

Denmark, Greenland and the Faroe Islands:

# Kingdom of Denmark

## Strategy for the Arctic 2011–2020



Photo.: Per Arnesen

Denmark, Greenland and the Faroe Islands:

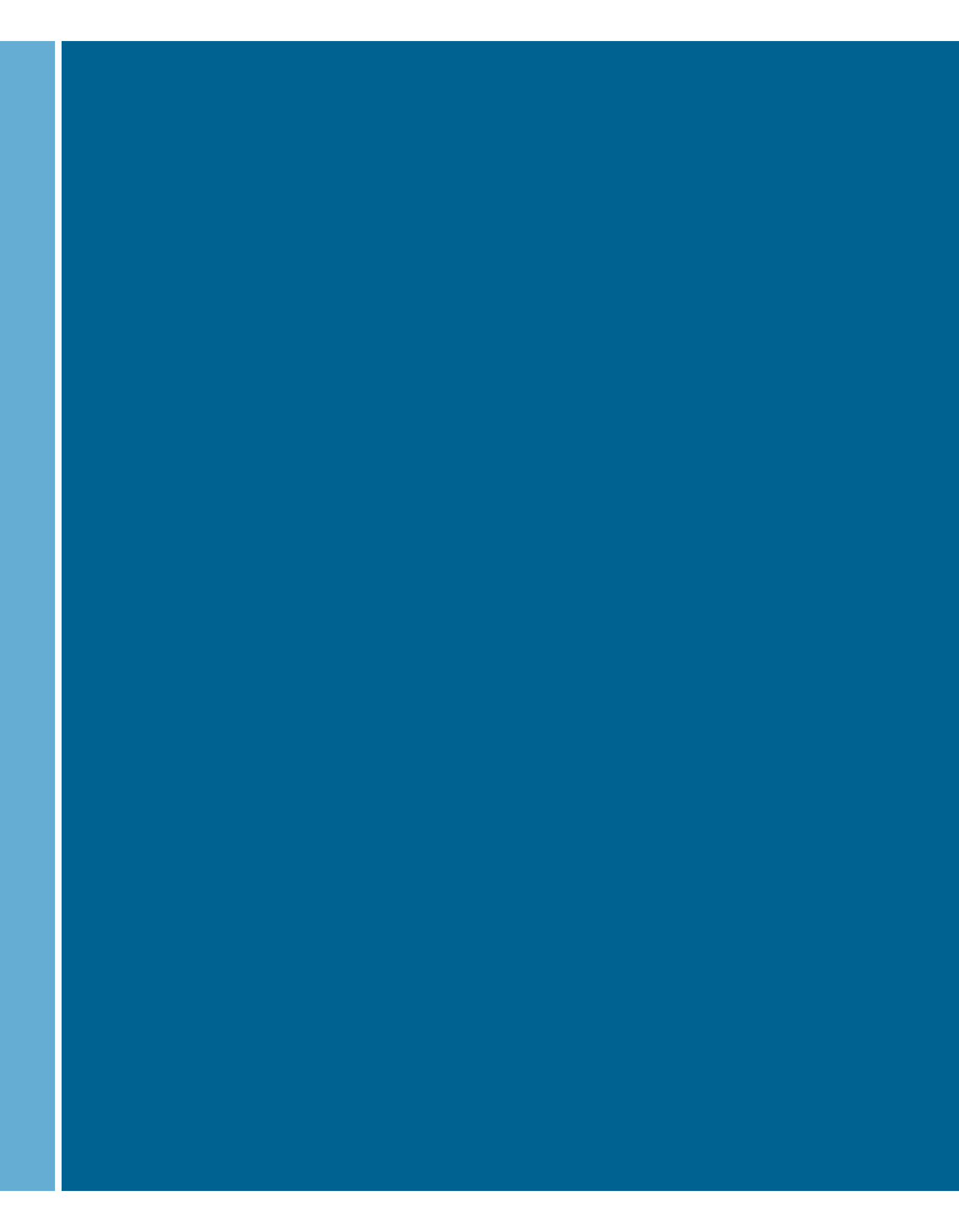
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# Preface

The Kingdom of Denmark is centrally located in the Arctic. The three parts of the Realm – Denmark, Greenland and the Faroe Islands – share a number of values and interests and all have a responsibility in and for the Arctic region. The Arctic makes up an essential part of the common cultural heritage, and is home to part of the Kingdom's population.

The Kingdom and its populations have over several hundred years developed modern and sustainable societies based on democratic principles. The development has affected all sectors of society - from education, health and research to the environment, trade and shipping. At the same time, huge and sweeping changes are taking place today in the Arctic. Due to climate change and technological developments, vast economic potential is becoming more accessible.

It is our common objective that the Arctic and its current potential must be developed to promote sustainable growth and social sustainability. This development must take place firstly to the benefit of the inhabitants of the Arctic and go hand in hand in safeguarding the Arctic's environment.

With new opportunities come new challenges. The Arctic has to be managed internationally on the basis of international principles of law to ensure a peaceful, secure and collaborative Arctic.

The purpose of this strategy is, on the basis of an already strong engagement in the Arctic, to reinforce the foundation for appropriate cooperation on the many new opportunities and challenges that the Arctic is facing.

The Kingdom is already a vigorous and important actor in the strategically vital international cooperation on the future of the Arctic and in that connection attaches great importance to creating transparency in and understanding for cooperation.

In the Kingdom's strategy for the Arctic 2011-2020, the Government, the Government of the Faroes and the Government of Greenland have set out the most important opportunities and challenges as we see them today and in the near future. On that basis we have defined our common political objectives for the Arctic.

We will – through close cooperation in the Kingdom and with our international partners - work towards the common overall goal of creating a peaceful, prosperous and sustainable future for the Arctic.

For the Government of Denmark

Lene Espersen



For the Government of the Faroes

Kaj Leo Holm Johannesen



For the Government of Greenland

Kuupik Kleist





Photo: Silje Bergum Kinsten / norden.org

# 1. Introduction

## 1.1. A REGION IS OPENING UP

One of the most significant global issues over the past 10 years is the vast changes in the Arctic region. The world has again turned its attention to the Arctic, this time mainly because of the climate effects in the Arctic, the economic potential of the region, and the geopolitical implications of changes in the Arctic. The political, economic and social development is already underway, including the flourishing of advanced democratic societies, and the future of the Arctic will be radically different from the reality we know today.

Warming in the Arctic is occurring faster than anywhere else on the planet, and the average temperature in the Arctic has surpassed all previous measurements in the first decade of the 21st century. Sea ice has been shrinking, and the melting of Greenland's ice sheet and other Arctic ice caps will contribute more and more to the rise in global sea levels. Climate change has major implications for the global, regional and local climatic and environmental conditions and requires decisive global action.

The Arctic and the global community are presented with both new challenges and new opportunities.

Climate change poses new challenges to the peoples of the Arctic and puts pressure on the natural environment. Warming will

especially change the basis of the Arctic inhabitants' lifestyles and the indigenous Arctic peoples' culture. Moreover, the harvesting of living resources plays a pivotal role in the Arctic, and changes for example in fish stock productivity and distribution is of great importance to the economy. Glaciers in the Arctic and the Greenland ice sheet increasingly contribute to the global rise in sea levels, and changes and dynamics in Arctic systems are crucial to global climate trends. Thus, they are of particular significance for the adaptation to climate change on a global scale and thereby also for the entire Kingdom. Increased economic activity and renewed geopolitical interest in the Arctic results in a number of key challenges to ensuring a stable, peaceful and secure region characterized by dialogue, negotiation and cooperation.

Climate change and technological developments are also opening new possibilities for the Arctic. Among them is increased access to the exploitation of oil, gas and minerals, but also new shipping routes which can reduce costs and CO<sub>2</sub> emissions by freight between the continents. It is estimated that the Arctic may contain up to 30% of the world's undiscovered gas resources and about 10% of undiscovered oil resources, and that ships sailing between East Asia and Western Europe could save more than 40% in transportation time and fuel costs by navigating the northern sea lanes north of Siberia rather than the southern route

through the Suez Canal. Furthermore, climate change could provide access to new fishing grounds in the Arctic where rising sea temperatures can pull fisheries towards the North. Commercial opportunities in the Arctic are enormous, not least for the Greenland, Faroese and Danish industries, which to a great extent already possess the skills that will be far more in demand with the development of the Arctic region.

Overall we can expect a multi-faceted boom in activities in the Arctic over the coming decades. New opportunities and challenges must be handled proactively - with care, with long-term accountability and with respect for the Arctic societies, the rights of Arctic indigenous peoples, the

### FACTS ABOUT THE ARCTIC

The Arctic covers more than a sixth of the Earth's total land mass plus the Arctic Ocean which the Arctic coastal states border. Unlike Antarctica, which also has relatively low temperatures year round, the Arctic region is populated by people, including more than 30 different indigenous peoples such as the Inuit who originate from the Thule culture. The Arctic has a unique wildlife, largely associated with the sea, including marine mammals such as seals, whales and walrus.



Arctic climate and the environment. The basis for the future of the Arctic is being created now, and the Kingdom must play a key role in the future international cooperation that lies ahead.

## 1.2. JOINT STRATEGY FOR THE ARCTIC

The Kingdom consists of three parts - Denmark, the Faroe Islands and Greenland - and, by virtue of Greenland, is centrally located as a coastal state in the Arctic. This involves specific rights and obligations in the region. Today, both the Faroe Islands and Greenland have extensive self-government and the division of legislative and administrative powers between the Kingdom's three parts requires good cooperation and a joint strategy to meet the opportunities and challenges in the Arctic.

The Faroe Islands and Greenland have had home rule since 1948 and 1979, respectively. Home rule arrangements have been continuously modernised, most recently by the Takeover Act on Power of Matters and Fields of Responsibility and the Act on Faroes Foreign Policy Powers of 2005 in the Faroe Islands and the Greenland Self-Government Act of 2009. Considerable parts of the separation of powers that are central in an Arctic context are matters that fall within the exclusive powers of the respective Faroese and the Greenland

authorities. The Kingdom thus comprises significant political diversity and also accommodates cultural differences.

The Kingdom's Arctic strategy intends no change in the power-sharing that exists between Denmark, the Faroe Islands and Greenland, including responsibility for policy areas taken over and their funding. Regardless of these individual distinctions, the Kingdom has a common interest in addressing the challenges and utilising the opportunities arising from the Arctic region's rapidly changing conditions and growing interest from the world. One of the areas Greenland has taken over is mineral resources. Decisions on development, exploration and exploitation of resources in Greenland are taken by the Greenland authorities. However, revenues from mineral activities will benefit both the Greenland and Danish people, given that cf. Self-Government Act for Greenland there will be a reduction of the annual block grant in line with possible revenues from mineral resources.

A strategy for the Arctic region is first and foremost a strategy for a development that benefits the inhabitants of the Arctic - involving common interests relating to for example international agreements, and regional and global issues. Such a development incorporates a fundamental respect for the Arctic peoples' rights to utilise and develop their own resources as well as respect for the indigenous Arctic culture, traditions and lifestyles and the promotion of their rights. Denmark and Greenland's cooperation on Arctic indigenous peoples dates back to 1973 when the Arctic Peoples' Conference at Christiansborg Palace in Copenhagen became a launching point for the international organising of indigenous peoples.

Cooperation between Denmark and Greenland helps in creating new opportunities for the Arctic indigenous peoples. Greenland's self-government model, natural resource

management, climate policy, environmental policy and preservation of its cultural heritage is a model of inspiration for many of the world's indigenous peoples. This situation constitutes an essential element in the Kingdom's international efforts to promote indigenous rights and aspirations. Denmark and Greenland will continue constructive cooperation to strengthen indigenous peoples' rights to control their own development and their own political, economic, social and cultural situation.

It is a central goal of Greenland, the Faroe Islands and Denmark that decisions regarding management and utilisation of resources and protection of the environment are taken in accordance with international obligations, and are based on the best scientific advice that supports healthy, productive and self-sustaining communities. Based on good collaboration within the Kingdom, policies and mechanisms must be organised in close cooperation with other Arctic nations and other stakeholders with an interest in the Arctic.

The premise of this strategy stems internationally from the Arctic Council Declarations and the Ilulissat Declaration of 2008, in which the coastal states of the Arctic Ocean committed themselves politically to giving negotiation and cooperation pride of place in handling disputes, challenges and opportunities in the Arctic, and thus hopefully once and for all dispelling the myth of a race to the North Pole.

The Kingdom's approach to security policy in the Arctic is based on an overall goal of preventing conflicts and avoiding the militarization of the Arctic, and actively helping to preserve the Arctic as a region characterized by trust, cooperation and mutually beneficial partnerships.

In an equal partnership between the three parts of the Danish Realm, the Kingdom will work overall for:

### TERMINOLOGY

The strategy uses the terms "The Kingdom" and "Danish Realm" for both the formal relations between Denmark, Greenland and the Faroe Islands and in a broader and more informal sense. Naalakkersuisut is, pursuant to the Self-Government Act of Greenland, the name of the Government of Greenland.



- A peaceful, secure and safe Arctic
- with self-sustaining growth and development
- with respect for the Arctic's fragile climate, environment and nature
- in close cooperation with our international partners.

The Greenlandic-Danish report, "Arctic in a time of change", of May 2008 and targets contained herein remains an important basis for the Kingdom's various activities in the Arctic.

The purpose of this strategy is to focus attention on the Kingdom's strategic priorities for future development in the Arctic towards 2020. The aim is to strengthen the Kingdom's status as global player in the Arctic.



Photo: Polfoto

## 2. A peaceful, secure and safe Arctic

- International law and established forums of cooperation provide a sound basis for conflict resolution and constructive cooperation in the development of the Arctic. The Kingdom must help in shaping the future of cooperation on joint challenges and new opportunities in the Arctic.
- Maritime safety is a fundamental priority. The extreme Arctic conditions require preventive measures including training and ship safety, as well as regional cooperation on search and rescue.
- The Danish Armed Forces undertake important tasks in the Arctic including the enforcement of sovereignty, and attach in this respect great importance to confidence building and cooperation with Arctic partner countries.

Climate change and rising global demand for oil and gas have resulted in a sharp rise in international interest in the Arctic, and the coastal states of the Arctic Ocean have increased their endeavours to ensure their rights to the greater part of the as yet unexplored Arctic subsoil. At the same time, the prospect is that for a large part of the year, it will be possible to navigate both the Northeast Passage and the Northwest Passage. The rising strategic interest and activity in the Arctic region necessitates a continued prioritising of a well-functioning international legal framework for peaceful cooperation, a special need for enhanced maritime safety, and persistent focus on maintaining the Arctic as a region characterised by peace and cooperation.

### 2.1. BASIS FOR PEACEFUL COOPERATION AND WITH EMPHASIS ON THE UN'S CONVENTION ON THE LAW OF THE SEA

The growing international interest in the Arctic has led to increased focus on legal controls in the area. However, the Arctic is not a legal vacuum. The Arctic has been inhabited for thousands of years, in contrast to the Antarctic which is uninhabited. Regions in the Arctic under national jurisdiction are governed by the coastal states legislation. The Arctic is also subject to a number of international laws, in particular the UN Convention on the Law of the Sea in 1982 (UNCLOS), which contains detailed regulation of for example navigational rights and management of resources. In recognition of the significant changes

that the Arctic faces, Denmark and Greenland arranged a conference in Ilulissat in May 2008 for the five coastal states of the Arctic Ocean. Its aim was to confirm the responsibility of the five coastal states for managing the development of the Arctic. The conference resulted in the Ilulissat Declaration in which the five coastal states of the Arctic Ocean undertook to enshrine close cooperation in developing the Arctic into international law. The five coastal states' cooperation covers areas such as sea rescue, continental shelf claims and environmental protection.

Even though the existing regulation in international law, particularly the UN Convention on the Law of the Sea, lays a solid foundation for coastal states' cooperation

on the development of the Arctic, there may be a continuous need for more detailed regulating of certain sectors. An example is the agreement on search and rescue adopted at the Arctic Council Foreign Ministers' Meeting in May 2011 in Nuuk.

The UN Convention on the Law of the Sea 1982 is the global international legal instrument in relation to the sea around the Arctic, in that the Convention defines states' rights and responsibilities in relation to their use of the oceans. Denmark ratified the Law of the Sea Convention on behalf of the Kingdom on 16 November 2004 and to date the Convention has been ratified by 161 states. Of the five coastal states of the Arctic Ocean, only the U.S. is not (yet) a party to UNCLOS, though

#### ILULISSAT DECLARATION

The Ilulissat Declaration is a landmark political declaration on the Arctic's future. It was adopted in Ilulissat, Greenland on 28 May 2008 by ministers from the five coastal states of the Arctic Ocean - Denmark / Greenland, Canada, Norway, Russia and the U.S. The Ilulissat Declaration sends a strong political signal that the five coastal states will act responsibly concerning future development in the Arctic Ocean. The states have a political commitment to resolving disputes and overlapping claims through negotiation. The five countries also confirmed that they will strengthen their cooperation in important areas. This applies to both broad cooperation that in particular takes place in the Arctic Council and the UN's International Maritime Organization (IMO), and to the practical everyday cooperation on issues such as search and rescue, environmental protection and navigational safety.

part of the Convention is an expression of customary law and therefore binding on countries not party to the Convention. Moreover, the United States, by Presidential Directive of 9 January 2009 specially approved the Convention as a means of resolving border issues concerning the continental shelf in the Arctic.

