



AMAP Report 2010:3

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**Progress Report from AMAP
for the Period 1 December 2009 – 1 April 2010**

**to the Senior Arctic Officials Meeting
in Ilulissat, Greenland, 28 – 29 April 2010**

Update on ongoing work

Since the Senior Arctic Officials Meeting, 12–13 November 2009, the AMAP Working Group has met in San Francisco on 11–12 February 2010, following an Experts Workshop on the AMAP Strategy and Monitoring Programme that took place on 8–10 February. Official minutes of the meeting have been distributed. Decisions made at this meeting will be presented to the SAOs by the Chair, if requested.

The AMAP Work plan for 2009–2011

Over the past four months, AMAP has implemented several parts of its current work plan. The main tasks for AMAP since the last Ministerial Meeting have been the following:

1. Production of assessment reports

Climate Change and the Cryosphere: Snow, Water, Ice and Permafrost in the Arctic (SWIPA)

The SWIPA project, coordinated by AMAP in cooperation with IASC, CliC, IPY, and IASSA, has been a major activity during the past six months.

The preliminary report “The Greenland Ice Sheet in a Changing Climate” was released during the 15th Conference of the Parties to the UN Framework Convention on Climate Change in Copenhagen, and was presented by the Danish Minister of Foreign Affairs, Dr Per Stig Møller and the convening lead author Professor Dorthe Dahl-Jensen at a joint Norwegian/Danish side-event on 14 December 2009.

The preliminary science report has been produced in English. A layman’s version, prepared by a science writer and signed off by the lead authors of the science report, has been translated and is available in the following languages: Chinese, Danish, French, Greenlandic, and Russian.

An 18-minute film based on the findings of the preliminary report on the Greenland Ice Sheet was finalized after review at the SAO meeting in November 2009. A second 18-minute film introducing the SWIPA project as a whole was also finalized after SAO review. These films have been sponsored by the Nordic Council of Ministers, the Norwegian Ministry of Foreign Affairs, and the Danish Energy Agency. Both films were shown at the Arctic Venue and other events during COP15 in Copenhagen. In addition, a 12-page brochure about SWIPA has been produced and distributed during COP15. Following interest from educational authorities in Denmark, plans are being developed to adapt these films for use in secondary schools (by adding subtitles, etc.).

Further national distribution of the preliminary SWIPA products is taking place through the AMAP WG. All products are available on the AMAP website and through the AMAP Secretariat.

A ‘Cross-Fertilization Meeting’ of SWIPA lead authors and the SWIPA Integration Team was held on 12–15 January 2010 at the Alfred Wegener Institute in Potsdam, Germany co-sponsored by the International Arctic Science Committee (IASC) and AMAP.

The anticipated length of the science report was reduced to less than 500 pages, 380 of which will review climate change influences on the different components of the cryosphere and thus comprise the main modules of the report.

Further details of the plans for preparing the SWIPA assessment reports and their delivery to the 2011 Arctic Council Ministerial Meeting are described in a separate document 'Outline of plan for finalization of SWIPA' that will be presented by AMAP at the SAO meeting under agenda point 3.2.

Mercury Assessment

The Mercury Expert Group, co-led by Canada and Denmark, has continued its work on the coordination of the mercury assessment. During the autumn of 2009, drafts were circulated within the group for internal review and improvement. An editorial meeting of the assessment leads took place in Rotterdam, Netherlands from 1-5 February 2010, following which drafts of the eight chapters of the scientific assessment report were circulated for peer review and national review/data checking by 15 April. Once the peer review has been completed, work to prepare a layman's summary report will also be initiated. The final assessment reports will be released at the Ministerial Meeting in Spring 2011.

