

Minutes from the Fifteenth Meeting of

Arctic Monitoring and Assessment Programme Working Group

Stockholm, Sweden, 30 August, 2001

including:

Minutes of the Fourth Assessment Steering Group-II/Cross-Fertilization Meeting

Stockholm, Sweden, August 27 - 30, 2001

Table of Content

1.	Opening of the AMAP WG meeting	3
2.	Approval of the agenda	3
3.	Presentation of reports from the ASG Cross-Fertilization meeting	3
4.	Decisions to be made by the WG related to the Assessment preparation and production of reports	6
5.	The 2 nd AMAP Symposium	8
6.	End of the joint ASG/WG meeting	9
7.	Progress report from the Chair and the Secretariat	9
8.	Report from the SAO meeting in June 2001	10
9.	Adoption of AMAP Operating Guidelines for Approval by SAOs	11
10.	Funding of the AMAP Assessment production	12
11.	Update on AMAP projects activities (PCB and PTS projects, etc.)	13
12.	The requests from EEA regarding production of a joint report	15
13.	Election of Vice Chair	16
14.	Next WG meeting	16
15.	Updated timetable for 2001-2002	16
16.	Any other Business	16
17.	End of the meeting	16

List of Annexes

- Annex 1. Minutes of the 4th Assessment Steering Group-II/Cross-Fertilization Meeting, Stockholm, Sweden, August 27 - 29, 2001
- Annex 2. List of Participants at the 15th AMAP WG and 4th ASG-II/CF meetings.
- Annex 3. Draft Agendas for the 15th AMAP WG and 4th ASG-II/CF meetings.
- Annex 4. List of Documents Distributed Prior to the 15th AMAP WG and 4th ASG-II/CF meetings.
- Annex 5. List of Actions arising from the 15th AMAP WG and 4th ASG-II/CF meetings.
- Annex 6. ISAAR production schedule (all indicated deadlines are latest possible dates).
- Annex 7. Timetable for production of the 2002 SOAER.
- Annex 8. Draft Outline / Table of Contents of the “Setting the Stage” Chapter.
- Annex 9. Status of the ‘Multilateral Co-operative Project on Phase-out of PCB Use, and Management of PCB-contaminated Wastes in the Russian Federation.’
- Annex 10. Status of the RAIPON/AMAP/GEF project ‘Persistent Toxic Substances (PTS), Food Security and Indigenous Peoples of the Russian North.’
- Annex 11. Data available through the thematic data centres (TDCs) and other sources (status of data reporting for AMAP Phase 2 assessments)

Minutes of the 15th AMAP WG Meeting, Stockholm, Sweden, 30 August 2001

Agenda item 1: Opening of the AMAP WG meeting

The AMAP WG Chair, Hanne Petersen (Denmark), opened the meeting.

Manuela Notter (Sweden) welcomed participants to Stockholm, and to the meeting at the offices of the Swedish Environmental Protection Agency.

Minutes of the 4th ASG-II/Cross-Fertilization meeting that was held from 27-29 August, immediately preceding the 15th AMAP WG meeting are attached as Annex 1.

A list of Participants for the WG and ASG meetings is attached as Annex 2.

Agenda Item 2: Approval of the agenda

The draft agenda (Annex 3, AMAP WG15/2/1) was adopted without changes.

A list of documents for the meeting is attached as Annex 4.

A list of actions arising from the meeting is attached as Annex 5.

Agenda Item 3: Presentation of reports from the ASG Cross-Fertilization meeting

Hanne Petersen introduced Helgi Jensson (AMAP WG Vice-Chair, Iceland) who, as Chair of the AMAP Assessment Steering Group (ASG), would chair the parts of the WG meeting concerning reporting from the ASG Cross-Fertilization (ASG/CF) meeting that was held immediately prior to the WG meeting (see Annex 1).

Helgi Jensson informed the WG that the ASG/CF meeting from 27-29 August had been as productive as the similar meeting that took place in Winnipeg in April 1996 as part of the preparation for the AMAP phase 1 assessment. He then invited lead authors of the four main assessments that are being produced for 2002 to summarize the progress within their groups at the ASG/CF meeting.

Suzanne Marcy (USA, lead of the **Heavy Metals assessment**) reported that the heavy metals group had a very successful meeting, and thanked all members for their work. The cross-fertilization process was interesting and valuable; however, many of the opportunities that arose through this process cannot be acted upon during the available

time frame. If cross-fertilization is to occur in an AMAP Phase III assessment, it should begin early on to allow for ongoing cross-fertilization throughout the writing stages.

The assessment will comprise three parts:

- (1) an update, presenting new information on sources, pathways, spatial and temporal trends and effects;
- (2) three case studies on mercury (detailing the mercury story from deposition, especially following mercury depletion events at polar sunrise, to uptake by biota, and what this means in terms of the effects of mercury entering the environment at the peak of the breeding season), lead (highlighting the success of control measures in reducing environmental lead levels, but emphasizing differences between lead and mercury), and cadmium (a shorter example presenting the current information on cadmium, and featuring it as a continuing concern);
- (3) a summary section where key questions identified by the group would be answered.

The group developed a strategy for completing their assessment. Key experts are expected to complete their agreed writing assignments in September and October. These inputs will be fed to a small writing team who will edit the material into a second draft of the assessment to be delivered by the end of December. There are some challenges that remain with respect to the pathways section, particularly for mercury. Also, the co-lead authors are working together with the AMAP Secretariat to find the appropriate people to address the marine environment.

Jens C. Hansen (Denmark, co-lead of the **Human Health assessment**) reported on progress to date during 2001 in the human health assessment. Most material has been drafted, although some parts such as the 'Scenarios' and 'Conclusions and Recommendations' sections are still missing. The group plans to be ready with a complete second draft by (and if possible before) the end of the year. No major problems had been identified during the meetings of the previous days, and the cross-fertilization with the other assessment groups had been fruitful, leading to agreements on how to exchange information and including discussions on how to handle scenarios, etc. As a result of discussions with the radioactivity group, a task group will do a comparative look at risk assessment for POPs/heavy metals versus radionuclides.

The group has suggested including in each of the four reports a short abstract/summary of all the reports in order to give the reader - who may not look at all the reports - a better overall view. Such an overall summary need not delay the production of the independent reports, since summaries of each report will be able to be completed in advance of the final preparation of each report.

In response to a question about progress with the Arctic Council's Children and Youth project and components of this project that are being covered by the AMAP human health group, Jens Hansen noted difficulties in obtaining the necessary data from some countries. This was being addressed through contracts that had been established between Canada (as lead country) and the countries concerned.

Derek Muir (Canada, co-lead of the **POPs assessment**) reported that the group had had a very good representation of experts at the ASG/CF meeting, that good discussions were held within the group, and fruitful exchanges had occurred with the other groups. The main themes of the 2002 POPs assessment will be new information on biological effects (in particular arising from work on polar bears and *Glaucous gulls*) and on 'new' chemicals that are entering the Arctic environment and ecosystems.

Discussions within the POPs expert group had covered identification of gaps in data and of final sources of information that needed to be included in the assessment – in particular a large data set on POPs in soils had been identified that would be provided by Jesse Ford. Limited discussions had also been held on preliminary conclusions and identification of gaps in knowledge to be reported in the assessment. In relation to scenarios, attempts would be made to translate proposed reductions in emissions of POPs (as agreed under UN ECE and UNEP, etc.) into projections of temporal trends. Models developed by Wania et al. might be used to project accumulation of POPs in whales and seals, but this only covers marine mammals. Atmospheric modeling work on POPs that is being conducted by MSC-E, as part of their UN ECE EMEP activities, should also be introduced. Atmospheric emissions would be addressed largely through expected contributions from Jozef Pacyna, based on the AMAP sources and emissions workshop held in Kjeller, Norway 22-24 August. Initial inventories of usage and consumption of PCBs are now available (from information gathered under the AMAP-led ACAP project on PCBs in the Russian Federation and global inventories work by Knut Breivik). However problems still exist in translating this information into data on actual emissions (largely due to the diverse uses of PCB-containing materials and their widespread distribution).

As a result of the cross-fertilization process, the POPs group has taken some hints, especially from the human health group, on organizing the POPs report, and on reporting of PCBs, i.e. with respect to different congeners.

Concerning timetables, the group anticipated some difficulties, but would do their best to feed information to the authors of the SOAER in a timely fashion. The group aims to produce a second draft by the end of December, but noted that a delay of 2-3 months to accommodate information expected from the PTS project was preferable to missing this important information from the assessment.

In a previous ASG meeting, it was proposed that there should be no significant appendices, however, the POPs assessment will include a set of greatly condensed appendices documenting new information that would supplement but not repeat the information contained in similar appendices to the 1998 assessment report. The POPs group wishes to see the data appended, even if it is on a CD-ROM that is attached to report.

Yuri Tsaturov (Russia, co-lead of the **Radioactivity assessment**) informed the WG of successful work made by the radioactivity expert group during the ASG/CF meeting, both internally and in discussions with the other assessment groups, in particular the human

health group. The group had reviewed the first draft of the radioactivity assessment and identified new information to be incorporated. The new assessment will address risk management issues and extend the work on doses to humans presented in the previous assessment to include more focus on effects of radioactivity on the Arctic environment and its ecosystems. No serious problems had been identified, however much work was still required on several sections of the assessment, especially to identify information on some new sources within the territory of Russia. Yuri Tsaturov noted that a new edition of the Russian 'White Book' is due to be completed in 2001 and that this would provide new and updated information for the AMAP assessment. The Conclusions and Recommendations of the new AMAP radioactivity assessment are not expected to differ greatly from those of the previous assessment, however the new assessment will provide further confirmation and justification, and significantly update the information presented in 1997/98. Two meetings of the AMAP Radioactivity Expert group are planned for 2001, one in October in Oslo and one in Obninsk in December. It is anticipated that these meetings will fulfill the objectives of delivering the second draft of the assessment by the end of the year.

Yuri Tsaturov further noted that the report prepared by Roshydromet on progress in implementing the Russian AMAP National Implementation Plan was available to the meeting.

Keith Puckett (Canada) provided a brief report on the plans for updating information on **pathways** in the new AMAP assessments. No separate report on pathways would be produced, but provision was being made for a small group [Keith Puckett, Harald Loeng (Norway), Robbie Macdonald (Canada)] to draft a generic and brief section to summarize new information on pathways. This would then be incorporated in the individual issue-specific AMAP assessment reports (ISAARs). This task should be feasible, since there is something similar being done for the Canadian Arctic Contaminants Assessment Report, and it is more a matter of expanding upon that. A first draft will be available before the end of December.

Agenda Item 4: Decisions to be made by the WG related to the Assessment preparation and production of reports

Helgi Jensson briefly reminded the meeting of the steps that had been agreed to by the WG during the inter-sessional period between the 14th and 15th WG meetings to facilitate production of the planned 2002 assessment reports. These included arrangements to contract scientific journalists Annika Nilsson and Henry Huntington to work together on production of the 2002 SOAER, and to contract Kai Olsen as publisher for the five planned reports. Kai Olsen would also be responsible for preparing the graphics for inclusion in the reports, based on materials provided by the assessment groups.

He further drew the attention of the WG to the timetable that the ASG had developed for producing the reports by the time of the 2002 Arctic Council Ministerial meeting (see Annex 6). This timetable is extremely tight. Helgi Jensson therefore reiterated the

importance that the WG ensure that all scientists engaged in the production receive the maximum possible support within their countries and institutes, to allow them to meet their commitments so that the deadlines could be met. Finally, brief reference was made to the arrangements for funding production of the assessment reports.

The AMAP Executive Secretary, Lars-Otto Reiersen, noted that the budget for production of the 1997 SOAER and 1998 AAR reports had been 1.2 million USD, and that although this had been reduced to 450 K USD for the 2002 assessment reports, an amount exceeding 100 K USD was still lacking. This situation had resulted in significant problems with respect to the ability of the Secretariat to agree contracts with the publisher and journalists. Although provisional contracts had been agreed, if the total budget was not ensured by mid-November it would be necessary to renegotiate the contracts with major implications for the production process and the ability of AMAP to deliver the products requested by Ministers in 2002. He reminded the WG of the intention to finance the production of the 2002 assessment reports largely through orders from the countries for copies of the reports, and further noted that the numbers of 2002 reports (both SOAER and ISAARs) provisionally ordered were substantially lower than the numbers of reports ordered in 1997/98. This was despite the fact that almost the entire stock of 1997 SOAERs (8000) had now been used up, and most of the 1998 AARs (ca. 400 remaining of the production of 3500). If this situation could not be remedied during the WG meeting, it would be necessary to raise it with SAOs at their meeting in November.

Hanne Petersen also expressed surprise at the low numbers of reports currently ordered from the countries. She noted that, if countries had difficulties in justifying large orders for copies of reports they could also make voluntary additional contributions to cover the various components of the production work.