Under the UN's Convention on the Law of the Sea, coastal states have the right to create an exclusive economic zone. In this zone, the coastal state has exclusive right to explore and exploit natural resources of the sea as well as the seabed and its subsoil, and any other economic exploitation. The coastal state may also exercise environmental jurisdiction in the zone. The exclusive economic zone can extend to a maximum of 200 nautical miles (approx. 370 km). Denmark and Greenland have an exclusive economic zone while an exclusive economic zone has not yet been declared in the Faroese fisheries territory.

Under article 76 of the UN's Convention on the Law of the Sea, a coastal state has the possibility of extending its continental shelf beyond 200 nautical miles if within 10 years of the Convention coming into force for the state concerned, it can document to the Commission on the Limits of the Continental Shelf (CLCS) established pursuant to the Convention, that a number of scientific criteria are met. The coastal state will then have the right to living and non-living resources on and under the seabed beyond 200 nautical miles, subject to an obligation to make payments or contributions to the International Seabed Authority pursuant to Convention Article 82.

The Kingdom thus has a deadline of 16 December 2014 to submit data and other material to the CLCS as a basis for the extension of the continental shelf beyond 200 nautical miles. The time limit can however be exceeded in special cases under a

decision made by the convention partners in 2008, as long as preliminary information is submitted to CLCS before the deadline expires.

To document the claim on the continental shelf the Danish Realm has launched a continental shelf project that is based in the Ministry of Science, Technology and Innovation and is run in cooperation with the Government of the Faroes and the Government of Greenland, the Prime Minister's Office, the Ministry of Foreign Affairs, and the Ministry of Finance. The project includes the participation of the Danish, Faroese and Greenland authorities and scientific institutions, and is charged with identifying areas where the rights to new seabed claims can be made, and to collect, interpret and document the data necessary to submit a claim to the CLCS. The Kingdom has submitted documentation to the CLCS for claims relating to two areas near the Faroe Islands and by 2014 plans to submit documentation on three areas near Greenland, including an area north of Greenland which, among others, covers the North Pole.

The budget for the continental shelf project until 2014 is app. DKK 350 million spread over 12 years. The actual work of the project is a collaboration between Jarðfeingi (Faroe Directorate of Geology and Energy), the Danish Maritime Safety Administration, DTU Space (Institute for Space Research and Technology), National Survey and Cadastre and the Geological Survey of Denmark and Greenland (GEUS). Jarðfeingi, together with GEUS, is project manager for the Faroese Continental Shelf Project (half funded by the Faroe Islands) while GEUS is the project manager for the Greenland part where the Bureau of Minerals and Petroleum in Nuuk and ASIAQ (Greenland's Survey) take part.

The continental shelf project is very much an example of a project that is feasible

due to all parties', including both the Faroe Islands and Greenland's, willingness and ability to cooperate and the will to achieve the project's targets. Furthermore, the project is an example of how different institutions can cooperate across the Kingdom and benefit from one another. The continental shelf project also has exemplary research cooperation with other countries, such as the Swedish Polar Research Secretariat with which it has carried out many data collection expeditions with the Swedish ice-breaker Oden. The project also has fruitful research-based cooperation with Canada and Russia.

The Kingdom's claims on the continental shelf will in some areas overlap with other country's continental shelf claims. There is close collaboration with other coastal states in the Arctic Ocean to solve unre-

solved boundary issues beyond 200 nautical miles. As highlighted in the Ilulissat Declaration, unresolved boundary issues in the Arctic will be resolved in accordance with international law.

Besides maritime boundary issues, the Kingdom has an unresolved issue relating to the sovereignty of Hans Island (Hans Ø) as both the Kingdom and Canada claim sovereignty over the island. In September 2005, Denmark/Greenland and Canada made a joint statement on Hans Island, and frequent consultations on the island are in progress. Pending a permanent solution to the issue, the dispute will be handled professionally as would be expected between two neighbouring countries and close allies.

- The Kingdom will work for peaceful cooperation between the coastal states of the Arctic Ocean in accordance with the Ilulissat Declaration.
- The Kingdom will advance concrete international legal regulation of the Arctic in areas where needed.
- The Kingdom will seek to resolve outstanding unresolved boundary issues and actively work to reduce the processing time of the Commission on the Limits of the Continental Shelf and thereby ensure greater assurance of coastal states' continental shelf claims in the Arctic.
- The Kingdom will continue work on the Continental Shelf Project in order to promote its claim pursuant to the UN's Convention on the Law of the Sea.

## THE CONTINENTAL SHELF PROJECT IN PRACTICE

Since 2006 the Danish Realm has conducted a series of expeditions in the Arctic Ocean as part of the continental shelf project. A factor common to the expeditions is close cooperation with other countries. Canada, Russia and the U.S. have also been conducting scientific studies in the Arctic Ocean these years in preparation for an extension of their respective continental shelves. The expeditions "LORITA" (2006), "LOMBAG" and "LOMGRAV" (2009), for example, were based on Canadian logistics. LOMROG I and II expeditions in 2007 and 2009 were carried out with the Swedish icebreaker Oden, in cooperation with Sweden and Canada. In 2007, the expedition was for a period supported by a Russian nuclear icebreaker. Another factor these expeditions have

in common is that in addition to the collection of data relevant to the continental shelf project, emphasis is also placed on scientific output and follow-up research in other fields. Thus, ice cores have been collected, ice thickness measured, samples of DNA and bacteria collected, geology, oceanography, plankton ecology all studied, and the accumulation of mercury measured. All collections are conducted in cooperation with Danish, Greenland, Swedish and American research institutions and have led to increased knowledge of the Arctic Ocean's plate tectonics, palaeoclimatology, physical oceanography and ecosystems. Further expeditions are planned under the auspices of the Continental Shelf Project in 2011 and / or 2012.



Source: Ministry of Science, Technology and Innovation / [www.a76.dk](http://www.a76.dk)



*Photo: Greenland Tourism*

## 2.2. ENHANCED MARITIME SAFETY

Navigation in the Arctic is increasing, including in the waters around Greenland and the Faroe Islands. Less ice coverage, especially in the summer months, has led to a significant growth in maritime traffic, including cruise ships to areas of Greenland which until a few years ago were not possible to navigate. In 2010, 43 cruise ships berthed in Greenland ports, compared with 32 in 2009. Furthermore, shipping trade in Faroese waters has increased considerably. Shipping in Faroese waters has risen by 5-6 times from 2008-2010 and 40-50 sizeable cruise ships now call at Faroese ports each year.

Shipping operators are exploring new areas still further north as ice conditions permit.

Meanwhile, prices of raw materials and not least a long-term expectation of a shortage of oil and natural gas have led to increased trade in the exploration and exploitation of natural resources. The melting of sea ice in the summer also allows for new shipping routes through the Northeast and the Northwest Passage which could ultimately yield significant savings in transportation time by the maritime transport of goods between Europe and Asia. It is believed that the waters around Greenland and the Faroe Islands will experience a significant increase in maritime traffic in the coming years.

The increasing maritime activity is closely linked with economic development in the Arctic. For the sake of the fragile environment in the Arctic, it is important to build sustainable growth. For shipping, which

is a global industry, this means that internationally high safety standards must be established for ships navigating in the Arctic. Furthermore, in terms of shipping policy, it is important that the Kingdom is working to promote shipping in the Arctic under high standards where international regulation ensures that ships are competing within a uniform framework.

Because of the extreme conditions in sparsely populated Arctic regions, prevention of marine vessel accidents is crucial in the Arctic. Regardless of climate changes, it will still be necessary to take account of ice, low temperatures, extreme weather and the risk of grounding. It is therefore vital that ships are built and equipped so they can operate under these conditions. Despite increasing intensity, marine traffic

will still be spread over a vast geographical area far from ports. Therefore, ships should first and foremost use their own rescue equipment if an accident should occur, until the resources offered by the authorities responsible in the area can be deployed to assist. Therefore, preventive measures must be set in place that allow for the continued and increased navigation in the Arctic, while at the same time effectively preventing and minimising marine accidents and mitigating damage to the environment and nature.

It is important to implement preventive safety measures, not least for the cruise ships that sail with many passengers, and often with limited local knowledge. Here, experience shows that other *cruise ships* in the vicinity are crucial to saving lives. The Kingdom is working to promote cooperation on maritime safety in all key forums, particularly in the International Maritime Organisation (IMO), where binding rules for navigation in the Arctic are drawn up, but also through enhanced cooperation in the Arctic Council.

To increase the safety of ships navigating in Arctic waters, Denmark has introduced improved port State control of cruise ships planning to sail to Greenland. Moreover, other countries have been urged to do the same when these ships enter their ports before sailing to the Arctic. Furthermore, the Ministry of Economic and Business Affairs has entered into an agreement with the Government of Greenland (Naalakkersuisut) on the establishment of a liaison committee in order to ensure that a high safety level of navigation in Greenland waters is sustained and developed, whether this takes the form of international shipping or in the form of domestic navigation to and from Greenland ports. The liaison committee will prepare a joint plan in 2011 to ensure this.

Increased maritime traffic also places greater demands on *infrastructure* as

marine vessels require support in the form of a sound infrastructure. The Government of Greenland has focused on this challenge with the establishment in 2009 of a Transportation Commission and in the coming years will address requirements in this area, based on the recommendations in the commission's report in 2011.

Updating nautical charts will be an important factor under the auspices of the Danish Realm. In the future, ships will increasingly use electronic nautical charts and make use of satellite-based navigation systems such as GPS which impose stricter requirements on the accuracy of charts. In particular, a thorough knowledge of water depth is necessary to navigate safely at sea. In 2009 an agreement was made between the Minister of Environment and the Government of Greenland about a renewal of the nautical charts for Greenland, which means that the charts for most of Southwest Greenland (from Cape Farewell to Uummannaq) - the busiest Greenland waters - will be corrected and digitized no later than 2018. Due to the vast sea areas, large areas of the Greenland waters will be unsurveyed beyond 2018 while still greater areas become accessible to shipping as the ice melts. For reasons of safety at sea the Kingdom will furthermore continue to prioritize the work of the International Hydrographic Organization (IHO), such as in the regional commission on the Arctic which was established in 2010.

Similarly maritime safety is supported by ensuring the availability of reliable information on weather, sea conditions and ice. The Greenland Ice Services at the Danish Meteorological Institute was established in 1959 as one result of the shipwreck of M / S "Hans Hedtoft". The Service's main task so far has been to map the ice conditions in the Cape Farewell area for the safe navigation of cargo ships between Greenland and Denmark. Because of

changing climatic conditions and altered distribution of sea ice in Greenland waters, the navigational pattern of ships has changed dramatically. Combined with the growth of cruise ship activity and oil exploration, there is a need for intensified ice and weather warning alerts further north in both West and East Greenland. It will therefore be a priority that the existing Ice Services be adapted to the increased requirements for observation, forecasting and dissemination of ice conditions in Greenland waters.

Furthermore, enhanced surveillance of maritime traffic in the Arctic will contribute to improved prevention of accidents and coordination of the rescue efforts. It also provides greater opportunity to intervene before an accident can occur. Currently, ships sailing to Greenland must report to the so-called GREENPOS reporting system, which requires ships in Greenland waters to continuously report their position to the Greenland Command. Larger ships already send their positions via the satellite-based LRIT (Long Range Identification and Tracking) system. Surveillance is expected to be improved, for example by using new technology with satellite reception of ships' AIS signals (Automatic Identification System) as almost all larger ships are equipped with AIS.

The Faroese Maritime Authority follows international developments and handles Faroese interests in the IMO because of its status as an associate member of IMO. With the introduction of AIS and LRIT, which are based on IMO mandatory requirements, it has been possible to improve the monitoring of foreign and Faroese vessels in Faroese waters. In addition to this, cooperation has been established between Denmark, Greenland, the Faroe Islands, Norway and Britain for the mutual exchange of AIS data in the North Atlantic region.



Over a number of years, both the Faroe Islands and Greenland have entirely or in part been responsible for the monitoring of the marine environment and pollution control in territorial waters. Furthermore, the Faroe Islands has responsibility for search and rescue services. In light of increased activity in the region further knowledge and exchange of findings and cooperation will be needed to solve these tasks.

- The Kingdom will promote cooperation with other Arctic states and other key countries with significant maritime interests in major marine policy issues concerning the Arctic, such as maritime safety. Cooperation with other Arctic states must support a sustainable maritime growth, for example by establishing a better knowledge base on navigation in the Arctic.
- The Kingdom will reinforce concrete preventive measures to improve safety of navigation in the Arctic. In particular this involves endeavours, in cooperation with the other Arctic States, for adoption by the IMO of a mandatory Polar Code to ensure high safety levels in Greenland waters, regardless of the ships' nationality and for a requirement that crews have the requisite skills for navigation in Arctic waters.
- To work for the inclusion of requirements in the polar code under IMO auspices that cruise ships coordinate their navigations with the emergency services, including other cruise ships, which could come to the rescue if a maritime incident occurs. The Kingdom will work in the Arctic Council to gather knowledge of cruise lines' own safety standards for navigation in order to promote "best practices" for the navigation of cruise ships in the Arctic, and also consider the need for increased focus on port State control prior to cruise ships sailing to the Arctic.
- The Kingdom will continue preparing new nautical charts for Greenland to avoid maritime accidents in Greenland waters and to support mineral resource activities. The Kingdom will support the surveying of the Greenland waters and cooperation with other coastal states of the Arctic Ocean within the Arctic Hydrographic Commission. Maritime safety must also be supported by ensuring the availability of reliable information on weather, sea and ice in collaboration with other Arctic states, better information about navigation in Greenland waters and the tightening up of port State control of ships sailing to the Arctic, and finally working for the international dissemination hereof.
- The Kingdom will work to introduce binding global rules and standards for navigation in the Arctic and it is a high priority to reach agreement on a global regulation of shipping via the IMO, cf. Ilulissat Declaration. Should it prove that agreement on global rules cannot be reached, and in view of the especially vulnerable Arctic environment and the unique challenges of security, the Kingdom will consider implementing non-discriminatory regional safety and environmental rules for navigation in the Arctic in consultation with the other Arctic states and taking into account international law, including the Convention on the Law of the Sea provisions regarding navigation in ice covered waters.
- The Kingdom will work to strengthen cooperation with neighbouring countries on monitoring, search and rescue, such as supporting the implementation of the joint Arctic cooperation agreement on strengthening coordination and data-sharing in relation to search and rescue, entered into under the auspices of the Arctic Council in May 2011.
- Given the clear correlation between the rise of maritime activity and economic development in the Arctic, efforts will be strengthened to involve Greenland citizens in tasks within areas of maritime safety, such as surveying, buoying, and search and rescue at sea, perhaps by establishing a voluntary coastal rescue service.
- The Kingdom will examine the need for the establishment of new shipping routes, and implement this to the extent it promotes maritime safety and marine protection. For example, there is particular need to establish recognized routes in Faroese waters for both cruise ships, tankers and other vessels with respect to safety and the environment.

## NAVIGATION IN GREENLAND

There are many different maritime activities in Greenland waters. In particular, cruise tourism has increased markedly: From 15,654 passengers in 2004 to 30,271 passengers in 2010. There is

also an increasing activity of vessels used for oil exploration and marine studies, just as the shipping of minerals with bulk carriers is expected to rise significantly. Additionally, there is considerable local traffic

with fishing vessels, passenger transport, supply of Greenland towns, etc..

## THE NEW SHIPPING LANES

The continued melting of ice in the Arctic Ocean is expected over a 10 to 20 year period to result in the opening (at least during parts of the year) of the Northwest Passage over North America and the Northeast Passage over Russia. The economic benefits of these new routes are potentially significant. The opening of the Northwest Passage will reduce the distance from Seattle to Rotterdam by almost 25% compared to the route via the Panama Canal. The possibility of navigating the Northern Sea Route via the Northeast Passage will reduce the distance between Rotterdam and Yokohama by

over 40% compared to the route via the Suez Canal. Furthermore, the opening of these alternative routes means that the military and commercial shipping will no longer be dependent on passage through the political unstable Middle East nor the piracy-infested routes through the South China Sea, the Malacca Straits and the Gulf of Aden.

**Danish pioneers:** In September 2010, the heavy ice class bulk carrier, "Nordic Barents", of the Danish shipping company, Nordic Bulk Carriers, sailed via the Arctic and the Northeast Passage to Asia as the first cargo ship ever to do so. The voyage,

with 41,000 tons of iron ore concentrate from Kirkenes in northern Norway to China was around 30% shorter than if the ship had used the traditional route via the Mediterranean and the Indian Ocean and took place in close cooperation with the Norwegian Tschudi Shipping Company and the Russian authorities. In August 2008, the Danish cable ship "Peter Faber", assisted by Canadian pilots, sailed as the first commercial vessel through the Northwest Passage thus saving 15 days on its voyage from Japan to Newfoundland in order to lay cables between Greenland and Canada.