As part of its assessment work, AMAP has coordinated projects in association with UNEP Chemicals Branch to prepare updated information on global mercury emissions to air from anthropogenic sources in 2005. A second project to update historical mercury emission inventories has also been completed, coordinated by AMAP and supported by Canada and Denmark. Distributed emission datasets arising from these projects have been provided to the modelling community for use in their work. Results of both of these projects have been used in the preparation of the AMAP mercury assessment. AMAP authors and staff are coordinating this work with the UNEP global mercury initiative.

Short-Lived Climate Forces (SLCF) of Arctic Climate Change

Based on the decisions made at the Tromsø Ministerial Meeting, AMAP has established a scientific expert group to continue the work to clarify the science behind the effects of SLCF on Arctic change. The group is co-led by the USA and Norway and most Arctic countries have nominated experts to take part in this work. In addition to teleconferences held during 2009, the AMAP SLCFs Experts Group met in San Francisco in February 2010 in conjunction with the meeting of the SLCFs Task Force which was established by the Arctic Council to look into SLCF mitigation options. The AMAP Experts Group plans to prepare a report in collaboration with the Task Force that will update the information that was provided by AMAP to the Ministerial Meeting in April 2009 for presentation at the Ministerial Meeting in 2011.

AMAP Assessment 2009, Human health in the Arctic

Copies of the 254 page scientific report *AMAP Assessment 2009: Human Health in the Arctic* are available from the AMAP Secretariat and also from www.amap.no.

AMAP Assessment 2009, Radioactivity in the Arctic

The scientific report *AMAP Assessment 2009: Radioactivity in the Arctic* is currently in the final stages of being prepared for printing and is expected to be available within the next month.

AMAP Assessment 2009, Persistent Organic Pollutants in the Arctic

The scientific publications that together constitute the *AMAP Assessment 2009: POPs in the Arctic* are being published as a Special Issue of the Scientific Journal *Science of the Total Environment* (STOTEN). This special issue is expected to be published in spring 2010 and will be distributed as soon as it is available.

Highlights of these three scientific assessments—on human health, radioactivity, and POPs—were presented in the report *Arctic Pollution 2009*, which was released at the Tromsø Ministerial Meeting. The publication and release of the full scientific assessment reports will complete the work that was conducted under the Norwegian chairmanship.

Arctic Council (2007) Assessment Oil and Gas Activities in the Arctic – Effects and Potential Effects (OGA)

As reported earlier, the OGA assessment was unfortunately delayed due to late contributions from some of the participating countries and additional work to support the report's findings and recommendations. The overview report *Arctic Oil and Gas 2007* was presented to the SAOs in November 2007, and the Executive Summary was approved in April 2008. The scientific assessment report ('*Assessment 2007: Oil and Gas Activities in the Arctic – Effects and Potential Effects*') has been made available in electronic form on www.amap.no. Due to its size (more than 1000 pages), the results of the scientific assessment will be printed as three volumes. The layout work on the first two volumes is currently being finalized and these volumes are expected to be printed by the summer of 2010. The final volume will follow as soon as possible thereafter.

2. Monitoring and assessment of the Arctic

Evaluation and updating of the AMAP Strategic Framework, Assessment strategy and monitoring programme.

As part of the workplan for the current period, AMAP is conducting an evaluation and update of its strategic framework and implementation plan for the AMAP monitoring and assessment programme. AMAP is reviewing and updating its Strategic Framework and implementation plans with a view to assessing the past 20 years of monitoring and assessment activities and develop strategic plans for the next ten years. Preparatory work on this major task started within the AMAP WG and was expanded through the involvement of experts from the AMAP expert groups at a Workshop on the AMAP Strategy and Monitoring Programme that took place on 8–10 February 2010 in San Francisco, USA. Over 70 experts from Arctic nations, observer countries and Permanent Participants took part to provide their input and advice into the future plans of AMAP. The plan for the strategic framework review and update was further discussed at the AMAP WG meeting immediately following the workshop, together with the time schedule for the completion of this work. In addition to the experts workshop, the AMAP strategic framework, assessment strategy and monitoring plan have undergone an internal review by a small group of AMAP HoDs as well as an external review group composed of six international experts with no current association with AMAP. Based on the input from the San Francisco workshop, the internal and external review groups, and the WG meeting, a draft strategic framework document has been prepared and is currently under review by AMAP Heads of Delegation. A broad consultation process on the strategic framework will be undertaken from early May to mid-June involving the other Arctic Council Working Groups, SAOs, permanent participants and observer nations.

