EXPLORING COMMON SOLUTIONS

ARCTIC ENVIRONMENT MINISTERS' MEETING

11–12 October 2018, Rovaniemi

FINLAND'S CHAIRMANSHIP 2017–2019

ARCTIC COUNCIL

5 October 2018

Arctic Environment Ministers' Meeting
11-12 October 2018, Rovaniemi, Finland

Background paper
Synthesis of State, Permanent Participant and Working Group inputs

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INTRODUCTION

International Arctic cooperation at the governmental level started at the first-ever Arctic ministerial meeting in Rovaniemi, in 1991. This meeting adopted the Arctic Environmental Protection Strategy, which in turn led to the creation of the Arctic Council in 1996. The Arctic Council Member States and the Permanent Participants representing Arctic Indigenous peoples are committed to environmental protection and sustainable development of the Arctic.

Finland organized an Arctic Environment Ministers' Meeting (AEMM) between the eight Arctic Council Member States and the six Permanent Participants, representing the Indigenous peoples of the Arctic on October 11th-12th, 2018, in Rovaniemi. The objective of the meeting was to discuss topical environmental issues in the Arctic and to explore solutions to them.

Arctic Council Member States, Permanent Participants, Working Groups, and Expert Groups have highlighted priority issues in preparation for the AEMM. These inputs are synthesized into this preparatory document for the meeting. The output of the Ministerial meeting is a "Chair's summary" which It will be shared with the Arctic Council Ministerial meeting (in May 2019), and contribute to the future environmental cooperation of the Arctic Council.

CHALLENGES FOR THE ARCTIC ENVIRONMENT

Climate Change

Over the past 50 years, the Arctic has warmed at twice the rate of global average. It is becoming increasingly evident that the Arctic environment is becoming warmer, wetter and more variable. This transformation has profound implications for economies, societies and ecosystems in the Arctic and worldwide. Global activities affect the Arctic environment while changes in the Arctic environment have global consequences.

The Arctic will continue to warm at a faster rate than the global average and the severity of the impacts is projected to increase. Arctic warming is primarily governed by global GHG emissions, in particular CO_2. This is exacerbated by Arctic climate feedbacks which in turn have global repercussions. According to the Intergovernmental Panel on Climate Change Special Report on 1.5C of Global Warming, the projected difference in impacts on the Arctic of just 0,5 degrees additional global warming – from 1,5 to 2 degrees – will be considerable, both with regard to reductions in sea ice, impacts on biodiversity and thawing of permafrost. Immediate and substantial global CO_2 reductions are needed to effectively address global and Arctic climate change. Collective progress in the near term to reduce emissions of short-lived climate pollutants (SLCP) such as black carbon and methane can help mitigate climate change globally, but particularly in Arctic regions. Black carbon emission reductions would also bring considerable localized health benefits.

Climate change is a major threat to Arctic biodiversity, populations and traditional livelihoods, with Indigenous Peoples having the highest points of vulnerability. It changes the biological basis for the distribution and harvesting of living resources, opens up new areas for maritime activities and resource exploitation. Further, as shown by growing rates of forest fires, northward movement of species, some of which are invasive, and permafrost thaw the risks and challenges associated with life in the Arctic are increased. Ocean acidification, resulting from increased levels of dissolved CO_2 in seawater is occurring particularly rapidly in the Arctic Ocean. The Arctic Ocean ecosystems, marine resources, and the livelihoods of Arctic peoples are especially vulnerable to the associated impacts of ocean acidification and ocean warming, in part because of the limited buffering capacity of these cold waters.

Indigenous peoples and other inhabitants of the Arctic are among the first to observe and be impacted by the rapid changes occurring within the Arctic, while also holding first-hand knowledge on how to adapt to environmental changes. Participation of Indigenous peoples in decision-making on addressing the impacts of climate change is important. Indigenous, traditional, and/or local knowledge and sustainable management practices, along with the development of innovative new strategies to address climate change, can inform assessments, decision-making, and policy at all levels. Similarly, the holistic approach presented by the Arctic Resilience Action Framework highlights the complex and ongoing interactions between people and nature, facilitating the development of effective mitigation options and adaptation strategies.

Guiding questions

Mitigation

- What can the Arctic countries and the Arctic Council do to promote early and ambitious climate change mitigation efforts? How can investment in modern, smart and clean buildings infrastructure help in tackling climate change and contribute to sustainable economic development in the Arctic?
- How could climate change considerations be better mainstreamed into the Arctic economic development agenda? What would low carbon pathways mean for the further development of the Arctic and for infrastructure investments in the region?