Source: Hugo Ahlenius, UNEP/GRID-Arendal

### THE POLAR CODE

The Polar Code will supplement the international maritime safety and environmental conventions which already apply in the Arctic with additional rules on rescue equipment, fire fighting, ice

navigation and navigation in uninhabited areas to allow for Arctic conditions. The Polar Code must also allow for the changing requirements imposed by geography and seasons. The work is taking place at

the International Maritime Organisation (IMO) and the rules are expected to come into force in 2013-2014.

### AGREEMENT ON AERONAUTICAL AND MARITIME SEARCH AND RESCUE IN THE ARCTIC COUNCIL AND PREPAREDNESS IN GREENLAND

At its meeting of foreign ministers in May 2011, the Arctic Council adopted a mutual agreement on Search and Rescue (SAR), which aims to strengthen coordination of rescue efforts, so in

the event of an accident, it is possible to receive rapid assistance from neighbouring countries' emergency services. The Ministry of Economic and Business Affairs, Ministry of Transport and Ministry of Justice have

overall responsibility for the SAR response in Greenland. The daily operational management is handled by the Greenland Command, the Air Rescue Service and the Chief of Police office in Greenland.

### 2.3. EXERCISING OF SOVEREIGNTY AND SURVEILLANCE

The Arctic is and must be a region characterized by peace and cooperation. Even though the working relationship of the Arctic Ocean's coastal states is close, there will be a continuing need to enforce the Kingdom's sovereignty, especially in light of the anticipated increase in activity in the region. While the Kingdom's area in the Arctic is covered by the NATO treaty Article 5 regarding collective defence, the enforcement of sovereignty is fundamentally a responsibility of the Realm's central authorities. Enforcement of sovereignty is exercised by the armed forces through a visible presence in the region where surveillance is central to the task. In addition, the armed forces play an important role in the provision of a range of more civilian-related duties. Within the entire spectrum of tasks, the Kingdom attaches great importance to confidence building and cooperation with Arctic partner countries.

The long-term political agreement on defence (Danish Defence agreement 2010-2014) involves a stronger focus on the tasks of the Danish Armed Forces in the Arctic. The agreement includes four overriding initiatives that must be viewed in light of climate change and increased activity that would foreseeably result in an increase of tasks for the armed forces.

**Firstly**, the Armed Forces North Atlantic command structure will be streamlined by the amalgamation of the Greenland Command and the Faroe Command into a joint service Arctic Command.

**Secondly**, the ability of the armed forces to conduct operations in the Arctic environment will be strengthened through the establishment of an Arctic Response Force. The response force would not be established permanently, but designated from existing armed forces and emergency preparedness units with Arctic capacity or the potential to develop one.

The range of tasks of the Arctic Response Force is for defined periods and in defined areas anticipated to strengthen the armed forces' enforcement of sovereignty and surveillance, for instance through military exercises. The force could also be deployed in other situations such as in assistance to the Greenlandic society.

**Thirdly**, a risk analysis of the maritime environment in and around Greenland is to be conducted in the light of an anticipated expansion of traffic and activity in the Arctic.

**Fourthly**, towards 2014 a comprehensive analysis of the armed force's future tasks in the Arctic is to be carried out, including opportunities and potential for closer cooperation with partner countries in the Arctic concerning surveillance and the like. In this connection it is to be examined whether the Thule Air Base may play a larger role in regard to the tasks performed in and around Greenland by the Danish Armed Forces in cooperation with other partner countries.

The Danish Defence aspires, as other public institutions, to reflect the surrounding community. Indeed, it is a Danish-Greenland hope that citizens of Greenland can be increasingly involved in the tasks of the armed forces and with that, participate in a wide range of training opportunities, whether they be basic training, civil/military specialist and management training programs or customized further education at all levels. The armed forces will thereby also greatly benefit from Greenland local knowledge.

- The armed forces must be visibly present in and around Greenland and

the Faroe Islands with regard to the enforcement of sovereignty and surveillance. The North Atlantic command structure is to be streamlined by the establishment of an Arctic Command and an Arctic Response Force is to be designated from existing units.

- The Kingdom will reinforce confidence-building in cooperation with other Arctic states to maintain the Arctic as a region characterized by cooperation and good neighbourliness, just as the Kingdom will continue to play an active role in creating and promoting new collabora-

tive initiatives between countries in the Arctic. The Kingdom will stress the potential for increased cooperation on surveillance.

- The possibilities to enhance cooperation in regard to the armed force's tasks will be looked into, including the involvement of Greenland's citizens in the handling of key tasks of the armed forces in the Arctic. The possibilities for targeted information and recruitment campaigns and the establishment of customized courses will be studied.

## KEY TASKS OF THE ARMED FORCES IN THE ARCTIC

Enforcement of state sovereignty is a fundamental task of the armed forces in all parts of the Kingdom. Sovereignty enforcement is the primary task of the Danish Armed Forces in the Arctic and the level of presence in the area is determined accordingly. Units from the army, navy and air force carry out tasks in the Arctic. They undertake surveillance and enforcement of sovereignty of Greenland and Faroese territorial waters and air space, as well as the Greenland exclusive economic zone and the fishing zones to ensure that no systematic violations of territory can take place. Likewise, the Sirius Patrol oversees the National Park in Northeast Greenland and enforces sovereignty there.

As part of its presence, the armed forces is building a habitual picture of activities in the waters around Greenland and the Faroe Islands. The armed forces presence and overview of activities in the Arctic establishes a basis for solving many other tasks, including providing assistance to the Greenland community. Activities in the Arctic are largely related to the ocean as a trans-

portation route and to the utilisation of marine resources.

Climate change in recent years, in particular the melting of ice masses, has resulted in an increase in the navigable areas and the commercial activities that follow in Greenland in the summer from mid-May to mid-October and this trend looks set to continue. In winter, there has not been a corresponding change of activities in the area. How this development will affect the armed forces' tasks is analysed as part of the Defence Agreement 2010-2014.

The armed forces adapts its deployment of vessels, aircraft and other capacities in accordance with the distinct difference in seasonal activity. Because of the enormous dimensions of the Arctic, international cooperation is an important element in resolving the armed forces' tasks in the Arctic.



*Challenger CL-604 patrol aircraft*



*Off shore patrol vessel and patrol vessel*



*Sledge patrol*



Photo: Ivars Sillis og Nukissiorfiit / Grønlands Energiforsyningselskab

# 3. Self-sustaining growth and development

- Mineral resources shall be exploited under the highest international standards of safety, health, environment, preparedness and response, and transparency with high returns for society.
- The use of renewable energy sources must be increased significantly.
- Living resources, including fish, shellfish and marine mammals shall be harvested in a sustainable manner based on sound science.
- New opportunities in the Arctic must be exploited in close cooperation with industry, and an optimal regulatory framework will be created for exports and investments.
- The Kingdom's Arctic research will be at the global forefront, and research and training efforts must support the development of industry and society in the Arctic.
- The Kingdom will promote Arctic cooperation on health and social sustainability, including research and best practices in areas of shared challenges.

It will be an overriding political priority for the Kingdom and particularly in Greenland over the next ten years to seize the many opportunities in the Arctic to create more growth and development. The huge economic potential in the Arctic must be realized while appreciating its human impact, i.e. the economic and social integration of the population and with sensitivity to environmental concerns, thereby creating a healthy, productive and self-sustaining community. Greenland is already a fast-changing society and peoples in the Arctic, including the Greenlanders, may have to adapt to even more extensive changes in the future due to climate change, societal

developments and the restructuring of industry. Integration into the new opportunities in the Arctic will place great demands on the populations' adaptability and mobility. It will also be a significant challenge for Greenland to develop policies which, apart from the goal of social and societal-related sustainability, deal with the prospect of significant foreign labour migration.

There is a close correlation between on the one hand realising the potential of natural resources, new trade and investment opportunities, and enhanced research and education contributions while on the other promoting health and social sustainability,

which are the areas specifically addressed in this chapter. This concerns a number of strategic priorities for the Kingdom in relation to economic and societal development in the Arctic, but also other important areas such as enhanced economic development and diversification of the economy. This applies i.a. to the development of the tourist industry and bolstering the overall development with adequate infrastructure.

Today, *tourism*, second only to fisheries, is the most important export industry in Greenland, and the tourist industry has potential for growth in the future. This ap-

plies both to land-based tourism and the cruise-liner business. Among the benefits of the latter is that even small towns and villages along the coast can be involved in tourism. The land-based tourism generates by far the greatest revenue but is currently dependent on only a few markets, primarily the Danish. Therefore Greenland's Tourist Board is working on the development of a new national brand that more clearly defines Greenland as an adventure destination focusing on sustainable tourism and which to a greater extent appeals to the global market.

#### GEOLOGICAL SURVEY OF DENMARK AND GREENLAND GEUS

The Geological Survey of Denmark and Greenland (GEUS) is responsible for the scientific exploration of the geological survey of Denmark and Greenland, including their respective shelf areas. GEUS will conduct research at the highest international level on issues of importance to the exploitation and protection of Denmark and Greenland's geological natural resources. GEUS also carries out mapping, monitoring, data collection, data management and the presentation of these issues. GEUS provides geological advice to public authorities on nature, environment, climate, energy and mineral resource related questions and participates in the authority's regulatory work within these areas. GEUS is a national geological data centre and in that capacity makes data and knowledge available to the authorities, educational institutions, businesses and individuals. GEUS's tasks in relation to Greenland are generally defined in the Self-Government Act and are described in the Mineral Resources Act for Greenland.

**Infrastructure** is a key element in the development of the Greenland society and to ensure long term sustainable development, the Government of Greenland set up a transportation commission in 2009 for the socio-economic analysis of the entire infrastructure in Greenland. The Commission's recommendations of April 2011 will form an important element in future policy decisions on the evolution of Greenland infrastructure. This will include decisions on the location of ports and airports. These projects will be costly and therefore private funding is seen as a possibility, just as mining projects located near urban areas could be included in potential funding of larger local infrastructure projects.

#### 3.1. HIGH STANDARDS FOR THE EXPLOITATION OF MINERAL RESOURCES

Studies from the U.S. Geological Survey, among others, estimate that there may be enormous, as yet unproven oil and gas resources in the Arctic, just as previously major discoveries were made of gas especially (in Russia) but also oil (in Alaska). Specifically, it is estimated that the Arctic may contain up to 30% of the world's undiscovered gas resources and approx. 10% of the oil resources. Approximately 97% of oil and gas resources are believed to lie within the Arctic States' exclusive economic zones, and are thereby allocated.

In Greenland's case, it is estimated that 31 billion barrels of oil and gas off the coast of Northeast Greenland and 17 billion barrels of oil and gas in areas west of Greenland and east of Canada could be discovered, though the probability is greater for discoveries in Northeast Greenland. Greenland is also rich in mineral deposits, including zinc, copper, nickel, gold, diamonds and platinum group metals, and has substantial deposits of so-called critical metals, including rare earth elements, several of which

are important components of high-end technology, including green energy technologies.

The mineral resources sector in Greenland has significantly matured over the last 10-15 years as a result of a long-term and deliberate strategy. After the adoption by Parliament Act No. 7 of 7 December 2009 on mineral resources and activities of relevance hereto, the mineral resources sector was fully taken over by the Greenland Self-Government on 1 January 2010 and is a key element to building growth industries and a self-sustaining economy. In 2008, Greenland had already adopted the Parliament Act No. 6 of 5 December 2008 on Greenland's Mineral Resources Fund, which is inspired by the Norwegian model so that oil and gas revenues also benefit future generations.

The vision is to exploit mineral resources in the Arctic under the best international practices, and in continued close cooperation with relevant authorities of the Danish Realm and international partners. Greenland and the Faroe Islands shall be attractive areas for exploration, and the management of mineral resources must be competent and efficient in ensuring that such mineral resources are explored and exploited under the highest standards of safety, health, environment, emergency preparedness and transparency. The mineral resource industry must be developed while strongly taking into consideration the fragile Arctic environment so it contributes to sound economic development, including the creation of new jobs and a maximum return to society. Mineral resource activities will also be carried out with sufficient preparedness that the public is kept from harm (based on the polluter-pays-principle) and that the Kingdom's international obligations can be met in case of major unscheduled incidents. This should be a model for resource exploitation across the whole of the Arctic.

In the oil and gas sector, licensing rounds have been held biannually since 2002 and alongside rising oil prices in recent years, there has been a breakthrough in the international interest in Greenland's oil potential. An area of more than 200,000 km<sup>2</sup> offshore South and West Greenland is now covered by 20 exploration and exploitation licenses, and in 2010 seven new exploration licenses were issued in Baffin Bay off the coast of Northwest Greenland. A licensing round for oil exploration off the coast of the northernmost part of East Greenland will be held in 2012/2013. In the coming years in particular, there will be a need to maintain the level of activity offshore of West and Northwest Greenland, while ensuring a broad professional knowledge building in the more inaccessible areas off Northeast Greenland. With respect to oil and gas finds and subsequent production, a number of new challenges and tasks will emerge. As a result, coordination and cooperation with neighbouring Arctic states with similar challenges will be a major priority.

In 2000 the first licenses for exploration of the Faroese shelf were issued. Subsequently there were two licensing rounds in 2005 and 2008. In total, 17 licenses have been issued, of which 12 are currently active with a total of 11 licensees. Of the 7 wells drilled so far, 5 contain hydrocarbons, but finds on a commercial scale have not yet been confirmed. There is still unexplored potential for exploration in structures that could potentially contain large amounts of hydrocarbons. Currently there are two outstanding drilling commitments, of which the first well will be drilled in 2012.

The current relatively modest level of activity has already had favourable effects on the Faroese economy through direct and indirect taxes in connection with drilling and area fees. Another significant benefit is the boost in commercial competencies

and employment opportunities which wholly or partly are attributable to exploration activity on the Faroese Continental Shelf. One condition for acquiring a license is that a commitment must be entered into to finance activities that build up local competencies. This enhancement of competence must be commercially oriented though not necessarily be related to the oil industry. The arrangement should be seen as an investment in both the present and future, and already several hundred projects, both large and small, have been carried out. This has created a solid basis for local involvement provided that commercial discoveries are made on the Faroes.

In the *mineral sector*, exploration in Greenland in recent years has especially targeted gold, zinc, iron, copper, diamonds, rubies and a number of critical metals, including rare earth elements. The prospects are bright that the development of the mineral sector can significantly underpin the development of an economically self-supporting Greenland. The Government of Greenland is expecting that a number of mature projects developed with foreign partners and partial involvement of Danish companies will create over 1,000 new jobs by 2015. Regarding radioactive minerals, the Self Government follows a zero-tolerance policy, which means that it does not permit the exploration and exploitation of deposits that contain radioactive elements, either as a main product, by-product or residue. In 2010 an amendment was made to the standard terms for exploration, which permits the carrying out of feasibility studies, including environmental, health and safety studies of deposits containing radioactive elements.

• Greenland will continue the successful licensing policy and strategy of competitive tenders in the oil and gas sector. Sets of rules will be continually adapted to optimize safety, health, environment and transparency standards through

the use and improvement of best available techniques and practices. This will include inspiration from other countries' regulations, not least the Norwegian NORSOK standards.

- Cooperation will be expanded with authorities in similar areas, including Norway and Canada, and participation in relevant international fora such as the Arctic Council's working groups is to be given high priority.
- The Kingdom will work actively in the United Nation's Maritime Organisation (IMO) or other international fora, for the establishment of an international liability and compensation convention and a possible international compensation fund for pollution damage caused by offshore oil exploration and exploitation.
- Terms and conditions for licenses to exploit must be reasonable for both larger and smaller companies, resilient to fluctuating market conditions as well as simple and easy to administrate for companies and authorities.
- Mineral sector activities must be conducted responsibly as regards environmental, health and safety concerns, and an appropriate supervisory body must ensure compliance hereof.



## OIL AND GAS ACTIVITIES IN GREENLAND

### High standards for activities

In connection with the exploration and exploitation of oil and gas resources regulated by the Greenland Mineral Resources Act, the licensee must ensure that *safety, environmental and health risks* are identified, assessed and reduced as much as practically and reasonably possible.

The Bureau of Minerals and Petroleum (BMP) guidelines and terms of approval are based largely on the Norwegian NORSOK standards which determine how the licensee can comply with international best practice in relation to specific operational procedures and practices. The BMP follows strict compliance with international standards, supplemented by an emergency committee broadly composed of authorities of the Danish Realm (including the Danish Armed Forces and the Danish Maritime Authority) and Greenland authorities. The Emergency Committee monitors the precautionary actions taken by the licensee, and is responsible for coordinating the authority's efforts in accident and emergency situations on offshore installations.

Thus, permission is only given for exploration and exploitation activities provided that the Government of Greenland is fully assured that the activities are performed properly in a safe and healthy manner and stringent requirements are made of licensees regarding their own capacity to deal with accidents and emergencies. Under the Mineral Resources Act, the responsibility for clean-up operations and compensation always lies with the party causing damage, whereby a number of stringent requirements are imposed fol-

lowing international standards regarding financial guarantees and insurance for oil and mineral activities.

