

The Eighth Session of the Scientific Advisory Committee
on Acid Deposition Monitoring Network in East Asia
15-17 October 2008, Hanoi, Vietnam

REPORT OF THE SESSION

I. Introduction

1. The Scientific Advisory Committee (SAC) of the Acid Deposition Monitoring Network in East Asia (EANET) held its Eighth Session (SAC8) from 15 to 17 October 2008 in Hanoi, Viet Nam. The Session was organized by the Secretariat for EANET and the Network Center (NC) for EANET, and hosted by the Government of Viet Nam.
2. The Session was attended by the members of SAC or their alternates and other nominated persons from the participating countries of EANET, namely, Cambodia, China, Indonesia, Japan, Lao PDR, Malaysia, Mongolia, Myanmar, Philippines, Republic of Korea, Russia, Thailand, and Viet Nam.
3. The Session was also attended by representatives from the Chemical Coordinating Center (CCC) of the Co-operative Programme for Monitoring and Evaluation of the Long Range Transport of Air Pollutants in Europe (EMEP) under the United Nations Economic Commission for Europe, Convention on Long-Range Transboundary Air Pollution (UNECE, CLRTAP), and World Meteorological Organization (WMO). The two co-chairpersons of the Task Force on Hemispheric Transboundary Air Pollution (TF HTAP) of the CLRTAP also attended the first day of the SAC8 session. Local government officials and researchers from various institutions in Viet Nam attended the Session as observers.
4. The List of Participants is attached as Annex 1.

II. Opening of the Session (Agenda Item 1)

5. The Session was opened by Ms. Adelaida Roman, Coordinator of the Secretariat for EANET. She stressed that scientists could provide policy makers with information which will underpin political decisions. It was pointed out that scientific progress in EANET will facilitate new undertakings concerning EANET activities. Moreover, it was pointed out that there are co-benefits from taking joint measures on air pollution and greenhouse gases and from coordinated emission inventories and reporting.
6. Mr. Pham Van Tan, Vice Director, Department of International Cooperation, Ministry of Natural Resources and Environment (MONRE) of Viet Nam presented the Welcome Address. He warmly welcomed the participants and mentioned that rapid changes in economic development, urbanization and industrialization while resulting in positive

changes in the socio-economic status of the population has also caused negative environmental changes. He stressed that collaboration among the countries is needed to share solutions to common local environmental problems, as well as to solve those environmental problems that go beyond country borders.

7. In his introductory remarks, the Director General of the Acid Deposition and Oxidant Research Center (ADORC) of Japan, Dr. Hiromasa Ueda, informed that during the preparation and data analyses for the first Periodic Report on the State of Acid Deposition in East Asia (PRSAD) many scientific problems were revealed due to the characteristics of the EANET region. He informed of the Intergovernmental Meeting (IG) decision, for SAC to reconsider the establishment of the expert group to review substances to be monitored and expert group on promotion of emission inventories and modeling activities.

III. Election of the Officers (Agenda Item 2)

8. Dr. Duong Hong Son, Director, Center for Environmental Research (CENRE), Viet Nam Institute of Meteorology, Hydrology and Environment, was elected as Chairperson, Prof. Wang Ruibin, Director, Department of Air Quality Monitoring, China National Environmental Monitoring Center (CNEMC) and Dr. Jesada Luangjame, Director of Silvicultural Research Division, Royal Forest Department, Thailand, were elected as Vice-Chairpersons, and Dr. Elizabeth Philip, Senior Research Officer, Forest Research Institute of Malaysia (FRIM) was elected as Rapporteur of the Session.

IV. Adoption of the Agenda (Agenda Item 3)

9. The Session adopted the Agenda (EANET/SAC 8/3/1) as proposed.
10. The Session also agreed to include a report on the outcomes of the International Workshop on Regional and Intercontinental Transport of Air Pollution, which was organized by TF HTAP in conjunction with EANET in Hanoi on 13-14 October 2008, in the program. The revised draft program (EANET/SAC 8/3/3) was adopted.

V. Consideration of the Report of the Progress of EANET since the Seventh Session of the Scientific Advisory Committee (SAC7) and Financial Report in 2007 and Report on the Outcomes of the Ninth Session of the Intergovernmental Meeting (IG9) and the Sixth and Seventh Sessions of the Working Group on Future Development of EANET (WGFD6 & WGFD7) (Agenda Item 4)

11. The Secretariat and the NC made presentations on the Report on the Progress of EANET after the Seventh Session of the Scientific Advisory Committee (SAC7) (EANET/SAC 8/4/1) and the Financial Report of the Secretariat and Network Center in 2007 (EANET/SAC 8/4/2). The Secretariat also presented the Report on the Outcomes of the Ninth Session of the Intergovernmental Meeting (IG9) and the Sixth and the Seventh Sessions of the Working Group on Future Development of EANET (WGFD6 and WGFD7) (EANET/SAC 8/4/3). The Session was invited to make comments and suggestions concerning the reports.
12. Major points of discussions included:
 - It was informed that the JICA Third Country's Training Course on Control Strategies and Mitigation Measures of Acid Deposition will be held in Thailand from 19 January to 6 February 2009. The deadline for submission is 31 October 2008, and more information is available on <http://www.jarcom.net>.
 - In view of the fluctuation in currency exchange rates particularly the US dollar, a question was raised if expenses of the Secretariat and the NC are paid based on US dollars. It was clarified that these payments are made in local currencies (baht and yen). For the purpose of reporting, all expenses are converted to the US dollar based on the prevailing exchange rate. The NC will further study the impacts of the currency fluctuation on its expenditure and make a statement in the IG session.