David Stone (Canada) expressed the opinion that, in their agreement to cover the costs of production through orders for copies of the reports, the WG and countries had implicitly agreed to order an adequate number of reports to fund the entire production. Obviously a strategy to resolve this problem was required by the end of the WG meeting.

Lars-Otto Reiersen noted that some countries had informed of difficulties in making funding commitments in advance of their national budgetary decisions, which in several cases are not decided before the autumn.

Helgi Jensson expressed his hope that more positive news would be forthcoming during the meeting, but wanted to make clear to the WG the major implications if sufficient funding did not become available. It was noted that this item would be considered again under Agenda Item 10 and the WG decided to return to the matter of funding the production of the reports at that time.

Helgi Jensson then invited Annika Nilsson and Henry Huntington to add any comments. Annika Nilsson informed the WG that she and Henry Huntington had met with each of the assessment groups and, on the basis of discussions held, it was anticipated that they would be able to start drafting in October. Initially they would only be able to prepare a

rather sketchy first draft, however, by mid-February 2002 they expected to produce a fairly complete second draft for the WG to review. If any ISAARs are substantially delayed, then it might be necessary to decide a 'cut-off' date for material that can be included in the SOAER. A timetable for the SOAER production is attached as Annex 7.

Lars-Otto Reiersen informed the WG of plans to produce the 'Setting the Scene' chapter that would be introduced into the SOAER and also used as part of the introduction in each of the ISAARs. It had been agreed that the IPOs would lead this process, and a small drafting group comprising Jan Idar Solbakken, Terry Fenge and Henry Huntington would begin working on this text as soon as possible. An ad hoc group produced a draft table of contents for the chapter (see Annex 8).

Helgi Jensson announced that this concluded his part of the chairmanship of the WG meeting.

Expressing her thanks to all those involved in the ASG/CF meeting, Hanne Petersen noted her satisfaction that the CF meeting had proceeded so well and that, apart from funding matters, so few problems had been raised for the WG to address.

Agenda Item 5: The 2nd AMAP Symposium

The first *AMAP International Symposium on Environmental Pollution of the Arctic* was held in Tromsø in 1997, and was very successful in highlighting the findings of the first AMAP Assessment. AMAP is now planning a second *AMAP International Symposium on Environmental Pollution of the Arctic* to showcase results of the second AMAP Assessment, and this promises to be an equally exciting event. The Symposium will be held in Rovaniemi in fall 2002, back-to-back with the Ministerial meeting in early October. Hotels have already been booked.

John Derome introduced the plans, timetable, programme and provisional budget for the second AMAP Symposium (as outlined in document ASGII-4/8/1). The Symposium will be held in Rovaniemi (Finland) during the first week in October 2002, immediately preceding the Arctic Council Ministerial meeting in October 2002. Rovaniemi was selected for the location because it has the best venue for meetings in Finland. The main purpose of the Symposium is to highlight the results of the AMAP Phase 2 assessments and extract the main messages that can be conveyed to SAOs and Ministers for their consideration. The Symposium will also allow any new scientific information that becomes available too late to include in the 2002 AMAP assessment reports to be brought forward.

The first announcement and call for papers, to be sent out September 1, was circulated to meeting participants. Platform presentations will be 20 minutes (including 4 minutes for questions), and presenters of posters will also have the opportunity to give a 3-minute oral presentation. Symposium proceedings will be approximately 150 pages in total,

including abstracts, summaries of key AMAP findings, statements on combined effects and new threats, and a message to the Ministers.

Lars-Otto Reiersen provided additional comments, including the request to lead authors of the AMAP assessments to prepare for this event and to make time to act on the scientific committee that will plan the Symposium and select presentations, etc.

Comments to the plans drew attention to the short time available for presentations and the implications for the timetable if presenters did not keep strictly to their allocated times. In particular, the Combined Effects session and Panel session were identified as parts of the programme where additional time was desirable. Possibilities to rearrange parts of the programme to address some of these concerns were discussed and these comments will be taken into account in further development of the programme.

Discussing the composition of the Panel for the symposium, the WG was reminded of the process adopted for the first AMAP Symposium in Tromsø in 1997. The WG and ASG will be consulted as the process of selecting Panel members proceeds.

The ASG and WG were asked to look for sponsors for the Symposium. The WG decided that the fee for the Symposium 200 USD, (see agenda item 10) and the committee would consider a lower fee for students. The Secretariat will send letter to potential during September.

AMAP is one of the main co-sponsors of the Fifth International Conference on Environmental Radioactivity in the Arctic and Antarctic that will be held in June 2002 in St-Petersburg. The main messages coming out of that conference will also be brought forward to the Rovaniemi Symposium.

Agenda Item 6: End of the joint ASG/WG meeting

Hanne Petersen wound up the joint ASG/WG session and thanked the experts for their enthusiastic work and was looking forward to see the final products.

Agenda Item 7: Progress report from the Chair and the Secretariat

The Secretariat informed the WG that the AMAP progress reports to the Ministerial meeting last October and to the SAO meeting in June covers most activities since last WG meeting. The main issue during the summer had been preparation for these joint meetings, circulation of the draft reports and fund raising for the production.

Agenda Item 8: Report from the SAO meeting in June 2001

The Chair reported that at the SAO meeting in June all WGs, except AMAP, had their Operational Guidelines approved by the SAOs, see agenda item 9.

During the discussion of the WG the SAOs was informed about the funding situation for the production of the 2002 assessments. Several countries stated that they would respond later regarding exact financial support. Denmark asked for a start to plan the AMAP phase 3.

Following an introduction and presentation of the main conclusions of the report prepared for SAOs by the Finnish consultant on the possible reorganization of the Arctic Council groups, the Finnish delegation reiterated that the consultants report was prepared at the request of the SAOs and did not constitute the official position of Finland regarding any possible reorganizations.

The AMAP WG Vice-Chair noted that, since this report was only a working document for SAOs it would not be fruitful for the AMAP WG to discuss its content in any detail. If WG members had comments or opinions on the document or any of its proposals, they should therefore address these to their respective SAOs.

Lars-Otto Reiersen drew the attention of the WG to the strong emphasis on 'human health' in a number of the activities that are currently being promoted through the Arctic Council. The need to properly organize the different human health related activities was stressed by the US SAO. AMAP agreed therefore to ensure that all relevant activities are coordinated with the work of the AMAP human health expert group. Since members of the AMAP human health expert group are playing a key role in most of the Arctic Council's human health related initiatives, coordination was not expected to present any major problems.

Hanne Petersen reminded the WG that at their last meeting they had discussed how to feed relevant information from the 2002 AMAP assessments into the Rio+10 process. The intention following the AMAP WG14 meeting had been to provide material directly from the AMAP 2002 SOAER to the Rio+10 event. However, since it has now been decided that the Johannesburg (Rio+10) meeting shall take place before the 2002 Arctic Council Ministerial meeting, this means that the 2002 SOAER will not yet have been delivered to Arctic Council Ministers for their consideration by the time of the Rio+10 meeting.

The WG were informed of discussions within the Arctic Council Secretariat concerning Arctic Council message to the Rio+10 meeting (Johannesburg 2002), one option being a single message or statement from the Arctic Council; ultimately this needs to be discussed and decided by the SAOs at their November meeting.

It was not yet clear what kind of an input from AMAP for inclusion in the Rio+10 'message' could be required, however the Arctic Council Secretariat informed that the

current idea is to prepare a coordinated message rather than individual contributions from the Arctic Council groups. The Secretariat also reminded, that developments (e.g. themes) at the UN side of the preparations needs to be followed carefully as well.

David Stone noted that it was unlikely that the Arctic Council would deliver anything of substantial volume to the Rio+10 meeting, but rather that it might produce a clear, concise message that could be backed-up by its own sources. One possibility is that, given the timetable, any eventual Arctic Council message may be fed into Rio+10 through the UN ECE and its office in Geneva. Whilst no specific product is therefore required from AMAP at this stage, he suggested that it might be useful if AMAP were to prepare for the SAOs a short summary of key messages that they could take into account when considering any Arctic Council message for Rio+10. This input could be based on AMAP material that SAOs and Ministers have previously accepted (from the AMAP phase 1 reports, Barrow Ministerial update, etc.).

Simon Wilson noted that much of the material concerning Ministerial Decisions in relation to AMAP's findings has already been compiled in the Fact Sheets prepared for ACAP and that this could readily be introduced into any such document for SAOs.

In addition to key messages based on AMAP material already considered by Ministers, it was agreed that it would be appropriate also to include in the note to SAOs information on the likely content of the 2002 AMAP assessments (i.e. the subjects or themes that were likely to be highlighted in the 2002 assessments). If Ministers so wished, they could then request AMAP to prepare contributions for Rio+10 based on the material that they had not yet received.

Outi Mähönen (Finland) noted that the suggestion of David Stone was entirely consistent with ideas expressed by SAOs, as reflected in text from the report of the SAOs meeting in Rovaniemi in June.

It was therefore agreed that the AMAP Board and Secretariat should prepare a short (ca. 3 page) document containing information that might be relevant for inclusion in a possible Arctic Council message to Rio+10. The document should summarize or refer to relevant information previously presented in AMAP assessments and update reports to Ministers, and also incorporate material compiled in the ACAP Fact Sheets and input from lead authors concerning the main themes that will be addressed in the 2002 assessments. The document should be drafted and circulated to the WG for comment by mid-October, the final version to be submitted to SAOs for consideration at their November 5-7 meeting.

Agenda Item 9: Adoption of AMAP Operating Guidelines for Approval by SAOs

Hanne Petersen introduced the issue of the approval by SAOs of the AMAP Operating Guidelines. Operating Guidelines previously agreed by the WG had been submitted to SAOs at their meeting in June 2000 for approval, however, due to differences between

the AMAP proposals and operating guidelines accepted for other Arctic Council working groups, the AMAP Operating Guidelines were not yet approved.

Following the SAO meeting, the AMAP Chair had discussed with a representative of the US delegation his concerns with the AMAP Operating Guidelines. As a result of this meeting, the AMAP Chair together with the US representative had made some minor revisions to resolve the outstanding problems.

The WG was requested to review the revised version of the AMAP Operating Guidelines as presented in document AMAPWG 15/9/1 to see if they could accept these for re-submission for SAO approval.

Norway observed that if the WG felt that the proposed changes would not adversely affect the operation of the Secretariat they had no objections to the changes.

No further comments or objections to the revisions were raised and it was agreed therefore to forward the revised AMAP Operating Guidelines to SAOs for approval at or before their meeting in November.

Agenda Item 10: Funding of the AMAP Assessment production

Lars-Otto Reiersen informed the meeting participants of the financial situation regarding the production of the AMAP 2002 assessment reports, based on both direct contributions and provisional orders for copies of the reports (AMAPWG 15/10/1). He emphasized that more than USD 100,000 are still missing to cover total production costs, and requested the national delegations to raise additional funding in their countries.

David Stone pointed out that the Canadian delegation is in favour of a cost-recovery basis for financing the production, and will clarify the number of copies needed by Canada.

The Danish Delegation informed that Denmark has no strong interest in the English version of the SOAER report as it plans to translate and publish the report in Danish. The meeting participants were informed that Denmark has allocated 350,000 DKR for production of the AMAP Assessment, and is currently considering optimal ways of using these resources.

Outi Mähönen confirmed previous commitments of Finland, and expressed her readiness to raise an issue of additional contribution to the AMAP Assessment production at the next AMAP National meeting. [supplementary note: following the AMAP WG meeting, Finland informed the Secretariat that it had identified a further 50,000 FIM for use on production of the AMAP assessment reports and covering costs of national copies of the reports].

The Icelandic Delegation confirmed the order of the same number of copies as for the previous SOAER.

Harald Loeng noted that Norway had not yet discussed publication of Norwegian or Saami language versions of the SOAER. Norway stated that they would allocate 200 000 NOK for production and purchasing of the reports which is in addition to the USD 9 300 that Norway has contributed earlier. Norway made the reservation that some of the above mentioned contribution might be also used for joint publication of a Saami language version of the SOAER if Finland, Norway and Sweden make such a decision.

The Swedish Delegation informed the meeting participants that all copies of the previous AMAP Assessment Report have been distributed, and confirmed the order for copies of the 2002 reports as included in the presentation of Lars-Otto Reiersen.

Yuri Tsaturov reported that Russia had identified a need for 150 copies of the report, however stated that the Russian Delegation is not currently ready to confirm a possibility of covering an associated cost.

John Calder reported that the US Delegation is collecting information on possible financial sources to support production of the 2002 AMAP reports. A decision is concerning this matter is expected to be made by the November SAO Meeting.

With reference to the US statement, David Stone reminded the meeting participants that, although allocated resources should become available at the beginning of the next year, the corresponding decisions are to be made by the November SAO meeting. He also noted that the previous AMAP Assessment Report had been extensively used by UNEP, and requested the AMAP Secretariat to investigate whether UNEP (e.g., UNEP-Chemicals) would be prepared to sponsor the publication of the 2002 reports.