Short-lived climate pollutants, black carbon and methane

- What efforts are the Arctic States carrying out to reduce emissions of black carbon and methane? How to contribute to the implementation of the Arctic Council aspirational black carbon goal (2017)?
- How to improve sharing of best practices and lessons learned from actions to quantify and reduce emissions of black carbon and methane and how to encourage use and implementation of recommendations and good practices, as well as scale up of innovations among the Arctic States and Observer States?

Adaptation

- How could Arctic cooperation contribute to
    - the development of tools and strategies that address vital aspects of Arctic change?
    - expanded meteorological cooperation and observation systems, as well as coordinated and integrated climate services
    - to the development of a sound knowledge base for adaptation?
    - to strengthen, together with Indigenous peoples, actions that build resilience in the Arctic
    - enhance meaningful engagement of Indigenous Peoples and their knowledge in observation, assessment and adaptation activities and decisions
    - bring together Indigenous Knowledge and science through a co-production of knowledge process

Arctic Council reports:
- Snow, Water, Ice and Permafrost in the Arctic, SWIPA, AMAP 2017
- Assessment of Short-Lived Climate Forcers, AMAP 2015
- Adaptation Actions for a Changing Arctic, AACA Reports (3 reports): Perspectives from Barents Region, Baffin Bay / Davis Strait Region, Bering / Chukchi / Beaufort Region, AMAP 2017
- Arctic Resilience Action Framework; cooperating for a More Resilient and Prosperous Arctic Region, SDWG 2017
- Arctic Ocean Acidification Assessment, AOA AMAP 2013 and AMAP 2018
- Arctic Climate Issues, Short-Lived Climate Pollutants, Summary for Policy Makers AMAP 2015
- Framework for Action on Black Carbon and Methane, and Summary of Progress and Recommendations for enhanced action on black carbon and methane, EGBCM 2015 and 2017

Safeguarding Arctic biodiversity under changing conditions

Until recently, Arctic ecosystems have been relatively undisturbed, and they provide innumerable services and values to the people. Climate change is by far the most serious threat to Arctic biodiversity, exacerbating all other threats. On land, some high Arctic ecosystems and species are expected to disappear or remain only in isolated fragments of their present ranges. In the ocean, the total loss of some key habitats such as multiyear sea ice is expected, with dire consequences for sea ice dependent species but also with shifting patterns for fish stock. The stresses from climate change do not act in isolation, but work in conjunction with other stressors, yielding even greater risks to Arctic biodiversity. The number of alien and potentially invasive species may also increase in the warming climate posing further threats to ecosystems.

Disturbance and habitat degradation can diminish Arctic biodiversity and the opportunities for Arctic residents and visitors to enjoy the benefits of ecosystem services. Direct or indirect impacts to habitats and species are putting increasing pressures on the Arctic environment in some areas. Accidental release of oil from ships or sites of oil and gas development is an example of a potential threat to biodiversity in coastal and marine ecosystems.

For Arctic peoples, biodiversity has been the very basis for their ways of life through millennia, and is still a vital part of their material and spiritual existence. The mechanisms ensuring the full and effective participation of Arctic Indigenous peoples in management of land and territories, both terrestrial and marine, and in biodiversity conservation in areas where the Indigenous peoples live, are still to a large extent being developed.

The protected area coverage of the Arctic's terrestrial ecosystems is 20.2% and of marine areas 4.7%. The global Aichi Biodiversity Target aims for at least 17% of terrestrial and inland water and 10% of coastal and marine areas to be protected by 2020. Given the cumulative impacts from climate change, ocean acidification, long-range pollution, invasive species and increased human activities and the unprecedented rate of loss of Arctic sea ice there is an urgency to provide and secure scientific and Indigenous, traditional and/or local knowledge and to make decisions regarding the protection of ecologically important marine habitats. An ecologically connected, representative and effectively-managed network of protected and specially managed areas protects and promotes the resilience of the biological diversity, ecological processes and cultural heritage of the Arctic environment, and the social and economic benefits they provide to present and future generations.

Guiding questions

Mainstream biodiversity in economic development and sustainable use of resources

- How could the Arctic Council strengthen cooperation and advance the application of an ecosystem approach to management? How to minimize adverse impacts of expanding industrial activities and infrastructure development on biodiversity and traditional land-use in a region already under pressure from a rapidly warming climate?

Marine Protected Areas Network in changing conditions

- How to enhance cooperation, means and tools for development of a marine protected areas network and an ecosystem based approach to management, in collaboration with Indigenous peoples in order to safeguard Arctic marine biodiversity linked to sea-ice in changing conditions?

