Arctic Climate Impact Assessment

Policy Document

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The Arctic Council is a high-level, intergovernmental forum comprised of eight Member States (Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and the United States) and six Permanent Participants (Arctic Athabaskan Council, Aleut International Association, Gwich'in Council International, Inuit Circumpolar Conference, Russian Association of Indigenous Peoples of the North and the Saami Council) representing Arctic indigenous communities. The Arctic Council provides a mechanism to address the common concerns and challenges faced by the Arctic governments and people of the Arctic. In the last several years, the issue of climate impacts in the Arctic has been the subject of increased concern, as reflected in the Arctic Council's sponsorship, together with the International Arctic Science Committee, of the Arctic Climate Impact Assessment, the first comprehensive regional assessment of climate impacts [http://www.amap.no/acia/index.html]. Arctic Council Member States are committed to exercising leadership within the Arctic and globally to address the sources and multiple Arctic impacts and consequences of climate change and ultraviolet radiation, in accordance with the UNFCCC, as well as the Barrow and Inari Arctic Council Ministerial declarations.

Ministers of the Arctic Council meeting in Reykjavik, Iceland in November 2004 addressed the matter of Arctic climate change and variability as follows:

Welcome with appreciation the Arctic Climate Impact Assessment (ACIA) and the scientific work completed in evaluating and synthesizing knowledge on climate variability and change and increased ultraviolet radiation in the Arctic,

Note with concern the impacts documented by the ACIA that are already felt throughout the region. Climate change, and other stressors, presents a range of challenges for Arctic residents, including indigenous peoples,[1] as well as risks to Arctic species and ecosystems,

Recognize that the Arctic climate is a critical component of the global climate system with worldwide implications,

Note the findings of the ACIA with respect to climate change and **acknowledge** that such findings, as well as the underlying scientific assessment, will help inform governments as they implement and consider future policies on global climate change,

Endorse the ACIA policy recommendations for mitigation, adaptation, research, monitoring and outreach contained in the SAO Report to Ministers,

Acknowledge the need to consider the findings of the ACIA and other relevant studies in implementing their commitments under the UNFCCC and other agreements, including through adoption of climate change mitigation strategies across relevant sectors,

[1] The United States notes that the use of the term "peoples" in this policy document shall not be construed as having any implications as regard the rights which may attach to the term under international law.

Encourage Member States to take effective measures to adapt to and manage the environmental, economic and social impacts of climate change and ultraviolet radiation, *inter alia* through enhancing the access of Arctic residents to information, decision makers and institutional capacity building,

Encourage relevant national and international research bodies and sponsors to take into account the ACIA science recommendations in the planning, development and implementation of their programmes,

Decide to promote global, national and local awareness of the ACIA and any follow up activities through appropriate outreach activities,

Acknowledge the need to further organize the work of the Arctic Council and its subsidiary bodies based on the findings of the ACIA and direct the SAOs to report on the progress made at the 2006 Ministerial Meeting.

Senior Arctic Officials of the Arctic Council reported to Ministers on the work on the climate impacts carried out by the Arctic Council during Iceland's Chairmanship in response to the Minister's declarations at the October 2002 Ministerial Meeting in Inari, Finland. The text of their report is as follows:

BACKGROUND

The Barrow Ministerial Meeting of the Arctic Council in October 2000, endorsed, adopted, and established the Arctic Climate Impact Assessment (ACIA), requesting it to "evaluate and synthesize knowledge on climate variability and change and increased ultraviolet radiation, and support policy-making processes and the work of the Intergovernmental Panel on Climate Change (IPCC); further request that the assessment address environmental, human health, social, cultural and economic impacts and consequences, including policy recommendations."

Since then, a team of more than 300 leading Arctic researchers, indigenous representatives and other experts from fifteen nations has completed its work on the ACIA. They have distilled and synthesised available scientific information, traditional knowledge, and indigenous perceptions in order to examine how climate and ultraviolet radiation have changed in the Arctic, how they are projected to change in the future, and what the consequences of these changes will be for the Arctic and the world. The full assessment is published in a comprehensive science report and synthesised in an overview document "Impacts of a Warming Arctic", designed to be accessible to the lay person and the policy maker. The documents have been reviewed by more that 160 independent scientists and experts and made available to national reviews. Comments were taken into account by authors, who assume responsibility for the final document.