Lars-Otto Reiersen supported this proposal and suggested applying also to the European Environmental Agency (EEA) for co-sponsoring. Taking into account time constraints, it was decided that the Secretariat should submit these applications by mid-September.

For raising additional funds for publication of the AMAP reports, the Canadian Delegation suggested to increase the Rovaniemi Symposium Conference Fee. After discussion, the meeting participants provisionally agreed to raise the fee to USD 200.

Lars-Otto Reiersen informed the WG that the Secretariat would prepare a revised budget for the production and publication of the reports before the November SAO meeting, and that any outstanding needs would be brought to the attention of the SAOs at this time.

Agenda Item 11: Update on AMAP projects activities (PCB and PTS projects, etc.)

Vitaly Kimstach (AMAP Secretariat) informed the WG about progress in the implementation of the 'Multilateral Co-operative Project on Phase-out of PCB Use, and Management of PCB-contaminated Wastes in the Russian Federation' (Annex 9), and the RAIPON/AMAP/GEF project 'Persistent Toxic Substances (PTS), Food Security and

Indigenous Peoples of the Russian North' (Annex 10), as well as other projects under way under ACAP.

1) Multilateral Cooperative Project on Phase-out of PCB Use, and Management of PCB-contaminated Wastes in the Russian Federation (see Annex 9)

Information from this study is of particular interest to, and should be incorporated in the POPs Assessment.

2) Persistent Toxic Substances: Food Security and Indigenous Peoples of the Russian North (see Annex 10)

Information from the PTS project is of particular interest to the Human Health, POPs, and Heavy Metals Assessment Groups. Lead authors should be aware that new data from this project could arrive by the end of this year, and they should therefore be prepared to incorporate it into their assessments at that time.

3) Other projects

The WG were also informed about several other projects that are underway or being prepared within the framework of ACAP, and which are of interest to AMAP and/or have AMAP involvement:

1. PCB project: coordinator - AMAP Secretariat.
2. Dioxins & Furans: coordinator - Sweden; AMAP role is to assist.
3. Fact Sheets: completed, coordinator - AMAP Secretariat.
4. Mercury - reduction of atmospheric emissions: new project, coordinator Denmark, AMAP role is to assist.
5. Obsolete Pesticides: new project, coordinator USA, AMAP role is to assist.

Special attention is being given by AMAP to the projects on dioxins/furans, stocks of obsolete pesticides, and mercury. It was noted that the PCB project is providing a model for development of other ACAP projects and the PCB project methodology has been adopted as a basis for several of the projects.

It was agreed that AMAP involvement in the implementation of the initial phases of these projects would be beneficial for both the development of the projects, and for AMAP, in particular for making inventory data and information available for use in the AMAP assessment work.

Although data from these projects will probably not be available for the current assessment, AMAP assessment groups should be aware of these for future work.

More information regarding these projects is available from the AMAP Secretariat or ACAP Secretariat.

During the discussion, Lars-Otto Reiersen requested the AMAP National Delegation to search for additional funding for the PCB and PTS projects to cover their budget deficits.

Agenda Item 12: The requests from EEA regarding production of a joint report

Hanne Petersen reminded the meeting participants on the proposal of the European Environmental Agency to issue a joint report on the “Arctic Environment: European perspective”, and the history of this proposal.

Lars-Otto Reiersen commented on this presentation that the AMAP Secretariat had heard nothing from EEA on this proposal since its discussion at the Rovaniemi SAO meeting in June. Taking into account the forthcoming period of heavy work on the AMAP Assessments, Lars-Otto Reiersen noted that it is critical that any activity to produce a joint report should not interfere negatively on the AMAP products. He repeated that AMAP is interested in collaborating with the EEA and other relevant players on publication of the joint report. However, it is necessary to avoid possible conflicts with the AMAP Assessment production.

In connection with the fact that not all AMAP countries are EEA participants, the US Delegation noted that it is not in favour of such a work if this would take resources from AMAP.

Yuri Tsaturov informed the meeting participants that, in connection with the Kiev European Environmental Conference, EEA is preparing a report, and a special group on monitoring has been established. Among the other objectives, this group will prepare its report, which will also cover the European Arctic. Lars-Otto Reiersen noted that there are several parallel activities within the EU with similar objectives.

Helgi Jensson underlined the importance of collaboration with other international bodies. However he stressed that work outside the Arctic Council should be financed from external sources.

The meeting participants agreed that any participation of AMAP or AMAP experts in work to produce joint reports must ensure that unpublished data provided for the 2002 AMAP Assessments are not used in other publications prior to the release of the 2002 AMAP Assessment. This would include the proposed joint report with the EEA, the regionally based Global POPs Assessment, GIWA, etc. One should also avoid a situation where AMAP’s work is driven by the agendas of other groups.

A question was raised concerning whether the EEA could use the 2002 AMAP Assessment to serve for their purposes. The Secretariat will clarify this.

Regarding the request from GIWA, AMAP has not received any information that changed the previous position. AMAP is supportive of cooperation, but is awaiting clarification of work to be done and funding of costs before a final decision can be made.

Agenda Item 13: Election of Vice Chair

Hanne Petersen, with reference to her earlier letter to the AMAP Heads of Delegations, regretfully declared that she must resign as the AMAP Chair due to her appointment to a new position in Denmark. According to the draft AMAP Operational Guidelines, under such circumstances the AMAP Vice-Chair should assume the Chair. The WG used the opportunity of the WG meeting to formally elect Helgi Jensson as the new AMAP Chair, and requested SAOs to confirm their agreement to this decision.

John Calder proposed to elect Yuri Tsaturov as the new Vice-Chair of the AMAP WG. This proposal was supported by the Danish Delegation. The Working Group members unanimously elected Yuri Tsaturov as the AMAP Vice-Chair, and requested SAOs to confirm their agreement to this decision.

Agenda Item 14: Next WG meeting

The meeting participants accepted with appreciation an invitation from the Danish delegation to host the next AMAP Working Group meeting on the Faeroe Islands, 30 April – 3 May 2002.

Agenda Item 15: Updated timetable for 2001-2002

Based on inputs from the experts during the ASG/Cross Fertilization meeting, the Secretariat presented an updated timetable, see appendixes 6 & 7.

Agenda Item 16: Any other Business

In connection with the joint AMAP/CAFF meeting scheduled for the next day, Hanne Petersen requested the meeting participants to prepare their responses to the proposal on preparation of the ACIA Policy Document that would be discussed during this meeting. In relation to this, Lars-Otto Reiersen noted the importance of involvement of IPCC in preparation of this document, starting from its early stages.

Agenda Item 17: End of the meeting

The AMAP Chair, Hanne Petersen, closed the 15th meeting of the AMAP Working Group at 16:00.

Annex 1: Minutes of the 4th Assessment Steering Group-II/Cross-Fertilization Meeting, Stockholm, Sweden, August 27 - 30, 2001

1.0 Opening of the Meeting

The AMAP Working Group (WG) Vice-Chair, Helgi Jensson (Iceland) called to order the 4th meeting of the Assessment Steering Group (ASG-II) / Cross-Fertilization meeting. He then invited Lars-Erik Liljelund, the General Director of the Swedish Environmental Protection Agency, to provide opening remarks.

Lars-Erik Liljelund extended a warm welcome to Stockholm to all meeting participants. At the April 1996 Cross-Fertilization meeting in Winnipeg, Canada, in preparation for the first AMAP Assessment, he had held the position of Chair of the ASG. He recalled that the Winnipeg meeting did not resolve all concerns related to writing of the Assessment, but was successful in raising and deciding how to deal with several vital issues. The importance of the first AMAP Assessment can be clearly seen through its impact in other international fora, for example, it was instrumental in bringing the LRTAP protocols on POPs and Heavy Metals and the UNEP POPs Convention into existence. Mercury is an emerging issue requiring global action, similar to that which led to the development of the POPs Convention, and AMAP phase 2 is an opportunity to provide valuable information to the mercury debate. Lars-Erik Liljelund concluded by wishing all participants a successful meeting.

Helgi Jensson reiterated the welcome and stated his hopes that this meeting would prove as fruitful as the cross-fertilization meeting in Winnipeg in 1996. He then provided information on practical/logistical arrangements.

A list of participants is included in Annex 2.

2.0 Approval of the agenda

The draft agenda (see Annex 3) was adopted without comment.

Concern was raised that the process by which all meeting materials were distributed only by e-mail had been very inconvenient due to the time required for the meeting participants to download and print very large files. A request was made that in the future the documents be provided to meeting participants in hard copy. Helgi Jensson expressed his understanding and sympathized with the time required to print out the large draft assessment documents. Lars-Otto Reiersen (AMAP Secretariat), however, informed that the AMAP Secretariat had followed a decision agreed by the ASG at their Reykjavik meeting in 2000, which was to use only e-mail for correspondence and draft report distribution (accompanied by a fax notification of the distribution) (see minutes of the

Third meeting of ASG-II, point 16.4). The current request was therefore in direct contrast to the previous decision. Electronic distribution is necessary because the costs of distribution by mail (and in particular courier delivery) are prohibitive; the time available for review of drafts, etc., is already limited and surface mail distribution can take up to 3 weeks to reach some participants. Lars-Otto Reiersen further noted that the budget for the AMAP Secretariat had not increased since 1993, representing a decrease in real terms. In conclusion, it was agreed that document distribution by e-mail or web-based systems should continue to be used, however attempts would be made to find more convenient solutions (to reduce file sizes, etc.) and to accommodate individual experts with specific needs and/or problems with respect to receiving electronic documents.

Lars-Otto Reiersen announced and briefly presented some new publications of possible interest to the ASG, including two additional fact sheets in the series produced by AMAP at the request of the Arctic Council Action Plan (ACAP): Fact Sheets #2 (Radioactivity) and #3 (Heavy Metals) are similar to the POPs Fact Sheet (#1) that was used successfully in Johannesburg. He also presented the Executive Summary report on phase 1 of the AMAP-led ACAP project "PCBs in the Russian Federation", and the report on the Status of Arctic Flora & Fauna produced by CAFF (available at a cost of ca. USD30 from the CAFF Secretariat).

A list of documents for the meeting is included in Annex 4.

A list of Actions arising from the meeting is included in Annex 5.

3.0/4.0 Objectives and Expected Outcome of Meeting

The main objective of the Cross-Fertilization meeting is for the ASG and their extended expert groups to go through the drafts of the four different assessment reports (Heavy Metals, Human Health, POPs, Radioactivity) due to be completed in 2002. The groups responsible for each of the Issue Specific AMAP Assessment Reports (ISAARs) should meet first separately and then jointly with each of the other groups to consider the following:

1. **Gaps.** To determine if important information is missing, and where gaps are identified, to identify a person/persons to fill in the gaps in the time available for production of the report.
2. **Content of the first AMAP Assessment.** To avoid repeating information from the first Assessment unnecessarily, but make reference to it, where appropriate.
3. **Relevancy.** To discuss whether or not all information in the drafts is relevant.
4. **Graphics.** Lead authors and drafting groups are responsible for providing appropriate material (draft versions/instructions/necessary data, etc.) for all intended graphics to the publisher (Kai Olsen) who will be responsible for graphical production.
5. **Technical editing.** Lead authors, together with the drafting groups, or designated individuals within the group are responsible for the technical editing of their

- respective reports – particular attention should be paid to references and citations, cross-referencing and correctness of units, labels, etc. as these were issues that considerably delayed the 1997/98 AAR production.
6. **Data Availability.** Drafting groups should consider the data are available through the thematic data centres (TDCs) (see Annex 11) and other sources and try to make the best possible use of these data.
 7. **Repetition.** Different groups may decide that there is a need for some repetition of similar information between the various individual assessment reports.
 8. **Responsibilities.** The content of each of the ISAARs is the responsibility of the experts involved in their production (i.e., lead authors and scientists), that is, these experts have to stand behind the content of the ISAARs. The ASG and AMAP WG have responsibility for the content of the SOAER.
 9. **Scenarios.** It is important to consider in the ISAARs scenarios representing situations that *could realistically happen*, particularly those that might be of use in the political arena. These ‘*what if*’ projections could, for example, include ‘business as usual’ scenarios or ‘policy target’ scenarios based on existing protocols (e.g., if we fulfill current agreements, how might the situation in the Arctic change?).
 10. **Generic Sections.** Are there sections that should occur in all 4 volumes, and if so, who will write them? There is no need for 4 different authors/versions of each generic section.

5.0 Plans for the production of the reports, including technical and linguistic editing

Timetable

The production of the reports to date has followed the timetable that the ASG agreed upon at its meeting in Reykjavik (see minutes of the Third meeting of ASG-II, Annex 8). However, delays have occurred in both the production of most first drafts and in reporting of data to TDCs (see Annex 11). As time passes, the amount of slack in the schedule is reduced.