VI. Review of the Data Report 2007 (Agenda Item 5)

13. The NC presented the draft Data Report 2007 (EANET/SAC 8/5). The report included the wet deposition monitoring data, the dry deposition monitoring data, the soil and vegetation monitoring data and the inland aquatic environment monitoring data from the monitoring activities carried out by the participating countries in 2007, which were submitted to the NC. The Session was invited to review the Data Report and make comments as appropriate.
14. Major discussions were as follows:
 - i. Wet deposition monitoring data
 - The data from two sites in China were not included in the Data Report. It was clarified that Weishuiyuan site for wet and dry deposition monitoring in Xi'an was closed since the status of the site had changed from rural to urban. As for the Zhuxiandong site, monitoring was terminated due to equipment related problems. It is expected that the data from the Zhuxiandong site would be submitted in the next year.
 - The NC was requested to acquire the maps showing the two new sites, namely, Tokyo and Yangon.
 - Korea will check the data on potassium from Kanghwa site which was submitted to the NC and will confirm the validity of the data.

- The NC was requested to examine further the correction formula when data completeness is less than 100%

ii. Dry deposition monitoring data

- The use of ion balance to evaluate the particulate matter component measurements is a trial attempt and is not an established QA/QC procedure. As there are many unmeasured ions in particulate matter from Southeast Asia, the NC will continue to discuss the methodology with each laboratory.
- It was clarified that the monthly concentrations shown in the Data Report were calculated based on the hourly data from automatic analyzers or the weekly/bi-weekly data obtained from the filter-pack sampling. The NC informed that the hourly data and weekly data are available for modeling works upon request.
- Ozone levels in Samutprakarn, Thailand, and in Tanah Rata, Malaysia were quite low and did not show clear seasonality. It was suggested that the data should be checked by the national centers again.
- The NC was requested to make efforts to promote QA/QC on air concentration monitoring. It was also pointed out that if any abnormality of the monthly data is detected, then the hourly data should be further examined.

iii. Soil and vegetation monitoring data

- It was clarified that SAC6 in 2006 had adopted the Sub-Manual on Forest Vegetation Monitoring of EANET which recommended annual survey of tree decline.

iv. Inland aquatic environment monitoring data

- It was pointed out that alkalinity or electric conductivity (EC) reported from several sites did not meet the site selection criteria of EANET.

15. The Session endorsed the Data Report 2007.
16. The representative from CLRTAP EMEP, Dr. Kjetil Torseth made a presentation on Integration of Observational Databases for Evaluation of Hemispheric Transport of Air Pollutants. The Session was informed that the NC had received a request from the TF HTAP to provide individual observations (raw data) in the period 2000-2006 to the HTAP Global Database.
17. Major points for discussions were as follows:
 - It was clarified that units of the data submitted from different networks would be standardized in the HTAP database but the original units will be noted and kept separately.
 - It was informed that their database is an open source database with 3 levels of security.

- The TF HTAP could work together with NC to develop a procedure for submission and exporting of data.
18. The Session agreed that the EANET data would be shared on the HTAP Global Database, following the rules and procedures on data disclosure.

VII. Overview of the National Monitoring Plans of the Participating Countries (Agenda Item 6)

19. The NC presented an overview of the National Monitoring Plans of the Participating Countries (EANET/SAC 8/6). The Session was informed that to date there are 52 wet deposition monitoring sites, 42 dry deposition monitoring sites, 28 soil and vegetation monitoring sites and 18 inland aquatic monitoring sites in EANET. The Session was invited to discuss and make recommendations as appropriate.

20. Major points of discussions were as follows:

- The Sub-Manual on Forest Vegetation Monitoring of EANET (2006) recommended that observation of crown condition should be implemented as the survey of tree decline at least once a year but the National Monitoring Plans for most countries did not reflect the recommendation. It was informed that several national centers reported at STM9 that they would start the observation annually from 2008. Their National Monitoring Plans are expected to be revised later accordingly.
- It was pointed out that the current method for the observation of crown condition is not suitable for tropical forests in the Southeast Asian countries. However, it was suggested that annual growth of trees may be informative for assessment of tree decline in addition to crown condition, and measurement of tree size once a year should be included, if possible.

21. Representatives from Indonesia, Mongolia and Myanmar presented their National Monitoring Plans (2008). Observations from the Session included:

Indonesia:

- The wet and dry deposition monitoring site at Serpong was relocated by 50 meters due to the construction of a parking lot at the original site. Before relocation of the monitoring instrument, simultaneous sampling at the original site and new site are recommended to be carried out for a certain period. Detailed description of the relocation should be reported to the NC.
- In response to the question on the accuracy of the passive samplers fabricated in Indonesia, it was informed that a comparison study had been conducted between the measurements from the CSIRO, Ogawa and Indonesian-made passive samplers.

