

The Ninth Session of the Scientific Advisory Committee
on Acid Deposition Monitoring Network in East Asia
14-16 October 2009, Tsukuba, Japan

REPORT OF THE SESSION

I. Introduction

1. The Scientific Advisory Committee (SAC) of the Acid Deposition Monitoring Network in East Asia (EANET) held its Ninth Session (SAC9) from 14 to 16 October 2009 in Tsukuba, Japan. The Session was organized by the Secretariat for EANET and the Network Center (NC) for EANET, and hosted by the Government of Japan.
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 Vietnam.
3. The Session was also attended by the representative from the Norwegian Institute of Air Research (NILU)/Chemical Coordination Center (CCC) of the Co-operative Programme for Monitoring and Evaluation of the Long Range Transmissions of Air Pollutants in Europe (EMEP) and an expert from Malaysia as a resource person. Researchers from Japan attended the Session as observers.
4. The List of Participants is attached as Annex 1.

II. Opening of the Session (Agenda Item 1)

5. On behalf of the Secretariat for EANET, Ms. Adelaida B. Roman, Coordinator delivered the Opening Remarks and conveyed her great appreciation to the SAC members for demonstrating strong commitment and dedication to EANET activities. She expressed the view that with recent catastrophic events in Asia and Pacific region including typhoon, earthquake and tsunami, the latest science should empower governments to act particularly on the issues of climate change. She pointed out that as we focus on the national and regional concerns, we also need to realize that there should be coherent on global issues. She noted the upcoming Eleventh Session of the Intergovernmental Meeting of EANET to be held on 19-20 November 2009 in Bangkok, Thailand.
6. Mr. Toshiro Segawa, Director, Global Environmental Issues Division, Global Environmental Bureau, Ministry of the Environment, Japan gave the Welcome Address. He pointed out that several important activities, such as the development of the Medium Term Plan for EANET (MTP) (2011-2015) and the Second Periodic Report on State of Acid Deposition in East

Asia (PR SAD2) would be considered at SAC9. He expected that the MTP would propose necessary activities for future development of EANET.

7. In his introductory remarks, the Director General of the Acid Deposition and Oxidant Research Center (ADORC), Dr. Hajime Akimoto informed that the year 2010 is the Tenth Anniversary of EANET and it is a good time to review the accomplishment in the past ten years and to consider future direction. Due to rapid economic growth in Asia, concern on Asian regional air pollution is now widely spread among policy makers. Under this situation, EANET should look at acid deposition in the context of Asia regional air pollution, at least scientifically.

III. Election of the Officers (Agenda Item 2)

8. Dr. Duong Hong Son, Director, Center for Environmental Research (CENRE), Vietnam Institute of Meteorology, Hydrology and Environment (IMHEN) was elected as the Chairperson. Prof. Hiroshi Hara, Field Science Center, Faculty of Agriculture, Tokyo University of Agriculture and Technology, Japan and Dr. Elizabeth Philip, Senior Research Officer, Forest Research Institute of Malaysia (FRIM) were elected as Vice-Chairpersons and Ms. Jean N. Rosete, Chief, Air Quality Management Section, Environmental Management Bureau, Department of Environment and Natural Resources, Philippines was elected as Rapporteur of the Session.
9. Considering the important tasks of the SAC, such as the development of the Periodic Report, etc. and to ensure continuity, the next Sessions may re-elect the same bureau members for the succeeding two years, under the present rules of procedures.

IV. Adoption of the Agenda (Agenda Item 3)

10. The Session adopted the Agenda (EANET/SAC 9/3/1) with the following minor modifications: 1) The "Report from the Chairperson of the Task Force on Research Coordination" in the Agenda Item 13 was deleted since it is already included in the Agenda Item 8; and 2) Agenda Item 10 was changed to "Report on the Outcomes of the Regional Scientific Workshop on Acid Deposition in East Asia 2009".