Several developments have occurred since the Reykjavik meeting and the timetable has had to be adjusted accordingly. Simon Wilson therefore presented a proposal for a revised schedule for consideration by the ASG (ASGII 4/4/1).

Important factors in determining the timetables include the following:

- The next Arctic Council Ministerial meeting, which is the target for delivery of the next AMAP assessments, will be held in Ivalo/Saariselka in early October 2002. The second AMAP Symposium, in Rovaniemi, is planned to take place back-to-back with the Ministerial meeting, i.e. in the week prior to the Ministerial meeting. The second AMAP Symposium will therefore now take place the first week of October 2002.

- To produce the reports in time for the Ministerial meeting, a substantial amount of work - both in terms of content and format - must be completed by end of 2001. Drafting groups were asked to discuss the challenge of producing second drafts by November/December of this year, and to decide if the proposed revised timetable is practicable.
- New material may be made available for the Assessment following the upcoming AMAP conference and workshop on *Impacts of POPs and mercury on Arctic environments and humans* that will be held in Tromsø in January 2002. This needs to be taken account in the planning of the ISAAR and SOAER production.
- According to the plan, the ASG will approve the Assessment reports (ISAARs) in April 2002; in May the AMAP WG will approve the SOAER. This will require that, by early February 2002, a close-to-final draft is needed; by end of March 2002 the absolute final draft is needed. To have reports printed during the summer for delivery by the time of the Ministerial meeting in October, final manuscripts of the ISAARs need to be delivered to the publisher in early May (2 volumes) and early June (2 volumes) for layout work, etc. to be completed.

In discussions on the proposed timetables, both Simon Wilson (AMAP Secretariat) and David Stone (Canada) expressed concerns about this tight schedule, in particular about the chances of completing necessary editing work in the time available between production of the final manuscripts and their delivery to the publisher. Based on previous experience, this work had required considerable time (ca. 2 man-years) and been the reason for most of the delays in the production of the 1998 AAR. The one-month identified for editing in the proposed schedule therefore appeared unrealistic – given the reduced scope and volume of the 2002 ISAARs, a workload of ca. 9 man-months might be estimated.

The ASG concluded that, for editing work to be completed, much of this work would have to be accomplished during the drafting process by the groups themselves. The groups were therefore requested to identify individuals who would have this responsibility. In any event, the production of the SOAER should receive highest priority and not be delayed, and should therefore not be entirely dependent upon the availability of the final technical reports.

The timetables for production of both the ISAARs and SOAER were further elaborated during the meeting and the revised versions agreed at the meeting are presented under point 13.0 (below) (see Annexes 6 and 7).

Production

Kai Olsen, who will be the publisher of Assessment Report, was introduced; Annika Nilsson and Henry Huntington, who will be the authors of the SOAER, were also introduced.

The SOAER co-authors stressed the importance of drafting groups beginning to draw conclusions early on in the report-writing stage, even if the conclusions may be changed later on.

Since the scientific reports are required prior to the production of the SOAER report, Annika Nilsson requested moving the deadline for the scientific reports ahead by a few weeks because she and Henry Huntington will need a few weeks to incorporate changes into the SOAER.

Graphics

Graphics for both the SOAER and ISAAR reports will be produced by Kai Olsen based on draft materials provided by the drafting groups. Drafting groups were therefore encouraged to discuss graphical production issues including selection of graphics, use of photographs, delivery of materials, etc. with Kai Olsen during the meeting. According to the proposed timetable, ca. 80% of the graphical production work should be completed by the end of 2001. Groups were informed that they should (1) try to provide material in a constant flow to allow this work to proceed without delays, (2) provide materials without paying too much attention to trying to produce final versions themselves, as most of the material would in any case be re-worked, and (3) not worry about having all graphics finalised before delivery – drafts could be produced and adjusted later as additional data become available.

Editing

As noted above, lead authors, together with the drafting groups, and/or designated individuals are responsible for the technical editing of their respective reports.

Lars-Otto Reiersen recommended that one person from each drafting group be responsible for editing and work closely with Simon Wilson on this aspect. Editing should occur on an ongoing basis from this point forward.

Peer Review

Drafting groups were requested to identify two or three peer reviewers for their respective reports, as was done for the previous Assessment. Drafting groups were encouraged to begin to identify potential peer reviewers as soon as possible, if they have not already done so. Peer reviewers should begin to work as soon as the drafts are in a suitable state to make peer review worthwhile.

The AMAP Secretariat was uncertain about whether funding was available for peer reviewers; usually peer review is done free of charge, however, it was recognized that potential peer reviewers may request funds for a review of this nature. Funding availability for peer review is limited for several reasons, but primarily because the funding available to the Secretariat for report production is more limited than was previously the case, possibly reflecting reduced political will due to declining public

interest in environmental issues compared with the situation in the mid-1990s. Also, a large number of assessments are currently being produced (e.g. several overlapping assessments by UN organizations, EC, etc.) and more groups are therefore competing for the same pool of funding.

Lead Authors, with assistance from the AMAP Secretariat if necessary, were asked to look into the situation with respect to availability of funds to finance peer review work.

Guidelines

Simon Wilson informed that Guidelines for the preparation of the Assessment had been published (in an update of the Assessment Guidelines used under AMAP phase 1). These can be found on the AMAP website (<http://www.amap.no>) under 'online documents'.

In response to a question concerning references (i.e. what is acceptable with respect to papers that are in press, non-published data, etc?), Simon Wilson noted that references had been a major source of the editing delays encountered with the previous AMAP reports. He therefore agreed to draft specific instructions concerning citations and references, to replace those currently in the Guidelines document. These instructions would be circulated to all lead authors and individuals responsible for editing work as soon as possible.

Lars-Otto Reiersen also reminded the drafting groups that all data should be fully acknowledged, and that all authors should sign the AMAP Experts Data Agreement stating that data from others that they gain access to in the course of their work on the AMAP assessments will not be taken and used for other purposes.

6.0 Progress on Special Projects, and availability of data from Special Projects

Vitaly Kimstach (AMAP Secretariat) reported on special projects that have begun since the first Assessment. Although these are in various stages of progress/completion, relevant information can be drawn from these projects for inclusion in the current Assessments. Highlighting on where information from these studies is of particular interest to, and should be incorporated into the 2002 Assessments by the various drafting groups, he reported on (1) *The 'Multilateral Cooperative Project on Phase-out of PCB Use, and Management of PCB-contaminated Wastes in the Russian Federation'*, (2) *The project 'Persistent Toxic Substances: Food Security and Indigenous Peoples of the Russian North'*, and (3) *five other projects under way under the Arctic Council Action Plan (ACAP)*.

This information was also presented the following day at the AMAP WG meeting; details are therefore reported in the Minutes of the 15th AMAP WG Meeting under Agenda Item 11.

Information from the *'Multilateral Cooperative Project on Phase-out of PCB Use, and Management of PCB-contaminated Wastes in the Russian Federation'* is of particular interest to, and should be incorporated in the POPs Assessment (see Annex 9). Similar inventories of PCBs and other contaminants have presumably been prepared for other countries and these data should be included in the AMAP Assessments.

Information from the project *'Persistent Toxic Substances: Food Security and Indigenous Peoples of the Russian North'* is of particular interest to the Human Health, POPs, and Heavy Metals Assessment Groups (see Annex 10). Lead authors should be aware that new data from this project could arrive by the end of this year, and they should therefore be prepared to incorporate it into their assessments at that time.

Although data from several other projects under the framework of ACAP that were mentioned will probably not be available for the 2002 assessments, AMAP assessment groups should be aware of these for future work. Special attention in this respect was drawn to the projects on dioxins/furans, stocks of obsolete pesticides, and mercury. More information regarding these projects is available from the AMAP Secretariat or ACAP Secretariat.

7.0 Report from Work on Sources, Source Workshop, Work in Progress.

One finding of the last AMAP Assessment was that information available on sources and fluxes were not very accurate and that we need to know more about sources, emissions, and flux (air, water, ice).

Jozef Pacyna (Norway) provided a brief report on the outcome of the AMAP workshop on Sources and Emissions/Discharges that took place in Oslo during the week prior to the ASG meeting (August 23-24, 2001).

This workshop provided a platform for discussions on sources and emissions among the different experts who participated. The workshop focussed on heavy metals and POPs since the radioactivity assessment group already had good information on sources. A working document was distributed prior to the workshop to assist in the discussions. Information arising from the workshop will be incorporated into the working document to produce a final document, of which relevant sections will be provided to the ASG members toward the end of September.

The focus of the workshop was on discharges to water versus atmospheric inputs. Generally, there is a lack of data on discharges to water compared to emissions to air. The meeting participants have not yet done much work on scenarios, however, this can and will be done.

Jozef Pacyna also acknowledged the assistance provided by Canada, the United States and Norway to fund work on the preparation of new global emission inventories, in particular to fund projects to generate gridded datasets and maps on global emissions that

are required by atmospheric transport modellers. The Arctic Centre University of Groningen is currently assisting in a project to produce a new (1 degree by 1 degree) map of mid-1990 global Hg emissions that should be completed by late-September.

Part of the workshop conclusions was that we now have better information on major features of global emission inventories for several contaminants, but that information on the many small sources of emissions is sparse. It is necessary to convey the message that the focus should not only be on the few large sources; small sources can be equally important.

The workshop also considered the problem of locating official data on sources and emissions/discharges. A request from AMAP relating to this matter had been circulated to countries to request details of their reporting on such information to other international fora, however, so far, only Canada, Finland and Sweden had responded. The workshop recognized the usefulness of the information provided from Canada, Finland and Sweden and urged that AMAP encourage other countries to provide similar information as soon as possible.

Vitaly Kimstach provided further insights on the outcome of the workshop and the problems experienced in dealing with discharges to the aquatic environments. He reviewed the basic approach where information on sources is often an initial component in environmental assessments: Source - Transport - Environment - Biota - Food chain - Humans. Information is needed on each of these items for a comprehensive Assessment. However, regarding sources to the aquatic environment we are still missing contributions from most countries. Attention needs to be paid to riverine flux, however, information on estuarine processes is lacking making it difficult to assess net as opposed to gross riverine inputs. We therefore need to look at methodological issues and how to do this kind of work in the future. In relation to marine transport of pollutants, the workshop presentations provided information on transport of water masses, but not of the pollutants themselves. His conclusion was that we need to look at all sources (local and regional) and include use and recycling to put into the equation to really understand the full picture of sources.

The POPs and heavy metals assessment groups are largely facing the same situation and problems that existed during the first AMAP assessment with respect to information on sources: working with organizations/institutions internationally to obtain information for atmospheric emissions has yielded progress, however information on official reporting of emissions and discharges, in particular for sources to the marine/riverine systems, is very inadequate.

8.0 Report from modelling work, work in progress

Simon Wilson briefly presented a document entitled 'AMAP Phase 2 assessment: Notes on Atmospheric (Transport) Modelling and related Emissions Inventory Activities' (ASGII 4/7/1). He summarized work ongoing or planned to utilize new emission

inventories in atmospheric modeling work, including the possible contribution of this modeling work to the issue of scenarios. Limitations, however, exist due to lack of information on natural sources of Hg and lack of understanding of re-emissions from environmental reservoirs.

For POPs, less information was available about the planned contributions of modelling work to the AMAP phase 2 assessments. An AMAP modelling workshop in Bergen in 1999 had made a number of recommendations but there appeared to be more modelling work on POPs under AMAP phase 1 than under the current Assessment.

A workshop on 'Mercury and POPs' in Roskilde, Denmark (10-12 September 2001) that is jointly arranged by the Nordic Council of Ministers (NMR), the European scientific network EUROTRAC-MEPOP, and AMAP is expected to provide important information of relevance to atmospheric modelling activities.

9.0 Status on Progress of Reports

Heavy Metals

Suzanne Marcy (USA, lead, heavy metals assessment) reported that the heavy metals group met in Virginia, USA in June 2001 to prepare the first draft of the assessment document. As a result of the meeting, team members agreed to specific writing assignments. She noted that the heavy metals group was the only group to deliver its draft on time, and had it taken more time the draft would have been further improved. She also introduced Victoria Woshner (USA), the scientific secretary for the heavy metals assessment. The draft report is intended to be an integrated assessment of heavy metals in the Arctic environment, covering transport, transformation, concentrations in the environment, and effects. The assessment will concentrate on mercury, looking at concentrations as it moves through the different parts of the environment. The heavy metals draft assessment has not yet made much use of data generated by laboratory studies of effects, as have the other draft assessments – this should be addressed in future drafts. At this meeting, this group needs to discuss what are the next steps, and what scenarios will be examined.

Human Health

Jens Hansen (Denmark, co-lead, human health assessment) presented the table of contents, the page count, and status of each section of the Human Health assessment. All sections still require thorough editing. The human health group will meet again in early October in Denmark and is optimistic that it can meet the deadlines proposed for the production of the report.