Myanmar:

- The NC informed that Myanmar will receive an Ion Chromatography (IC) system and pure water system from JICA in the current Japanese fiscal year. The NC would provide technical assistance to Myanmar together with JICA.

VIII. Consideration of the Report of the Inter-laboratory Comparison Projects 2007 (Agenda Item 7)

22. The NC presented the Report of the Inter-laboratory Comparison Projects 2007 on wet deposition, dry deposition (filter pack method), soil and inland aquatic environment (EANET/SAC 8/7). The Session was invited to review the report and make recommendations as appropriate.

23. Major clarifications and discussions on this topic included the following:

Project on dry deposition (filter pack method)

- A question was raised on the reason for selection of the 3 ionic species in the inter laboratory comparison project. It was clarified that these ionic species were selected due to their stability.
- Chloride and sulfate ions were underestimated in almost all the laboratories for the low concentration sample. It was suggested that one of the possible reasons for the underestimation was due to extraction efficiency of the sample filters during the analytical process.
- It was informed that chloride measurement in the inter-laboratory comparison study performed by EMEP showed similar results to that of EANET. However, the extraction efficiency of chloride salts should be considered.

Project on inland aquatic environment

- It was noted that the flagged data were mostly for the ammonium ion. Efforts should be made to improve accuracy and suggestions from SAC members are highly welcomed.

24. The Session adopted the Report on the Inter-laboratory Comparison Projects 2007.

25. The Session was further informed that the NC has started dispatching the samples for the Inter-laboratory Comparison Projects 2008 to the participating countries in October 2008. Participating countries were requested to keep the deadlines for submission of the results to the NC.

IX. Consideration of the Reports from the Chairs of the Task Forces and Expert Groups of SAC (Agenda Item 8)

Draft Procedures for Establishing Task Forces and Expert Groups under the Scientific Advisory Committee

26. The NC presented the Draft Procedures for Establishing Task Forces and Expert Groups under SAC (EANET/SAC 8/8/1). The Session was informed on the necessity to develop a new set of guidelines for establishment and working procedures of the task forces and expert groups under SAC for consideration and approval of the IG.
27. The Session agreed to the revised draft Procedures for Establishing Task Forces and Expert Groups under SAC including the respective Terms of Reference (TOR) and memberships (as of October 2008). The revised document is attached as Annex 2. The Session agreed that the procedures as well as the revised TOR will be submitted to the Tenth Session of the Intergovernmental Meeting (IG10) to be held in November 2008 for endorsement.
28. It was noted that there is only one Indonesian representative in the current list of members of the task forces and expert groups. It was informed that more Indonesian members would be proposed.

Report on the Activities of the Task Force on Soil and Vegetation Monitoring

29. The Chairperson of the Task Force on Soil and Vegetation Monitoring presented a Report on the Activities of the Task Force on Soil and Vegetation Monitoring (EANET/SAC 8/8/2).
30. It was pointed out that the revision of the Strategy Paper for Future Direction on Soil and Vegetation Monitoring is one of the activities in the Strategy on EANET Development (2006-2010). The Session reviewed the draft "Action Plan for Future Direction of Soil, Vegetation, and Related Ecosystems Monitoring" and suggested some amendments to the draft document. An informal meeting of the Task Force members was convened on the evening of 15 October 2008 to improve the document.
31. The Session adopted the revised "Strategy Paper for Future Direction of Soil, Vegetation, and related Ecosystems Monitoring (2009-2014)" as presented by the Chair of the Task Force.

Report on the Activities of the Task Force on Dry Deposition Monitoring

32. The Chairperson of the Task Force on Dry Deposition Monitoring presented a Report on the Activities of the Task Force on Dry Deposition Monitoring (EANET/SAC 8/8/3).
33. Major comments included the following:
 - It was suggested that the name of the Task Force be changed to "Task Force on Air Quality Monitoring and Dry Deposition" to allow other parameters to be considered in the future.

- The task force was requested to prepare a position paper to the IG on the reason for the change of name of the task force and explain the terms “air quality monitoring” and “air concentration monitoring”.
 - The NC as secretariat of the task force was requested to invite the National Focal Points (NFPs) to nominate an expert from each country as member of the task force.
34. The Session agreed to the change of name of the Task Force and to inform the IG accordingly.

Report on the Activities of the Task Force on Monitoring Instrumentation

35. The Chairperson of the Task Force on Monitoring Instrumentation presented a Report on the Activities of the Task Force on Monitoring Instrumentation (EANET/SAC 8/8/4).
36. The Session took note of the results of the questionnaire survey conducted by the task force and the list of recommended activities prepared by the task force to improve current monitoring.