V. Report on the Progress of EANET since the Eighth Session of the Scientific Advisory Committee (SAC8) and the Financial Report in 2008 (Agenda Item 4)

11. The Secretariat and the NC made presentations on the Report on the Progress of EANET since the Eighth Session of the Scientific Advisory Committee (SAC8) (EANET/SAC 9/4/1) and the Financial Report of the Secretariat and the Network Center in 2008 (EANET/SAC 9/4/2). The Secretariat also presented the Report on the Outcomes of the Tenth Session of

the Intergovernmental Meeting (IG10), Third Special Session and Eighth Session of the Working Group on Future Development (WGFD-S3 and WGFD8) (EANET/SAC 9/4/3) and the Second Report on Future Development of EANET (Revised Draft) (EANET/SAC 9/4/4). The Session was invited to make comments and suggestions concerning the reports from scientific and technical viewpoints.

12. Major points of the discussions included:

- It was suggested that in the Terms of Reference (TOR) for the Working Group on Future Development (WGFD) of Acid Deposition Monitoring Network in East Asia (EANET) (Preliminary Draft), paragraph 5(v), the specified title of the Instrument in the document (EANET/SAC 9/4/3 Annex) shall be indicated after the adoption by the Intergovernmental Meeting (IG).
- Some countries suggested to use the word “Agreement” instead of “Instrument”.
- The definition of “acid deposition” as used in Revised Draft Text of the Instrument to Provide a Sound Basis for Contribution to EANET was not clear from scientific viewpoints.
- Some countries suggested that the possibility of designation of other entities as centers should be remained open in Item 13, paragraph 2 of the document EANET/SAC 9/4/3, Annex.
- It was suggested that the wordings in the first TOR of the WGFD adopted by the Sixth Session of the Intergovernmental Meeting (IG6) in 2004 will be used in the preliminary TOR to read as “The members of the Working Group shall be nominated by the National Focal Points (NFPs) of the participating countries. Two members of the working group shall be nominated, one for discussions on policy and legal matters and the other for discussions on scientific and technical aspects. The NFPs are recommended to consult with national members of the SAC in nominating their Working Group members for scientific and technical aspects.”

VI. Review of the Data Report 2008 (Agenda Item 5)

13. The NC presented the draft Data Report 2008 (EANET/SAC 9/5). The report included the wet deposition monitoring data, dry deposition monitoring data, soil and vegetation monitoring data and inland aquatic environment monitoring data from the monitoring activities carried out by the participating countries in 2008, which were submitted to the NC. The Session was invited to review the Data Report 2008 and make comments, as appropriate.

14. Major discussions were as follows:

i. General

- It was suggested that the detailed information of new monitoring sites, such as site name, start date of the monitoring, diagrams of the location, analytical conditions, etc. should be included in the Data Report.

- It was informed that the NC has already requested the national centers to make efforts to analyze all the mandatory parameters.
- ii. Wet deposition monitoring data
- It was clarified that the data of Vientiane site in Lao PDR would be included in the final version of the report.
 - Clarification was made that the annual data for 2008 for three sites in Republic of Korea would be incorporated in the final version.
- iii. Dry deposition monitoring data
- Following the comments on possible use of the passive sampler for ozone measurement, it was suggested that the clear direction on its applicability should be considered by the Task Force on Monitoring for Dry Deposition.
 - Clarification was made that the time variations of monitoring results had been endorsed over the detection limit as shown in table 4.40 of the Data Report.
- iv. Soil and vegetation monitoring data
- The latest soil data of the monitoring sites in Vachiralongkorn Dam, Thailand could not be directly compared with the data from previous years due to inconsistency of the methodology used. It was pointed out that the samples have been collected according the EANET method since 2008.
- v. Inland aquatic environment monitoring data
- At Zhuxiandong, China, the monitoring site was changed from reservoir to stream. It was suggested that information on the change of sites should be clearly described to avoid confusion in the future assessment.
 - A suggestion was made to review the monitoring data of Terelj River since the cations concentrations were much higher than those of anions.