Discussions held during the previous ASG meeting addressed how data on radioactivity effects on human health will be covered. It was agreed that the radioactivity group will handle the health risk associated with exposure to radionuclides, but that this assessment will focus on a set of radionuclides agreed in conjunction with the human health group, as the concerns within the political fora for radionuclides and human health issues do not

always coincide. Additional discussions with the radioactivity group will be held at and following the ASG/CF meeting.

Simon Wilson (AMAP Secretariat) reminded the Human Health drafting group that it is important to distribute the dietary data that it is collecting to other groups so that they may make use of it in their assessments.

POPs

Cynthia de Wit (Sweden, co-lead, POPs assessment) reported that the leads of the POPs group had held a successful drafting meeting in Canada, pulling a large amount of material together. In addition, Derek Muir (Canada), co-lead of this assessment, has attended several meetings to meet with key data suppliers in North America and Europe. The current draft reflects what has been received to date. The co-leads have been asking authors to provide text rather than raw data, that is, asking the authors to do the interpretation of their own data.

The lead authors will be involved in the organization of the Tromsø Biological Effects conference and will have access to abstracts in advance of that meeting; therefore, they will have a good idea of what new data will have to be incorporated into the report following the Tromsø conference. The POPs group will have to determine how to incorporate the newly available and soon-to-be-available Russian data that are expected from the PTS project.

Radioactivity

Per Strand (Norway, co-lead, radioactivity assessment) reported that several meetings have taken place with participants from most countries associated with the Radioactivity Assessment. There is good ongoing dialogue with other programs and several other projects and assessments currently underway, most of which should be completed during the fall. The draft report covers sources, pathways, effects, possible accidents, and risk management. The group has tried not to repeat what was done in the first AMAP Assessment, and is therefore focussing on risk management and environmental impact. The table of contents of the report was presented. The group still needs to address the issue of pathways.

The focus on radioactivity has traditionally been on human health; environmental effects were largely ignored. AMAP has contributed to raising the profile of environmental effects of radioactivity (e.g. morbidity/mortality/reduced fertility) and this will receive greater attention in the new assessment.

Yuri Tsaturov (Russia) commented that information on Kursk in the first draft would be moved to the 'potential sources' section.

General Discussion

Derek Muir commented that, with respect to pathways, we should be sure to have a consistent way of showing pathways in graphics e.g. consistency with arrows

Lars-Otto Reiersen commented that a decision was made that since each report must stand alone, there would be a few generic chapters that could be used in all reports, for examples, a “Setting the Scene” chapter and a “Pathways” chapter. The permanent participants volunteered to write the “Setting the Scene” chapter and the human health draft included a good introductory section, which could be used/adapted for this generic chapter. An *ad hoc* group was established to produce a draft table of contents for this “Setting the scene” chapter. This draft outline is attached as Annex 8.

10.0 Group Meetings

The meeting split into various groups; the four drafting groups had separate meetings to review comments and to discuss and update drafts; national data managers and TDCs met to discuss data issues; and the source, modelling and pathways experts met to discuss their contributions to the Assessment. The publisher of the Assessment Reports and the co-authors of the SOAER met with each drafting group to discuss plans, process and specific needs for the writing and/or production of the reports.

11.0 Cross-Fertilization

The “cross-fertilization” process proceeded in three sessions with drafting groups paired as follows:

1. Human Health and Heavy Metals / POPs and Radioactivity
2. Human Health and Radioactivity / Heavy Metals and POPs
3. Human Health and POPs / Radioactivity and Heavy Metals

12.0 AMAP Symposium

The first *AMAP International Symposium on Environmental Pollution of the Arctic* was held in Tromsø in 1997, and was very successful in highlighting the findings of the first AMAP Assessment. AMAP is now planning a second *AMAP International Symposium on Environmental Pollution of the Arctic* to showcase results of the second AMAP Assessment, and this promises to be an equally exciting event. The Symposium will be held in Rovaniemi in fall 2002, back-to-back with the Ministerial meeting in early October.

John Derome (Finland) presented the plans, timetable, draft Programme and provisional budget for the second AMAP Symposium. This information was also presented the following day at the AMAP WG meeting; details are therefore reported in the Minutes of the 15th AMAP WG Meeting under Agenda Item 5.

Leads of the AMAP assessments were asked to take note of the fact that, as members of the scientific committee for the symposium, they would be receiving proposals for

presentations at the Symposium during the autumn to review. They were therefore asked to keep in mind the timetable for the Symposium, and make time to undertake their tasks associated with the arrangement of this event. All assessment leads agreed to do this.

12.0 Reports from Drafting Groups

Helgi Jensson invited lead authors of the four main assessments and the lead of the pathways group to summarize their progress at the ASG/CF meeting. These summaries were also given the following day at the AMAP WG meeting and are reported in the minutes of WG meeting under Agenda Item 2.

13.0 Production Deadlines, etc.

Simon Wilson summarized the activities, workshops, milestones and events that will occur between now and the release of the Assessment Reports, emphasizing the importance of delivering materials on time. The updated timetable for the preparation of the ISAARs is presented in Annex 6. The corresponding timetable for the production of the SOAER is presented in Annex 7.

Concerning the ISAARs: The Second Drafts of all ISAARs, due by December 20, are intended for wide scientific review by experts within each of the eight Arctic countries. The intent is to circulate these to relevant experts before they leave for their Christmas vacation and a mechanism for this circulation needs to be agreed. Countries and drafting groups need to provide a list of all experts who will take place in this country review process to the AMAP Secretariat as soon as possible. Simon Wilson noted that it is critical that the second drafts are of sufficient quality to yield useful comments in this review process. Country review comments are due to be returned by the second week in January so that they can be available to the drafting groups in advance of the Tromsø conference, in time to allow the drafting groups to make edits and prepare a Third Draft by 15 February. The Third Drafts will be subject to peer review. This peer review is scheduled to occur within a 2-week period, allowing a further 2 weeks for addressing peer reviewer comments in the Final Draft that is due to be ready by 1 March. Assessment groups need to notify the list of peer reviewers for their assessments to the Secretariat as soon as they are known. Simon Wilson drew attention to these extremely tight deadlines during the spring of 2002. This programme of work is necessitated by the target of delivering the reports in time for the Ministerial meeting in October. He noted that the timelines presented may be impractical, however if they were not met, then the implication was that the reports could not be produced in time for the ministerial meeting. Editing by the Secretariat will take place from February to April. Two ISAARs will be delivered to Kai Olsen by May 1; the other two ISAARs will be delivered by June 1. The deadlines as given are latest possible dates. If materials are available earlier, they will gladly be received in advance of the stated deadlines.

The ASG were informed of a decision that a small number of individuals (including P. Outridge, A. Bignert, F. Riget, S. Wilson) would meet in Copenhagen during the last week in November to look at trend data series. The main focus will be on metals datasets, however if the POPs assessment group would like the meeting to consider POPs time series data then this could also be included. In this case the POPs assessment group would need to identify the time series concerned and the parameters that should be addressed well in advance of the meeting, and also to provide the necessary data.

It was decided that the Secretariat would distribute the second drafts to the experts nominated by the countries and/or drafting groups using e-mail or web-based systems. As mentioned earlier, attempts would be made to accommodate special needs of some individuals and to make this process as convenient as possible.

For the ISAARs, each reviewer should send comments directly to the lead authors.

A number of the concerns about the schedule noted by Simon Wilson were reflected in comments from the meeting participants. Some felt it was unrealistic to expect peer reviewers - who are generally busy people - to turn around the reports within 2 weeks of their receipt. It was suggested that this might be eased through payments to reviewers. It was also proposed that one way forward was to find peer reviewers who could focus on certain sections where they have particular expertise, which may improve the review and speed up the receipt of comments. The third option was to distribute the 2nd drafts to peer reviewers in December, if these were considered of high enough quality to warrant peer review. It was decided that the last option should be considered when the second drafts were available and taking into account the reviewers concerned (i.e. whether they would prefer to do a two stage review based on both the second and third drafts); otherwise the timetable would stand and the question of payment would be looked into. In general, despite the numerous reservations about the timetable for ISAAR production, all participants agreed that, given the ultimate deadlines for printing and delivery in October, there was little alternative and they would do their best to meet the deadlines. Annika Nilsson requested moving the deadline for the SOAER ahead a few weeks because she and Henry Huntington will need a few weeks to incorporate any changes made in the scientific reports into the SOAER.

14.0 Other business

Any AMAP needs/requests concerning the delivery of the AMAP reports will be discussed at the SAO meeting 4-6 November 2001. These requests must be sent to SAOs at least 2 weeks in advance. After their meeting in November 2001, the next SAO meeting is planned for 14-16 May 2002.

There is a possibility of holding an ASG meeting in the Faroe Islands between 2-5 April 2002 to approve the scientific reports and scientific conclusions and recommendations. Last time, scientific delegations discussed the conclusions in a fruitful meeting in Illulissat, and the AMAP Working Group then met at Groningen to approve the political

recommendations. At the Groningen meeting, both the SOAER and the scientific document were close to complete, and the WG had to assure that the two documents supported each other.

Lead authors were asked to consider and inform the Secretariat about whether there is a need for another ASG meeting in early April to draw out scientific conclusions and recommendations.

15.0 End of the Meeting

Helgi Jensson closed the meeting, thanking all participants for a very good and productive meeting, and expressing his sincere hope that together we will be able to meet the Assessment deadlines.

Annex 2: List of Participants at the 15th AMAP WG and 4th ASG-II/CF meetings.

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Annex 3: Draft Agendas for the 15th AMAP WG and 4th ASG-II/CF meetings.

ASGII-4/2/1

Monday 27: The ASG Cross Fertilization (CF) meeting, draft annotated agenda

0830 - 1000 **Registration.**

1000 - 1200 **Plenary session:**

1 Opening of the meeting.

The ASG Chair and a representative from Sweden.

2 Approval of the agenda.

Draft annotated agenda ASGII-4/2/1 has been circulated.

3 The Objectives & Expected outcome of the meeting.

The ASG Chair and Secretariat will give a short introduction.

4 Plans for the production of the reports, incl. timetable, graphics, technical and linguistic editing.

5 Introduction by the Secretariat. ASGII-4/4/1.

5 Progress on special projects and the data from them, e.g. PTS and PCB. Report by the Secretariat.

6 Report from the work on sources, source workshop, ACAP inventories, work in progress, etc.

7 Report by Secretariat and Workshop Chair.

7 Report from modelling works, work in progress.

Introduction by the Secretariat. Background paper circulated prior to the meeting. ASGII-4/7/1

8 Status of Preparation of draft chapters.

Short status report by the Secretariat and the Lead Authors, ASGII-4/8/1,2,3,4,5.

1200 - 1300 Lunch

1300 - 1800 **Several groups working in parallel:**

- The four drafting groups to have separate meetings to review comments received, updating drafts, etc. Draft assessments have been circulated to all participants prior to the meeting.
- Meeting between National Data Managers and TDCs.
- The Journalists, Publisher and the Board

- The Publisher to discuss graphical production with Assessment group leads, etc.

Tuesday 28: ASG/CF continues.

- 0900 - 1200 **Several groups working in parallel (continued): Cross-Fertilization**
 The four drafting groups have separate meetings with:
- the Journalists to prepare plans for the SOAER drafting.
 - the National Data Managers to be updated on new data that is coming and how this will be made available.
 - the TDCs to discuss data handling, presentation etc.
 - etc.
- 1200 - 1300 Lunch.
- 1300 – 1730 Mixing of the four drafting groups for discussion of the assessment content and future work. In addition the experts on sources, modelling and pathways will have separate meetings.
- 1300 - 1500 POPs - Heavy metals
 Radioactivity – Human health
- 1530 - 1730 POPs – Radioactivity
 Heavy metals – Human health
- 1900 ASG/CF meeting dinner

Wednesday 29: ASG/CF continues.

- 0900 - 1100 POPs – Human health
 Heavy metals – Radioactivity
- 1100 - 1200 The four drafting groups will meet separately to sum up the CF process.
- 1200 - 1300 Lunch.
- 1300 – 1500 The four drafting groups work separately. Preparation of drafts, report to WG, special questions to be resolved, technical and editorial editing, graphical production, funding issues etc.
- 1530 - 1800 **Plenary session:**
- 9 The 2nd AMAP Symposium.**
 The Secretariat will present the plans, budget and preparation of the work to be done. ASGII-4/9/1.
- 10 Recommendations to the WG.**
 ASG to prepare any recommendations to the WG for decisions.

Thursday 30: The 15th AMAP WG, draft annotated agenda.