Report on the Activities of the Task Force on Research Coordination

37. The Chairperson of the Task Force on Research Coordination presented a Report on the Activities of the Task Force on Research Coordination (EANET/SAC 8/8/5).
38. Major comments and discussions include the following:
- It was suggested that the duration of the research projects could be extended beyond a year depending on the objectives while the plan of the project and budget should be carefully considered.
 - It was informed that concept papers on the high priority research projects were prepared by the project leaders and more detailed implementation plans would be prepared upon approval of the budget by the IG.
 - It was decided that it was not necessary to forward the Guidelines for Selection and Implementation of High Priority Research Projects to the Working Group on Future Development of EANET for consideration.
39. The Session took note of the list of potential future research activities (for reference) prepared by the task force and endorsed the Guidelines for Selection and Implementation of High Priority Research Projects. The Session further agreed that the concept papers for the three high priority research projects to be submitted to IG10 for approval.

Report on the Activities of the Expert Group on Dry Deposition Flux Estimation

40. The Chairperson of the Expert Group on Dry Deposition Flux Estimation presented a Report on the Activities of the Expert Group on Dry Deposition Flux Estimation (EANET/SAC 8/8/6).
41. The Session took note of :
 - i) The inferential method recommended for estimation
 - ii) The preferred monitoring sites for field studies
 - iii) The proposal to report the dry deposition flux in the annual Data Report
 - iv) The measurements recommended for validation of the inferential method
42. The Session approved the table of contents of the Technical Manual on Dry Deposition Flux Estimation and lead authors and requested the Expert Group to further develop the contents of the manual.

Report on the Activities of the Expert Group on Revision of the Technical Manual on Wet Deposition Monitoring

43. The Chairperson of the Expert Group on Revision of the Technical Manual on Wet Deposition Monitoring presented a Report on the Activities of the Expert Group on Revision of the Technical Manual on Wet Deposition Monitoring (EANET/SAC 8/8/7).
44. Major comments and discussions include the following:
 - To revise the first bullet of the draft TOR, to “To identify the technical and administrative problems associated with wet deposition monitoring encountered in the EANET operation since the beginning of the preparatory-phase operation”
 - It was suggested that the revised Technical Manual should include some guidelines to review the evaluation methods for quantities with low data completeness.
45. The Session noted the recommendation of the expert group to carry out the following research activities:
 - i) Theoretical and experimental development of the method for assessing hydrogen carbonate
 - ii) A field intercomparison with a specific reference sampler
 - iii) Determination of organic acids for improving the ion balance and evaluation of major compounds to control the acidity
46. The Session approved the draft table of contents of the Technical Manual on Wet Deposition Monitoring (revised) and requested the Expert Group to further develop the manual.

Report on the Activities of the Expert Group on Revision of the Technical Manual on Inland Aquatic Environment Monitoring

47. The Chairperson of the Expert Group on Revision of the Technical Manual on Inland Aquatic Environment Monitoring presented a Report on the Activities of the Expert Group on Revision of the Technical Manual on Inland Aquatic Environment Monitoring (EANET/SAC 8/8/8).
48. The Session discussed in depth the following issues:
- River/stream water properties may change dynamically and reflect properties of its watersheds. It was suggested that the revised Technical Manual should incorporate the information of watersheds for better interpretation of the data.
 - In tropical regions, acidic lakes/ponds are naturally occurring and it is difficult to assess the impact of acid deposition. It was clarified that natural acidic lakes are not considered as suitable for EANET monitoring.
 - River systems in temperate/boreal regions and tropical region may have different characteristics. It was suggested that an appropriate expert on tropical river systems should be invited to the expert group.
 - Long term monitoring is required for detection of impacts of acid deposition on inland aquatic environment. It was recommended that the chosen sites should preferably be pristine sites.
 - Conducting of frequent sampling in mountainous area may be costly. It was suggested that efficiency of monitoring rivers or streams and site criteria should be further clarified so that good data sets will be obtained.
49. The Expert Group was requested to further improve the Technical Manual taking the suggestions and comments from SAC8 into consideration.
50. The Session endorsed the draft table of contents of the Technical Manual on Inland Aquatic Environment Monitoring (revised) in principle.

Report on the Activities of the Expert Group on Preparation of the Second Periodic Report on State of Acid Deposition in East Asia

51. The Chairperson of the Expert Group on Preparation of the Second Periodic Report on State of Acid Deposition in East Asia presented a Report on the Activities of the Expert Group on Preparation of the Second Periodic Report on State of Acid Deposition in East Asia (PRSAD2) (EANET/SAC 8/8/9).
52. Major comments and discussions include the following:
- It was clarified that the Expert Group would be dissolved after establishment of the drafting committee.
 - It was clarified that all countries would be invited to nominate one expert each to the drafting committee.
 - It was agreed that periodic reports will be produced once every 5 years and the duration for the current report would be up to 2009.

53. The Session endorsed the following:
- i) Draft implementation plan of PRSAD2
 - ii) Plan for establishment of the drafting committee of PRSAD2
 - iii) Schedule for proposed tasks of the drafting committee of PRSAD2

X. Consideration of the Scientific Activities of EANET (Agenda Item 9)

Report on Research Activities of EANET

54. The NC presented the Report on Research Activities of EANET (EANET/SAC 8/9/1). The status of cooperative research activities between the NC and Mongolia, Republic of Korea, Russia, Malaysia and Thailand were briefly described.