Co-management

- What actions can the Arctic States take to promote full and effective meaningful engagement and participation of Indigenous peoples in biodiversity conservation and planning and management of protected areas, including empowerment of Indigenous peoples to contribute to knowledge production related to biodiversity issues?

Arctic Council reports:
Arctic Biodiversity Assessment (CAFF 2013), the Actions for Biodiversity 2013–2021 (2015)
Ecosystem-Based Management in the Arctic (Expert Group on EBM, 2013)
Status of Implementation of the Ecosystem Approach to Management in the Arctic (PAME 2017),
State of the Arctic Marine Biodiversity Report (CAFF, 2017)
Conclusions of the Arctic Protected Areas – Indicator report, PAME and CAFF 2017
Framework for a Pan-Arctic Network of Marine Protected Areas was approved by Arctic Council Minsters, PAME 2015 Protected areas
Arctic Marine Strategic Plan 2015-2025, PAME 2015
Arctic Invasive Alien Species (ARIAS) Strategy and Action Plan, (CAFF and PAME, 2017)
Biological Effects of Contaminants on Arctic Wildlife and Fish, AMAP 2018
Arctic Ocean Acidification, AMAP 2018

Upcoming in 2019:
Reports on the State of the Arctic Terrestrial and Freshwater Ecosystems, CAFF 2019
Marine Protected Areas Toolbox Report, PAME 2019

Pollution prevention

Throughout the Arctic, a wide range of chemical substances are found, which originate largely from other parts of the globe. The Arctic region has become the unintended destination for certain pollutants, including persistent organic pollutants (POPs), short-lived climate pollutants, mercury, and marine litter and microplastics that travel long distances within the oceans, rivers, and/or atmosphere.

National measures and international regulation, including those taken pursuant to the Convention on Long-Range Transboundary Air Pollution (CLRTAP), the Stockholm Convention on persistent organic pollutants and the Minamata Convention on Mercury, have resulted in declining trends of many legacy pollutants in the Arctic. However, chemical contamination is still a severe problem. Some additional chemicals may be proposed for consideration by the Parties to Stockholm Convention. There are chemicals of emerging concern for which the effects on the Arctic ecosystems and food web are largely unknown and will require further research and action. The loss of multi-year sea-ice and glaciers, thawing permafrost and the continuing existence of legacy sites of contamination are leading to enhanced release and cycling of contaminants that may have adverse impacts throughout the food web and to drinking water.

Environmental and health impacts of increasing levels of industrial activities in the Arctic are of growing concern. Therefore, resource efficiency policies, sound waste management practices and highest standards of safety and environmental protection should be applied. Responding to an emergency in the Arctic is extremely challenging due to long distances, limited infrastructure, equipment and trained personnel in certain locations, and such physical environmental conditions as weather, ice, light and sea state. Waste management is an ever-present and increasingly prominent issue in the Arctic, especially in remote communities.

Many Arctic communities continue to rely upon drinking water from freshwater ponds, lakes, glaciers, and rain-water. Some Arctic populations continue to have some of the highest dietary exposures globally to mercury and some POPs, and negative health effects have been measured in some populations. In several Arctic regions, food advisories especially for some marine food items are introduced to limit the intake of contaminants.

Marine litter, including plastics and microplastic is a global issue that is emerging also in the Arctic. Plastic is found not only in seawater, some data shows high concentrations of plastics in Arctic sea ice in some locations. Although the contribution of the Arctic to marine litter is comparatively small, ocean currents bring marine litter and microplastics into the Arctic. An increase in human activity has the potential to contribute additional marine litter and microplastics into Arctic waters if not managed properly.

Guiding questions

Pollution prevention

- How to increase domestic action and international cooperation on the transboundary movement of pollutants, both legacy and emerging, that threaten the Arctic? How to strengthen measures to reflect chemicals of emerging Arctic concerns at the international level to reduce long-range transport of chemicals? What can the Arctic Council do to enhance risk management, prevention of pollution and minimizing adverse environmental impacts with regard to local pollution in the Arctic? How do we meet new environmental challenges due to novel industries/resource exploitation?

Marine litter

- How to focus and prioritize cooperation by the Arctic Council to better quantify key sources and reduce negative impacts of marine litter on the Arctic marine environment? How could the Arctic States support other international efforts to prevent and reduce marine litter and microplastics? How can we meaningfully engage Indigenous knowledge holders in discussion with scientists to develop the best questions, monitoring programs, and analysis processes needed to address microplastics?