The external review group conducted an independent review which was based on extensive multi-stakeholder consultations and developing future-looking scenarios. This group has produced a draft report that is intended to be published independently from AMAP and which addresses a number of very broad issues that may fall outside of AMAP's mandate and may be of interest to the AC itself and to other Working Groups.

Sustaining Arctic Observing Networks (SAON)

Following the Tromsø Ministerial Meeting, AMAP and IASC have re-organized the work on SAON according to the decisions made. A SAON Steering Group (SAON-SG) has been established, composed of representatives from the 8 Arctic countries, the AC permanent participants, and AC Working Groups. AMAP (John Calder) and IASC (David Hik) co-chair the Steering Group and provide secretariat support. Based on financial support made available for the SAON work, the two Secretariats have been able to allocate one person-year to this work. Five teleconferences have been held among the members of the SG. For more details please see the SAON website (www.arcticobserving.org), and take note of several new or updated country reports. In addition, a SAON brochure was published in March 2010 which describes the procedure for becoming a SAON network.

A SAON agency officials workshop was held on 18–19 March 2010 in Miami. The workshop was well attended and resulted in several significant suggestions for the work of the SG over the coming year. For example, it was suggested that for SAON to achieve its aims, dedicated resources (people and funds) will be needed, rather than continuing with part-time efforts. Further, it was suggested that the SAON SG should develop several task descriptions with resource requirements to present to the Arctic Council and funding agencies for review and decision. It is expected that the SAON SG will follow this approach and bring specific proposals to the Council for Ministerial review.

The SAON-SG has scheduled to meet in May, at which the SAON institutional framework will be on the agenda.

Unmanned Aircraft Systems (UAS) for Environmental Monitoring

Based on the decisions made at the Tromsø Ministerial Meeting, the work to promote the use of UAS for environmental monitoring has continued, with co-chairs from the USA and Norway. Teleconferences among partners that participated in the two previous UAS workshops were held in mid-October 2009 and in February 2010. There continues to be great interest among all participants—national civilian aviation authorities, the European control centre in Brussels, scientists, and the assessment community within AMAP to further this work. A meeting of the group is scheduled to take place in Copenhagen in mid-April.

National Implementation Plans (NIPs) for AMAP

Documenting the national implementation plans for AMAP is a continuing activity. The work is now being coordinated with work performed under SAON to document the SAON-relevant observing systems. Hopefully, the two processes will provide a more comprehensive picture of the monitoring networks currently in place.

The AMAP Project Directory (<http://www.amap.no/Resources/ProjectDirectory.htm>) is a tool that supports the process of documenting monitoring and research activities relevant to AMAP, and updating the content of this system is also a continuous ongoing process. The PD currently registers information on 650 monitoring and research projects and programmes concerned with Arctic environmental issues. This user-maintained online system is also available for use by other AC Working Groups to support their activities.

Registrations of new projects can be made through AMAP or through the ENVINET collaboration (involving European research stations/infrastructures). In addition to AMAP and ENVINET, the PD has also been adopted for use by CAFF. A request that countries complete the registration of relevant projects (in particular their NIP projects) in the PD has been repeated on several occasions during the last year, however, again not all countries

have responded to this call. Once again, we kindly ask countries to ensure that their scientists and experts register (or update existing registrations) concerning all projects that are relevant to the work of AMAP, and in particular projects that might contribute to ongoing and planned assessments.

AMAP Website

New information is routinely added to the AMAP website www.amap.no.