Before new offshore areas are designated as oil / gas licensing areas, the Government of Greenland sets in motion the preparation of *strategic environmental impact assessments* in order to ensure that any oil / gas activities can be implemented on an environmentally sustainable basis. The strategic environmental impact assessments are prepared on a scientific basis by the National Environmental Research Institute and Greenland's Institute of Natural Resources. In connection with an application for the carrying out of concrete oil / gas activities which are likely to have a significant impact on the environment, such as exploration wells, the licensee is required to conduct a specific assessment of the environmental impact (EIA). The EIA report is submitted for public hearing and must be approved by the Government of Greenland before the application to carry out the activity can be approved.

Under the Mineral Resources Act, companies seeking a license for exploitation must also prepare an *Assessment of Societal Sustainability* (SSA report). The report must, for example, describe the utilisation of Greenland manpower and enterprises in the project, including how the proportion of Greenland employees and subcontractors can be increased through training and skills development.

### Cooperation with Cairn Energy

Scottish Cairn Energy's exploratory drilling for oil in waters west of Qeqertarsuaq and Nuussuaq Peninsula is presently the most advanced project, and collaboration between the company and the authorities

has been very positive. The self-government has used Norwegian consultants for the regular monitoring of compliance with stringent safety requirements, and similarly the self-government has established cooperation with the Canadian government in the area. Cairn Energy has also complied with the Greenland authority's demands for financial guarantees in case of an accident, oil spill or a major environmental emergency. Cairn Energy, affected municipalities and Greenland's Self Government have also entered into a cooperation agreement on recruiting Greenland labour in the future, including initiatives which develop relevant courses as part of the self-government's efforts in using the resident workforce and local businesses wherever possible in the future.

### Licensees in oil and gas sectors in Greenland

As of 1st January 2011 there were 20 active exclusive right licenses for exploration and exploitation of oil and gas in the sea around Greenland. During 2012-2013 a licensing round will be carried out covering offshore Northeast Greenland. There is great interest from a number of different companies and as of January 2011 the licensees are: NUNAOIL (Greenland), DONG (Denmark), Maersk Oil (Denmark), ExxonMobil (U.S.), Chevron (U.S.), Husky (CAN), Cairn Energy (UK), PA Resources (SVE), ConocoPhillips (U.S.), Shell (NL), Statoil (NOR), GDF Suez (FRA) and Petronas (Malaysia).

### OIL ACTIVITIES IN THE FAROE ISLANDS

#### High standards for activities

The execution of exploration activities in the Faroes takes place with continuous regard for the environment and the existing fishing industry. Safety procedures for example are on par with the Danish, Norwegian and British. This includes requirements for the licensees regarding their technical and economic expertise as a part of their responsibilities. Furthermore, exploration activity must always live up to best practices in the industry and be geared to the circumstances of the specific drilling location. To be updated on developments in safety matters, the Faroe Islands is a member of NSOAF (North Sea Offshore Authorities Forum), an associa-

tion of offshore safety authorities in countries in Western Europe with an oil industry. As the exploration activity on the Faroese shelf is geographically close to activity in the UK and Norwegian waters, the emergency preparedness is also tied to response equipment on the respective British and Norwegian continental shelves. To a great extent, this places emergency preparedness on the Faroese shelf on a par with that in Norway and the UK.

#### Authorities' responsibility for oil drilling in the Faroe Islands

The Faroese Ministry of Trade and Industry has overall responsibility for exploration activity in the Faroes. The everyday management is delegated to Jarðfeingi (Faroese Earth and

Energy Directorate), which also deals with public sector geological interests, and has an advisory function regarding energy issues.

Umhvørvisstovan (the Environment Agency) is responsible for the Faroese marine environment act and the Faroe Islands Marine Rescue Coordination Centre (MRCC) Torshavn is responsible for coordination regarding incidents offshore.

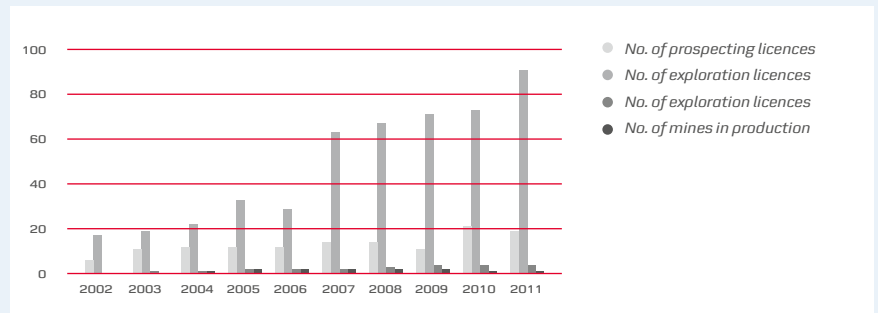
#### Oil companies active in the Faroe Islands

Atlantic Petroleum (FO), Cieco (Korea), Dana Petroleum (UK), DONG (DK), ENI (ITA), Exxon Mobil (US), Faroe Petroleum (FO), First Oil Expro (UK), OMV (Østria), Sagex Petroleum (NOR), Statoil (NOR).

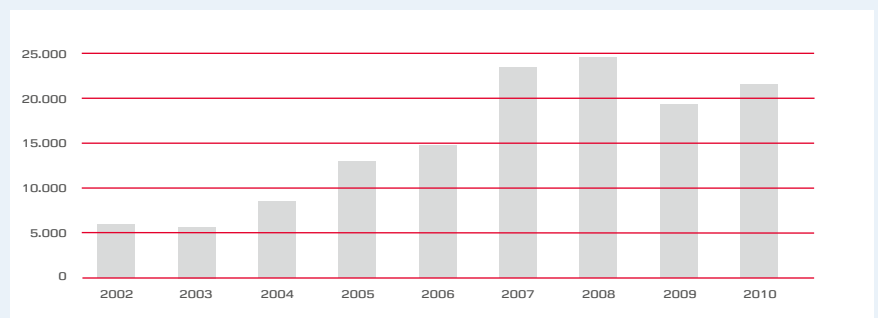
### GREENLAND'S STRATEGY FOR MINERALS

The Government of Greenland's strategy and plan of action for exploration and exploitation of hard minerals is described in the sectoral plan "Mineral Strategy 2009". The main objectives of the strategy are that all projects must be implemented socially sustainably, and ensuring that:

- 1) The society will receive a competitive share of profits gained from mining.
- 2) Greenland manpower and enterprises are used to the greatest possible extent.
- 3) All mineral activities are to be conducted properly in terms of safety, health and the environment.
- 4) The population is ensured participation and knowledge in the development of the mineral sector.
- 5) The development proceeds with respect to Greenland values.



Development of mineral activities in Greenland



Area (km²) covered by exploration licences

## CRITICAL METALS / RARE EARTH ELEMENTS AND DEPOSITS IN GREENLAND

A raw material/ mineral is considered 'critical' if it is used for purposes for which there are no other satisfactory alternatives. A given mineral resource's criticality is dynamic and is determined by issues of supply, demand and the potential reuse of the resource. New technology can change the require-

ments. The time span from exploration to the opening of a new mine will generally not be less than 10 years; therefore the mining industry has difficulty in keeping pace with market requirements for new resources. There may be various reasons why it can be difficult to obtain a given commodity, for example:

- 1) Geological conditions;
- 2) Technical factors;
- 3) Social conditions;
- 4) Political factors, and
- 5) Economic conditions – i.e., whether or not the raw material is available on the market.

### Mining Opportunities in Greenland

Overview of critical minerals (short term) <sup>1</sup>

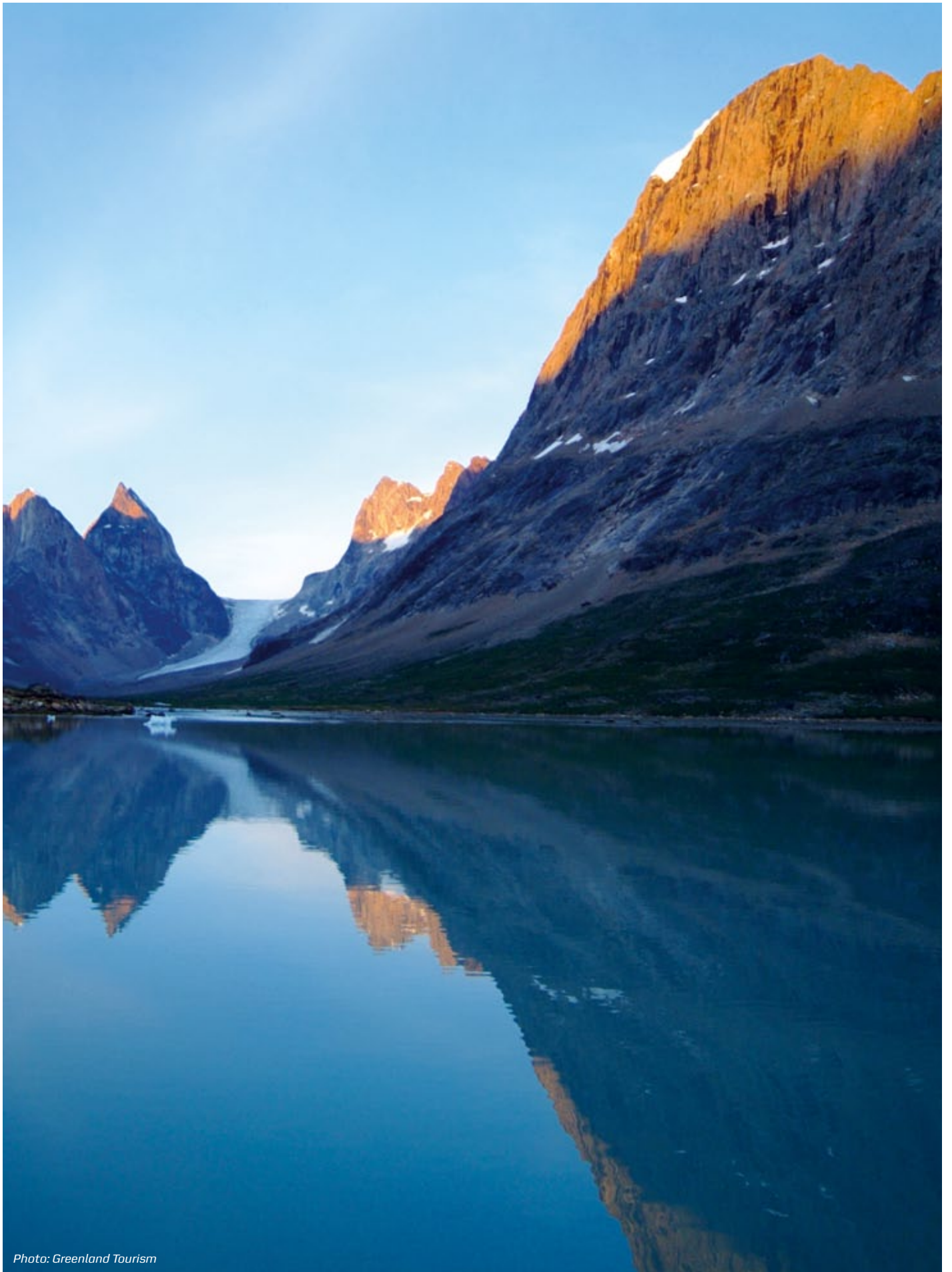
Mineral	Area	Rating of resource
Antimony	East Greenland	Moderate
Beryllium	South Greenland	Low
Cobalt	-	Low
Fluorspar	East Greenland	Low
Gallium	East Greenland	Moderate
Germanium	-	Unknown
Graphite	West- and East Greenland	Moderate
Indium	-	Low
Lithium	-	Low
Magnesium	-	Low
Manganese	-	Low
Niobium	South Greenland	Large
PGM <sup>2</sup>	West- and East Greenland	Large
REE <sup>3</sup>	South Greenland	Large
Tantalum	South Greenland	Large
Tellurium	-	Unknown
Tungsten	East Greenland	Moderate

### Overview of mineral resources which can be critical in the long term

Known deposits in Greenland <sup>4</sup>

Mineral	Area	Rating of resource
Aluminium	-	Low <sup>5</sup>
Zinc	South, West and North Greenland	Moderate
Nickel	East Greenland	Moderate
Manganese	-	Low
Iron	South, West and North Greenland	Large
Chrome	Southwest Greenland	Moderate
Molybdenum	East Greenland	Large
Vanadium	South and East Greenland	Large
Titan	South and East Greenland	Large
Copper	North and East Greenland	Large
Uranium <sup>6</sup>	South Greenland	Moderate

<sup>1</sup> Estimated by the EU, respectively (Raw Materials Supply Group, EU 2010), U.S. (Minerals, Critical Minerals, and USE economy 2008) and UNEP (Critical Metals for Future Sustainable Technologies and their recycling potential; UNEP 2009), respectively. <sup>2</sup> PGM = Platinum Group Metals. <sup>3</sup> REE = rare earth elements. <sup>4</sup> Estimated by the EU (Raw Materials Supply Group, EU 2010). <sup>5</sup> Can be high with other technology. <sup>6</sup> Greenland currently has zero-tolerance policy on uranium and thorium.



*Photo: Greenland Tourism*

### GREENLAND'S COMMITMENT TO RENEWABLE ENERGY

In 1990, the use of renewable energy in Greenland was almost zero, but since 1993, Greenland's Self-Government has annually invested an average of approx. 1% of GDP in the development of hydropower and other renewable energy sources. Today, renewable energy makes up 60% of the public energy supply via the power supply company, Nukissiorfiit. When the Ilulissat hydroelectric plant comes into operation in 2013 as expected, the proportion will rise to approx. 70%.

#### The Greenland hydroelectric power plants:

- Buksefjord Power Station at Nuuk (1992/2008) with an output of 45 MW;
- Tasiilaq hydroelectric plant (2005) with an output of 1.2 MW;
- Qorlortorsuaq hydroelectric plant (2008) with an output of 7.2 MW;
- Sisimiut hydroelectric plant (2009) with an output of 15 MW;
- Ilulissat hydroelectric plant (to be inaugurated in 2013) will have an output of 22.5 MW.

Through the annual Greenland Finance Act account for the Support of Research and Development of Renewable Energy a number of concrete projects are supported, including the installation of solar panels and wind turbines, installation of remote readers and the dissemination of renewable energy. Since 1993, an average of 1% of GDP has been invested annually on the development and establishment of hydropower.

### 3.2. EXPLOITATION OF RENEWABLE ENERGY POTENTIAL

The Kingdom will pursue ambitious and active energy and climate policies. The energy policy objectives of Greenland, Denmark and the Faroe Islands respectively are to create security of supply, to reduce emissions of greenhouse gases and air pollution while creating a basis for commercial development. A shared ambition is to significantly increase the harnessing of renewable energy sources. Denmark's commitment to renewable energy targets under the EU is 30% by 2020. Greenland will increase its share of renewable energy to 60% of total energy production by 2020. The Faroe Islands will increase the use of renewable energy, including the target of 75% of electricity production based on renewable energy by 2020.

Greenland has a tremendous natural potential for renewable energy, which among other things can be utilised for the development of emerging industry. An example is the designing, in collaboration with the American company, Alcoa, of an aluminium smelting plant in Maniitsoq which will be operated solely by hydropower. Increasing focus in Greenland is placed on small-scale solutions for renewable energy to be used in smaller towns and settlements where

there is currently no access to hydropower. The Government of Greenland provides support for developing renewable energy projects, including micro hydropower plants, and solar and wind power projects that aim at a green and self-sufficient Greenland energy supply. Furthermore, the utilisation of renewable energy in the transport sector is being explored. The development of renewable energy sources is a key issue in Greenland's international cooperation.

- Denmark, Greenland and the Faroe Islands will increase the share of renewable energy sources in the energy supply in order to increase the security of supply, reduce emissions of greenhouse gases and air pollution, and thus create the basis for enhanced commercial development and knowledge sharing through training and participation in projects.
- The Government of Greenland will continue to promote the utilisation of renewable energy in Greenland. In the smaller towns and settlements, the development of local energy solutions based on renewable energy must be supported. The Government of Greenland will also promote Greenland's potential to house industrial production based on renewable energy.



Photo: Ivars Siliis and Nukissiorfiit

### 3.3. SUSTAINABLE EXPLOITATION OF LIVING RESOURCES

The Arctic regions are unique ecosystems that represent important values biologically and socially. The natural resources have shaped the development of Arctic fishing and hunting cultures and traditions, and the utilization of fish and marine mammals has always formed the bedrock of Arctic societies and economies. Historically, supply-related and cultural considerations are fundamental to the Arctic population's relationship to the exploitation of living resources, whether fish or marine mammals. The exploitation of living marine resources is one of the essential economic factors in both Greenland and the Faroe Islands.

The structure, function, diversity and integrity of the ecosystem in the Arctic are crucial to the productivity. The Arctic must therefore be managed so as to ensure a healthy marine ecosystem with economically sustainable species and stocks. Ecosystem-based management means that management of the ecosystem is based on a holistic approach where all parts of the ecosystem and all impacts, including those from human activities, are taken into account in management. The management of living marine resources in the Arctic must ensure a high return within the ecosystem's capacity, ensure minimal impact on the ecosystem, and guarantee respect for the ecosystem's capacity for future production of living resources.

