

Press Release

Adaptation Actions for a Changing Arctic – Baffin Bay/Davis Strait Region

Issued by	Arctic Monitoring and Assessment Programme (AMAP)
Issued:	Reston, VA, USA 25 April 2017
Embargo:	03:00 am CEST, 25 April 2017

Arctic Monitoring and Assessment Programme (AMAP) has released the Baffin Bay / Davis Strait Region regional report, a result of four years of research towards understanding the adaptive capacity in Greenland and the eastern part of Nunavut in Canada.

The Adaptation Actions for a Changing Arctic (AACA) report carefully documents environmental, climatic and social information, and highlights the interactions between these factors. This knowledge supports and informs decision makers, communities and businesses, helping people adapt to a changing climate. The Baffin Bay and Davis Strait Region report, one of three reports requested by the Arctic Council, proposes how best to meet these changes with efficient adaptation.

Future changes

Before Baffin Bay and the Davis Strait Region were mapped on paper, people in Greenland and Nunavut have shared the waters of Baffin Bay and Davis Strait. In the last decades the people and environment in the region have faced a new challenge: climate change. The signs of it show already, with winter coming later and spring arriving earlier.

In the future, more change is coming. Results from the Baffin Bay/Davis Strait (BBDS) regional report shows that people of the region will face increased air and sea temperatures, heavier precipitation and greater wind speeds. In addition, diminished ice sheets, reduced snow depth and thawing permafrost are expected. These changes offer new risks, challenges and opportunities to both humans and ecosystems.

Challenges and opportunities

A warming climate may offer some advantages. Less sea ice offers improved shipping access and fewer days of extreme cold; the retreating of glaciers allows for prospecting. However, other factors hinder development, such as increased cases of extreme weather events, reduced availability of ice roads and thawing permafrost.

The long term effects are more difficult to predict, making adaptation more challenging.

Socio-economic conditions

Adaptation depends on people's ability to handle both environmental and socio-economic changes. From the many socio-economic factors in this region, economics is the strongest. While global sea-levels are expected to rise, sea level in this region is projected to fall. As the ice sheet on the land melts, its weight diminishes and the land rises. Results from the AACA BBDS report show that this could cause the sea level to decrease by almost a meter on the west coast of Greenland, which should be considered when planning new ports.



In the future, policy makers should increasingly focus on the challenges and needs of the changing climate and associated socio-economic factors. Currently more communities are recognizing the need to adapt to change. However, knowledge about adaptations, and the understanding of how to integrate that knowledge into practical planning, needs enhancement.

Healthy people, ecosystems and economics

Many people in this region rely on hunting and fishing. Changes to their food sources could leave people hungry and without the economic means to care for themselves. Drinking water availability and quality will also become harder to ensure as summer rainfall becomes less predictable. "Everything from traditional hunting and fishing to commercial fishing to tourism and shipping - need a healthy functioning ecosystem," says Anders Mosbech, co-chair of the BBDS report and Senior Researcher from Aarhus University.

Adaptation requires cooperation on many levels. For Indigenous people, traditions and deep knowledge of their local area can help scientists to better understand the Arctic and how communities interact with the current changes. "Knowledge is strengthened when conventional science is combined with traditional and local knowledge," says Dr. Martin Forsius, the AMAP Chair.

Finding certainty

It is evident that climate change is an important driver of change, but it is not the only one. Adaptation strategies should therefore reflect a broader context than climate change alone, considering social, economic and ecosystem factors. Each community and area is unique and requires its own solutions. It is difficult to predict economic development, market behaviour, political events or technologies in the future. AMAP has produced information to guide the formation of adaptation tools and long-term decision making.

Change is coming; our only choice is how we adapt to it.

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For **additional information** please visit the AMAP website for the [press kit with photos](#) and the [BBDS Overview Report](#).

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About AMAP

AMAP is one of the six working group of the Arctic Council. AMAP is mandated to monitor and assess the status of the Arctic region with respect to pollution and climate change issues. AMAP document levels and trends, pathways and processes, and effects on ecosystems and humans, and propose actions to reduce associated threats for consideration by governments. AMAP produces sound science-based, policy-relevant assessments and public outreach products to inform policy and decision-making processes.

AMAP coordinates international activities that give us a complete knowledge of the whole Arctic. All our science is subjected to rigorous peer-review, making use of the most up-to-date results from both monitoring and research.