15. The Session endorsed the Data Report 2008, with necessary revisions.

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

16. The NC presented an overview of the National Monitoring Plans of the Participating Countries (EANET/SAC 9/6). The Session was informed that to date, there are 56 wet deposition monitoring sites, 47 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 on this topic, as appropriate.

17. Major points of discussions were as follows:

- It was suggested that some information on optional parameters should be included in the Data Report.
- Regarding the changes of site category, it was suggested that detailed information should be clearly described in the Data Report.

VIII. Review of the Report on the Inter-laboratory Comparison Projects 2008 (Agenda Item 7)

18. The NC presented the Report of the Inter-laboratory Comparison Projects 2008 on wet deposition, dry deposition (filter pack method), soil and inland aquatic environment (EANET/SAC 9/7). The Session was invited to review the report and make recommendations, as appropriate.
19. Major clarifications and discussions on this topic included the following:
 - Wet Deposition
 - The Session was informed that an external researcher commended the high quality of EANET data.
 - Soil
 - On possible solutions of outliers, the NC has already contacted the relevant laboratories and analysts to discuss the problems and possible solutions.
20. The Session adopted the Report on the Inter-laboratory Comparison Projects 2008.
21. The Session was further informed that the NC has started dispatching the samples for the Inter-laboratory Comparison Projects 2009 to the participating countries in October 2009. Participating countries were requested to keep the deadlines for submission of the results to the NC.

IX. Consideration of the Reports from the Chairpersons of the Task Forces (TFs) and Expert Groups (EGs) of Scientific Advisory Committee (SAC) (Agenda Item 8)

Task Force on Soil and Vegetation Monitoring

22. The Chairperson of the Task Force on Soil and Vegetation Monitoring presented a Progress Report on the Activities of the Task Force on Soil and Vegetation Monitoring (EANET/SAC 9/8/1) including the draft Guideline for the Catchment-scale Monitoring in East Asia (EANET/SAC 9/8/1 Annex 2) for future monitoring.
23. Major comments and discussions included the following:

- It was suggested that urban forest or park could be one of the potential sites for the ozone trial campaign since damages on plants might be easier to detect.
- A view was expressed that impacts on crop production should be taken into account for identification of the areas susceptible to acid deposition.
- It was clarified that the TF may include one or two experts on inland aquatic environment.
- Clarification was made that streams and related biogeochemical processes in the forest catchment would be the main targets in the catchment-scale monitoring.
- It was suggested that lakes should also be taken into consideration for some catchments.

Task Force on Monitoring Instrumentation

24. The NC, on behalf of the Chairperson of the Task Force on Monitoring Instrumentation, presented a Progress report on activities of the Task Force on Monitoring Instrumentation (EANET/SAC 9/8/2).
25. Major comments and discussions included:
 - Some countries reported that new sites have been established and that new monitoring instruments were installed in some sites.
 - It was informed that the project on Feasibility Study on Low Cost Methodologies for Monitoring Air Concentrations is currently being implemented in some participating countries.

Expert Group on Dry Deposition Flux Estimation

26. The Chairperson of the Expert Group on Dry Deposition Flux Estimation presented a Progress Report on the Preparation of the Technical Manual on Dry Deposition Flux Estimation (EANET/SAC 9/8/3).
27. Major comments and discussions included the following:
 - It was suggested that dry deposition flux should be estimated for gaseous species prior to particulate species since uncertainties still remained for the particulate species.
 - Since three sub-bodies of SAC, namely: Task Force on Monitoring for Dry Deposition, Task Force on Monitoring Instrumentation and Expert Group on Dry Deposition Flux Estimation are discussing the dry deposition issues, a suggestion was made to enhance communication among these bodies.
 - The draft Technical Manual on Dry Deposition Flux Estimation will be presented to the Tenth Session of the Scientific Advisory Committee (SAC10) for endorsement.
 - The NC will communicate with the participating countries to provide the necessary meteorological parameters for estimation of dry deposition flux for the Periodic Report.