Greenland and the Faroe Islands' *fishery* takes place mainly in the North Atlantic, the Denmark Strait and the David Strait. Greenland's fishery is based on a quota system whose aim is to ensure a sustainable exploitation of certain stocks. Therefore, an annual "Total Allowable Catch" (TAC) of the principal species is stipulated, based on biological advice and respecting socio-economic concerns, commercial interests and international obligations.

The biological advice is provided by the Greenland Institute of Natural Resources and a number of regional organizations, particularly the ICES and NAFO.

Faroese fishing of pelagic stocks and fishing in other waters under bilateral and multilateral agreements is mainly based on quota systems, while for groundfish fisheries around the Faroe Islands there is a special system of fishing days and areas which are closed as required. Besides their own expertise, the Faroese also draw on international advice, particularly ICES. Greenland and the Faroe Islands each have agreements with one another and also with the EU, Norway and Russia, and the Faroe Islands furthermore with Iceland. The Faroe Islands, though also Greenland, shares fishery stocks with close neighbours and exports of fish and fish products form a large part of the economy of both countries. The Faroe Islands' export of fish and fish products represents approx. 90% of total exports and for Greenland, approx. 85% of total exports.

The Greenland fishery industry is facing a structural challenge of adjustment, including the need of larger and more modern vessels and the need for future regulation of the industry in relation to ownership provisions and access to capital. This restructuring process will also cause an outflow of labour to other industries and make demands on social policy. Greenland's Self-Government has initiated a project concerning the consequences of climate change on the fishing and hunting industry with a view to identifying opportunities for adaptation that manage the challenges while exploiting new opportunities. The adaptation of industry and retraining initiatives in for example the fisheries industry, might be one element of a new phase of partnership between Greenland and Europe.

A key element in fishery management is control and enforcement. Control opera-

tions are undertaken by the Greenland and Faroese authorities who monitor that both Greenland and Faroese, and relevant international fishery regulations are complied with by all vessels in their respective waters, as well as by Greenland and Faroese vessels operating internationally. The inspection of vessels and catches at sea is undertaken by the Danish Armed Forces and the Faroe Islands Fisheries Inspection *Fiskiveiðieftirlitið*. Furthermore, regional cooperation on inspections remains a priority.

General increases of temperature in the Arctic and rapid melting of ice can make new areas of the Arctic Ocean potentially attractive for fishing. This presents new challenges with regards to national and international regulation of these areas due to insufficient data about them. In addition, illegal, unreported and unregulated fishing is a serious threat to marine ecosystems which has considerable implications for conservation and rational management of marine resources. It is a huge task for small communities with large ecosystems to provide adequate expertise for the management and control of fishery. In the Arctic, there is relatively limited knowledge of fish stocks and fishery opportunities, which means that the precautionary principle should be applied to protect the environment and fishery resources.

*Hunting* is an integral part of the Arctic community and a sustainable exploitation of hunting resources is important for the local economy and for cultural self-identity. The best possible basis for decisions should be ensured in the exploitation of these resources nationally and internationally. Similarly, it is essential that hunters have confidence in the basis for decision-making so that limitations on hunting are observed. The Greenland seal-hunting industry is currently under pressure partly because the European and North American markets for sealskin have

## KEY ORGANIZATIONS AND OTHERS IN THE FISHERY AND HUNTING SECTOR

- ICES - International Council for the Exploration of the Sea: International organization that is responsible for coordinating and promoting marine research in the North Atlantic and adjacent seas, the Baltic and North Sea. The organization has 20 member states, including Denmark, with the Faroe Islands and Greenland.
- NAMMCO - North Atlantic Marine Mammal Commission: Regional management organization for marine mammals with Norway, Iceland, the Faroe Islands and Greenland as members. NAMMCO has observer status in the Arctic Council.
- NAFO - Northwest Atlantic Fisheries Organization: Regional fisheries management organization that provides science-based advice, as well as managing and regulating fishing in the Northwest Atlantic. NAFO consists of 12 members at present, including Denmark in respect of the Faroe Islands and Greenland.
- NEAFC - Northeast Atlantic Fisheries Commission: Regional fisheries organization that provides science-based advice and manages and regulates fishery beyond 200 miles in the North Atlantic and up to the North Pole. NEAFC currently consists of 5 members, including Denmark in respect of the Faroe Islands and Greenland.
- IWC - International Whaling Commission: International Management Organisation which regulates hunting of large whales. Denmark, the Faroe Islands and Greenland are members. Greenland allocates quotas on large whales by means of the so-called "Aboriginal Subsistence Whaling quota"

virtually collapsed after pressure by special interest groups on consumers. Internationally, there is very limited understanding for the catch of marine mammals. This is also true of the Greenland catch of large whales, which is regulated by the International Whaling Commission in accordance with the exemption that applies to indigenous peoples.

- All living resources must be developed and exploited sustainably based on an ecosystem management that ensures a high return in the long term, and is in compliance with international obligations, while at the same time the Arctic communities' rights are defended in support of the fishing and hunting industry. Management must be based on scientific advice that is founded on the collection, processing and analysis of data, including from hunters and industry.
- The Kingdom will work internationally for the Arctic indigenous peoples' right to conduct hunting and to sell products from seal hunting, as long as it is based on sustainable principles.
- Denmark, Greenland and the Faroe Islands will work to ensure that the utilisation of living resources, including marine mammals, is founded upon an ecosystem-based management model that places emphasis on scientific foundation and sustainability.
- Work continuously to ensure regular scientifically based monitoring of living resources in the Arctic with the involvement of its citizens. The precautionary principle should apply in cases where there is a lack of adequate knowledge about development in previously ice-covered areas.
- Effective management and control regimes must be pursued to counter illegal, unreported and unregulated

fishery and hunting, and also work for international agreements on potentially attractive Arctic high seas not yet covered by the conservation and management systems. The parts of the Danish Realm will work to ensure that in general fishery does not commence where a conservation and management system is not available.

- The parts of the Danish Realm will work to strengthen international cooperation on scientifically based management of shared fish stocks and fishery in international waters with a view to promoting consensus on sustainable management plans and allocation formulas for the benefit of all relevant parties.
- The parts of the Danish Realm will work towards the introduction of a special regional form of control for a prudent fishery in large ecosystems in sparsely populated areas where there is no historical data and where it is particularly challenging to collect data and carry out control. Methods must be developed for sustainable management in situations of scientific uncertainty, whereby models are developed that support a learning management system based on the precautionary principle.

## WHALING

Denmark is in a rather unique situation when it comes to whaling, since the Kingdom's three parts - Denmark, the Faroe Islands and Greenland - each have their own whaling policy. This particular situation is similar to the U.S. and Russia, which also distinguish between population groups that rely on whaling and the rest of the territory. The Faroe Islands and Greenland's maritime policy is based on the principle of being able to live off marine resources in a sustainable way, whether it be fish, seals or whales. Each part of the Danish Realm is empowered to regulate the exploitation of whale resources in their own waters - though some whale species are subject to decisions to which the King-

dom is bound under the framework of the International Whaling Commission (IWC). The entire Danish Realm is thus bound by the IWC's current ban on commercial hunting of large whales.

In the Faroe Islands and in Greenland there is general support for a principled policy and the political priority is to ensure the populations' right to hunt. In the Danish part of the realm, many people are fundamentally hesitant about whaling and whaling is not practised in Danish waters, although there is understanding for the situation of Greenland and the Faroe Islands. In Danish waters, EU rules apply, i.e. a total ban on whaling. In Greenland, the hunting of small as well as large whales is oper-

ated in connection to the society's food supply. Large whales are covered by the IWC's regulatory powers. As a member of the IWC, the Kingdom therefore seeks, at intervals, to obtain backing in the IWC for quotas of relevant species of whales in Greenland. The Faroe Islands has previously operated commercial hunting of large whales, but has for many years only operated non-commercial hunting of small whales, mostly pilot whales, which are not subject to the IWC. The Faroe Islands, however, continues to see sustainable commercial whaling as a right and supports the right of other nations in this respect.

### 3.4. STRONGER INTEGRATION IN INTERNATIONAL TRADE

New opportunities for economic development in the Arctic are leading to increasing interest from international investors in the area. The Government of Greenland has set itself clear targets to attract more foreign investors, and to ensure that the exploitation of Greenland's natural resources in the future will constitute a major source of revenue for the Greenland society. The new trading opportunities can contribute to the diversification of Greenland's economy and create the basis for economic sustainability and prosperity. For the Faroe Islands in particular, the opening of the Northeast Passage will unfold new opportunities as a result of increased navigation. The Government of the Faroes has decided to set up a working group to assess the Faroese strategic opportunities associated with increased enterprise in the Arctic and North Atlantic area.

The heightened international interest requires the creation of attractive regulatory frameworks for investments. Therefore, Greenland is working to conform to international trade rules and obligations and create a healthy investment environment. This will not only strengthen Greenland as an attractive investment destination, but also give Greenland more opportunities to penetrate new markets. By virtue of the Kingdom of Denmark's membership, Greenland and the Faeroe Islands come under the World Trade Organisation. Since the end of 2005, Greenland has worked continuously to bring Greenland law into compliance with WTO rules. Due to its OCT status (Overseas Countries and Territories) Greenland goods have duty-free access to the EU. The Faroe Islands has duty-free access to the EU for the majority of its goods pursuant to an agreement on mutual tariff exemption in 1991, renewed in 1996. Faroe trade with the EFTA countries, Norway and

Switzerland (and Liechtenstein), is covered by free trade agreements concluded in the early 1990s. As regards Iceland, the Faroe Islands entered into a more comprehensive economic cooperation agreement in 2005 (Hoyvik Agreement).

Many Arctic regions are favourably located in relation to the world's two largest markets (the EU and U.S.), especially Greenland. The opportunities for a closer association to the surrounding markets must gradually be expanded as the extent of sea ice decreases. Trading requires infrastructure, and it is essential that the infrastructure be developed to support growing trade. In Greenland, the Transportation Commission has analysed the future needs for adapting the infrastructure and its recommendations of April 2011 will form a weighty element in the basis for decisions on the development of Greenland's infrastructure.





*Photo: Fernando Ugarte, april 2011 / Polar bear sedated for research purposes*

- A close collaboration with the business community must be ensured regarding the increased opportunities in the Arctic. The markets for Greenland and Faroese export goods are to be expanded, and internal and external barriers to exports removed.
- Inside the Kingdom's individual customs territories, the closest possible alignment must be ensured with international trade regulations and obligations, in particular the WTO's regulations.
- Cooperation must be strengthened concerning Greenland adaptation, as deemed appropriate, to the bilateral trade agreements which Denmark enters into via the EU, and the Kingdom will work to maintain - and wherever possible expand - preferential access for products from Greenland and the Faroe Islands in the EU and third countries, including entering into agreements on reciprocal free trade between the Faroe Islands and new third countries.
- Trade relations with the outside world must be managed through an ongoing infrastructure development.

### 3.5. KNOWLEDGE-BASED GROWTH AND DEVELOPMENT

Greenland now plays a prominent role in international research because of the unique opportunities to study processes of global importance, including the planet's geological history, natural climate variations and global warming. Interest in Arctic research has been increasing rapidly in recent years, which has resulted in major national and international research programs and increased Arctic research funds from among others the Nordic Council of Ministers and the EU. Nordic, European and wider international research and educational cooperation will also be given high priority in the future.

Global warming affects the Arctic directly, including the Greenland ice sheet, sea ice and ocean currents, which in turn have far-reaching implications for global climate trends. Meanwhile, climate change also has direct consequences for the Arctic in terms of changing circumstances for the fishing and hunting industry, the potential for mining and exploitation of hydrocarbon resources, and also navigational options for tourism and transport.

Greenland offers so many unique opportunities for research in nature, geography, biology as well as the interplay between nature and humans. It is vital that research into and monitoring of the ice sheet and research on climate and environmental processes in the Arctic are disseminated and used internationally. It is also essential that research findings are of practical use by Arctic peoples in supporting the rapid cultural, social, economic and industrial development that other peoples have had generations to adapt to. Therefore, Arctic research findings must clearly be promoted to the benefit of the Arctic populations, not least the Arctic indigenous peoples. Here, social science and health research will play a key role.

The Faroe Islands lies at the gateway to the Arctic. Nearly 90% of the total oceanic heat transfer towards the Arctic flows through this area, and the heat brought into the Arctic keeps large marine areas free of ice and far warmer than they would otherwise have been. This is the basis for the huge pelagic fish stocks that feed in the area, keeping surrounding land masses warmer than the global average at this latitude. In the Arctic and subarctic oceans, the water cools and then most sinks and returns to the world's oceans as a cold deep-water current that transports carbon dioxide, oxygen and heat from the atmosphere into the deep water masses, which are a prerequisite for all deep-water fauna. This interconnected system of

ocean currents is essential to the relationship between the oceans, the global climate and not least the Arctic, but it is driven by sensitive mechanisms that can easily be weakened as the Arctic warms. The international scientific community has put considerable resources into charting patterns of ocean currents, following their changes and working out methods to predict their development and future impact on climate, living resources and humans. The Kingdom will seek to play an active and leading role in the continuation of this research effort.

There is a long tradition in the Danish Realm for Arctic research and close cooperation in meeting challenges. Danish, Greenland and Faroese universities, and research and scientific centres take part in numerous international research projects within a broad spectrum of paleoclimatic studies, research into Arctic ecosystems, oceanography, glaciology, geophysics, geology, social sciences and health sciences, and similarly a number of monitoring programs and Arctic research stations conduct an essential monitoring of climate impacts on the Arctic.

In addition, a joint research initiative by the Danish-Greenland-Faroese Continental Shelf Project provides data collection on the seabed and opportunities for follow-up research in other fields.

Research into Arctic technology, which mainly takes place at the Arctic Technology Centre in Sisimut West Greenland in cooperation with the Technical University of Denmark (DTU), is another area with potential, including requirements for the use of renewable energy in power systems and the development of Arctic infrastructure.

In 2009, the Ministry of Science and the Government of Greenland set up an interdisciplinary climate research centre in Nuuk. The centre works in partnership with

the Commission for Scientific Research in Greenland (KVUG), the Greenland Institute of Natural Resources and the University of Greenland. The centre focuses on basic research about the Arctic climate and the effects of climate change including the need for mitigation and adaptation strategies, and currently has approx. 80 Greenland, Danish and international researchers affiliated on a permanent or flexible basis.

Nordic, European and wider international research and education cooperation is to be given high priority. For example, Danish and Greenland researchers are participating in the top Nordic research initiative on climate, environment and energy, which is one of the Nordic Council of Ministers' globalization initiatives. The Kingdom also supports the running of the University of the Arctic - an association of circumpolar universities that offers a rich variety of courses relevant to Arctic students. Bilaterally, education, language and research constitute key elements in Joint Committee cooperation between Greenland, Denmark and the U.S. - and Greenland is increasingly taking part in promising bilateral research and education partnerships, as for example with Canada.

Research and education are closely connected - and must be tightly linked with economic and industrial development. For instance, in January 2011, the Government of Greenland set up a new mineral resources school by reorganising the Mining and Construction School in Sisimut. The mineral resources school will function as a knowledge centre for the entire mining resource sector and develop training within the oil industry. The Government of Greenland also has ongoing initiatives where research is used for the training of the population. Among other things, a summer school in Kangerlussuaq has been launched in cooperation with the United States under its auspices, where foreign scholars teach pupils at secondary

level in scientific research topics. Finally, as part of the existing partnership agreement with the EU, Greenland receives about 25 million Euros annually in budget support for the education sector, in particular targeting the special educational drive where the societal needs are greatest.

It will remain a key priority to support the future economic and social sustainability with educational initiatives. Besides the mineral resource sector, initiatives concerning new opportunities and challenges in the maritime sector will also be central.

- The Kingdom will maintain its leading position internationally in a number of research fields concerning the Arctic, and will promote national and international Arctic research.
- The Kingdom will work to promote the participation of Danish, Greenland and Faroese academic and scientific institutions in international research and monitoring activities. This includes the quantification of global and regional impacts of climate change in the Arctic, such as how Arctic ecosystems, sea ice and ice sheets respond to climate change and also the consequences and importance of climate change for the populations and communities in and outside the Arctic.
- Research and monitoring in the Arctic puts a strain on resources and logistics and therefore international cooperation on such projects must continue to be encouraged, as well as pursuing flexible administration that facilitates access to the regions and minimizes administrative burdens on projects.
- Research in the Arctic must also help to support the cultural, social, economic and commercial development. Knowledge and data must be built up even more, firmly embedded, and also used

in the Arctic where research partnerships in for example natural resources and broader social science fields will be prioritized. The extensive research by foreign researchers must be disseminated to a greater extent to relevant institutions and communities.