All AMAP reports, including AMAP and SWIPA, etc., products are available as electronic documents from the AMAP website. Maps and graphics produced for the AMAP assessments are also available from the website through a searchable online system that currently holds around 575 graphical products, with work ongoing to add another 500 or so AMAP graphics. The site also provides log-in areas that support the work under the various expert and assessment groups.

Work is currently ongoing to redevelop the AMAP website so it can serve the increasing demand for access to information and data. The new website is expected to be launched later in 2010.

AMAP Data handling

AMAP continues to operate the following Thematic Data Centres (TDCs):

- Atmospheric TDC located at Norwegian Institute for Air Research (NILU), Norway;
- Marine TDC located at International Council for the Exploration of the Sea (ICES), Denmark;
- Freshwater and Terrestrial TDC located at University of Alaska-Fairbanks (UAF), USA;
- Radioactivity TDC located at Norwegian Radiation Protection Agency (NRPA), Norway.
- Human health data are handled by the AMAP Secretariat and the health expert group.

The Arctic countries, observing countries and organizations have all been called upon several times to report relevant data to these TDCs so that the data are available to experts engaged in the production of ongoing and future AMAP assessments. However, the response to this call from some countries has not been as good as might be hoped. The Arctic countries are again kindly requested to ensure that AMAP-relevant data are reported to the AMAP TDCs, and also provide financial support for the continued operation of these TDCs.

3. Special Projects

The proposed *Siberian hydrology project* has received considerable interest from within the GEF organizations (UNEP and UNDP), and after a period of delays while the GEF was being reorganized is now back on track. The project has been signed by the Russian Focal Point for GEF in Moscow and handed over to GEF. The project is part of the follow-up to the *Lena River project* and the ACIA. In Russia, federal, regional and local authorities will be involved as well as RAIPON. The project is closely linked to the Arctic HYDRA project in the IPY, therefore several scientific institutions and experts from Arctic countries will be involved in the project. AMAP took part in a planning workshop which was held in St. Petersburg in March 2010.

The follow-up project of the RAIPON/AMAP/GEF *PTS project* has been presented to the Russian Focal Point for GEF in Moscow. UNEP GEF has expressed great interest for this follow-up project so therefore it is hoped that this project will be back on track again after the delay.

Remediation of Contaminated Areas of Franz Josef Land

The Russian government has initiated a project to clean up contaminated sites at Franz Josef Land (FJL), and at the same time been open to the establishment of a research and monitoring station at these islands. The AMAP Secretariat has assisted the Polar Foundation in planning and implementation since the first survey of sites was made in 2004.

The updated inventory regarding the pollution on *Franz Josef Land* was finalized in 2008. The report is available from www.amap.no. Russia has allocated some 300 000 USD for this work and NEFCO has allocated 200 000 Euro.

The clean-up project could be a very interesting joint project between several Russian institutions and international organizations, such as the Arctic Council and the Barents-Euro Arctic Council (BEAC). From an AMAP perspective, it is important to remove any significant local sources of contaminants at FJL, and AMAP would welcome the establishment of an upgraded monitoring and research station on Franz Josef Land that can perform monitoring and research on climate, UV/ozone, contaminants, and basic Arctic physical, chemical and biological parameters in general.

4. Collaboration with AC WGs

AMAP is continuing to work with several other Arctic Council WGs as described in the report to the Ministerial meeting in April.

Conservation of Arctic Flora and Fauna (CAFF)

The cooperation between AMAP and CAFF has mainly been related to the on-going SAON work and the development of the CBMP. An AMAP representative from Canada is a member of the Marine and Freshwater Expert Groups under CBMP and has fully participated in several meetings over the past six months. The CBMP draft marine monitoring implementation plan was distributed to key AMAP marine experts for comments. A continued close working relationship between AMAP and CBMP will be carried out.