Ministers of the Arctic Council Meeting in Inari in October 2002 welcomed with appreciation the good progress of the ACIA and emphasized "the importance of continued dialogue on the consequences of climate change and on policy measures among national governments, indigenous and other local communities, regional administrations, the business community and scientific experts with the aim for a

transparent and open process, and of enhancing early capacity building to mitigate and adapt to the effects of climate change".

Since Inari, Senior Arctic Officials (SAOs) and representatives of the Permanent Participants have met with climate experts in Svalbard, Nuuk and The Hague to discuss the scientific findings of the ACIA and to further the dialogue among the Arctic states and others on climate change.

The Arctic Monitoring and Assessment Programme (AMAP), the Conservation of Arctic Flora and Fauna (CAFF) and the International Arctic Science Committee (IASC) participated in the ACIA Steering Committee. AMAP and CAFF were the conveners of a drafting group of representatives from Arctic Council Member States and Permanent Participants, that produced early drafts of recommendations to relate the findings from ACIA to the policy needs of the Arctic Council. SAOs then assumed responsibility for the drafting of these policy recommendations.

The ACIA is the world's most comprehensive and detailed regional climatic and ultraviolet radiation assessment to date and documents impacts that are already felt throughout the Arctic region. Climate change, together with other stressors such as ultraviolet radiation, presents a range of challenges for human health, culture and well-being of Arctic residents, including indigenous peoples and communities, as well as risks to Arctic species and ecosystems.

The authors of the overview document of the ACIA identified the following ten key findings:

1. The Arctic climate is now warming rapidly and much larger changes are projected.
2. Arctic warming and its consequences have worldwide implications.
3. Arctic vegetation zones are projected to shift, bringing wide-ranging impacts.
4. Animal species' diversity, ranges, and distribution will change.
5. Many coastal communities and facilities face increasing exposure to storms.
6. Reduced sea ice is very likely to increase marine transport and access to resources.
7. Thawing ground will disrupt transportation, buildings, and other infrastructure.
8. Indigenous communities are facing major economic and cultural impacts.
9. Elevated ultraviolet radiation levels will affect people, plants, and animals.
10. Multiple influences interact to cause impacts to people and ecosystems.

Such findings, as well as the underlying scientific assessment, will help inform governments as they implement and consider future policies on global climate change.

ARCTIC CLIMATE POLICY ACTIONS

In responding to climate change, Member States are taking two sets of actions: mitigation and adaptation. Both kinds of actions require extensive communication and education about climate change and its impacts. Further research, observations, monitoring and modelling is needed to refine and extend the ACIA findings.

Mitigation

To address the risks associated with climate change in the Arctic of the magnitude projected by the ACIA and other relevant studies, timely, measured and concerted action is needed to address global emissions. Even though overall emissions of greenhouse gases within the Arctic region are limited, there are important mitigation opportunities in the region that would contribute to sustainable development and global emission reduction efforts.

Mindful of their countries' share in total global greenhouse gas emissions, SAOs, taking into account specific national circumstances, recommend to Ministers that the Member States:

- *Consider* the findings of the ACIA and other relevant studies in implementing their commitments under the UNFCCC and other agreements.

- *Adopt* climate change mitigation strategies across relevant sectors. These strategies should address net greenhouse gas emissions and limit them in the long term to levels consistent with the ultimate objective of the UNFCCC, integrating mitigation and adaptation measures, building on partnerships, and, where synergies are possible, addressing other social, economic and environmental issues.

- *Promote* the development and adoption of appropriate energy sources, uses, technologies and efficiencies. The International Partnership for Hydrogen Economy (IPHE) and The Carbon Sequestration Leadership Forum (CSLF), together with initiatives to promote renewable energy production and more efficient energy use, are examples of relevant initiatives.

- *Adopt* policies and programmes that conserve and enhance carbon sinks and reservoirs in accordance with the principles of sustainable development.

Adaptation

While mitigation is necessary to address the risks associated with climate change, the scenarios used by the ACIA and elsewhere project that some climate change is inevitable, indicating that continued adaptation is needed.