- Within the Kingdom, cooperation between research institutions must constantly be consolidated and developed, and researchers have to be familiar with available options for funding of Arctic research. Continuity and stability in the research environment must be assured, for example, by the recruitment of young researchers.
- Greenland targets that by 2020, at least 2 / 3 of school leavers will have gained training leading to formal qualifications, and the Government of Greenland will prioritise supplementary further education as new requirements arise. In particular, the Self-Government will develop education and training in the mineral resources area, so Greenland will increasingly be able to offer relevant and qualified manpower in the offshore and mineral industry.
- Possibilities will be considered for closer involvement of Greenland's citizens in the armed force's education and training and tasks in the Arctic, including customized programs in Greenland with emphasis on the maritime domain.
- International training and exchange cooperation will be a strategic priority for Greenland, particularly with the U.S. and Canada as well as the EU, where a new phase in the partnership could involve further adaptation to trade and industry and / or retraining initiatives.

## INFORMATION A PREREQUISITE FOR PROGRESS - BUILDING UP OF GEOGRAPHICAL INFRASTRUCTURE

The establishment of a well-developed infrastructure of geographical information is important for the development of the Arctic. Compiling geographical information and obtaining a complete picture of what is happening at a given location (maps, charts, records, etc.) is very important to the carrying out of the authorities' activities and for people's access to information. The building up of a geographical infrastructure is based on the principles that data

must only be produced once and that all additional data should be collected and maintained and made available in the most effective manner. To manage this, the Greenland self-government has set up NunaGIS. The objective of NunaGIS is to gather all essential information across Greenland in a digital atlas, and link this information to a data and organizational infrastructure, also called SDI (Spatial Data Infrastructure). Work is being done internationally to establish a common geographi-

cal infrastructure for the entire Arctic region by building an Arctic SDI where basic topographical data from all the Arctic countries can be assembled, displayed and linked with other information on the climate, wildlife, vegetation etc.

## TOPOGRAPHICAL MAPPING

There is an agreement between the National Survey and Cadastre (KMS) and Greenland's Self-Government to jointly find a method to establish data for the topographical mapping of Greenland at 1:100.000 and maintain these maps in a simple manner. Since it is a vast land area to be covered, traditional methods

that have been used for mapping in Denmark are in some cases are too costly, and therefore new technologies for mapping, including use of satellite images, need to be explored. There is also agreement between Umhvørvisstovan (Environmental Office) in the Faroe Islands and KMS that there must be an updating and moderniza-

tion of the topographical map, so that new data from the Faroese authorities can be combined with existing topographical maps of the Faroe Islands.

## NEEM ICE CORE DRILLING

North Greenland Eemian Ice Drilling, NEEM (2007 - 2011) is an international research project coordinated by the Centre for Ice and Climate, a scientific research project at the Niels Bohr Institute at Copenhagen University, funded by the Danish National Research Foundation. The goal of NEEM drilling in Northwestern Greenland is to retrieve an ice core reaching back through the last interglacial period, the Eemian, which ended about 115,000 years ago. The climate in Greenland was warmer during the Eemian period than it is today, and is therefore considered as an

analogue for the future climate which is expected to be warmer because of global warming. Ice cores from the Eemian period may thus contribute to understanding climate dynamics in the future. Previous drilling in other parts of the Greenland ice sheet (e.g., DYE-3, GRIP, GRIP2 and NGRIP) have also aimed at acquiring knowledge about past climate changes, but none of the ice cores obtained from previous drills have contained a complete uninterrupted series of Eemian ice layers. On 27 July 2010 NEEM reached bedrock at a depth of 2537.36 m. The researchers expect that the lowest meter of the ice core will be rich

in DNA and pollen and thus be able to give insights into vegetation that existed in Greenland during the last interglacial period and perhaps earlier. Further analysis of the approx. 2.5 km-long ice core will be undertaken by the Centre for Ice and Climate in collaboration with international research groups.

### CLIMATE RESEARCH CENTRE'S COLLABORATION WITH CANADA

In 2010 Greenland's Climate Research Centre began collaborating with the University of Manitoba, Canada where the head of the Climate Research Centre was awarded the post of Canada Excellence Research Chair in Arctic Geomicrobiology and Climate Change. Thus, a new and extensive Greenland-Danish-Canadian climate research collaboration was launched which is bringing together a number of the world's leading scientists in climate research in

the Arctic. In addition, in early 2011 steps were taken to establish a new "Centre for Arctic Research" at Aarhus University with close ties to Greenland's Climate Research Centre, which creates the basis for a highly integrated and coordinated climate research collaboration between Denmark, Greenland and Canada around much of the Arctic region. The new collaboration will be structured in a new joint research partnership, the 'Arctic Science Partnership', with the participation of Greenland's

Climate Research Centre, the University of Manitoba and the University of Aarhus. Overall, this provides unique opportunities for comprehensive research, educational cooperation and synergy between the three centres.

### SUMMER SCHOOL IN KANGERLUSSUAQ AND THE ARCTIC STATION

In July 2011 the first summer school in Kangerlussuaq is going to be held for high school students from Greenland, Denmark and USA. The summer school is taking place under the auspices of the trilateral "Joint Committee" cooperation between Greenland, Denmark and USA. Greenland is providing facilities; the manager is Danish, while the teachers are American scientists who freely devote 2-4 days to train the students in scientific disciplines. The purpose of the summer school is to arouse interest in science among young people, to improve their language skills and to give the Greenland students the

opportunity to make contact with Americans and Danes of the same age and learn about educational opportunities in the U.S. and Denmark. The project is targeting two of the three priority areas which the Joint Committee has agreed upon in 2010-2011, namely to improve access for Greenland's students to U.S. institutions of learning and to improve English skills in secondary schools in Greenland.

In July 2000, and 2001, so-called pre-research schools were held for high school students at the Arctic Station on Disko Island in West Greenland, where researchers covered a wide range of scientific top-

ics. The purpose of the schools at the field station was to motivate students to pursue science in higher education. The result was extremely positive and several students subsequently chose higher education courses in geology and biology. Pre-research schools at the Arctic Station will resume in 2012.



Photo: Helle Astrid Kjær / NEEM ice core drilling project, [www.neem.ku.dk](http://www.neem.ku.dk)

### 3.6. ARCTIC COOPERATION ON HEALTH AND SOCIAL COHERENCE

It is a shared core value in Denmark, Greenland and the Faroe Islands to promote the population's health and also prevent and treat illness, suffering and disability with respect for the individual, his/her integrity and independence. The parts of the Danish Realm prioritize preventative and public information efforts to improve diet, increase the number of physically active people, reduce smoking and harmful alcohol consumption and also to maintain focus on risk groups to combat the increase in lifestyle diseases. Furthermore, the parts of the Danish Realm prioritise the monitoring of the population's state of health.

Greenland today is facing a dual challenge from both old patterns of disease characterized by relatively high infant mortality, accidents, and acute and chronic infectious diseases such as tuberculosis, as well as a new Western pattern of disease dominated by chronic and lifestyle-related diseases.

In the field of environmental medicine, Greenland faces the challenge of the long-range trans-boundary pollution, which increasingly impacts on traditional food resources and the population's health, just as the training of professionals as well as recruitment and retention of health professionals is a continuing challenge.

In 2011 Greenland has launched a health reform which is expected to be fully implemented in 2013. Through the regionalization of the healthcare system, the health reform will lead to greater and more equitable access to healthcare for the population, improved financial management and better opportunities for recruitment and retention of health professionals. The health reform is underpinned by the telemedicine network which was developed with the help of Alaskan and Norwegian inspiration.

The Danish Realm supports cooperation which can improve people's living conditions and health in a sustainable way, including knowledge-exchange and the increased use of new technological capabilities, both within the Kingdom and Nordic cooperation and in cooperation with existing and new partners in the rest of the Arctic. This applies generally, but also focusing especially on vulnerable sections of the population, including children and the elderly, and also the mentally ill. The Danish Realm will continue jointly to review health-care policy and other health-related challenges, including specialized treatments, among other things as a follow-up to the Danish-Greenlandic agreement in September 1998 on the continuation and expansion of cooperation in the health area. The Danish Realm also supports Arctic research cooperation concerning the development of best practices, public health and health-related consequences of pollution.

Some Arctic communities are also facing difficult social issues. To deal with adverse social trends, the emphasis on social coherence and integration is central to development in the Arctic. Denmark and Greenland are cooperating closely on projects and knowledge-exchange in the social sector. Greenland is also sharing its experience on family matters and gender equality with, among others, the Nunavut region of Canada. Furthermore, the Nordic Council of Ministers has been focusing on changes in the Arctic from a gender perspective.

- The Kingdom will continue to develop cooperation in the health area, including emergency and specialist treatments within the Kingdom – and in the case of Greenland also with Iceland - and training and recruitment within the Kingdom and through Nordic and Arctic cooperation.
- The cooperation between Arctic partners on common challenges should be

further developed, especially based on a Greenland context. Enhanced Arctic cooperation could include, research, evaluation and also exchange of "good / best practices" regarding infectious diseases, public health, telemedicine, a culturally attuned health service and environmental medicine.

- It will be a priority to increase cooperation in the Nordic and Arctic arena on public health preparedness concerning disaster situations and other urgent challenges to public health.
- In cooperation with the international research and scientific communities, the Kingdom will continue to focus on monitoring the state of public health, as well as the effect of climate change and global pollution on public health and social conditions in Greenland. Greenland has a special responsibility for advice and internal dissemination of the monitoring and research findings generated in the Kingdom and internationally.
- The Kingdom will promote Arctic cooperation and knowledge sharing on social coherence, including the participation of the population in new opportunities in the Arctic, and their involvement in international debates on the future of the Arctic.

## TOWARDS CLOSER COOPERATION ON ARCTIC HEALTH

The first Arctic Health Ministers' Meeting took place on 16th February 2011 in Nuuk with Denmark and Greenland as hosts. The Arctic countries are facing a number of common challenges in health and wish to work together to find the right solutions and exchange

knowledge and share experiences. This applies particularly to prevention, telemedicine and research, as well as mental illness and the prevention of abuse and suicide. The meeting led to the "The Arctic Health Declaration" which expresses agreement on closer cooperation on health issues

such as the sharing of "best practices" and that the indigenous peoples in the Arctic to a larger extent should be involved in research, health promotion and prevention.





Photo: Ólavur Fredriksen

# 4. Development with respect for the Arctic's vulnerable climate, environment and nature

- The Kingdom will pursue a vigorous and ambitious knowledge building on climate change in the Arctic and its consequences in order to foster global and local adaptation to far-reaching change.
- The Arctic nature and environment must be managed based on the best possible scientific knowledge and standards for protection, and international cooperation in this endeavour must be promoted.

The Arctic has increasingly become a part of the international agenda, and global developments have in turn increasingly become a part of the Arctic. With the Arctic Council's publication of Arctic Climate Impact Assessment from 2005, the world discovered the magnitude and consequences of climate change in the Arctic. However, 20 years earlier, the realization that heavy degradable man-made pollutants and heavy metals lead to pollution and the accumulation of toxins in animals and humans in the Arctic, had already spurred the creation of the Arctic Council as well as international agreements in 1998 that regulate pollutants. There is rightly an increased international focus on environmental regulation in the Arctic, including nature conservation, biodiversity and the marine environment. There is also considerable attention to the growing im-

pact of toxic substances like mercury and persistent organic pollutants (POPs), which can have harmful effects on public health as well as ecosystems and biodiversity.

The following focuses on the strategic priorities to improve knowledge building on the consequences of rapid climate change in the Arctic, and to strengthen the protection of the environment and biodiversity in the Arctic.

## 4.1. IMPROVED UNDERSTANDING OF THE CONSEQUENCES OF CLIMATE CHANGE IN ARCTIC

Recent scientific studies conclude that warming in the Arctic since 1980 has been twice as much as the rest of the globe and that in 2005-2010 the Arctic had the highest average temperatures since

records began in 1840. Global climate models predict that warming will continue. The effects of continued warming of Greenland's climate, ice sheet and ocean are studied using regional climate models with a view to facilitating adaptation to climate change. Arctic warming means that snow and ice are steadily melting faster and the permafrost is disappearing in the southern part of the Arctic. The effects of these changes are extensive - including rising sea levels, potential changes in the atmospheric content of greenhouse gases, potential changes in global ocean currents, and so on - and climate change in the Arctic is of crucial importance to global climate and environmental conditions.

In order to anticipate how global climate and environmental conditions will evolve, it is crucial to understand how climate

change affects the Arctic, and in turn how changes in the Arctic affect global climate trends. Such knowledge is essential for the adaptation to climate change in the Arctic and the rest of the world. The Kingdom is also working to support and promote the conclusion of a global agreement on limiting emissions of greenhouse gasses.

- In cooperation with the international research and scientific community, the Kingdom will strengthen the effort to quantify global and regional impacts of climate change in the Arctic, including

knowledge about how Arctic ecosystems, sea ice and ice sheets respond to climate change. Such efforts include monitoring and research activities with the involvement of Greenland, Faroese and Danish research centres.

- Research and monitoring must reinforce the knowledge base on climate change impacts and their significance for the populations and communities within and without the Arctic as well as incorporating local and traditional knowledge. Furthermore, cooperation

must be strengthened on identifying measures to adapt to climate change within the Kingdom.

- The Kingdom will assist in reinforcing the rights of indigenous peoples in negotiations towards a new international climate agreement by promoting the visibility of indigenous peoples' situation and also ensuring that the principles of the UN Declaration on the Rights of Indigenous Peoples from 2007 are observed.

#### ARCTIC CLIMATE IMPACT ASSESSMENT (ACIA) AND SNOW, WATER, ICE AND PERMAFROST IN THE ARCTIC (SWIPA)

In 2005, the Arctic Council released a major scientific work on climate change and its consequences in the Arctic - Arctic Climate Impact Assessment (ACIA). The ACIA-report pointed out that climate change in the Arctic will have major consequences for the Arctic environment and peoples of the Arctic and that the first signs of change are already visible. In 2011 the Arctic Council published a follow-up of the ACIA report: Snow, Water, Ice and Permafrost in the Arctic (SWIPA) which specifically focuses on the impact of cli-

mate change on snow, ice and frost conditions in the Arctic within the last ten years. The work, based on scientific articles and data is carried out by 200 of the world's leading Arctic researchers. SWIPA results confirm the predictions contained in the ACIA report, but in some areas the pace of change is happening much faster than expected. SWIPA shows the following: that the years between 2005-2010 were the warmest yet measured in the Arctic; that the summer sea ice could disappear within 30-40 years; that the Greenland ice sheet and other Arctic ice caps are continuously

melting faster; that global sea level rises at the end of this century may be 0.9 to 1.6 m with a significant contribution from Arctic ice; and that changes in snow, ice and frost conditions fundamentally change the Arctic ecosystem, which will be particularly challenging for local communities and traditional lifestyles.

#### REGIONAL CLIMATE MODELLING IN THE ARCTIC

In cooperation with the Climate Research Centre in Nuuk, the Danish Meteorological Institute (DMI) is developing and applying a model for the climate system with high resolution (detail) to assess future climate change in the area around Greenland. The project is supported by the Commission for Scientific Research in Greenland (KVUG). The model system is initially envisaged

as a tool to focus on increasing basic knowledge about the climate in the Arctic, with emphasis on Greenland and to assist in a better understanding of the effects of climate change. The model system focuses mainly on the inland ice and its interaction with the surrounding seas, but also contributes to knowledge of permafrost conditions and the interplay between weather, sea and ice more generally.

The latter is taking place as a pilot project focusing on the Nuuk area where a range of activities at the Climate Research Centre are concentrated. This can be utilised for model verification and a greater interaction in the Greenland society with regards to climate change adaptation initiatives.

## PROGRAMME FOR MONITORING OF THE GREENLAND ICE SHEET - PROMICE

The contribution from the Greenland ice sheet to global sea rise levels has accelerated over the past ten years and the net loss of ice is now at about 200 Gt / yr. The ice sheet will most likely be the main contributor to the rise in global sea level over the next hundred years, according to the Arctic Council SWIPA report from 2011. Changes in ice sheet mass balance may further affect ocean circulation in the North Atlantic and the marine resources around Greenland. To establish a better knowledge base, a long-term national monitoring of the ice sheet called PROMICE was launched in

2007. The goal of PROMICE is to determine the ice sheet's mass loss, explain why and provide data and observations to the global research effort in this area through:

- A network of automatic weather stations directly on the ice sheet
- Direct measurements of ice height and ice thickness from aircraft
- Mapping of ice flow from satellite
- Direct, continuous measurements of outlet glacier flow rate

- Observation-based modelling of melting and the formation of icebergs
- Monitoring of the smaller ice caps and glacier's mass loss
- Operation of database with free online access to all data collected

PROMICE is a collaboration between GEUS, the Danish Technical University and Asiaq, Greenland's Survey.

## 4.2. PROTECTING THE ENVIRONMENT AND BIODIVERSITY

The Arctic nature and wildlife are unique and fragile. This is due to the fact that ecosystems have evolved under low temperatures in the Arctic. Global warming is leading to increasingly ice-free seas in summer periods, and the lower prevalence of sea ice can have a major impact on the living conditions and distribution of species associated with sea ice. Similarly, longer periods of open water will result in increased activity, such as shipping in areas that previously couldn't be navigated, just as increased mineral exploitation, fishing and tourism pose a risk of pollution and accidents.