Protection of the Arctic Marine Environment (PAME)

PAME and AMAP representatives met several times to discuss PAME's request to AMAP to contribute to the follow-up of the PAME Arctic Marine Shipping Assessment (AMSA) recommendations by identifying marine areas of heightened ecological and cultural significance in the light of a changing climate. This identification of vulnerable areas in relation to shipping will be made to encourage the International Maritime Organization to designate them as sensitive areas. AMAP has information relevant to this topic, particularly the yet-unfinished Chapter 6 of the Oil and Gas Assessment. At its meeting in February in San Francisco, the AMAP WG agreed that AMAP would assist PAME and will take on the 'ecological significance' part of the PAME request but not the 'cultural significance' aspect, as it was more appropriate that SDWG take the lead on this part because AMAP does not

have the relevant expertise. The AMAP WG also indicated that CAFF should be able to contribute significantly to the ecological significance issue. It was agreed that the AMAP work on AMSA follow-up will be conducted by a small group coordinated by Norway and that funding for this work will be sought.

AMAP representatives attended a PAME workshop on 2 March in Copenhagen on the Arctic Ocean Report. AMAP is supportive of this initiative and will work with PAME, as needed. Good cooperation between Working Groups on the AOR initiative was the main outcome of the 2 March AOR workshop.

Sustainable Development Working Group (SDWG)

AMAP representatives participated in a roundtable meeting on socio-economic issues arranged by the SDWG on 2 March in Copenhagen as well as in the Sustainable Development Working Group meeting on 3–4 March. The meetings resulted in a good spirit of cooperation between AMAP and SDWG.

6. International cooperation

COP15

AMAP participated actively in a number of events taking place during the meeting of the UNFCCC COP15 in Copenhagen in December. AMAP activities were mainly based on materials produced as part of the SWIPA project. The preliminary SWIPA report “The Greenland Ice Sheet in a Changing Climate” was presented by the convening lead author at a joint Norwegian/Danish side-event at COP15, AMAP had a permanent stand at the ‘Arctic Venue’ in central Copenhagen, and AMAP also presented its work at other events during the two-week conference. At all occasions, AMAP products were disseminated and the public interest, especially for the SWIPA and the Greenland Ice Sheet films, was overwhelming.

Nordic Council of Ministers

A multi-year project on Combined Effects of Contaminants and Climate Change, partially funded by the Nordic Council of Ministers, is nearing completion, with a final project report under preparation for printing in the second half of 2010. The results of this project will be of use for the EU-funded ArcRisk project (see below).

Stockholm Convention

A report on the combined effects of climate change and Persistent Organic Pollutants (POPs) will be prepared as a joint report between AMAP and the Stockholm Convention Secretariat. This should be completed by March 2011 in time to be presented at the Stockholm Convention’s COP-5 to be held in May 2011. A letter of understanding between the Stockholm Convention Secretariat and AMAP will be prepared, similar to that with UNEP Chemicals for the mercury report.

UNEP and UN ECE – Coordination of Mercury Assessment activities

In connection with the preparation of the *AMAP Update Assessment on Mercury in the Arctic* (due to be completed in 2010 and delivered to Ministers in 2011), parallel work on mercury-related activities under other international bodies including UNEP and the UN ECE has been taken into account, as agreed by the AMAP WG and SAOs.

As described above, part of the work on the 2010 AMAP Mercury Assessment has been jointly implemented with UNEP. A report (prepared by UNEP) based on the work to update information on global mercury emissions to air from anthropogenic sources in 2005 contributed to the UNEP Governing Council's decision to institute a process to establish a global agreement on mercury by 2013. Results of the AMAP-coordinated project to update historical mercury emission inventories have been provided to UNEP for incorporation in its ongoing 'Paragraph 29' study. Results of these two projects have therefore both contributed to the ongoing UNEP process and have been used in the preparation of the AMAP 2010 Mercury Assessment. The UNEP Intergovernmental Negotiating Committee (INC) charged with developing a global agreement on mercury by 2013 will hold its first meeting in Stockholm in June 2010.

