Cooperation

Grant	Project Title	Start /End	EU Contribution (€ million)	Consortium	Project Website	Project Objectives
ACCESS	Arctic Climate Change, Economy and Society	2011-2015	11.0	27 partners from 10 countries	www.access-eu.org	To assess and quantify climate change impacts on key economic sectors (maritime transport, fisheries, tourism and resource extraction) and on how the development of these sectors could affect the Arctic environment, including climate feedbacks. To produce scenarios that will help policy makers in their strategic choices. The project will also consider Arctic governance issues, including the United Nations Convention for the Law of the Sea framework.
ACOBAR	Acoustic Technology for Observing the interior of the Arctic Ocean	2008-2012	3.0	9 partners from 5 countries	http://acobar.nersc.no	To develop an observation system for environmental monitoring of the Arctic Ocean using underwater acoustic methods.

Grant	Project Title	Start /End	EU Contribution (€ million)	Consortium	Project Website	Project Objectives
ArcRisk	Arctic Health Risks: Impacts on health in the Arctic and Europe owing to climate induced changes in contaminant cycling	2009-2013	3.5	21 partners from 12 countries	www.arcrisk.eu	To understand a) what influence climate change is having on the long-range transport of contaminants; b) how contaminants travel through the food web; and c) what impact this is having on the health of human populations, including Arctic populations. This project is coordinated by the Arctic Monitoring and Assessment Programme, a working group of the Arctic Council.
ATP	Arctic Tipping Points	2009-2012	5.0	13 partners from 11 countries	www.eu-atp.org	To identify and assess potential critical thresholds at which minor climate change driven perturbations can irreversibly change the Arctic marine ecosystems.
CLEAR	Climate Change, Environmental Contaminants and Reproductive Health	2010-2014	2.4	8 partners from 8 countries	www.inuendo.dk/clear	To investigate the possible impact of global climate change on reproductive health in the Arctic and in two local European populations. The key questions to be addressed are: a) how may climate change impact on human exposure to widespread environmental contaminants; and b) how may contaminants impact on occurrence of reproductive disorders as sensitive indicators of health.
DAMOCLES^{77*}	Developing Arctic Modelling and Observing Capabilities for Long-term Environmental Studies	2005-2010	16.5		www.damocles-eu.org	To identify and understand the changes in sea-ice, atmosphere and ocean of the Arctic and sub-Arctic domain, improve modelling and determine appropriate adaptation strategies.
EPOCA	European Project on Ocean Acidification	2008-2012	6.5	32 partners from 10 countries	www.epoca-project.eu	To improve the understanding of past and present spatio-temporal changes of ocean acidification; to determine the impacts of ocean acidification on marine biota; to improve the understanding of future changes in ocean chemistry and biogeochemical feedbacks in terms of hotspots, uncertainties, thresholds; to synthesise information on tipping points.

⁷⁷ * These are grants awarded under the Sixth Framework Programme but executed during the 2007-2013 period

Grant	Project Title	Start /End	EU Contribution (€ million)	Consortium	Project Website	Project Objectives
EURO-BASIN	European Union Basin-scale Analysis, Synthesis and Integration	2010-2014	7.0	24 partners from 10 countries	www.euro-basin.eu	To understand the potential impacts and feedbacks of global change and anthropogenic forcing on the sea ecosystems of the North Atlantic, including the associated Arctic shelf with a view to furthering our capacity to manage these systems (e.g. fisheries) in a sustainable manner. EURO-BASIN is part of a multidisciplinary international effort (BASIN) linked with similar activities in the US and Canada.
HERMIONE	Hotspot Ecosystem Research and Man's Impact on European Seas	2009-2012	8.0	38 partners from 14 countries	www.eu-hermione.net	This project seeks to advance knowledge of the functioning of EU deep-sea ecosystems and their contribution to the production of goods and services. It considers the combined effects of climate change and human activities such as fishing, resource extraction, seabed installations and pollution. It comprises a component looking at the impact of global warming in the Arctic on deep sea ecosystems.
HYPOX	In situ monitoring of oxygen depletion in hypoxic ecosystems of coastal and open seas, and land-locked water bodies	2009-2012	3.5	16 partners from 11 countries	www.hypox.net	To monitor oxygen depletion and associated processes in aquatic systems due to global warming and eutrophication in open waters and land-locked systems. The Arctic is one of several regions studied. This project improves the capacity to monitor oxygen depletion globally by implementing reliable long-term sensors to different platforms for <i>in situ</i> monitoring. It will use a state of the art data centre and comply with GEOSS standards.
Ice2sea	Estimating the future contribution of continental ice to sea-level rise	2009-2013	10.0	24 partners from 13 countries	www.ice2sea.eu	To enhance global sea-level rise projections by improving the understanding of the interactions between ice and climate. Specifically, it will study the contribution that the loss of continental glaciers and ice sheets stands to make to sea level rise, thus reducing a key source of uncertainty in the projections. This project will help to build a scientific foundation for policy development and decision-making in this area.