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

28. The Chairperson of the Expert Group on Revision of the Technical Manual on Wet Deposition Monitoring presented a Progress Report on Revision of the Technical Manual on Wet Deposition Monitoring (EANET/SAC 9/8/4).
29. Major comments and discussions included the following:
- Clarification was made on three research projects, namely: HCO_3^- index experiment, inter-comparison project for the field operation (reference method), and analysis of organic acids.
 - It was informed that the final draft of the technical manual would be submitted to the SAC10 for consideration and possible adoption.

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

30. The Chairperson of the Expert Group on Revision of the Technical Manual on Inland Aquatic Environment Monitoring presented a Progress Report on Revision of the Technical Manual on Inland Aquatic Environment Monitoring (EANET/SAC 9/8/5).
31. Major comments and discussions include the following:
- It was informed that the final draft of the technical manual would be submitted to SAC10.
 - Clarification was made that methodologies on river monitoring were modified in the revised technical manual, while those of lakes were also slightly modified.
 - It was clarified that monitoring of lakes will still be included in the revised technical manual, although the rivers and streams would be highlighted to give flexibility in situations where there is difficulty in finding appropriate monitoring sites.
 - A view was expressed that the revised technical manual should take into consideration the high surface runoff due to heavy rainfall.

Task Force on Research Coordination

32. The Chairperson of the Task Force on Research Coordination presented a Progress Report on the Activities of the Task Force on Research Coordination (EANET/SAC 9/8/6).
33. Major comments and discussions included:
- It was informed that the researchers involved in the high priority research project “Analysis of existing data for improving the understanding the status of acidification in East Asia” that was presented in the RSW2009 are Prof. Hiroshi Hara, Dr. Kazuhide Matsuda, Dr. Wilfredo Carandang and Dr. Apolonio Ocampo.

Task Force on Monitoring for Dry Deposition

34. The Chairperson of the Task Force on Dry Deposition Monitoring presented a Progress Report on Activities of the Task Force on Monitoring for Dry Deposition (EANET/SAC 9/8/7) including preparation of the draft Strategy Paper for Future Direction of Monitoring for Dry Deposition of EANET and a recommendation on establishment of the Expert Group on Preparation of the Technical Manual for Air Concentration Monitoring. SAC9 was invited to consider the recommendations by the Task Force.
35. Major comments and discussions included:
 - It was clarified that the Task Force will convene another meeting in July next year and the meeting period will be 2 days to have more time for deliberation and discussions.
36. The Session endorsed the Table of Contents of the draft strategy paper.
37. The Session agreed to submit the proposal on the establishment of the new Expert Group on Preparation of the Technical Manual for Air Concentration Monitoring and its TOR attached as Annex 3, with Dr. Duong Hong Son as the Chairperson to the Eleventh Session of the Intergovernmental Meeting (IG11), for its consideration and endorsement.

X. Establishment of the Drafting Committee (DC) of the Second Periodic Report on the State of Acid Deposition in East Asia (PRSAD2) (Agenda Item 9)

38. The NC presented the proposal to establish the Drafting Committee (DC) of the Second Periodic Report on the State of Acid Deposition in East Asia (PRSAD2) (EANET/SAC 9/9).
39. Major comments and discussions included the following:
 - The Session agreed to apply the Procedures to prepare the Periodic Report on the State of Acid Deposition in East Asia (EANET/SAC 4/16 Annex II), as approved by the Fourth Session of SAC in 2004.
 - It was decided that Dr. Duong Hong Son, as Chairperson of SAC9 be the Chairperson of the DC.
 - The list of the members of the DC as decided by the SAC is attached as Annex 2.
 - The Session agreed to dissolve the EG on Preparation of PRSAD2 upon establishment of the DC.