Joint Research Activity on Model Inter-comparison Study for Asia Phase II (MICS-Asia II)

55. The NC made a presentation on the Joint research activity on Model Inter-comparison Study for Asia (MICS-Asia) Phase II project (EANET/SAC 8/9/2). The background of MICS-Asia project and current situation and outlook for MICS-Asia Phase III were described. The Session was invited to discuss and provide comments on direction of future activities.
56. Major points of discussion were as follows:
- Regional models and global models may cover different aspects. It is important to distinguish the performance of each model for specific use and under various conditions.
 - It was suggested that criteria of validity of model should be discussed.
 - Many models have been developed but each model has its pros and cons. It was informed that ensemble statistics of various models could provide good results.
 - It was suggested that statistical evaluation between modeling and observation should be promoted for validation of the models and to determine the magnitude of over-estimation.

XI. Review of the Progress of the Scientific Activities of the Strategy on EANET Development (2006-2010) (Agenda Item 10)

57. The NC made a presentation on the Progress of the Scientific Activities of the Strategy on EANET Development (2006-2010) (EANET/SAC 8/10) as of October 2008. The Session was informed of the status of implementation of the scientific activities. IG9 had requested SAC to reconsider the establishment of the expert group to review substances to be monitored and expert group on promotion of emission inventory and modeling activities.
58. Major points of the discussion were as follows:

- In response to a question on the delay in the implementation of some activities of the Strategy on EANET Development (2006-2010), it was explained that the Strategy was only approved by IG at the end of 2006.
- Experts of the EANET participating countries are encouraged to share the information on emission inventories and modeling with other participating countries.
- SAC7 had decided that the Expert Group for promotion of emission inventories and modeling activities could be established in the NC in coordination with the Secretariat. However IG9 had recommended that SAC reconsider its proposal of the establishment of this expert group.
- It was recognized that the NC had accomplished good progress in promotion of modeling activities for EANET particularly in the intercomparison of models under the MICS-Asia project and this activity should be continued.

59. The Session agreed to the following:

Expert Group to review substances to be monitored:

- The review of substances to be monitored could be undertaken by the Task Force on Air Quality Monitoring and Dry Deposition. In line with this development, the expert group will not be established. It was also suggested that this activity should be reflected in the draft TOR of the Task Force on Air Quality Monitoring and Dry Deposition.

Expert Group for promotion of emission inventories and modeling activities:

- SAC would revisit the establishment of the Expert Group for promotion of emission inventories and modeling at a later stage.

XII. Consideration of the Work Program and Budget of EANET in 2009 (Agenda Item 11)

60. The Draft Work Program and Budget in 2009 for EANET (EANET/SAC 8/11) was presented by the Secretariat and the NC. This document was prepared for consideration and adoption by IG10. The Session was invited to make comments on the document from the scientific and technical viewpoints.

61. Major discussions and clarifications were as follows:

- The Secretariat clarified that the high level segment during the Eleventh Session of the Intergovernmental Meeting (IG11) will aim to report major achievements of EANET to Ministerial level of the participating countries and to hear their views and comments on future development of EANET and to launch the Second Report for Policy Makers (RPM2).
- It was clarified that the high cost in the communication item of the Secretariat budget was due to sending out of many reports and publications to the participating countries and others. It was suggested to use other means of sending information such as the use of Internet.

- It was clarified that the NC core budget had included costs for the support of all the task forces and expert groups including the proposed ones. It was agreed that the budget would be adjusted based on the decision of SAC8. However the total sum would be maintained because of anticipated increase in membership.

XIII. Activities of other regional and international initiatives on acid deposition and transboundary air pollution (Agenda Item 12)

62. Dr. Andre Zuber, the co-chairperson of the International Workshop on Regional and Intercontinental Transport of Air Pollution, made a presentation on the outcomes of the workshop which was held from 13 to 14 October 2008 in Hanoi back to back with SAC8. It was suggested that EANET could be developed further and it needs to consider other activities such as source receptor relationships, modeling, emission inventory and projections to provide policy guidance for mitigation options. EANET expressed its gratitude to the two co-chairpersons of the workshop for sharing their experiences, activities and invitation to collaborate with the TF HTAP. A summary of the outcomes of the workshop is attached as Annex 3.
63. The representative from CLRTAP EMEP, Dr. Kjetil Torseth, presented an overview of the current EMEP activities relevant to EANET. He introduced revision of EMEP strategy, revision of EMEP monitoring strategy, and the Atmospheric Composition Change the European Network of Excellence (ACCENT) workshop on network harmonization and data intercomparability. In particular, the report of ACCENT workshop was presented with various recommendations from the discussions. He stressed that EANET is an important initiative to understand acid deposition problems in East Asia, and linkage between monitoring, modeling, projections and mitigation becomes effective in future. Collaboration with other networks is also essential.
64. Dr. Liisa Jalkanen, representative of WMO made a presentation on the Global Atmosphere Watch (GAW) Program. She informed that GAW Strategic Plan (GSP) for years 2008-2015 was published in 2007, and various projects are now ongoing. She stressed the importance of collaboration between EANET and GAW, in particular on sharing of the EANET station information in the GAW Station Information System (GAWSIS), collaboration on passive samplers, and participation in MICS-Asia Project.
65. Mr. Mylvakanam Iyngararasan from UNEP Regional Office for Asia and the Pacific (ROAP) provided an update on the activities of the Malé Declaration, which has completed Phase III implementation and entering into the Phase IV. He briefed the achievements during Phase III. He also provided an overview of the Joint Meeting of the regional air pollution initiatives and the Second Governmental Meeting on urban air quality management in Asia.