Grant	Project Title	Start /End	EU Contribution (€ million)	Consortium	Project Website	Project Objectives
PAGE21	Changing Permafrost in the Arctic and its Global Effects in the 21st Century	2011-2015	6.9	18 partner from 11 countries	www.page21.eu	To improve the understanding of the processes and dynamics affecting the size of the Arctic permafrost carbon and nitrogen pools, and assess their vulnerability to climate change. This project will improve datasets and modelling, and further the understanding of uncertainties and of feedbacks involving permafrost and global change. It will also explore stabilisation scenarios.
RECONCILE	Reconciliation of essential process parameters for an enhanced predictability of Arctic stratospheric ozone loss and its climate interactions	2009-2013	3.5	16 partners from 8 countries	www.fp7-reconcile.eu	To improve our understanding of key processes dominating polar ozone loss. Through direct implementation of a chemistry climate model (CCM), the project strengthens our predictive capabilities in terms of feedbacks between stratospheric ozone and global climate change, in particular in the polar regions.
SEARCH for DAMOCLES *	Study of environmental Arctic Change - Developing Arctic Modelling and observing capability for long-term environment studies	2006-2010	0.6	5 partners from 4 countries	www.damocles-eu.org	This was a joint initiative designed to foster a partnership between two major Arctic research programs, SEARCH (USA) and DAMOCLES (EU) to exploit synergies on account of their shared scientific objectives. These included large-scale observations of the Arctic Ocean sea-ice cover, circulation and atmospheric processes, integration and assimilation of observations with models, assessment of environmental and human impacts.
THOR	Thermohaline overturning – at risk?	2008-2012	9.3	20 partners from 9 countries	www.eu-thor.eu	THOR combines modelling with observations to provide improved quantification of the risk, time horizon and possible scenarios for Thermohaline Circulation breakdown, and related abrupt climate change for Europe and the Arctic/sub-Arctic region in the medium term. THOR will also develop strategies for the establishment of a medium term climate forecast service for Europe to assist planning in both the public and the private sectors.



European
Commission

Projects on Infrastructures and Networks for Polar Research 2007-2012

Seventh Framework Programme – Capacities

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EISCAT_3D_2	Upgrade of the EISCAT facility for ionospheric and space weather research	2010-2014	4.5	8 partners from 5 countries	www.eiscat.se	EISCAT_3D is a next generation incoherent scatter radar system for high-latitude atmosphere and geo-space studies. The facility will consist of multiple large phased-array antenna transmitters/receivers in three countries, comprising tens of thousands of individual antenna elements. The new radars will collect data from the upper stratosphere to the magnetosphere and beyond.
EMSO	European Multidisciplinary Seafloor Observatory	2008-2012	3.9	12 partners from 12 countries	www.emso-eu.org	To establish the legal, financial and governance framework of a new European Multidisciplinary Seafloor Observatory as identified in the ESFRI roadmap. This preparatory phase project will aim at the foundation of a European Research Infrastructure Consortium as the legal entity that will manage EMSO distributed research infrastructures.

Grant	Project Title	Start /End	EU Contribution (€ million)	Consortium	Project Website	Project Objectives
ERICON-AB	The European polar research icebreaker consortium Aurora Borealis	2008-2012	4.5	15 partners from 10 countries (and ESF)	www.eri-aurora-borealis.eu	To generate strategic, legal, financial and organisational frameworks as a basis to develop and implement the European Polar Research icebreaker Aurora Borealis.
ESONET	European Seas Observatory Network	2007-2011	7.0	44 partners from 14 countries	www.esonet-noe.org	To create an organisation capable of implementing, operating and maintaining a network of ocean observatories in deep waters around Europe. To make continuous real-time observations over a range of time scales.
EuroSITES	Integration and enhancement of key existing European deep-ocean observatories	2008-2011	3.5	13 partners from 8 countries	www.eurosites.info	To construct a coherent European network of deep ocean observatories and perform a small number of specific science missions to inform future improved and novel monitoring capability.
EuRuCAS	European-Russian Centre for cooperation in the Arctic and Sub-Arctic environmental and climate research	2012-2015	2.0	12 partners from 8 countries	<i>To be announced</i>	To enhance cooperation on Arctic research between the EU and Russia by providing access for EU researchers to work at the Nansen International Environmental and Remote Sensing Centre (NIERSC) established in St. Petersburg, Russia. Joint studies to focus on climate and environmental changes in the Arctic and Sub-Arctic in the 21st century and their socio-economic impacts will also be supported.
ICOS	Integrated Carbon Observing System	2008 - 2012	4.3	19 partners from 14 countries	www.icos-infrastructure.eu	<p>ICOS provides the long-term observations required to understand the present state and predict future behaviour of climate, the global carbon cycle and greenhouse gases emissions. It tracks carbon fluxes in Europe and adjacent regions by monitoring the ecosystems, the atmosphere and the oceans through integrated networks. Data from several observatories are already available.</p> <p>At high latitudes, amplified climate change increases the emissions of greenhouse gases from several vulnerable areas potentially setting off different feedbacks. ICOS monitors these high-latitude feedbacks from observatories in Northern Eurasia.</p>

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INTERACT	International Network for Terrestrial Research and Monitoring in the Arctic	2011-2014	7.3	33 partners from 14 countries, 8 observer stations from a further 4 countries, and 1 international organisation	www.eu-interact.org	<p>To build a circum-arctic network of terrestrial field bases for enhanced capacity for research and monitoring in the Arctic. Includes access to the field stations and data.</p> <p>In its first year of life, INTERACT has already established equipment to measure biospheric feedbacks at many sites and awarded hundreds of researchers access to 20 research stations. Further, methods for networking sensors and data management have been surveyed and INTERACT co-convened a meeting of the major Arctic organisations to improve cooperation on biodiversity issues. A catalogue of research stations and their activities has also been produced.</p>
SIOS	Svalbard Integrated Arctic Earth Observing System	2010-2013	4.0	26 partners from 14 countries	www.sios-svalbard.org	<p>SIOS will provide a unique assembly of observational infrastructures to address the whole spectrum of the natural coupled system in the European Arctic. It will thus be a crucial infrastructure to verify predictions of coupled Arctic, and – ultimately – Earth System Models, either directly or indirectly through validation of satellite observations in a particularly challenging region.</p>