Adaptation to climate change and its impacts in the Arctic must take into account the especially sensitive and vulnerable natural and human systems of the region. Special attention needs to be paid to strengthening the adaptive capacities of Arctic residents. Recognizing that not all impacts of climate change can be properly addressed through adaptation, the SAOs recommend to Ministers that the Member States:

- *Work* closely with Arctic residents, including indigenous and local communities, to help them to adapt to and manage the environmental, economic and social impacts of climate change and ultraviolet radiation change. Adaptation needs will vary. Arctic residents may need *inter alia* enhanced access to information, decision makers, and institutional capacity building to safeguard their health, culture and well-being.

- *Recognize* that opportunities related to climate change, such as increased navigability of sea routes and access to resources, should be developed and managed in a sustainable manner, including through the consideration of environmental and social impacts and taking appropriate measures to protect the environment, local residents and communities.

- *Implement,* as appropriate, adaptive management strategies for Arctic ecosystems, making use of local and indigenous knowledge and participation, review nature conservation and land and resource use policies and programmes, and to the extent possible reduce risks related to infrastructure damage, permafrost degradation, floods and coastal erosion, taking into account costs and benefits.

Research, Observations, Monitoring and Modelling

The authors of the ACIA have made recommendations for additional research, observations, monitoring and modelling. It is of particular importance to focus on those research needs that play a significant role in developing and applying mitigation and adaptation measures.

Therefore, the SAOs recommend to Ministers that the Member States:

- *Stress* the importance of intensifying natural and social science research on impacts and adaptation, including studies to enhance understanding of fundamental processes and sustainability, procedures for integrating indigenous and local knowledge into scientific studies, and partnerships between indigenous peoples, local communities, and scientists in defining and conducting research and monitoring associated with Arctic climate and ultraviolet radiation changes.

- *Encourage* relevant national and international research bodies and sponsors to take into account the ACIA science recommendations in the planning, development and implementation of their programmes.

- *Seek* to expand and link circumpolar research and monitoring networks, including community-based networks, applying standardized methodologies focusing on year round observations of climate and ultraviolet radiation and their impacts on species and ecosystems, residents and communities, stressing seasonal variations. Given its international character and potential global significance, the Arctic ocean, its ice and atmosphere, are of special importance.

- *Seek* to ensure that relevant data from research, observation, monitoring and modelling activities are made available to local, national and international research and monitoring programmes.

- *Recognize* the need to consider how to conduct further studies of climate change within the Arctic region, especially through added focus on regional and climate variability, socio-economic impacts, vulnerabilities of Arctic human-environment systems, climate modelling, and use of historical and long-term data on climate variability.

Outreach

In order to ensure global, national and local awareness of the ACIA and any follow up activities, the SAOs recommend to Ministers that the Member States:

- *Disseminate* the ACIA documents within international fora in order to advance co-operation to address the environmental, social, economic and cultural implications of climate change in the Arctic.

- *Promote* the ACIA at the national and local level and explore the use of a variety of methods, languages and partners to engage Arctic residents.

- *Seek* to provide Arctic residents and communities with information and knowledge on climate research and monitoring that they require to adapt to Arctic climate change, including taking advantage of new opportunities.

- *Encourage* the incorporation of materials from the ACIA into educational, research and training programmes.

THE ROLE OF THE ARCTIC COUNCIL

Based on the findings of the ACIA, there is a need for the Arctic Council and its subsidiary bodies to further organize their work. Therefore, SAOs recommend to Ministers to:

- *Direct* relevant technical working groups of the Arctic Council to review the scientific chapters of the ACIA in the context of their ongoing and future work programmes and to report on the progress made at the 2006 Ministerial Meeting.

- *Decide* to keep under review the need for an updated assessment of climate change in the Arctic, drawing *inter alia* on the IPCC fourth assessment report and the results of the International Polar Year 2007-2009.

- *Direct* SAOs to nominate a focal point, to be responsible for an ACIA follow up, including an assessment of gaps in knowledge.

- *Communicate* as appropriate, any Arctic Council ACIA follow-up actions to the Conference of the Parties to the UNFCCC.