AMAP has completed the three 2017 Adaptation Actions for a Changing Arctic (AACA) reports. Each report addresses opportunities and challenges for how to adapt to Arctic change. They carefully document the Arctic, gathering information about both climate and society to understand the interactions between communities and the environment. In all three AACA pilot regions, climate is only one of many drivers causing change. These reports provide information that allow residence and policy makers to form decisions and create policy while considering these changes in the context of the Arctic and its people.



Fact Sheet: Adaptation Actions for a Changing Arctic, Baffin Bay / Davis Strait Region

In the last decade, adaptation has emerged as a focus for research, policy, and decision making in the Baffin Bay / Davis Strait (BBDS) region. Arctic residents are showing that they are not powerless victims of climate change. They have identified, developed, and implemented adaptations that respond to both climate change and other stresses. The regional approach to adaptation shows a readiness for people to view change as an opportunity, as well as a threat.

Climate change in Baffin Bay and Davis Strait Region

Climate models are used to construct scenarios for the future. They do not provide one single scenario, but rather a range of likely outcomes, dependent on several factors.

Annual minimum temperatures are projected to increase by 2-6 °C in the medium emission scenarios and by more than 6 °C in the higher ones. The Nunavut side will have higher temperatures than the Greenland side. Projections show large (40-150%) increases in precipitation. There may be heavier rainfall, more wet days and longer dry spells. Permafrost is projected to warm the most in the coldest areas (e.g. Ellesmere Island), and to thaw considerably in warmest areas (e.g. South-western Greenland).

Higher temperatures lead to later annual snowfall. Periods of snow cover at the end of the 21st century will be between 40 and 60 days shorter. The smallest amount of snow cover will be in the coastal regions.

On the sea and land there is less year-round ice. The longer ice-free open water season could lead to rapid growth for shipping and marine tourism. However, international demand drives development, and marine safety measures need to be developed to support a larger number of vessels.

Sea levels

Despite the projected global sea level rise, relative sea level in the BBDS region is projected to fall at nearly all locations, mainly due to the land lifting up as the ice mass decreases. Projected changes range from a fall of nearly 90 cm to a rise of nearly 10 cm.

Sea opportunities

As the sea-ice retreats, waters open. Less sea ice extends the season for shipping, creating opportunities for new shipping routes. Northern ports could become busier, with more fishing and more cruise ships. The Northwest Passage has opened, although its season is short.

Marine tourism also has experienced rapid growth. Tourism brings economic advantages, but could also bring negative impacts, including risks. The industry is expanding into uncharted regions and there is danger of accidents occurring.

All ships face the dangers of not having detailed charts, and there are limited search and rescue possibilities in newly opened areas.



Fisheries

Both Greenland and Nunavut depend on fisheries for employment and food. In Greenland, commercial fisheries produced over half of the 2011 total service and goods export value. Although it is not as developed as Greenland's, the value of the commercial fishing industry continues to rise in Nunavut. The differences found between these two fisheries are due to relatively warm water from the West Greenland Current. The current provides open waters and nutrients to the region.

Expected environmental changes will result in various changes in fish stock distribution and productivity, even in the short term (2030). Given the complexity of the environment, it is not possible to predict the development of fisheries over longer time periods for both endemic and emerging species.

Making the vulnerable strong

Housing shortages, food insecurity, ill-health and high unemployment are some of the factors that make people vulnerable to climate-related risks. These factors increase sensitivity and constrain the adaptive capacity of communities to projected climate change impacts. Efforts to reduce vulnerability and enhance adaptive capacity to climate change can, and should be, integrated into ongoing policy initiatives.

Positive developments for the safety and efficiency of the fisheries in Greenland are occurring. Across the region, education for naval officers, fishermen and hunters is being offered. Education becomes increasingly important as the products of the land enter international markets. Even fish caught by hunters with small dinghies in very small settlements are eventually sold to international markets. Stakeholder consultations in Nuuk show that new skills are in demand. Therefore, targeted skills training or formal education is becoming a critical factor.

With a warming climate, new diseases may come into the region, such as tetanus and diseases transmitted by insects. Another result of these changes would be the decline in surface water, causing problems for drinking water storage in some areas.

Strengthening traditions

Traditional and local knowledge needs to be passed on, helping Indigenous People to identify hazards, learn survival skills and understand animal behaviour. This traditional knowledge brings together the community and culture, and plays a vital role in helping people adapt to change.

As the region's economy continues to develop, people move to urban centers and traditional knowledge becomes weaker. Maintaining the communities and their knowledge and traditions is vital.

