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AMAP Progress Report to SAOX Meeting, Iceland, November 2020

1. Introduction: Response to Arctic Council priorities

As part of its mandate, AMAP continues to work to update information on climate change and pollution issues, and their implications for Arctic physical environments, ecosystems and human health – essential for providing policymakers with the most recent and relevant information for decision making. AMAP's work on climate and pollution issues underpins the Arctic Council's overarching goals of addressing environmental protection, sustainable development and scientific cooperation, including the present Arctic Council's chairmanship priority on how environmental changes can affect Arctic inhabitants and their livelihoods.

AMAP's work is planned to ensure that Arctic / Arctic Council information is delivered in a timely manner and effectively communicated to relevant international fora. Especially important in this respect is supporting the further development and implementation of the UN Environment Programme's Stockholm (POPs) and Minamata (mercury) Conventions as well as the UN Economic Commission for Europe's Air Convention (Convention on Long-range Transboundary Air Pollution), and work targeting the needs of the UN Framework Convention on Climate Change and Intergovernmental Panel on Climate Change.

Continued meteorological cooperation – The initiative on Meteorological Cooperation has promoted an Earth System Science approach by intensifying cooperation on meteorological, oceanographic and terrestrial observations, research and services, and has also contributed to an increased focus on the need for well-maintained and sustained observation networks and continuous monitoring in the Arctic. These are issues of importance to AMAP and the Sustaining Arctic Observing Network (SAON) initiative, as well as the broad observing and modelling communities in general. To support a continued follow-up of the Initiative on Meteorological Cooperation, AMAP have supplemented its Climate Expert Group with experts on meteorology.

Continued focus on Short-Lived Climate Forcers (SLCFs) – The Icelandic AC Chairmanship has continued the priority established under the Finnish Chairmanship to address SLCFs. AMAP is contributing to this work through its Expert Group on SLCFs that is working in close cooperation with the Arctic Council's Expert Group on Black Carbon and Methane (EGBCM).

Litter and microplastics. Under the heading *Arctic Marine Environment*, the Icelandic AC Chairmanship has highlighted plastic pollution in the Arctic marine environment. AMAP started studying litter and microplastics as part of the AMAP report on Contaminants of Emerging Arctic Concern (CEAC 2017) and has been involved in the preparation of the PAME *Desktop Study on Marine Litter including Microplastics in the Arctic*. As a follow-up to this, work has been initiated to develop a *Marine Litter Regional Action Plan (ML-RAP)* under the leadership of PAME. In the light of AMAP's mandate and expertise, AMAP has established a *Litter and Microplastics Expert Group (LMEG)* that is developing a monitoring programme including monitoring guidelines for litter and microplastics to accompany the ML-RAP. The guidelines are now under peer review.

Another Icelandic AC chairmanship priority is to improve the utilization of living marine resources, and Iceland is leading the development of a project on the Blue Bioeconomy in the Arctic. AMAP is

contributing to this project, mainly by providing information from recent AMAP work on *Adaptation Action for a Changing Arctic* and *Arctic Ocean Acidification*.

2. Summary of progress on AMAP projects in the work plan 2019-2021

Contaminants

Work is ongoing to prepare an update *Assessment of Mercury in the Arctic* for delivery in 2021, including a chapter on Indigenous perspectives on mercury research and monitoring. This work will update the 2011 AMAP mercury assessment and build on recently completed work including the AMAP contributions to the Technical Background to the UN Environment Global Mercury Assessment (GMA) 2018, and the 2018 AMAP Assessment of Contaminant Effects on Arctic Wildlife and Fish. The scientific assessment report is currently undergoing peer review and work has started on a summary for policymakers.

The AMAP Persistent Organic Pollutants (POPs) Expert Group is completing an assessment component addressing the effects of *Climate Change on POPs* – updating previous work in 2002 and joint work with UNEP on this subject in 2011. The results of this work will be reported in 2021. Peer review has been completed and a summary-for policy makers is under preparation.

Human Health – An updated assessment of human health in the Arctic is being prepared for delivery in 2021. This comprises an assessment of data on contaminant trends in Arctic human populations, new information on health implications of contaminant exposure, risk assessment methods and experiences with risk communication. The assessment will include consideration of the health effects of dietary transitions in Arctic populations, including assessing dietary exposure related to POPs and Hg. The assessment report has been peer reviewed and a summary for policymakers is under preparation.

The contaminants–related activities of AMAP including those addressing human health are supporting the ongoing effectiveness evaluation under the Stockholm Convention, and work to develop and implement the Minamata Conventions.

Climate Change

Climate Change: Trends and Impacts

Following the completion of the *Snow, Water, Ice and Permafrost in the Arctic* (SWIPA) assessment in 2017, our *Climate Expert Group* (CEG) is preparing a climate issues update for 2021 covering recent trends in Arctic climate parameters, extreme events in the Arctic, Arctic/mid-latitude weather connections, an initial review of physical impacts of climate change on Arctic ecosystems and ecosystem feedbacks to climate, and climate impacts on Arctic livelihoods. The update report is under peer review and work on a summary for policymakers is initiated

Short-lived Climate Forcers (SLCFs) - The AMAP SLCF Expert Group is completing an integrated assessment of air pollution issues with a focus on short-lived climate forcers (SLCFs) for delivery in 2021. New observation data together with updated emissions information and emissions scenarios have been assessed and utilized by modelling groups to investigate impacts of SLCFs on Arctic climate, ecosystems and human health and evaluate implications of possible emissions reduction strategies. The assessment also includes a first AMAP assessment of open biomass burning (including wildfires). Parts of this work linked to an ongoing project under the OECD to look into

economic aspects of policy to address SLCFs emissions. The ongoing work is well coordinated to bridge scientific and policy-related activities under the Arctic Council (AMAP, EGBCM, ACAP) with those under other relevant fora including the Air Convention, OECD and the EU-funded Action on Black Carbon in the Arctic. Results of the AMAP Update Assessment on SLCFs will be reported to the 2021 Arctic Council Ministerial meeting, including potential follow-up work under the AMAP Workplan for 2021-2023. The assessment report is currently undergoing peer review and work on a summary for policymakers initiated.