XIV. Other Issues (Agenda Item 13)

Second Report for Policy Makers on EANET

66. The Secretariat presented the Third Draft of the Second Report for Policy Makers (RPM2, EANET/SAC 8/13/1) which had been circulated to the NFPs. The Session was invited to make comments particularly on the scientific and technical contents.
67. Suggestions were made on the topic, 'impacts on ecosystems' as follows:
- The first sentence will be replaced by "An isolated case was reported on soil acidification in East Asian region."
 - The last sentence shall read, "Acidification of rivers in mountainous areas has been reported in a certain area".
68. The figures would be updated based on the discussion during the Session.

EANET Science Bulletin

69. The NC presented the draft of the EANET Science Bulletin (EANET/SAC 8/13/2). The Session was invited to review the draft bulletin and provide guidance.
70. It was pointed out that the bulletin is a great achievement of EANET and the NC was requested to apply for the International Standard Serial Number (ISSN) code to make the bulletin a formal publication so that it can be widely disseminated.
71. The Session endorsed the draft EANET Science Bulletin, Volume 1.

EANET Participation in Group on Earth Observations (GEO)

72. The NC informed the Session that IG9 had requested the NC to continue discussions with GEO and elaborate on the discussions at IG10. The NC had been informed by the GEO Secretariat that for EANET to be recognized as a participating organization of the GEO, a formal application to the GEO Secretariat and endorsement of the 10-Year Implementation Plan of the Global Earth Observation System of Systems (GEOSS) are required. The IG would be informed of this development in its 10th Session.

XV. Consideration and adoption of the Report of the Session (Agenda Item 14)

73. The Report of the Session (EANET/SAC 8/14) was considered and adopted.

XVI. Closing of the Session (Agenda Item 15)

74. The participants expressed their gratitude and appreciation to the organizers, host country particularly the Ministry of Natural Resources and Environment, and the staff of the Center for Environmental Research, Vietnam Institute of Meteorology, Hydrology and Environment for the excellent arrangements made for the Session.

75. The Session was officially closed by the Chairperson.

Annex 1

List of Participants

Participating Countries

Cambodia

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Annex 2

**PROCEDURES FOR ESTABLISHING TASK FORCES AND EXPERT GROUPS
UNDER
THE SCIENTIFIC ADVISORY COMMITTEE OF EANET
(DRAFT)**

Procedures for establishing the Task Forces and Expert Groups

1. The Scientific Advisory Committee (SAC) of the Acid Deposition Monitoring Network in East Asia (EANET) may recommend to the Intergovernmental Meeting (IG) the establishment of task forces and expert groups related to scientific and technical issues deemed important for future development of EANET.
2. The IG will consider the recommendation of SAC and give its approval, if appropriate.
3. SAC will select the chairperson from among the SAC members and decide on the scope of the activities of the task force or expert group. The terms of reference of the task forces and expert groups may be further developed and updated from time to time based on guidance from SAC. The activities shall be in line with the Medium Term Plan of EANET/Strategy on EANET Development.
4. The Network Center (NC) of EANET shall assume the functions of secretariat of the task forces and expert groups established under SAC. The NC shall make provisions for the expenditures of the task forces and expert groups' activities under its budget in consultation with SAC, for approval of IG.
5. Unless otherwise specified, the chairpersons of the task forces and expert groups will decide on the member composition. The members may be experts selected from the participating countries or experts nominated by the National Focal Points (NFPs) of EANET, as appropriate. An appointment letter signed by the chairperson will be sent to each member to confirm his/her appointment to the task force or expert group.
6. Additional experts from outside the participating countries of EANET may be invited to participate in the activities of the task force and expert groups as members or resource persons for scientific and technical reasons. The experts may be invited by the chairperson in consultation with the NC and members of the task force or expert group, depending on availability of budget and other factors.
7. The NC will provide technical assistance and facilitate communication between SAC, IG, the chairpersons and members of the task forces and expert groups.

8. A task force or expert group can be dissolved if decided by SAC and approved by the IG.

Work Procedures of the Task Forces and Expert Groups

1. The task forces and expert groups shall work in close coordination with each other in areas of common interest and exchange relevant information.
2. Meetings will be held by the invitation of the chairperson. The frequency of the meetings will depend on availability of budget and necessity for members to meet. The NC will provide support in convening the meetings and will function as the meeting secretariat.
3. All documents developed by the task forces and expert groups will be submitted to SAC for consideration and subsequent action.
4. As far as possible, communications among the members and between the NC and members of the task forces and expert groups will be conducted through the Internet to save costs.
5. The chairperson, with advice from the members, can decide to invite new members based on need for additional expertise. A member may withdraw from the task force or expert group at any time upon notification to the chairperson and the NC.
6. The progress of activities of the task forces and expert groups will be reported by the chairpersons and reviewed at the sessions of SAC.
7. The activities of the task forces and expert groups and related recommendations from SAC will be reported at the annual IG sessions.