- 0900 – 0930: 1. **Opening of the AMAP WG meeting.**
The AMAP WG Chair and a representative from Sweden.
2. **Approval of the agenda.**
Draft annotated agenda AMAPWG/15/2/1 has been circulated.
- 0930 – 1100 3. **Presentation of reports from the ASG Cross Fertilization meeting,** regarding progress, problems and funding. By the ASG Chair, Lead Authors and the Secretariat.
4. **Decisions to be made by the WG related to the Assessment preparation and production of reports.** Funding, journalist, etc.
- 1100 – 1200 5. **The 2nd AMAP Symposium:** Preparation, Programme, Funding, and Decisions to be made.
- 1200 6. **End of the joint ASG/WG meeting.**
- 1200 – 1300 Lunch.
- 1300 – 1800 7. **Progress report from the Chair and the Secretariat.**
8. **Report from the SAO meeting in June 2001,**
incl. Rio + 10 and other events.
9. **Adoption of AMAP Operating Guidelines for Approval by SAOs.**
Papers have been circulated prior to the meeting,
AMAPWG/15/9/1.
10. **Funding of the AMAP Assessment production.**
AMAPWG/15/10/1.
11. **Update on projects such as PCB and PTS.**
12. **The requests from EEA regarding joint production of reports.**
13. **Election of Vice Chair.**
14. **Next WG meeting.**

15. **Updated timetable for 2001-2002.**

16. **Any other Business.**

1800

17. **End of the meeting.**

**Annex 4: List of Documents Distributed Prior to the 15th
AMAP WG and 4th ASG-II/CF meetings.**

ASGII 4/1/1

Document No.	Document Title:
ASGII 4/1/1	Draft List of Documents
ASGII 4/1/2	Draft List of Participants
ASGII 4/2/1	Draft Annotated Agenda
ASGII 4/4/1	2002 AMAP Assessment Report Production Timetable
ASGII 4/7/1	AMAP Phase 2 assessment: Notes on Atmospheric (Transport) Modelling and related Emissions Inventory Activities
ASGII 4/8/1	AMAP Heavy Metals Assessment - First Draft
ASGII 4/8/2	AMAP Human Health Assessment – First Draft
ASGII 4/8/3	AMAP POPs Assessment – First Draft
ASGII 4/8/4	AMAP Radioactivity Assessment – First Draft
ASGII 4/9/1	Symposium (Not yet distributed)

Draft List of Documents Distributed Prior to The 15th AMAP WG, 30 August, 2001, Stockholm

Document No.	Document Title:
AMAPWG 15/1/1	Draft List of Documents
AMAP WG 15/1/2	Draft List of Participants
AMAPWG 15/2/1	Draft Annotated Agenda
AMAPWG 15/9/1	Draft Operating Guidelines for AMAP WG, September 2000
AMAPWG 15/9/2	Updating of Operational Guidelines
	Attached: Proposed revisions to AMAP draft operating guidelines of September 2000
	Draft Operating Guidelines for AMAP WG, September 2000
	Proposed revisions to AMAP draft operating guidelines of September 2000, June 13, 2001-07-04
AMAPWG 15/10/1	Production of the 2002 AMAP reports
AMAPWG 15/13/1	Letter of 15 August, 2001 concerning election of Vice Chair

Annex 5: List of Actions arising from the 15th AMAP WG and 4th ASG-II/CF meetings.

Action	For	By
Draft specific instructions concerning citations and references, for circulation to all lead authors and individuals responsible for editing work.	Simon Wilson	asap
Agree writing assignments, and complete assignments.	Heavy Metals Drafting Group	October/ November
Undertake a comparison of risk assessments for POPs/heavy metals versus radionuclides.	Human Health Drafting Group	October/ November
Distribute the dietary data that it is collecting to other groups so that they may make use of it in their assessments.	Human Health Drafting Group	asap
Draft a generic and brief section to summarize new information on pathways.	Keith Puckett, Harald Loeng, Robbie Macdonald	October/ November
Begin to draw preliminary conclusions and transmit these to SOAER authors	ISAAR Drafting group Leads	15 October
Draft the 'Setting the Scene' chapter for use in SOAER and ISAARs	Jan Idar Solbakken, Terry Fenge, Henry Huntington	asap
Identify one (or more) person(s) assigned the responsibility for editing the ISAAR (to work closely with Simon Wilson on this aspect) and notify these to the Secretariat. Editing shall occur on an ongoing basis from this point forward.	ISAAR Drafting group Leads	asap
Identify potential peer reviewers for their respective assessments and notify these to the Secretariat.	ISAAR Drafting group Leads	asap
Clarify whether funding is available to compensate peer reviewers.	Assessment Leads and AMAP Secretariat	asap
AMAP Secretariat to ensure that all those involved in production of the 2002 ISAARs and SOAER have signed the AMAP Experts Data Agreement.	AMAP Secretariat and Assessment Groups	asap
Arrange a small meeting to assess temporal trend data in Copenhagen in late November. (1) arrangement (2) provision of data sets	(1) AMAP Secretariat (& ICES) (2) Metals and POPs assessment groups	asap
Produce second drafts of ISAARs and deliver these to the AMAP Secretariat.	Assessment group leads	20 December

Nominate (and supply e-mail addresses/contact information for) experts to be involved in wide 'country review' of second drafts (review to take place from end-December 2002 with comments due to lead authors by end second week of January 2002)	AMAP countries and observers, assessment leads	Asap (latest 1 December)
Arrange system for distribution of second drafts for country review	AMAP Secretariat	20 December
Produce third drafts of ISAARs and deliver these to the AMAP Secretariat.	Assessment group leads	1 February 2002
Produce final drafts of ISAARs and deliver these to the AMAP Secretariat.	Assessment group leads	1 March 2002
Delivery of first 2 ISAAR final manuscripts to publisher	Assessment group leads and AMAP Secretariat	1 May 2002
Delivery of final 2 ISAAR final manuscripts to publisher	Assessment group leads and AMAP Secretariat	1 June 2002
Send scientific recommendations to SAOs at least 2 weeks in advance of the May 2002 meeting.	AMAP WG and Secretariat	15 April 2002
Decide on need for ASG meeting in April 2002	AMAP Board and ASG	15 January 2002
Provide relevant sections of report of AMAP workshop on sources and emissions/discharges to assessment group leads	Jozef Pacyna	End-September 2001
Provide reports on official reporting of data on emissions and discharges according to form distributed by AMAP Secretariat	Denmark, Iceland, Norway, Russia, USA	asap
Distribute first announcement and call for papers for the Second AMAP Symposium	John Derome	1 September
Seek sponsors for AMAP Symposium	Countries (WG and ASG)	
Nominate members and conduct consultations on selection of panel members for AMAP Symposium	AMAP WG and Secretariat	
Review proposals for presentations at the Rovaniemi 2002 Symposium and, as members of the Symposium scientific/organizing committee, to undertake other tasks associated with the arrangement of this event.	Assessment group leads	Fall 2001
Provide to their respective SAOs any comments or opinions on the of the main conclusions/proposals of the report prepared by the Finnish consultant on the possible reorganization of the Arctic Council groups.	AMAP WG	September 15

Provide any additional information on funding of AMAP 2002 assessment report production to AMAP Secretariat	Countries (WG)	
Begin drafting 2002 SOAER	Annika Nilsson and Henry Huntington	October
Conduct review of second draft of 2002 SOAER	WG	mid-February
Prepare note to SAOs on possible AMAP input to Rio+10 communication including information on the likely content of the 2002 AMAP assessments and key messages based on AMAP material already considered by Ministers.	AMAP Secretariat/Board	End-September
Circulate SAO note to WG for comment; finalisation and agreement of document for submission to SAO meeting in November	AMAP Secretariat / WG	mid-October
Forward revised AMAP Operating Guidelines to SAOs for approval at or before their meeting in November	AMAP Secretariat	15 September
Discuss production of Saami language version of 2002 SOAER	Finland, Norway, Sweden	
Send application to UNEP-Chemicals and European Environmental Agency for co-sponsoring AMAP assessment report production	AMAP Secretariat	mid-September
Clarify whether the EEA could use the 2002 AMAP Assessment to serve their purposes.	AMAP Secretariat	
Update status of financing of AMAP 2002 assessment report production and prepare a revised budget for the production and publication of the SOAER and ISAAR reports. Communicate any potential funding problems to SAOs at their meeting in November.	AMAP Executive Secretary / AMAP Secretariat	15 September
Request SAO approval for election of new AMAP Chair and Vice-Chair	AMAP Secretariat	15 September
Seek additional funding for PCB and PTS projects	Countries	

Annex 6: ISAAR Production Schedule (all indicated deadlines are latest possible dates)

	Activities	Milestones	Notes	Events
August (2001)				ASG/CF meeting, Stockholm
September	Drafting	Graphical production 80%+	DG editing (refs., etc.)	
October				Human Health DG meeting, 1-5/10
				Radioactivity DG meeting, Oslo
November				
				Trend analysis meeting 26/30/11
December				
		ISAAR Second draft	2 nd drafts available by end-December or sooner for circulation for national review *	
January (2002)	Country review			Biological effects conference, Tromso 21-24/1 + HH, HM and RAD DGs, including SOAER authors
	Update	Comments to second drafts		

February	Secretariat editing and remaining graphical production work	ISAAR Third draft	3 rd drafts available by 1 February or sooner for circulation for peer review **
		Final comments	Peer review and any other final comments to be received by 15 February
March		ISAAR Final draft	Final drafts incorporating peer review comments available by 1 March – end of main DG work, leads still active
April			Final approval of ISAARs for publication
			ASG meeting, 2-5/4, Faeroe Is.
May		2 ISAAR manuscripts to publisher	Final approval of SOAER for publication
			WG meeting, 30/4 -3/5, Faeroe Is.
June		2 ISAAR manuscripts to publisher	
			Fifth International Conference on Radioactivity, 16-19/6, St Petersburg
July			1 July – Proofs available from publisher
			15 July – Last proofing edits to publisher 19 July – Definitive CTP proofs for OK'ing
August			26 August – Start of printing
September			9 September – Reports ready to ship

Annex 7 – Timetable for production of the 2002 SOAER

When?	What?	Who?	
September	start photo and art inventory	Annika Nilsson	
	start graphics inventory	Annika Nilsson	
	decide basic chapter structure	Annika Nilsson Henry Huntington	
	check file transfers	Annika Nilsson Henry Huntington Kai Olsen	
	Decide on review procedures (who gets what when?)	AMAP	
October	Human Health meeting Aarhus Oct 2-4	Annika Nilsson	
	Start drafting Human health	Annika Nilsson	
	Radioactivity meeting in Oslo Oct 18-19?	Annika Nilsson	
	Start drafting radioactivity	Annika Nilsson	
November	Start drafting POPs	Annika Nilsson	
	Start drafting Heavy metals	Henry Huntington	
	Start drafting Introduction	Henry Huntington	
December	First drafts of Human health and Radioactivity to AMAP December 1. Extended outline of POPs, Heavy metals and Intro.		
	Photo and graphics selection as complete as possible by Dec 31. Final decision on cover photo.	Annika Nilsson Henry Huntington Kai Olsen	
	Delivery of first draft of Heavy metals and POPs to AMAP by Dec 31.	Henry Huntington Annika Nilsson	
January	Second draft of all AAR chapters to Annika and Henry by January 2.	AMAP	
	Tromsø meeting January 21-23, discussion with POPs, Human Health and Heavy metals	Annika Nilsson	
February	Possible meeting with radioactivity group Feb 11?	Annika Nilsson	
February 15	Delivery of second draft of all chapter to AMAP	Annika Nilsson Henry Huntington	
	Compile glossary. Distribute for review by March 15 for comments at ASG in April.	Annika Nilsson	
March	Comments on second draft to Annika and Henry by March 15. This should be the major scientific review of text and graphics.	AMAP	
	Decision on all illustrations. Text for all figure captions.	Annika Nilsson Kai Olsen	
April	ASG April 2-5. All scientific questions/controversies should be dealt with at this point. Any last revision of content in figures and figure captions. Draft executive summary. Draft recommendations.	Annika Nilsson Henry Huntington? Annika Nilsson? Lead authors?	