Increased shipping may also pose a risk of an increased influx of invasive species. To this must be added the slow degrading of problematic chemical substances that are often long-range transported. Climate change may likewise cause direct impacts on terrestrial biodiversity, while a number of climate-related and non climate-

related anthropogenic impacts can affect biodiversity. This applies, for example, to increased traffic and its associated disturbance and erosion, fragmentation of habitats, and increasing use of areas in open land for commercial and recreational purposes.

On this basis, we can anticipate greater pressure on the Arctic ecosystems and fragile biodiversity. At the same time, there is an accumulation of pollutants through the food chain which could have major implications for the Arctic society. It is therefore essential, in collaboration with international partners, to ensure monitoring and studying of the environmental and health impacts to which the Arctic peoples, the Arctic ecosystem and biodiversity are exposed. It is equally important to ensure knowledge-building by the monitoring and study of migratory species (eg. whales, polar bears, migratory birds), ecosystems and biodiversity to be used in international conservation work. This will ensure the best possible foundation for

future management in Greenland that is based on sustainable utilisation and protection of the Arctic environment.

Parameters such as migration routes, area utilization and core habitats may also change in line with anticipated changes in climate and ice conditions. Further analysis could lead to more accurate identification of problem areas and to possible future changes. Identifying these areas and estimates of future changes will be of great importance for the implementation of necessary adjustments to ensure sustained and effective protection of nature and the environment.

As regards environmental pressures and impacts, it remains necessary to ensure the monitoring and study of, for example, persistent organic pollutants (POPs), mercury, oil, particulates and other pollution to which the Arctic populations and ecosystems are exposed. Many years of continuous data collection of environmental impacts in the area provides important in-

formation both about the effect of existing international agreements on the reduction of long-range transboundary pollutants and information for use in future environmental work in the EU and other international fora. The impact of local pollution in the Arctic region has so far been minimal. One consequence of these environmental challenges is that it is necessary to ensure that future monitoring is conducted in a way that assesses all threats and impacts in the Arctic in an integrated way.

Efforts are to be focused on the national implementation of international agreements entered into on nature and the environment, and on safeguarding the marine environment against pollution for example by enhancing maritime safety. In doing this, it is essential that the highest international environmental standards are employed in the harvesting of resources in the Arctic, and that due to the special navigational conditions, the best possible prevention of maritime accidents in the Arctic and possible pollution that results can be ensured.

- Nature and the environment must be managed based on the best possible knowledge base. This is ensured through a long term monitoring and systematic collating of research findings. The protection of biodiversity under international standards must be enhanced by identifying important and ecologically sensitive areas.
- Efforts will be made to ensure the rights of the Arctic countries and access to the exploration and utilisation of biological resources in the Arctic, since the Kingdom is especially interested in protecting and utilising the genetic and biological resources in the Arctic under the Convention on Biological Diversity.

- The continued monitoring of long-range transboundary pollutants and their impact on ecosystems and humans in the Arctic must continue. Likewise, continued monitoring and also the prioritization of monitoring species and ecosystems must be assured. Furthermore, it is important to do an overall assessment and monitoring of all the threats to and impacts on the Arctic for the protection of nature and the environment.

- The most recent knowledge about pollutants in the Arctic is to be made available and applied proactively. Focus must be enhanced on the use of available information in international fora relating to global negotiations of agreements such as the UNEP's global mercury convention and the Stockholm Convention and other relevant agreements on persistent organic pollutants.

- Prevention of marine pollution in the Arctic must be reinforced. This includes better international sharing of knowledge and experience on preventative steps and cooperation, especially in the Arctic Council and the IMO on joint prevention measures.

- The Kingdom will participate in protecting the marine environment as soon as possible by implementing and ratifying the HNS Protocol on compensation and liability for damages arising from hazardous and noxious substances, and also the Ballast Water Convention which will help in protecting the marine environment from invasive species.

- Moreover, towards 2014, the Kingdom will carry out a risk-analysis of the maritime environment in and around Greenland, including the risk of oil and chemical contamination caused by the

expected expansion in traffic and activity in the area. Based on the risk analysis, the Kingdom will assess to what extent it may be useful to strengthen the protection of the maritime environment in the Arctic. Possible initiatives could include increased international sharing of knowledge and experience on pollution control, enhanced preparedness for the prediction of drifting oil spills and strengthened international cooperation on maritime emergency preparedness.

### ARCTIC ENVIRONMENT MINISTERS MEETING IN JUNE 2010

In June 2010, an Arctic Environment Ministers meeting was held in Ilulissat in Greenland with the Danish Minister for the Environment and the Member of Naalakersuisu for the Environment and Nature as hosts. Following up on the meeting, the Kingdom started work on identifying vulnerable marine areas and is looking at ways to protect them

against the effects of shipping. Twelve vulnerable marine areas around Greenland have been identified, and it was decided that 6 of these must be investigated more closely. The work will initially focus on three high-priority fragile marine areas, namely:

- 1) Nordvandspolyniet (off Northwestern Greenland),
- 2) Disko Bay and Big Halibut Bank (West Greenland) and
- 3) Ittoqqortoormii (Scoresby Sound) and surrounding areas (East Greenland).

### GREENLAND ECOSYSTEM MONITORING

The Arctic is characterized by a harsh climate with extreme light and temperature conditions, short summers and snow and ice cover in winters. The ecosystems and the species that live in the Arctic have had to adapt to these extreme conditions and high natural variability from year to year. Knowledge of how Arctic ecosystems function, how the systems affect the surroundings, what year-on-year variation in, for example, weather conditions means and how systems alter as a consequence of climate change requires large-scale study programs over long periods. At

the Zackenberg research station and a similar station in Kobbefjord near Nuuk, multidisciplinary studies and research are being conducted that help to illuminate the workings of the Arctic's ecosystem and its development. For example, changes in biodiversity, the system's intake / release of greenhouse gases and their resilience in the light of climatic development. Together, the two programs are called the Greenland Ecosystem Monitoring and are carried out in collaboration between Greenland and Danish academic and research institutions, including ASIAQ, Greenland Climate Research Centre, the

Greenland Institute of Natural Resources, University of Copenhagen, Geological Survey of Denmark and Greenland, and Aarhus University.

### GREENLAND ENVIRONMENTAL ATLAS OF AREAS PARTICULARLY SENSITIVE TO OIL SPILLS

Commissioned by the BMP in Greenland, the Danish Environmental Research Institute has developed an Environmental Atlas which is an atlas of Greenland marine areas and fjords that are particularly sensitive to oil spills. The atlas enables oil companies and the Greenland Self-Government to ensure the best possible emergency

preparedness in case of an oil spill in order to mitigate damage to nature and the environment.

The atlas forms an essential part of the overall preparedness that is being established in connection with oil exploration. It contains information about the local wildlife, local fishing and hunting interests and

archaeological sites that are especially sensitive to potential oil spills. In addition, the atlas contains data on the physical environment - such as coastal types, oceanography - logistics and ways to control oil pollution. The atlas covers the entire area from Cape Farewell (60 ° N) in the south to the southern part of the Upernavik area (72 ° N).



Photo: Lars Schmidt

# 5. Close cooperation with our international partners

- The Kingdom will prioritize global cooperation relevant to the Arctic, including, in particular, an ambitious focus on climate change, protection of nature and the environment, strict global maritime rules, and continue giving high priority to indigenous peoples' rights.
- The Kingdom will enhance cooperation in the Arctic Council. Cooperation with the EU is to be promoted and the Arctic to be given more weight in the Nordic context. "Arctic 5" is an essential complementary regional forum for the coastal states of the Arctic Ocean.
- To optimise the safeguarding of interests, the Kingdom will upgrade bilateral cooperation and dialogue regarding the Arctic, both with established and new partners.

International interest in the Arctic will continue to rise in coming years. A growing number of states, corporations, civil society organizations and international organizations will engage themselves in the region. This requires a solid and effective regional and global cooperation that constantly adapts to new opportunities and conditions. It is natural that the Kingdom plays a key role in shaping the future international architecture of the Arctic. Many international agreements and cooperation fora are relevant to the Arctic and whose interests require active safeguarding by the Kingdom. For example, this concerns world trade within the WTO, environmental and nature conservation within UNEP, in research, health,

and in security and defence matters in NATO among others.

The Kingdom's Arctic strategy will form the basis of our cooperation with international partners on the Arctic and Arctic issues. A number of themes and organizations discussed in this chapter will make up the Kingdom's strategic priorities in foreign policy on the Arctic. The point of departure will be that today we have the requisite international legal basis and that the Arctic continues to be a region of cooperation. In particular, we will build on the Kingdom's firm tradition of cooperation with our Arctic neighbours, in parallel to the prioritising of other relevant collaborations globally, regionally and bilaterally.

## 5.1. GLOBAL SOLUTIONS TO GLOBAL CHALLENGES

The Kingdom will pursue a vigorous and ambitious climate policy to tackle the challenges that climate change poses in the Arctic and other vulnerable regions. The Kingdom's climate policy stems from the UN's Climate Change Convention (UNFCCC), whose goal is to stabilize atmospheric greenhouse gases at a level that prevents climate change that is dangerous to humanity. In negotiations on a future global climate agreement, the Kingdom continues to work towards achieving the common objective of limiting global temperature increases to a maximum of 2 degrees above pre-industrial levels.



Denmark shares the EU's ambition of reducing total global greenhouse gas emissions by at least 50% in 2050 compared to 1990, as well as reductions for the industrialized countries of 25-40% and 80-95% in 2020 and 2050, respectively - both compared to 1990. The target requires that sufficient global reductions in greenhouse gas emissions are achieved in the short and longer term. The government's ambition is that Denmark should become independent of fossil fuels by 2050 and that Denmark's binding renewable energy target under the EU in 2020 is 30 percent.

Greenland aims to reduce greenhouse gas emissions by 5% in the period 2013-2020 for the society, as it looks today, and as regards energy supplies that at least 60% of total energy production in civil society must be based on renewable energy by 2020. Activities within the minerals and hydrocarbons sector that are currently being developed, are not covered by the reduction of emission goals, but will be developed in accordance with international principles of sustainability.

Faroese climate policy, which involves a reduction of greenhouse gas emissions of at least 20% by 2020 compared to 2005, will entail that 75% of electricity production must be based on renewable energy by 2020. The effects of climate change are already being felt, and the Kingdom underlines the importance that adaptation measures are carried out in order to mitigate the already unavoidable climate impacts.

- The Kingdom will work towards the conclusion of an ambitious global climate agreement that includes reduction commitments and actions which, in accordance with current and future assessments of the UN's climate panel, are consistent in keeping the global temperature rise to a maximum of 2 degrees above pre-industrial levels.

- The Kingdom will continue, for example, through the Arctic Council, to contribute with knowledge and information inputs on Arctic climate change to the relevant international forums in which a global climate agreement under the UNFCCC is to be promoted. This also includes the need for climate change adaptation initiatives in the Arctic.

The Kingdom's global policy on nature and the environment in relation to the Arctic is particularly focused on the Convention on Biological Diversity and the Ramsar Convention on Wetlands of International Importance. Denmark, the Faroe Islands and Greenland have a long tradition of working together in global fora such as the Ramsar and Biodiversity Convention. The aim is to promote the protection and sustainable harnessing of the Earth's biological diversity and to ensure regeneration and preservation of the ecosystem services that underpins communities and well-being. Under the Biodiversity Convention of October 2010 in Nagoya, Japan, three important agreements were adopted to preserve biodiversity globally. The agreement contains the Nagoya protocol on access to genetic resources and benefit-sharing (ABS), the Strategic Plan for Biodiversity 2011-2020, and the Resource Mobilization Strategy.

Furthermore, reaching a global mercury agreement has long been a priority of the Kingdom. Mercury is a toxic heavy metal that accumulates in the food chain. In the Arctic region especially, mercury is a threat to public health since local and traditional diet such as seal, whale, sea birds and eggs can contain high levels of mercury. Under the auspices of the Arctic Council, there is particular focus on monitoring the levels and effects of mercury, and these findings are a part of the basis of global negotiations.

- The Kingdom will work to ensure that the 20 intermediate objectives of the

strategic plan under the Biodiversity Convention are implemented focusing on problem areas of particular relevance to the Faroe Islands and Greenland. The Kingdom will bolster the knowledge base for the international protection and sustainable use of biodiversity and ecosystem services among others through The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and the Global Biodiversity Information Facility (GBIF).

- The Kingdom will work in relevant global fora in order to reduce pollutants brought by sea and air to the Arctic. The Kingdom will work for a globally binding mercury agreement under the auspices of UNEP and work to strengthen existing chemical agreements such as the Stockholm Convention on persistent organic pollutants and the LTRAP protocol.

Greenland and Denmark have a tradition of close and constructive cooperation in ameliorating the conditions of the world's **indigenous peoples**. Indigenous peoples are in some situations particularly exposed to human rights violations when new challenges arise, such as climate change. To the extent that their rights are recognized, which in itself has been difficult at times, one of the major challenges is to ensure respect for and observation of these rights. Denmark and Greenland possess experience and historical background, giving them sound credentials to work together to promote indigenous peoples' rights. The effort has resulted in the UN, at the initiative of Denmark and Greenland, having established a Permanent Forum on Indigenous Issues which has functioned since 2002.

This forum has already proved its worth as a venue for governments and representatives of indigenous peoples worldwide and is the only forum where individuals and groups of indigenous peoples are

represented. The forum actively seeks to raise awareness of the situation of indigenous peoples within the UN system. Moreover, Denmark and Greenland have also actively participated in negotiations on the UN Declaration on the Rights of Indigenous Peoples, adopted in 2007. The Declaration is an important starting point for future work in ensuring the rights of indigenous peoples and their survival through respect for their culture, language and way of life.

- The Kingdom will promote and protect indigenous peoples' rights. Denmark / Greenland are working to ensure that the principles outlined in the UN Declaration on the Rights of Indigenous Peoples of 2007 are carried out in practice.
- Denmark and Greenland also support the work being done by the UN special rapporteur for indigenous peoples, while also working to ensure that the Expert Mechanism on Indigenous Peoples' Rights (EMRIP) under the UN's Human Rights Council contributes positively to promote and protect indigenous peoples' rights.

**UN International Maritime Organization (IMO)** is the UN's specialised agency for maritime safety and security of international shipping and the prevention of pollution by ships. The IMO has 169 members, including Denmark, and 3 associate members, including the Faroe Islands. The IMO is absolutely critical to the global establishment of technical requirements of ships to avoid distortion in the world's free trade. It is a fundamental principle of the IMO that ships must be treated equally, whichever flag they fly.

The IMO is working to introduce the highest possible standards for health, safety and environment. Only by establishing global requirements can it be ensured that safety standards are not compromised. In recent years there has been a particular focus on the environmental agenda in the IMO, including the protection of sensitive marine areas, increased regulation of oil transportation, requirements of the ships' fuel and emissions, and not least the climate change agenda. In these areas, the Kingdom is playing a significant role in ensuring the creation of solutions that benefit both the environment and shipping.

- The Kingdom will ensure in the IMO that the Arctic and Greenland conditions are taken into account in the IMO's work and decisions regarding development opportunities for the maritime industry, increased maritime safety, protection of the marine environment and coastal zone, and also reduced emissions of greenhouse gases and reduction of air pollution.

## DANISH / GREENLAND CONTRIBUTION TO INDIGENOUS PEOPLES' RIGHTS

Greenland and Denmark have for many years worked closely to promote indigenous peoples' rights. Denmark's first strategy in 1994 to support indigenous peoples was prepared based on a Danish / Greenland initiative, and just working with Greenland has helped to give Denmark a high international profile in the field.

Denmark and Greenland have historically been active in a number of relevant international forums where indigenous peoples' rights are discussed. These include the annual sessions of the UN

Permanent Forum on Indigenous Issues, which was also created on a Danish / Greenland initiative and the UN Expert Mechanism on Indigenous Peoples' Rights (EMRIP). Denmark / Greenland were also important players in the adoption of the UN Declaration on the Rights of Indigenous Peoples.

The establishment of the Self-Government arrangement for Greenland in 2009 is an illustration of Denmark's implementation of the UN Declaration. Finally, Denmark / Greenland participates actively in negotiations in the UN Human Rights Council

and General Assembly, among others, on resolutions relating to indigenous peoples' rights.

In 2011, a review of Denmark's strategy for support to indigenous peoples was finalised. The review concludes that the Danish / Greenland cooperation has led to groundbreaking institutional results and to improved living conditions for indigenous people.

## 5.2 ENHANCED REGIONAL COOPERATION

It is a central goal of the Kingdom to strengthen cooperation in the Arctic Council. As the only organization that has all 8 Arctic states as members and additionally 6 organizations of indigenous peoples as equal partners, the Arctic Council is the primary organ for concrete cooperation in the Arctic. The Council's work originates from collaboration on environmental issues, but over time has been extended, for example, to include sustainable development and the populations' living conditions. Recently, the Arctic Council has been instrumental in the development of a binding agreement between the 8 members on search and rescue (SAR) with the Faroe Islands and Greenland as "co-signatories," which is needed because of the increased access to areas that were previously covered by ice.