Organization and Responsibilities of the Task Forces and Expert Groups

Task Force on Air Quality Monitoring and Dry Deposition

Members

Dr. Cho Seog-Yeon (R. of Korea) - Chairperson

Members to be nominated by the National Focal Points

Draft terms of reference

- To further develop and elaborate the strategy for air quality monitoring and dry deposition evaluation in the region
- To discuss on future direction of air quality monitoring and dry deposition evaluation and provide guidance on relevant activities based on the strategy
- To develop the Technical Manuals for Air Concentration Monitoring and Dry Deposition Flux Estimation
- To review substances to be monitored

Task Force on Soil and Vegetation Monitoring

Members

Dr. Wilfredo Carandang (Philippines) - Chairperson

Mr. Liu Fang (China)

Dr. Masamichi Takahashi (Japan)

Dr. Nik Abdul Majid/Dr. Ahmad Makmum Abdullah (Malaysia)

Dr. Apolonio M. Ocampo (Philippines)

Ms. Hoe-Jung Noh (Republic of Korea)

Dr. Tatiana A. Mikhailova (Russia)

Dr. Jesada Luangjame (Thailand)

Dr. Hiroyuki Sase (ADORC)

Draft terms of reference

- To continue to improve methodologies mentioned in the Technical Manual for Soil and Vegetation Monitoring and the Sub-Manual on Forest Vegetation Monitoring for EANET
- To revise the technical documents on soil and vegetation monitoring as necessary
- To plan for the implementation of activities for future direction of soil, vegetation and ecosystem monitoring

- To assess the impacts of acid deposition and relevant air pollutants on soil and vegetation based on available data and other information for the EANET periodic reports
- To develop the guideline for future catchment monitoring

Task Force on Monitoring Instrumentation

Members

Prof. Wang Ruibin (China) - Chairperson
Mr. Chhek Roth (Cambodia)
Mr. Zheng Haohao (China)
Ms. Novy Farhani (Indonesia)
Dr. Hiroaki Yago (Japan)
Ms. Setouanh Phanthavongsa (Lao PDR)
Ms. Wong Fook Lian/Ms. Siniarovina Urban (Malaysia)
Mr. Barkhasragchaa Baldorj (Mongolia)
Ms. Htwe Htwe Win (Myanmar)
Engr. Arturo Bongco/Engr. Robert Co (Philippines)
Dr. Han Jin Seok (Republic of Korea)
Dr. Sergey Paramonov (Russia)
Ms. Wassana Toruksa (Thailand)
Mr. Tran Son (Viet Nam)

Draft terms of reference

- To review acid deposition monitoring instrumentation and laboratory equipment including their operation
- To recommend suitable less expensive monitoring methodologies for EANET
- To review current QA/QC procedures and recommend improvements
- To develop monitoring manuals and guidelines in cooperation with other subsidiary groups under SAC

Task Force on Research Coordination

Members

Dr. Sergey Gromov (Russia) - Chairperson
Prof. Wang Ruibin (China)
Dr. Hajime Akimoto (Japan)
Dr. Hiroshi Hara (Japan)
Prof. Katsunori Suzuki (Japan)
Dr. Elizabeth Phillip (Malaysia)
Dr. Cho Seog-Yeon (R. of Korea)
Dr. Wilfredo M. Carandang (Philippines)
Dr. Tamara Khodzher (Russia)

Dr. Pojanie Khummongkol (Thailand)
Dr. Duong Hong Son (Viet Nam)
Dr. Hiromasa Ueda (ADORC)

Draft terms of reference

- To propose the future direction of research activities for the network
- To review the outcomes of EANET research activities
- To review the reports of EANET Research Fellowship program
- To identify potential international collaborative researchers for EANET

Expert Group on Dry Deposition Flux Estimation (under the Task Force on Dry Deposition Monitoring)

Members

Dr. Pojanie Khummongkol (Thailand) - Chairperson
Dr. Kazuhide Matsuda (Japan)
Dr. Kentaro Hayashi (Japan)
Dr. Akira Takahashi (Japan)
Dr. Hong You-Deog (R. of Korea)
Dr. Hiromasa Ueda (ADORC)

Draft terms of reference

- To review existing researches of direct measurement and inferential method for estimation of dry deposition flux;
- To select monitoring sites where estimation by inferential method or direct method could be implemented;
- To evaluate the inferential method by using direct measurement results in and outside of EANET region;
- To prepare a Technical Manual for dry deposition flux estimation
- To identify future research activities on dry deposition.