April 15??	Distribution of final draft for approval by Working group.	AMAP	
April 29 - May 3	AMAP Working Group in Faeroe Islands. Final text revisions to be decided at the meeting.	Annika Nilsson Henry Huntington	
May	Proof reading entire manuscript. Check all figures and captions. Index	AMAP Annika Nilsson Henry Huntington Annika Nilsson Kai Olsen	
June	Prepare proofs	Kai Olsen	
July 1	Proofs to AMAP	Kai Olsen	
July 15	Last editorial meeting	Kai Olsen AMAP Annika Nilsson?	
August 2	Very last changes to Kai	AMAP	
August 12	Start computer to plate production	Kai Olsen	
August 19	Definitive proofs of CTP files in AMAPs hands for checking and green light	Kai Olsen	
August 26	Start of printing and binding	Kai Olsen	
September 9	Reports printed, bound and ready for shipping		
October 1-4	AMAP symposium in Rovaniemi	AMAP	

Annex 8 – Draft Outline / Table of Contents of the “Setting the Stage” Chapter

ISAAR Introduction “Setting the Stage”

Outline
31 August 2001

To be written by the Permanent Participants

--draft to be circulated prior to November 2001 SAO meeting, so it can be discussed by AMAP & PPs there

--reviewing the 1997 and 1998 SOAER/AAR from their perspective

--to be ~10 pages, including maps & figures, with an additional ~10 pages for the Executive Summary

--may make 4 variations, one for each ISAAR (POPs, heavy metals, radioactivity, human health) emphasizing the particular contents of that volume (e.g., focus on POPs for the POPs ISAAR, heavy metals for the heavy metals ISAAR, etc.)—probably easier to start with one all-inclusive draft, which can be divided later as needed; can also use “boxes” to highlight particular issues in a given ISAAR introduction

I. Who lives in the Arctic

--many different groups, indigenous and otherwise (map)

--summary of demographic information (table or map)

--they share a close connection to their environment, manifested in the production & sharing of food

II. Why they are concerned about contaminants

--discovered high levels of POPs in breast milk in Nunavik

--started discovering POPs, metals in animals that are eaten

--shocking that foods that had always given strength now contain toxins

--radioactivity is worrisome

III. What the 1997 and 1998 AMAP reports did

--compiled a comprehensive picture of contaminants in the Arctic

--showed pathways from lower latitudes, demonstrating it's a global problem

--showed bioaccumulation and biomagnification processes, reflecting Arctic ecology

--identified areas of particular concern for research, policy, and public health (i.e., summary of conclusions & recommendations from Phase 1)

--indigenous peoples exposure to radioactivity (from atmospheric nuclear testing) can be 50-100 times global averages

IV. Why the 1997 and 1998 AMAP reports mattered

--brought scientific attention on a circumpolar basis

--made a strong case for global action

--empowered indigenous groups to do something about pollutants

--had significant impact on POPs Treaty

--led to ACIA, which will tackle climate and UV in a big way

V. The 2002 ISAARs/SOAER

--confirm what the 1997 & 1998 reports said

--add new information, including things of special importance: _____, _____, _____, etc.

--raise new issues & concerns, especially: _____, _____, _____, etc.

--summarized in Executive Summary

V. What now?

--many recommendations from 1997 & 1998 still require action, in addition to new recommendations

--need to continue monitoring, especially for new substances & pathways

--need global action on mercury

--need good public health advice risk management

--need more work on environmental effects of radioactivity

--need more attention to human health impacts of radioactivity & what can be done about it

--need more attention to combined effects

--oil, acidification will be covered in next assessments (ISAARs due in 2004)

Annex 9 – Status of the ‘Multilateral Co-operative Project on Phase-out of PCB Use, and Management of PCB-contaminated Wastes in the Russian Federation’

The main objective of this project is to assist Russia to meet commitments related to the UN ECE Protocol on POPs. Phase 1 of the PCB Project (Evaluation of the current status of the problem with respect to environmental impact, and development of proposals for priority remedial actions) has been completed and a report on this phase was released in September 2000. This work involved an assessment (inventory) of the current situation regarding PCB in Russia. It looked at the production of PCBs in the FSU, how PCBs were used, how PCB-containing equipment was used, and the situation with respect to PCB-contaminated waste. A brief summary of key results was presented. The assessment identified a total PCB production in the FSU of 180,000 tonnes. As a result of inventory work conducted under the first phase of the project, the location of PCB-containing transistors/capacitors currently still in Russia have been documented. The Executive Summary Report was made available to all meeting participants.

It was noted that similar inventories of PCBs and other contaminants have presumably been prepared for other countries. The AMAP WG were therefore requested to see if such information existed for their countries and is so to make it available for use in the AMAP Assessments.

Information from this study is of particular interest to, and should be incorporated in the POPs Assessment.

Phase 2 of the project – comprising a feasibility study concerning clean up of identified sources/potential sources of PCB contamination in Russia – is already under implementation. A Russian expert team has already presented the report for Activity 1 (Assessment of relevant regulations and requirements) of Phase 2, and this is now under consideration by Western experts. Three other activities are expected to begin prior to the next Project Steering Group meeting 4-5 October 2001.

It was emphasized that Phase 2 of the project has been started in spite of a lack of full financing for the work. Some declared contributions (e.g. from Denmark) have not been officially confirmed yet, and the Secretariat cannot sign the contracts on a number of activities without this confirmation.

MULTILATERAL CO-OPERATIVE PROJECT ON PHASE-OUT OF PCB USE, AND MANAGEMENT OF PCB-CONTAMINATED WASTES IN THE RUSSIAN FEDERATION

Background: Based on the information from the Russian officials, PCB production in Russia ceased in 1995. However, until recently, produced amounts of PCB were used in production of some types of electric equipment. Extensive use of PCB for several decades in energy production and a number of industries caused actual and potential threats to the environment and human health in the Russian Federation.

To solve the PCB problem in Russia, it is necessary to develop and implement a special Federal programme, which would be funded by the Russian sources and financial support of the interested countries and international financial institutions.

The *Pilot Project* is aimed to assist the Russian Federation in handling their PCB problem, and might be used as a model for the Federal Programme. The pilot project should be performed mainly by Russian experts and institutions, with assistance of western experts and funding support from the participating countries and international financial institutions. It will consist of three phases:

Phase I: Evaluation of the current status of the problem with respect to environmental impact, and development of proposals for priority remedial actions.

Phase II: Feasibility study.

Phase III: Implementation.

MULTILATERAL CO-OPERATIVE PROJECT ON PHASE-OUT OF PCB USE, AND MANAGEMENT OF PCB-CONTAMINATED WASTES IN THE RUSSIAN FEDERATION

Phase 1: **Evaluation of the current status of the problem with respect to environmental impact, and development of proposals for priority remedial actions.**

- (1) Production term characterization**
- (2) PCB use term characterization**
- (3) PCB-containing equipment use characterization**
- (4) Waste related characterization**
- (5) Release inventory**
- (6) Production and use prioritization**

Phase 2: **Feasibility study.**

- (1) Assessment of relevant regulation and requirements**
- (2) Design of PCB collection and storage schemes**
- (3) Preparation of a “least cost” overall Russian PCB phase-out strategy**
- (4) Selection of alternatives for replacement of PCB, with acceptable environmental characteristics and feasible production**
- (5) Construction/retrofit of a prototype facility for production of alternative fluids**
- (6) Construction/retrofit of a prototype for use of non-PCB alternative compounds in a major PCB use sector**
- (7) Selection/development of environmentally sound technologies for destruction/of PCB-containing fluids**
- (8) Selection/development of environmentally sound technologies for destruction/decontamination of PCB-contaminated containers, equipment and their sub-components**
- (9) Selection/development of standard/innovative technologies for rehabilitation of PCB-contaminated areas**

Annex 10 – Status of the RAIPON/AMAP/GEF project ‘Persistent Toxic Substances (PTS), Food Security and Indigenous Peoples of the Russian North’

Due to delays in assuring necessary funding, the PTS project, which encompasses both POPs and heavy metals (mostly mercury), is behind its originally envisaged schedule. Despite these delays, however, the project is now being implemented in all four regions of the Russian Arctic selected for pilot implementation (Kola Peninsula, Pechora Basin, Taimyr Peninsula, and Chukotka).

Project activities and progress were described for the various components of the project, which include:

- Identification and documentation of local sources;
- Assessment of long-range pollution sources;
- Assessment of contaminant (HMs and POPs excluding dioxins) fluxes in 2 rivers;
- Environmental Pollution and Biomagnification in Arctic food chains;
- Dietary Surveys;
- Monitoring of persistent toxic substances in humans (blood and breast milk);
- Assessment of combined effects on health and development of recommendations;
- Capacity building;
- Dissemination of results and information.

Under the activity ‘Biomagnification in Arctic food chains’, about 2400 samples have been collected thus far, covering all environmental compartments and including a number of key biological species. Two further expeditions are planned but a decision may be made to reallocate funding from these expeditions to sample analysis. A contract has been made for analysis of environmental samples by the RCMA laboratory in Russia. As part of the project QA/QC programme, this laboratory that is participating in the QUASIMEME programme. Results from the analyses of the samples collected so far are expected to be available by the end of the year for inclusion in the AMAP Assessment.

The human health expert group for the PTS project, with strong involvement of the AMAP human health experts, has started the work on a dietary survey and monitoring of PTS levels in humans. A tender for laboratories to analyze human samples has been announced and an analytical laboratory will be selected taking into account the results of the AMAP circumpolar ring-test analytical exercise. The coordinators are also looking for western laboratories that are willing to make in-kind contributions so that some of the Russian samples can be analysed by both the Russian and western laboratories for intercomparison purposes (e.g. PCBs, dioxins, Hg). Vitaly Kimstach expressed concern about the delay of the evaluation of the ring-test results, which may cause a corresponding delay in beginning the analytical work, and in turn delay the provision of data needed for the AMAP Assessment.

Under capacity building activities, AMAP has arranged workshops for health workers and indigenous peoples representatives engaged in the project work on how to conduct

dietary surveys, collect samples and plan follow-up workshops, etc. Logistical support has been provided to hospitals involved in the project.

Information on project participants and financial resources was also presented.

Information from the PTS project is of particular interest to the Human Health, POPs, and Heavy Metals Assessment Groups.

Lead authors should be aware that new data from this project could arrive by the end of this year, and they should therefore be prepared to incorporate it into their assessments at that time.

PERSISTENT TOXIC SUBSTANCES, FOOD SECURITY AND INDIGENOUS PEOPLES OF THE RUSSIAN NORTH

- Overall Goal:*** To reduce the contamination of the Arctic environment by PTS.
- Objective: 1.*** To assist indigenous peoples in developing appropriate remedial actions to reduce the health risk resulting from the contamination of their environment and traditional food sources.
- 2.** To enhance the position of the Russian Federation in international negotiations to reduce the use of PTS, and to empower indigenous peoples to participate actively and fully in these negotiations.
 - 3.** To enable the Russian Federation and RAIPON to increase their involvement in the work of the Arctic Council to reduce emissions of PTS.
- Outcomes: 1.*** Recommendations to federal and local authorities, indigenous peoples and the international community on measures to reduce exposure of indigenous peoples to PTS, including identification of priority areas where actions are needed.
- 2.** Assessment of significance of food chains as a pathway of exposure of indigenous peoples to PTS.
 - 3.** Assessment of the relative importance of local distant sources, and the role of atmospheric and riverine transport of PTS.

PERSISTENT TOXIC SUBSTANCES, FOOD SECURITY AND INDIGENOUS PEOPLES OF THE RUSSIAN NORTH

<p><u>Project Activities:</u></p> <ol style="list-style-type: none"> 1. Assessment of local pollution sources. 2. Assessment of distant pollution sources. 3. Environmental pollution and biomagnification in food chains. 4. Dietary surveys. 5. Monitoring of PTS levels in humans. 6. Assessment of combined effects on health and development of recommendations. 7. Capacity building. 8. Dissemination. 	<p><u>Areas of the project implementation:</u></p> <ol style="list-style-type: none"> 1. Kola peninsula (Lovozero). 2. Lower Pechora (Nelmin Nos). 3. Taimyr Peninsula (Dudinka and Khatanga) 4. Chukchi peninsula (Konchalan, Lavrentia and Uelen). 	<p><u>Project participants:</u></p> <ol style="list-style-type: none"> 1. RAIPON 2. Ministry of Health 3. Federal Service for Hydrometeorology and Environmental Monitoring 4. Ministry of Natural Resources 5. AMAP Secretariat 	<p><u>Financial sources:</u></p> <ol style="list-style-type: none"> 1. UNEP-GEF 2. Canada 3. Denmark 4. Finland 5. Norway 6. USA 7. Nordic Council of Ministers 8. University of Tromsø 9. World Meteorological Organization 10. Salamander Foundation 11. UN-ECE 12. Roshydromet 13. RCMA
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Annex 11: Data available through the thematic data centres (TDCs) and other sources (status of data reporting for AMAP Phase 2 assessments)

Atmospheric data:

Data reported to the AMAP atmospheric thematic data center (NILU) are comprehensively summarized in the document *AMAP Data Report: Atmospheric Subprogramme Report No. 2 (NILU OR 46/2001, June 2001)* that has been made available to the assessment groups. Data have been reported from all countries. Relevant for the 2002 assessments are data concerning POPs and metals. These are summarized in the tables below. Note: the data report and tables include all data reported under AMAP's phase 1 and 2.