AMAP has for several years provided input to the EMEP Executive Body concerning the status of Arctic monitoring and assessment of POPs, heavy metals and acidification. As part of its strategy discussions, AMAP will be looking into how to improve the effectiveness of its communications with the EMEP EB and CLRTAP.

In April 2009, AMAP participated in a joint workshop in St. Petersburg with the EMEP Task Force on Hemispheric Transport of Air Pollutants (HTAP). The focus was on monitoring of POPs and mercury in Eastern Europe, Asia and the Arctic. The HTAP group is currently preparing assessments (due for release in 2010) that include chapters on POPs and mercury and have called for contributions from AMAP to these activities.

Unfortunately, due to the high activity within AMAP at the current time, and demands placed on AMAP experts to complete their work on ongoing AMAP assessments, AMAP had to decline to take a leading role in this work. AMAP is, however, in communication with the groups that will prepare the HTAP report to ensure that published AMAP information is made available to the HTAP process and incorporated in an appropriate manner. AMAP intends to discuss with HTAP and other LRTAP bodies how its strategy for the future that can better serve the ongoing activities under these and other international organizations.

EU cooperation

The AMAP Secretariat, as coordinator of the EU-funded ArcRisk project and also in charge of communication and dissemination, has established a project website (www.arcrisk.eu) containing general information on the project as well as a password area for internal communication among the 21 partner institutes. Now in the ninth month of the project, internal project reports have been prepared describing the choice of contaminants for study in the project and the health outcomes for review; in addition, plans have been developed for the field studies, including the sampling areas and the types of samples that will be collected.

Barents Euro-Arctic Council (BEAC)

The AMAP Secretariat has provided information to the BEAC work on "Hot Spots".

The International Polar Year (IPY)

The IPY projects are creating an influx of data and process understanding that is very useful for assessments and reviews undertaken by AMAP and other AC working groups. These outputs have just started to emerge as they have to be peer reviewed, and also because many projects are not yet finished.

There has been a close contact and cooperation between AMAP and IPY. This is mainly connected to the work on SAON and implementation of SWIPA, and has benefited considerably from the arrangement under which Odd Rogne is engaged to work part-time in the Secretariats of both organizations. AMAP was also represented at the IPY data management meeting in Ottawa in October. A joint IPY/SAON workshop is under planning for 7–8 June 2010; this is intended to be a small workshop mainly attended by data managers and focusing on the capture and preservation of IPY data.

IASC

AMAP and IASC have worked closely together especially in work related to the follow-up of SAON and SWIPA, with IASC hosting the SWIPA Cross-Fertilization Workshop at the Alfred Wegener Institute in Potsdam on 12–15 January 2010 together with AMAP. New cooperation on work relating to Arctic coastal dynamics and contaminant inputs due to coastal erosion is under discussion.

WMO/CliC

In connection with the implementation of SAON and SWIPA projects, there has been a close cooperation with WMO/CliC. Future cooperation will likely be undertaken between AMAP and WMO's proposed establishment of a Global Cryosphere Watch initiative.

World Wildlife Fund (WWF)

AMAP has had discussions WWF prior to the COP15 in an attempt to avoid overlapping and conflicting work. We have also looked for possibilities for joint events.

7. Requests to the SAOs

Monitoring and Observation activities

SAOs are again kindly requested to secure the necessary national funding to allow AMAP to fulfill its work-plan as requested by Ministers and SAOs. It is also vital to ensure that observations of levels, trends and effects of contaminants and climate in the Arctic continues, even during the periods between major assessments, in order to guarantee uninterrupted time series and ensure that future assessment reports presented by the AMAP WG are complete and reliable. Continuation of core observations and establishment of both baseline and long-term records are especially important in this connection.