Implementation of AMAP Strategic Framework -- AMAP Strategic Framework 2019+, emphasizes five strategic goals related to the need for collaborative assessment processes; access to data; inclusive partnership with Indigenous Peoples; effective communication and the timeliness and relevance for international processes. The AMAP WG has begun a process to oversee the implementation of AMAP recommendations including the participation of Permanent Participants, and all work endeavors to engage Permanent Participants (PPs) and utilize Indigenous and Traditional and Local Knowledge where applicable.

Future perspectives

An update assessment on radioactivity is planned with delivery in 2023. Work to scope a joint AMAP-CAFF initiative addressing climate change impacts on Arctic marine, freshwater and terrestrial ecosystems and ecosystem feedbacks to climate will be completed by the end of 2020, with work being planned for implementation under the AMAP and CAFF workplans for 2021-2023. This work will also be linked to planned AMAP work on wildfire emissions and associated climate and air quality impacts. Additionally, AMAP will look into possibilities to exploit the opportunity afforded by the Covid-19 pandemic shutdowns to evaluate the effects on Short Lived Climate Forcers and Greenhouse Gasses as well as the consequences of reduced human activities on climate, ecosystems and health. New work is being considered to better link AMAP work on contaminants in wildlife and human health, including a focus on emerging threats, including zoonoses.

3. Deliverables for the next Ministerial

AMAP deliverables currently intended for the 2021 AC Ministerial Meeting include a series of 'Summary for Policy-Makers' that will communicate the results of the work currently ongoing as described above (POPs/Climate Change Interactions, Mercury Assessment 2021, SLCFs Assessment 2021, Human Health Assessment 2021, Climate Issues of Concern 2021, AMAP's contribution to the Arctic Marine Litter – Regional Action Plan (ML-RAP))

4. Working Group administration and next meeting(s)

AMAP held its 34th Working Group meeting (6-8 October 2020) as a virtual meeting and is planning a series of Heads of Delegation tele-meetings on 28 October, 4 November, 25 November, 2 December, 9 December and 16 December and early in 2021.

5. Collaboration with other working groups / other organizations

AMAP works closely with several of the working groups, task forces and Observers within the Arctic Council. AMAP involvement in cooperation on cross-cutting issues includes:

- CAFF: Joint AMAP-CAFF scoping of an assessment of Ecosystem Impacts of Climate Change and feedbacks to climate, and as a delivery for 2023. AMAP participates in monthly meetings of CBMP Steering Groups. Coordination on work on wildfires.
- EPPR: Liaising and coordination on ongoing and upcoming work on wildfires and radiation.
- PAME: AMAP is preparing a monitoring plan and monitoring guidelines on litter and microplastics in cooperation with PAME's initiative to develop a Marine Litter Regional Action Plan (ML-RAP).
- SDWG: AMAP cooperates on health-related issues, as well as coordination of upcoming workplan activities.
- ACAP: AMAP has established liaison processes to follow-up with ACAP on work related to POPs and mercury, work on SLCFs (including wildfires), and plastics. AMAP have participated remotely in ACAP WG meetings this fall.
- EGBCM: AMAP participated (remotely) in the October 2019 meeting of the EGBCM and continues to work closely with the EGBCM in work connected with the AMAP update assessment of SLCFs, to ensure that this work is complementary with that of the EGBCM.

AMAP relies on sharing, access and exchange of data and information, as well as cooperative assessment to improve understanding of challenges and opportunities, between AMAP, research and educational institutions, international and partner organizations. AMAP therefore continues to cooperate with:

- *IASC* – in relation to assessment activities, coordination of peer review processes, and as co-sponsor of SAON.
- *UN-Environment* - on activities connected with the UNEP global mercury process (Minamata Convention, Stockholm Convention's POPs Review Committee and Effectiveness Evaluation process. AMAP collaborated with UN Environment (Technical Background report to the UN Environment's Global Mercury Assessment 2018 (GMA 2018), and in work to produce and publish reports arising from the GMA.
- *UN ECE* –AMAP has enhanced cooperation with the Convention on Long-range transboundary air pollution (CLRTAP) bodies (work connected with SLCFs and work aiming to improve integration of actions addressing climate change and air pollution). AMAP was represented at the 2019 joint session of EMEP and the Working Group on Effects, and at meetings with CLRTAP representatives arranged under the EU Action on Black Carbon in the Arctic initiative. AMAP participated in the CLRTAP 40th Anniversary event in Geneva, in December 2019.
- *EU* - The AMAP WG Chair attended the EU Arctic Forum meeting in, Sweden, October 2019.
- *WMO* – AMAP continues to collaborate on meteorological initiatives, especially through the *WMO Executive Council Panel of Experts on Polar and High Mountain Observations, Research and Services* (EC-PHORS) and the Arctic Regional Climate Centre Network (ArcRCC-N).
- *SAON* - to enhance and strengthen observational networks and sharing of data and knowledge, including activities in connection with the Arctic Observing Summit in April 2020 and the 3rd Arctic Science Ministerial meeting in November 2020.
- *IPCC* – AMAP climate products, particularly the SWIPA 2017 report, are being utilized in relevant IPCC reports including the Special Report on the Ocean and Cryosphere in a Changing Climate.