Country	Sites	Matrix			Year(s)
		Precip	Air	Snow	
Canada	Alert		X		1992-94
	Tagish		X		1992-94
Finland	Pallas	X	X		1996
Iceland	Storhofdi	X	X		1995-98
Norway	Zeppelin		X		1993-98
Russia	Dunai		X		1993
	Kara Sea 94/95	X	X		1994-95
	Taimyr 95			X	1995

Country	Sites	Matrix			Year(s)
		Precip	Air	Snow	
Canada	Alert		X		1980-95 Hg: 1992-93, 1995-99
Denmark	Nord		X		1994-99
Finland	Pesosjarvi	X			1990-98
	Vuoskojarvi	X			1990-98
	Pallas	X			1996-97 (Hg: 1997)
Iceland	Storhofdi		X		1995-98 (Hg: 1998)
	Irafoss	X			1992-98
	Reykjavik	X			1993-98
Norway	Zeppelin		X		1994-98 (incl. Hg)
	Jergul	X			1992-96
	Svanvik	X			1992-98
	Overbygd	X			1996
	Karpdalen	X			1993-95
Russia	Kara Sea 94/95	X	X		1994-95 (Hg: 1994)
USA	NWAA		X		1986-93
	BELA/GAAR		X		1987-93
	DENA		X		1986-87
	YUCH		X		1986-93
	WRST/KATM		X		1987-93
	Barrow		X		1998-2000 (Hg)

In addition:

- Attempts are being made to compile additional years of data for most key atmospheric monitoring sites (Alert, Nord, Ny-Alesund, Pallas, Barrow) during fall 2001. In particular: Data for POPs from Alert (1995-1999) will be reported to NILU during fall 2001; Pallas data since 1996/97 will hopefully also be reported to NILU during fall 2001; POPs data (and Hg data if available) from Anderma should be made available from Canadian MSC.
- Under US national agreements concerning reporting of POPs data to TDCs, air monitoring (air filter and PUF samples) data from the Bering Sea area from 1993 are currently archived in at University of Alaska-Fairbanks (UAF, AMAP freshwater/terrestrial TDC). These will ultimately be included in the NILU database but in the short-term are available from UAF.
- Hg monitoring at Laverentia in Far-Eastern Russia is due to begin fall 2001 and first results from this site may be available for inclusion in the 2002 assessment.

Marine data:

Data reported to the AMAP marine thematic data center (ICES) are summarized on the ICES website at:

<http://www.ices.dk/env/commissions/amap>

In relation to AMAP phase 2, data reported to date include:

- Norwegian (NIVA) data for metals and POPs for the period to 2000 (adding to time series data sets)
- Icelandic data for metals and POPs for the period 2000 (adding to time series data sets)
- US (NOAA) data for POPs covering the period 1988-1997

In addition:

- Data from Greenland AMAP phase 2 marine monitoring are expected during fall 2001.
- Data from Faeroese AMAP phase 2 marine monitoring are expected during fall 2001.
- Norwegian institutes (Akvaplan-niva, Institute of Marine Research Bergen, Norwegian Polar Institute/Veterinary College) have indicated that they intend or will try to provide relevant AMAP phase 2 data during fall 2001.
- Under US national agreements concerning reporting of data to TDCs, marine monitoring data sets are currently archived in at University of Alaska-Fairbanks (UAF, AMAP freshwater/terrestrial TDC). These will ultimately be included in the ICES database but in the short-term are available from UAF. These data sets cover:
 - Alaskan polar bear data (POPs);
 - Surface sediment samples, Bering Sea 1993 (POPs);
 - Suspended sediment samples, Bering Sea 1993 (POPs);

- Water (centrifuged and filtered) samples, Bering Sea 1993 (POPs);
- Water contaminants, Barrow 1999 (POPs);
- Bowhead whale blubber data, 1997-2000 (POPs);
- Fish data, 1998 Barrow (POPs);
- Ringed Seal data, Barrow (POPs);
- Sediments and Fish Tissue data, Alaska (metals);

Freshwater/terrestrial data:

AMAP phase 2 data reported to the AMAP freshwater/terrestrial thematic data center (UAF) include data on:

- Metals and Organic Contaminants in Reindeer and Fish (Sweden) (including time series data sets)
- Heavy metal concentrations in moss (Sweden)
- POPs in soils and vegetation (Alaska and Siberia)
- Health and Heavy Metals Evaluation of Two Caribou Herds of Northern Alaska in Response to a Mortality Event
- Minerals and Metals in Northern Alaskan Moose.

UAF have also undertaken work to complete transfer the AMAP phase 1 freshwater data from the previous AMAP freshwater TDC, and work to support US national reporting of atmospheric and marine data (see comments above).

In addition:

- Data from Greenland AMAP phase 2 freshwater and terrestrial monitoring are expected during fall 2001.

Radioactivity data:

The AMAP radioactivity thematic data center (NRPA) has received data on activity levels in abiotic environmental media (e.g. water, sediments, air, precipitation, soil, etc.) from Canada, Faeroe Islands, Finland, Greenland, Iceland, Norway, Russia and the United States. Data on general levels of radioactivity in biota (e.g. lichen, moss, fish, birds, terrestrial and marine mammals) have been reported by Faeroe Islands, Finland, Greenland, Iceland, Norway, Russia and the United States; and levels in foodstuffs (milk, potatoes, lamb, reindeer, fish, marine mammals, etc.) have been reported for Canada, Faeroe Islands, Finland, Greenland, Iceland, Norway, Russia and Sweden.

Most of the data concern Cs-137 and Sr-90; other radionuclides are included in the data concerning abiotic samples reported for Faroe Islands, Finland, Greenland, Norway, Russia (Novaya Zemlya) and the United States (Amchitka).

Human health data:

The AMAP human health group decided to postpone implementation of an AMAP human health TDC. For the assessment, data from the human blood monitoring

programme are currently being compiled at Environmental Health Directorate, Health Canada. Data from dietary studies are also being collected under the human health activities and should be made available to other assessment groups.

National data reporting status:

Canada – Canadian atmospheric monitoring data are/will be reported to NILU (see comments above). No Canadian marine or freshwater/terrestrial data have been reported to the marine or freshwater/terrestrial AMAP TDCs. Other data are however being communicated directly to drafting groups.

Denmark – All AMAP phase 2 monitoring data from Greenland and the Faroe Islands will be reported to AMAP TDCs during the fall.

Finland - Finnish atmospheric monitoring data are being reported to NILU (see comments above), and radioactivity data to NRPA. The Finnish NDM has contacted relevant scientists and sent information to the POPs and Heavy metals assessment groups. Finland has no marine monitoring programme.

Iceland - Icelandic atmospheric and marine monitoring data have been reported to NILU and ICES, respectively, and radioactivity data to NRPA.

Norway –Norwegian atmospheric monitoring data and some Norwegian marine monitoring data have been reported to NILU and ICES, respectively. NRPA has Norwegian radioactivity data. Additional marine monitoring data should be reported (see comments above). At present no freshwater/terrestrial data have been reported from Norway.

Russia – Russia delivered a report on their NIP activities. Due to timing considerations, data from the PTS project will be communicated directly to the assessment groups as soon as they become available – they will ultimately be reported also the AMAP TDCs.

Sweden – Swedish freshwater/terrestrial monitoring data have been reported to UAF by arrangement with the Swedish NDM. Sweden is also responsible for analysis of metals from the Pallas atmospheric monitoring station. Sweden has no marine monitoring programme.

USA – US atmospheric monitoring data and some US marine and terrestrial monitoring data have been reported to NILU, ICES and UAF, respectively. Radioactivity data, mostly for Amchitka, are also reported to NRPA. Additional US atmospheric and marine monitoring data have been reported to UAF where they can be made available to the assessment groups pending their transfer to NILU and ICES.

AMAP List of Publications:

	Minutes of the First Meeting of the Arctic Monitoring and Assessment Task Force (AMATF), Tromsø, 2-6 December 1991
	Minutes of the Second Meeting of the Arctic Monitoring Assessment Task Force (AMATF), Toronto, 30 November - 4 December 1992
AMAP Report 93:2	Minutes from the Third Meeting of the Arctic Monitoring and Assessment Task Force (AMATF), Stockholm - Helsinki, 12 - 14 May 1993
AMAP Report 93:3	The Monitoring Programme for the AMAP
AMAP Report 93:4	Report to Ministers. Update on Issues of Concern to the Arctic Environment, including Recommendations for Actions
AMAP Report 93:5	Audit Report: Arctic Monitoring and Assessment Programme
AMAP Report 93:6	Minutes from the Fourth Meeting of the Arctic Monitoring and Assessment Programme Working Group (AMAPWG), Reykjavik, 11 - 13 October 1993
AMAP Report 94:1	Minutes from the Fifth Meeting of the Arctic Monitoring and Assessment Programme Working Group (AMAPWG), Tromsø, 3 - 4 March 1994
AMAP Report 94:2	Minutes from the Sixth Meeting of the Arctic Monitoring and Assessment Programme Working Group (AMAPWG), Washington 26 - 28 October 1994
AMAP Report 95:1	Guidelines for the AMAP Assessment
AMAP Report 95:2	Minutes from the Seventh Meeting of Arctic Monitoring and Assessment Programme Working Group (AMAPWG), Moscow, September 13-15 1995
NEFCO/AMAP Report 1995	Barents Region Environmental Programme: Proposals for environmentally sound Investment Projects in the Russian Part of the Barents Region: Volume one: Non-radioactive Contamination Volume two: Radioactive Contamination
AMAP Report 97:1	Minutes from the Eighth Meeting of Arctic Monitoring and Assessment Programme Working Group (AMAPWG), Groningen, January 27 - 31 1997
AMAP Report 97:2	Minutes from the Ninth Meeting of Arctic Monitoring and Assessment Programme Working Group (AMAPWG), Stockholm, 21 - 23 April, 1997
AMAP Report 1997	Arctic Pollution Issues: A State of the Arctic Environment Report
AMAP Report 98:1	Minutes from the Tenth Meeting of Arctic Monitoring and Assessment Programme Working Group (AMAPWG), Aarhus, 17 - 20 November, 1997

AMAP Report 98:2	Minutes from the Eleventh Meeting of Arctic Monitoring and Assessment Programme Working Group (AMAPWG), Girdwood, Alaska, USA April 23-24, 1998
AMAP Report 98:3	AMAP/CAFF Workshop on Climate Change, Rovaniemi, 24 – 25 March, 1998. Summary Report
AMAP Report 98:4	Brief Synopsis of the State of the Arctic Marine Environment in the Context of the Development of a Regional Plan of Action to Protect the Marine Environment from Land-Based Activities (RPA). June, 1998.
AMAP Report 1998	AMAP Assessment Report: Arctic Pollution Issues
AMAP Report 99:1	Report of the Workshop on Combined Effects in the Marine Environment, Copenhagen, 16 – 17 November, 1998
AMAP Report 99:2	Minutes from the Twelfth Meeting of Arctic Monitoring and Assessment Programme Working Group (AMAPWG), Helsinki, Finland December 7 – 9, 1998
AMAP Report 99:3	Synopsis of the State of the Arctic Environment in the Context of the Development of an Arctic Council Action Plan for the Elimination of Pollution in the Arctic (ACAP). Prepared by AMAP.
AMAP Report 99:4	Modelling and Sources: A Workshop on Techniques and Associated Uncertainties in Quantifying the Origin and Long-Range Transport of Contaminants to the Arctic, Bergen, Norway
AMAP Report 99:5	Minutes from the Thirteenth Meeting of Arctic Monitoring and Assessment Programme Working Group (AMAPWG), Toronto, Canada, November 10 – 12, 1999
AMAP Report 99:6	The AMAP Strategic Plan: 1998 – 2003
AMAP Report 99:7	The AMAP Trends and Effects Programme
AMAP Report 99:8	”Heavy Metals in the Arctic.” Anchorage, Alaska, September 7 – 10, 1999. Proceedings.
AMAP Report 2000:1	International Workshop on Persistent Organic Pollutants (POPs) in the Arctic: Human Health and Environmental Concerns, Rovaniemi, Finland, 18 – 20 January, 2000. Proceedings.
AMAP Report 2000:2	CAFF/AMAP Workshop on a Circumpolar Biodiversity Monitoring Program, Reykjavik, 7 – 9 February 2000. Summary Report
AMAP Report 2000:3	PCB in the Russian Federation: Inventory and proposals for priority remedial actions (Executive Summary).
AMAP Report 2000:4	AMAP Report on Issues of Concern: Updated Information on Human Health, Persistent Organic Pollutants, Radioactivity, and Mercury in the Arctic.

AMAP Report 2000:5	AMAP Report to the Second Ministerial Meeting of the Arctic Council, Barrow, Alaska, U.S.A., October 12 – 13, 2000.
AMAP Report 2000:6	Report of the Expert Meeting on Sampling and Analysis of Persistent Toxic Substances (PTS), St. Petersburg, Russia, 28 May - 1 June, 2000.
AMAP Report 2000:7	Minutes from the 14th AMAP Working Group Meeting, Trondheim, Norway, 5 – 6 September, 2000.
AMAP Report 2001:1	Guidelines for the AMAP Phase 2 Assessments.
AMAP Report 2001:2	Minutes of the 15 th AMAP WG Meeting, Stockholm, Sweden, 30 August 2001.