XI. Report on the Outcomes of the EANET Regional Scientific Workshop on Acid Deposition in East Asia 2009 (Agenda Item 10)

40. The NC presented the Report on the Outcomes of the EANET Regional Scientific Workshop on Acid Deposition in East Asia 2009 (EANET/SAC 9/10). Three sessions which included: Analysis of the current state and long-term trends of wet and dry deposition (Session I), Modeling analysis of regional air pollution in East Asia (Session II) and Results of studies

on ecological and human health impacts of acid deposition and related air pollution (Session III) were held. The recommendations from the participants for the development of PRSAD2 and future activities of EANET were presented.

XII. Consideration of the Draft Mid-Term Report on Implementation of the Strategy on EANET Development (2006-2010) from scientific and technical viewpoints (Agenda Item 11)

41. The NC made a presentation on the Draft Mid-Term Report on Implementation of the Strategy on EANET Development (2006-2010) (EANET/SAC 9/11). The Session was informed on the status of implementation of the scientific activities.
42. Major comments and discussions included the following:
- Clarification was made that scientists from participating countries could be seconded to the NC to carry out atmospheric and ecological research, if some logistics could be sorted out.
 - It was suggested that a Gantt chart should be prepared to indicate the activities and accomplishment.

XIII. Consideration of the Draft Medium Term Plan (MTP) for EANET (2011-2015) from scientific and technical viewpoints (Agenda Item 12)

43. The NC made a presentation on the Draft Medium Term Plan (MTP) for EANET (2011-2015) (EANET/SAC 9/12) which was revised based on the discussion at the Eighth Session of the Working Group on Future Development of EANET (WGFD8). The Session was invited to discuss, make comments and provide guidance from scientific viewpoints.
44. Major comments and discussions included the following:
- It was clarified that although the development of the MTP was under the TOR of the WGFD based on the decision of the IG10, collaboration with the SAC is necessary on the scientific issues.
 - Due to limited time to discuss fully the contents of the MTP, the Session decided that the SAC members would send their additional comments on the MTP to the NC by 31 October 2009.
 - It was suggested that the SAC prepare a separate scientific strategy paper to highlight the scientific activities planned under the various TFs and EGs. This would be discussed further at SAC10.

XIV. Consideration of future activities of EANET (Agenda Item 13)

Joint research activities on modeling studies for Asia

45. The NC presented the Report on Joint Research Activities on Modeling Studies for Asia (EANET/SAC 9/13/1).
46. Major comments and discussions included:
 - Clarification was made that the areas near the equator are usually excluded from the regional models due to difficulties simulating the meteorological condition. It was clarified further that global model can cover this part.
 - The common emission inventory has been used for MICS-Asia Phase II.
 - It was mentioned that the results from the Joint Research Activities on Modeling Studies in Asia is expected to be completed by middle of 2010 and might be references in preparing the PRSAD2.

Monitoring and QA/QC system of ozone in Japan

47. The NC presented the Monitoring and QA/QC system of ozone in Japan.
48. Major comments and discussions were as follows:
 - Clarification was made that ozone calibration system using the secondary standard will be promoted within the Japanese network. It was informed that the NC could provide Japanese ozone calibration instrument to the EANET sites, if requested.
 - A number of air quality monitoring sites have been established to promote continuous air quality monitoring system in Japan. Some sites in local city in Japan recently showed high ozone concentration.

XV. Consideration of the Work Program and Budget of EANET in 2010 from scientific and technical viewpoints (Agenda Item 14)

49. The Work Program and Budget of EANET in 2010 (Draft) (EANET/SAC 9/14) was presented by the Secretariat and the NC. This document was prepared for consideration and adoption by the IG11. The Session was invited to make comments on the document from the scientific and technical viewpoints.
50. Major discussions and clarifications were as follows:
 - Clarification was made on the Regional Scientific Workshop on Air Pollution and Acid Deposition to be held back-to-back with SAC10 in 2010, in any participating countries. It was then agreed to change the name of the workshop to “Regional Scientific Workshop on Acid Deposition” as mentioned in the Strategy on EANET Development (2006-2010) and that planning of this event shall be done in consultation with SAC, bureau members and TF Chairpersons through the NC.