The Kingdom wants to ensure a future - oriented Arctic Council, i.e. that the Council has an increasingly direct impact on the Arctic peoples. The Arctic Council must evolve from a 'decision-shaping' to a 'decision-making' organisation. The Council's function as an instrument exerting influence on nation states and international organizations should be reinforced, and where feasible, the possibility of real decision-making ought to be developed. It is also important to ensure cooperation with all countries and organizations that are of importance to the Arctic and can contribute to cooperation within the Council. During the chairmanship of the Arctic Council 2009-2011, the Kingdom has worked for a strengthening of the Council including the establishment of a permanent, jointly-funded secretariat and the admission of new permanent observers.

- The Arctic Council must be reinforced as the only relevant political organization that has all Arctic states and peoples as members. At the same time the Arctic Council must cooperate with all rel-

evant countries and organizations with interest in the Arctic. The Kingdom will emphasize that the human dimension, i.e. people's living conditions and well-being, is given increasingly more space in cooperation.

The Kingdom will retain the "Arctic 5" format consisting of the coastal states of the Arctic Ocean - Canada, Denmark / Greenland, Norway, Russia and the US - as a forum for issues primarily relevant for the five coastal states, currently the continental shelf issue. All three parts of the Realm are participating in the continental shelf issue while the Faroe Islands is ensured continued opportunity for scrutiny of any other activities in this forum. "Arctic 5" have met twice at ministerial level in 2008 and 2010, and in some cases at departmental level. Common to these meetings was that they concerned matters relating primarily to these coastal states.

- The Kingdom will promote its Arctic strategy in all relevant meeting formats, including any future meetings under "Arctic 5" auspices concerning specific action on joint issues.

Based on the European Commission's communication of November 2008, the European Union (EU) adopted in December 2008 and December 2009 the Council's conclusions on the Arctic and the European Parliament adopted in early 2011 a report on a sustainable EU policy for the Arctic. Both the Council's conclusions and the report are an expression of the growing interest that the EU has for the Arctic. Thus, the ground has been prepared for the EU to develop an overall Arctic strategy. The EU currently has interests in the Arctic in the form of, among others, research and fisheries and has indirect influence on the Arctic through e.g. its environmental laws. Furthermore, the EU and its member countries have interests in transportation and access in order to benefit from natural

resources in the Arctic, including oil, gas and minerals and critical metals such as rare earth elements.

Denmark, the Faroe Islands and Greenland work to ensure a broad and close partnership with the EU. It will be in the Kingdom's interest to leave its mark on the shaping and implementation of EU policies, for example, in energy, climate, fishing, hunting, exploitation of minerals and the relationship to the populations and indigenous peoples in the Arctic. For the parts of the Kingdom that are not in the EU it will be of interest to participate in relevant EU programs where desirable and possible. Furthermore, it will be important that the EU's involvement in the Arctic takes place on the Arctic populations' own terms. We must seek to avoid further cases where the laws, traditions, cultures and needs of Arctic societies are neglected, as for example in the EU's ban on the import of seal products.

It is of particular importance to promote good relations between Greenland and the EU and expand the cooperative relations which exist between the parties involved. In addition to this, endeavours must be made to make the Faroe Islands more visible to the EU as part of the Arctic cooperation. The Kingdom will work to ensure that the EU has a place in the Arctic, including in relevant institutions such as the Arctic Council where the Kingdom supports the EU's wish for observer status.

- The Kingdom will actively contribute to the shaping of EU policies relevant to the Arctic and Arctic challenges, and in this context seeks to ensure the Arctic peoples' rights and interests. The Kingdom will contribute towards the EU having a space in international discussions on the Arctic.
- The Kingdom collectively and each part of the Danish Realm will advance the

development of cooperative relations between the EU and Greenland and the Faroe Islands, respectively.

**The Nordic Council of Ministers** has allocated a grant for collaborative projects concerning the Arctic region and contributes financially to the Arctic Council's work. In addition, a number of collaborative projects of Arctic relevance are being carried out in the Nordic Council of Ministers' various ministerial councils. The Kingdom wants the Arctic aspect of the Nordic Council of Ministers' work both directly and through ministerial councils to be given greater weight, both politically and financially.

- The Kingdom will promote the Arctic as a cross-disciplinary focus area of the Nordic Council of Ministers' work.

Important cooperation in and about the Arctic is being undertaken in a wide range of organizations other than the above-mentioned, for example through **NORA**, the Nordic Atlantic Cooperation (Faroe Islands, Greenland, Iceland and coastal Norway), **West Nordic Cooperation** (Iceland, the Faroe Islands and Greenland) and in **sector organizations**, such as NAMMCO (North Atlantic Marine Mammal Commission - consisting of Iceland, Norway, Greenland and Faroe Islands). To this must be added organizations that cover fishery, environmental or scientific interests.

- The Kingdom will seek to promote cooperation in and around the Arctic in the range of organizations representing regional or sector-organized interests, especially NORA, West Nordic cooperation and NAMMCO.

#### FACTS ABOUT THE ARCTIC COUNCIL

On the initiative of the Finnish government, officials met from the eight Arctic states (Canada, Russia, USA and the five Nordic countries) in Rovaniemi in 1989 to discuss cooperation and measures to protect the Arctic environment. This led to the adoption of the *Arctic Environmental Protection Strategy* (AEPS) in 1991. At the AEPS Ministerial Meeting in 1993 in Nuuk, the participating category of "Permanent Participants" was introduced covering the Arctic indigenous peoples. In 1996, cooperation was expanded in the setting up of the Arctic Council in Ottawa, Canada, from a narrow environmental focus to a broad program covering all aspects of sustainable development. With this, the focus was expanded from a solely environmental one to include more general living conditions of peoples in the Arctic. Arctic Council members include, besides the eight Arctic States, six organizations representing indigenous peoples in the Arctic, the so-

called permanent participants. Moreover, a large number of countries and organizations participate as observers. The Arctic Council's traditional driving force has been the Council's six working groups that monitor developments in the Arctic on various parameters and prepare scientific reports with expertise, recommendations and suggestions for follow-up in the Arctic Council and other international bodies.

The Danish Kingdom's chairmanship of the Arctic Council in 2009-2011 was an important priority for Denmark, Greenland and the Faroe Islands. The Foreign Ministers meeting hosted by Denmark / Greenland in Nuuk in May 2011 was in terms of substance the most weighty and with the greatest ministerial participation in the Arctic Council's history. At the meeting the Nuuk Declaration was adopted, which among other things determines the role and criteria for admission of new observers, establishes a permanent secretariat for the Arctic Council in Tromsø in

Norway, sets up a task force to develop an instrument for preventing and managing potential oil spills in the Arctic and mandates an enhanced communication effort for the Arctic Council. Furthermore, the ministers signed an agreement on search and rescue in the Arctic (SAR), which as the first legally binding agreement under the auspices of the Arctic Council adds a new dimension to the Council's work and bodes well for strong future cooperation in the Arctic region.

### THULE - FUTURE ARCTIC HUB AND COLLABORATION PLATFORM?

The melting of the polar icecap and the consequent increased activity in the Arctic will lead to greater need for the presence of and entail more tasks for the armed forces in the area around northern and north-western Greenland. Under the defence agreement of 2010-2014, the armed forces is carrying out a streamlining of the North Atlantic operational command structure (see section 2.3), and in the course of the duration of the agreement it must be considered whether the Thule base may play a larger role in regard

to the tasks of the armed forces in and around Greenland in cooperation with other partner countries. Thule Air Base is, with its deep water port, airport and well-developed infrastructure (including tank and storage capacity, workshop, hospital, quarters, support and office facilities), a unique capability in the Arctic region north of the Arctic Circle.

There is thus already an existing opportunity to provide the logistical prerequisites for increased presence in the area around the northerly and north-westerly Greenland. Fur-

thermore, Thule Air Base has the potential to become a broader platform for supporting the collaborative intentions of the Illulisat Declaration of 2008 between the 5 coastal states in the Arctic Ocean. Collaboration on the logistical facilities in Thule could thus eventually include assignments and emergency preparedness in relation to the maritime environment, a base for exercises in connection to joint procedures such as search and rescue services, and also be a platform for joint research in the Arctic.

### 5.3. BILATERAL SAFEGUARDING OF THE KINGDOM'S INTERESTS

The rapid changes and the increasing importance of the Arctic where new opportunities and challenges are constantly arising and a number of new actors are registering their interest in the region, requires that we also make a gear-shift in bilateral safeguarding of the Kingdom's interests in the Arctic. We will also work closely on a bilateral basis with all our partners. The bilateral cooperation is also a good platform to promote multilateral initiatives in the Arctic, of which the continental shelf project is a good example.

**Canada, USA, Norway and Iceland** will remain key partners for close cooperation in areas such as the exploitation of resources, maritime safety, climate and environment, indigenous peoples, research, education, health and defence. Furthermore, we will maintain close contact with **Finland and Sweden** on Arctic issues.

In addition, the Kingdom also wants to further expand and develop cooperation with **Russia**, which has been increasingly

engaged in international cooperation in the Arctic. For example, under the auspices of the Danish-Russian governing council, there is great mutual interest in closer cooperation on strengthening the safety of navigation in Arctic waters. Enhanced cooperation with Russia could also incorporate scientific collaboration, for example, on the continental shelf. It could also include the exchange of findings on economically, socially and environmentally sustainable development, as well as confidence building and studies on potential cooperation between the Danish and Russian defence, particularly in the maritime area.

Beyond the Arctic states, other legitimate stakeholders also have increasing interests in the Arctic. These interests are particularly linked to research on climate change, new international transportation opportunities, as well as opportunities to profit from the exploitation of supply-related energy and mineral resources in the Arctic. Among these stakeholders is the EU, but also the three **Northeast Asian countries**, China, Japan and South Korea. Both China and South Korea have signifi-

cantly increased their research-related engagement in the Arctic, including the construction of icebreakers and the establishment of permanent research stations on Svalbard.

It is encouraging that the three Northeast Asian countries are joining the consensus among the coastal States that the United Nations Convention on the Law of the Sea must be the central foundation for the legal regulation in the Arctic. The Kingdom supports their respective wishes for observer status in the Arctic Council. Bilateral dialogues have also been established, especially on maritime law issues such as claims on the continental shelf in the Arctic region and unresolved boundary issues. Furthermore, special collaborative projects have been set up, for example between the University of Copenhagen and a number of Chinese universities within natural science, and a budding collaboration between the Danish Technical University and Harbin Institute of Technology on Arctic technology.

Global interest in the Arctic will inevitably increase even more in the coming years.

More countries will want to gain insight into and influence on international cooperation in the Arctic as its strategic, economic and energy-related potential becomes clearer. Here the Kingdom can play a major role in promoting an open and inclusive dialogue in bilateral relations. The Kingdom will strengthen the dialogue with

new stakeholders in the Arctic and benefit from the resources and expertise that they bring along through cooperation in commerce and R & D. Alongside this, the new actors will be integrated into the norms and values that the Kingdom and other coastal states in the Arctic Ocean believe should apply to the Arctic.

- In order to efficiently pursue the Arctic strategy's diversified goals and interests, the Kingdom will develop close bilateral partnerships with our Arctic neighbours. As a major actor in the Arctic, the Kingdom will play a part in fostering new bilateral collaborations and dialogues on opportunities and challenges in the region.

#### JOINT COMMITTEE COOPERATION WITH THE USA

Joint Committee cooperation between Greenland, Denmark and the U.S. arose from the Igaliku Agreement, signed in 2004 by then U.S. Secretary of State Colin Powell, then Minister for Finance and Foreign Affairs Josef Motzfeldt and then Danish Foreign Minister Per Stig Moeller in the South Greenland village of Igaliku. The Igaliku Agreement consists of three parts:

- An agreement on the update of the defence agreement of 1951 and the establishment of an advisory group hereto (Permanent Committee)
- A joint statement on cooperation regarding environmental issues at Pituffik (the U.S. base at Thule)
- An agreement on technical and economic cooperation (Joint Committee cooperation)

The Joint Committee is a tripartite forum for Greenland, USA and Denmark which aims to strengthen and promote economic and technical cooperation between Greenland and the U.S. with special focus on research, health, technology, education, culture and tourism.

#### CLOSE COLLABORATION WITH CANADA

Denmark / Greenland, as part of the *Continental Shelf Project* in 2002, collected data in three areas north of Greenland. These collections have been conducted in close collaboration with among others Canada, and the close cooperation has led to very successful measurements. In mid-2010 it was decided to intensify the bilateral technical cooperation via the establishment of a joint task force which among other things must explore ways to coordinate submissions of claims to the Commission for Continental Shelf Limits (CLCS).

In May 2010 Denmark and Canada signed a bilateral Memorandum of Understanding (MoU) on enhanced operational defence cooperation in the Arctic, focusing on joint military exercises, staff exchanges and cooperation in rescue op-

erations. The agreement serves as a catalyst for intensifying day-to-day collaboration between Greenland's Command, Joint Task Force North in Yellowknife and MARLANT Maritime Forces Atlantic in Halifax. It is expected that close Danish - Canadian military cooperation will be further enhanced over the coming years partly via mutual exchange of findings in survival techniques in the Arctic, patrolling and surveillance and partly via continued participation in joint military exercises.

As a direct consequence of the oil disaster in Louisiana, the Greenland Bureau of Minerals and Petroleum and the National Energy Board of Canada, which are responsible for determining the respective regulations for Greenland and Canadian exploitation of *oil and natural gas* in the Arctic, entered into a bilateral agreement in 2010. The agree-

ment formalises cooperation between the two authorities on information exchange of regulatory policy, specific oil and natural gas drilling and the overall development of their respective energy markets. The agreement specifies that the parties will meet at regular intervals. Similarly, it paves the way for the exchange of personnel, the carrying out of joint emergency exercises, building up of a joint emergency response, and that henceforth data and reports are shared. The formalized collaboration is a big step forward as both Greenland and Canada will obtain prior knowledge of initiatives which due to their geographical proximity will affect the counterpart. Furthermore, Denmark and Canada are party to the CANDEN-agreement on environmental cooperation, which ensures information exchange in case of oil spills and marine pollution, among other things.



Photo: Palfoto

# 6. Implementation and follow-up

- In order to ensure effective implementation, a steering committee is to be set up for the Kingdom's Arctic strategy, reinforced foreign policy coordination and cooperation, and intensified public diplomacy / public relations work regarding the Arctic.

The Kingdom's strategy for the Arctic marks an important milestone towards 2020 and beyond and aims to contribute to a sound foundation for positive development in the Arctic into the future. The Kingdom consists of three societies, each with their own political priorities and social structures. Therefore, the strategy's implementation in each individual area will be adjusted to each part of the Realm's unique legislation, political priorities and budget issues.

The Kingdom's Arctic strategy falls within the existing division of competences and responsibilities between the State and Greenland's Self-Government, and the State and the Government of the Faroes.

A chief aim of the Arctic strategy is to promote information exchange and coordination of efforts in all areas related to development in the Arctic, and thereby to obtain a clearer focus on common priorities and promote collaboration internally and externally where there is mutual interest. The strategy will thus provide the framework

for Arctic-related activities of the Kingdom and the three parts of the Realm towards 2020.

A number of measures will be initiated immediately to ensure the effective implementation of the strategy:

- A cross-disciplinary Steering Committee is to be established for the Arctic Strategy, consisting of representatives of the government (ministries with Arctic activities), the Government of Greenland and the Government of the Faroes at high level. The steering committee is to meet on a biannual basis as a minimum. The Ministry of Foreign Affairs will serve as chairman and secretariat of the steering committee in close collaboration with the Government of Greenland and the Government of the Faroes and the Prime Minister's Office. In order to promote the coordination of activities and safeguarding of the Kingdom's interests in the Arctic, the Foreign Ministry will appoint a special Representative for the Arctic.

- In collaboration between the Government, the Government of Greenland and the Government of the Faroes concrete efforts are to be initiated to bolster foreign and security policy coordination and cooperation with regard to the Arctic. In addition to the existing dialogue mechanisms (also at ministerial level) and the establishment of a cross-disciplinary platform qua steering committee for the Arctic strategy, elements could include enhanced dialogue regarding multilateral and global economic organizations and issues, more systematic cooperation through the network representation abroad, establishment of an exchange mechanism between the Department of Foreign Affairs in Nuuk and the Foreign Ministry in Copenhagen and also joint public diplomacy / advocacy efforts (see below).
- At the same time, the Arctic strategy represents an ambition for intensified and more systematic outreach efforts both in the three parts of the Realm and internationally, for example via the



representations abroad. This key endeavour, in the form of public diplomacy / advocacy initiatives such as seminars, cooperation with think tanks, etc., could focus on issues such as how climate change affects the Arctic, the Arctic as a region of cooperation, the new trade opportunities in the Arctic, the Kingdom's cultural and political diversity, international law and the Arctic, etc. The Foreign Ministry will allocate resources hereto.

The Foreign Ministry, on behalf of the Government and in cooperation with the Government of Greenland and the Government of the Faroes, will report annually on developments in the Arctic and the status of the Strategy's implementation. The aim is to carry out a mid-term evaluation of the Strategy in 2014-2015 and consider the preparation of a new strategy in 2018-2019.

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