Arctic Council reports:
Biological Effects of Contaminants on Arctic Wildlife and Fish, AMAP 2018
Chemicals of Emerging Arctic Concern, AMAP 2017
Human Health in the Arctic, AMAP, 2015
Temporal Trends in Persistent Organic Pollutants in the Arctic, AMAP, 2015
Radioactivity in the Arctic, AMAP, 2015
Mercury in the Arctic, AMAP, 2011
Oil and gas Activities in the Arctic – Effects and Potential Effects, 2007
Framework plan for Cooperation on Prevention of Oil Pollution from Petroleum and Maritime Activities in the Marine Areas of the Arctic, TFOPP 2015
Regional Programme of Action for the Protection of the Arctic Marine Environment from Land-based Activities, PAME 1998, 2009
Reports on Heavy fuel oil, PAME 2010-2016

Upcoming in 2019:
Desktop study on marine litter including microplastics in the Arctic, PAME
Meaningful Engagement of Indigenous Peoples and Local Communities in Marine Activities project, PAME

Sustaining Arctic observing, monitoring and co-production of knowledge

Sustainable development and management of the Arctic region is closely linked to mitigation actions and responsive adaptation to the changing conditions, including the safeguarding of Arctic ecosystems and biodiversity. However, our understanding of the rapid changes in the Arctic and our capabilities to forecast and quantify future changes are impaired by lack of systematic long-term data series, the analyses based on data, and the broad communication of subsequent findings. The demand for accessible, current and accurate information is therefore increasing. The need for comprehensive, sustained, inclusive and interdisciplinary Arctic observations and data management has frequently been recognized.

Effective monitoring of changes in the Arctic region requires national and international support and coordination. Connected, collaborative, and comprehensive long-term pan-Arctic observing system and regular assessments of the state and developments serves societal needs for including a wide range of partners and knowledge systems. Through its working groups AMAP and CAFF, the Arctic Council has provided the frame for coordinated monitoring of the arctic environment. This work has fed into the policy and action oriented work of all of the Working Groups of the Council; AMAP, CAFF, ACAP, EPPR, PAME and SDWG as well as task forces. The Arctic Council is well positioned to inform state level priorities and actions, as effective implementation requires partnerships. These partnerships include, but are not limited to, collaborations with policy-makers at all levels, Arctic Indigenous peoples' organizations, non-Arctic states, academia, civil society and the private sector, as well as engagement from other multilateral/international groups.

Indigenous and local communities hold unique knowledge of their homelands and offer valuable collaborative partnerships with scientists to identify key questions and research needs to increase our understanding of the changing Arctic. They can provide monitoring and observation data and information continuously across seasons. A successful co-production of knowledge process encompasses collaborative work from the inception, through gathering information, analysis, and output. Through the development of observation and monitoring programs that recognize and bring together both science and indigenous, traditional, and/or local knowledge there is an opportunity to better understand regional and global dynamics of Arctic change.

Guiding questions

Observations and monitoring

- How to maintain and develop the capacity of the Arctic Council to produce high quality monitoring and assessments on climate change and its impacts, ecosystems and biodiversity change, sources and consequences of pollution both from global and local sources?[1]:
- What can the Arctic States do to secure systematic short- and long-term observation and monitoring and the utilization and coordination of information from different observations (from local level to satellites)? How to enhance the use of observations and modelling as tools to manage and adapt to changing conditions?

Co-production of knowledge

- How can the Arctic Council enhance the incorporation of multiple knowledge and value systems, including scientific and Indigenous knowledge, throughout all phases of the information gathering, analysis, and decision-making processes?

Arctic Council Reports:
- Snow, Water, Ice and Permafrost in the Arctic, SWIPA, AMAP 2017
- Adaptation Actions for a Changing Arctic, AACA (3 reports): Perspectives from Barents Region, Baffin Bay / Davis Strait Region, Bering / Chukchi / Beaufort Region, AMAP 2017

[1] Among other things the following issues were raised:
- quantitative predictions of Arctic climate change and its consequences and risks to societies and ecosystems
- the need to assess the implications of different emission pathways, as exemplified by SWIPA, as a tool to better understand the long-term implications of our actions (or inaction) today
- feedbacks and interactions in the Arctic climate system, including impacts of Arctic climate change outside of the Arctic region and better understanding of atmospheric and ocean connections
- Arctic observing systems, including coordination and interpretation of data from observing systems and development of knowledge base for risk management and adaptation
- understand the Arctic climate response to Short-lived climate pollutants.
- acidification processes and their effects on Arctic marine ecosystems and northern societies that depend on them
- vulnerability and status of Arctic ecosystems to cumulative drivers and pressures from regional and local scales (fishing, tourism, pollution, etc.) and from global scale (climate change and ocean acidification)
- migratory birds, aquatic species and other transboundary species
- contaminants of concerns for the Arctic Region and the North