Expert Group on Preparation of Second Periodic Report on the State of Acid Deposition in East Asia

Members

Dr. Hiromasa Ueda (ADORC) - Chairperson
Prof. Wang Ruibin (China)
Dr. Wilfredo M. Carandang (Philippines)
Dr. Sergey Gromov (Russia)
Dr. Duong Hong Son (Viet Nam)

Ms. Adelaida B. Roman (Secretariat)

Draft terms of reference

- To prepare the draft procedures for establishment of the Drafting committee and its meeting schedule for consideration and adoption at SAC8
- To prepare the draft implementation plan for consideration and adoption at SAC8
- To discuss the draft format and contents of 2nd PRSAD for consideration at SAC9

Expert Group on Revision of Technical Manual on Wet Deposition Monitoring

Members

Dr. Hiroshi Hara (Japan) - Chairperson
Dr. Tsuyoshi Ohizumi (Japan)
Mr. Izumi Noguchi (Japan)
Ms. Bulgan Tumendemberel (Mongolia)
Dr. Ahn Jun-Young (R. of Korea)
Dr. Hathairatana Garivait (Thailand)
Dr. Dave Mactavish (WMO/Canada)
Ms. Leong Chow Peng (ADORC)
Mr. Shinji Nakayama (ADORC)

Draft terms of reference

- To identify the technical and administrative problems associated with wet deposition monitoring encountered in the EANET operation since the beginning of the preparatory- phase operation
- To evaluate differences in the measurement techniques of other regional monitoring programs and modify the current EANET procedures if necessary for comparability of the measurements
- To discuss advances in the measurement techniques in long-term monitoring and intensive studies, and modify such techniques in an appropriate manner for the EANET Technical Manual
- To produce a revised Technical Manual on Wet Deposition Monitoring

Expert Group on Revision of Technical Manual on Inland Aquatic Environment Monitoring

Members

Dr. Tamara Khodzher (Russia) - Chairperson
Dr. Senichi Ebise (Japan)
Dr. Haruo Fukuhara (Japan)
Dr. Vu Van Tuan (Viet Nam)
Prof. Seiichi Ohta (Japan)
Prof. Tomonori Kawakami (Japan)
Dr. Hiroyuki Sase (ADORC)

An expert on tropical inland aquatic systems from Southeast Asia

Draft terms of reference

- To review the current Technical Manual on Inland Aquatic Environment Monitoring
- To identify problems on Inland Aquatic Environment Monitoring
- To prepare a revised Technical Manual on Inland Aquatic Environment Monitoring
- To identify future research activities

Annex 3

**Outcomes of the International Workshop on Regional and Intercontinental
Transport of Air Pollution in collaboration with EANET
Hanoi, Viet Nam, 13-14 October 2008**

Possibilities for future cooperation

Global and Regional Modeling

- **MICS-Asia – HTAP Cooperation**
 - Progress being made on linkages between scales and quantification of regional inflow and outflow
 - MICS-Asia Phase 2.x and 3 is providing leadership in addressing these issues within HTAP as an example for other regions
 - MICS-Asia will contribute to the TFHTAP/TFMM meeting in May 2009 and to *HTAP 2010*
- **Understanding Source/Receptor Relationships**
 - Reviewed different methodologies for quantifying S/R relationships. Identified need to develop consensus on recommended methods and metrics for both regional and global analyses.
- **Developing Modeling Capacity**
 - Suggestion to develop training module using HTAP/MICS-Asia data to be used in other training courses.

Impacts of Long Range Transport

- **Asian Impact Assessments**
 - There are a number of assessments and studies, including Project ABC, that should be reflected in *HTAP 2010*.
- **Helpful to Characterize the Range of Air Pollution Impacts**
 - Human Health
 - Agricultural and Ecosystem Impacts
 - Radiative Forcing and Climate Impacts
 - Hydrological Cycle Impacts?
 - Economic Impacts?
- **Opportunity to Bring Together Atmospheric and Effects Communities**
 - Suggestion to bring together effects experts from EANET, ABC, and LRTAP/WGE experts with air quality experts?

Ozone and Aerosol Observations

- **Asian Networks and Research Studies**
 - High quality data available, especially for EANET region
- **New insights coming from new methods**

- New instrumentation for illuminating processes
- UAVs and Lidar for understanding vertical structure and its implications
- **Improving Access, Comparability, and Value of Data**
 - EBAS-HTAP and IGAC Japan Database
 - Need dialogue between data providers and users to improve comparability of different data sets
 - What are the best ways to facilitate this dialogue?

Mercury Observations

- **Need for international cooperation to characterize regional and global nature of problem**
 - Linking monitoring, modeling, and emissions
 - Importance of comparable speciated measurements
- **Potential for Establishing Regional Cooperation**
 - There are a number of national efforts across Asia that could comprise a regional network.
 - Need to leverage existing networks.
- **Potential for Furthering Global Cooperation**
 - UNEP Hg Fate & Transport Research Partnership
 - 9th International Mercury Conference, June 2009
 - GEO Project on Global Mercury Monitoring and Modeling

Emissions and Projections

- **Asian emissions are growing rapidly**
 - Satellites and ground observations can help update emissions inventories.
 - Importance of fires, agricultural burning, and residential heating and cooking in the region.
- **Need to use “Local Knowledge”**
 - Need technology specific information
 - Sector focused analyses can be helpful
 - Can be compiled to inform regional and global modeling: EDGAR-HTAP approach
 - Need to address temporal and spatial allocation
- **Further improvements could be facilitated by opportunities for consultation**