- It was suggested that the necessary budget for publication of the EANET Science Bulletin should be included in the NC budget in 2010.
- One country pointed out that the activities of TFs and EGs should be regarded as major activities of EANET and therefore, would be covered by the Secretariat budget.
- The Chairperson of the TF on Research Coordination requested the NC to use the unspent money for Fellowship Program in 2009 for the next year.

XVI. Updates on the activities of other regional and international initiatives on acid deposition and transboundary air pollution (Agenda Item 15)

51. Dr. Wenche Aas, Senior Scientist of Norwegian Institute of Air Research introduced the recent activities in EMEP which included the development of EMEP Strategy for 2010-2019, Revision of the Gothenburg Protocol, activities of the Task Force on Hemispheric Transport Air Pollution (TF HTAP), intensive observation campaign, and improvement of particulate matter monitoring and modeling. She also provided clarifications on the establishment and operation of supersites under EMEP Program as well as the monitoring of organic carbon.

XVII. Other Issues (Agenda Item 16)

52. Regarding the database of the EANET data, the following comments and discussion were made:
- The Session requested the NC to consider the possibility of implementing the two projects relating to the development of database of EANET monitoring data in the participating countries and a website for the data download system within the period of the current Strategy on EANET Development (2006-2010), as they are considered to be very important.
 - Regarding the first project, the NC will communicate with participating countries to identify the individual country's needs.
 - For the website data download system, the NC will provide the downloadable monthly data in excel format in the EANET website. The download system of hourly data will be considered by the NC at a later stage.
 - A suggestion was made that a simple security system could be accepted for the scientific data.

XVIII. Consideration and adoption of the Report of the Session (Agenda Item 17)

53. The Report of the Session (EANET/SAC 9/17) was considered and adopted.

XIX. Closing of the Session (Agenda Item 18)

54. The Session expressed its deepest gratitude to the Secretariat and the NC for organizing SAC9. The Session also appreciated the efforts made by the Chairperson, Vice-Chairpersons, Rapporteur and resource persons.
55. The Session was officially closed by the Chairperson, thanking all the participants for their great contributions.

The Ninth Session of the Scientific Advisory Committee
on Acid Deposition Monitoring Network in East Asia
14-16 October 2009, Tsukuba, Japan

List of Participants

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Programme Officer, EANET Secretariat

Annex 2

List of the Members of Drafting Committee for PRSDA2

Chairperson: Dr. Duong Hong Son

Cambodia: Mr. Hang Dara

China: *To be decided*

Indonesia: Prof. R. T. Sutamihardja

Japan: Prof. Hiroshi Hara

Lao PDR: Ms. Sisouphanh Luangrath

Malaysia: Prof. Nik Muhamad Majid

Mongolia: Dr. Erdenebart Eldev-Ochir (*To be confirmed*)

Myanmar: Dr. Hrin Nei Thiam

Philippines: Prof. Wilfredo Carandang

R. of Korea: Prof. Cho Seog-Yeon

Russia: Dr. Sergey Gromov

Thailand: Dr. Pojanie Khummongkol

Vietnam: Mr. Nguyen Dinh Luong

Annex 3

**Expert Group on Preparation of the Technical Manual
for Air Concentration Monitoring**

Draft TOR

Composition of the Expert Group (6-7 members)

- Chairperson: Dr. Duong Hong Son (Vietnam)
- Experts: from selected countries and related international organizations
- Secretariat: Network Center

Draft Terms of Reference

- Review the Technical Document for Filter Pack Method in East Asia and the QA/QC Program for the Air Concentration Monitoring in East Asia
- Identification of monitoring methods suitable for EANET air concentration monitoring
- Preparation of the Technical Manual for Air Concentration Monitoring based on the identified monitoring methods

Recommended Timetable

Early 2010: Nomination of the members of the Expert Group

Middle of 2010: The first meeting of the Expert Group to discuss the Table of Contents of the Technical Manual for Air Concentration Monitoring