

The Tenth Session of the Intergovernmental Meeting
on Acid Deposition Monitoring Network in East Asia
20-21 November 2008, Chiang Mai, Thailand

REPORT ON THE PROGRESS OF EANET SINCE THE NINTH SESSION OF THE INTERGOVERNMENTAL MEETING (IG9)

I. INTRODUCTION

1. This document is prepared to report the progress of the Acid Deposition Monitoring Network in East Asia (EANET) activities since the Ninth Session of the Intergovernmental Meeting (IG9) held on 19-20 November 2007 in Vientiane, Lao PDR.
2. The activities of EANET implemented during this period were guided by the “Strategy on EANET Development (2006-2010)” adopted at the Eighth Session of the Intergovernmental Meeting (IG8) held in November 2006 in Hanoi, Viet Nam, and in accordance with the Work Program and Budget of EANET in 2007 and 2008 adopted at IG8 and IG9 respectively.

II. INSTITUTIONAL AND ADMINISTRATIVE ARRANGEMENT

Voluntary financial contribution from the participating countries

[Secretariat Budget]

3. In March 2008, the Ministry of the Environment (MOE), Japan and the United Nations Environment Programme, Regional Resource Centre for Asia and the Pacific (UNEP RRC.AP) signed agreements regarding the Japanese contribution for the budget of the Secretariat activities in 2007. In accordance with the contract, the contribution from Japan was made in April 2008.
4. In accordance with the Revised Procedures and Guideline for Voluntary Contribution to EANET adopted at IG9 in 2007, Cambodia, China, Malaysia, Mongolia, Republic of Korea and Thailand made voluntary contributions to the Secretariat budget for the year 2008. China also transferred their voluntary financial contributions to the Secretariat budget for the year 2007 in July 2008.

[Network Center Budget]

5. In March 2008, MOE, Japan and the Japan Environmental Sanitation Center (JESC) also signed agreements regarding Japanese contribution for the budget for implementation of the

Network Center (NC) core and additional budget activities in 2007 and for the first quarter of 2008. In accordance with the contract, the contribution from Japan was made in April 2008.

6. In accordance with the Revised Procedures and Guideline for Voluntary Contribution to EANET, Malaysia and Thailand made contributions to the NC core budget for the year 2008 in January and March 2008 respectively. The NC also received contribution to the NC core budget for the year 2008 from Cambodia and Mongolia in October 2008.
7. The contract for the transfer of budget for the implementation of the research fellowship program in 2007 was also signed between MOE, Japan and JESC in February 2008 (Ref. paragraph 54). The contribution was made in April 2008. In June 2008, the Secretariat and the NC finalized the contract regarding the fellowship program in 2008. The contribution was received in August 2008.

Staff recruitment

[Secretariat]

8. On 1 October 2007, the Secretariat issued a vacancy announcement for the Programme Officer position. The Secretariat received 27 applications from participating countries. On 7 December 2007, the list of candidates was sent for comments of the National Focal Points (NFPs). On 21 March 2008, the selection committee held its meeting to review the applications of the candidates and the comments of the NFPs and selected the final candidate. After considering the comments from the participating countries, Dr. Apipong Lamsam was appointed as the Programme Officer of the Secretariat and started on his tasks from 15 May 2008 in accordance with the contract with UNEP RRC.AP.
9. An expert/consultant was engaged/hired by the Secretariat in March 2008 to prepare the Second Report for Policy Makers (RPM2) on EANET. This is in line with the Work Program and Budget in 2008 of EANET as decided by the IG9.

[Network Center]

10. An invitation to recommend candidates for the post of Deputy Director General of the Acid Deposition and Oxidant Research Center (ADORC) in charge of the Network Center for the next two years period from March 2009 was sent by the Secretariat to NFPs on 18 September 2008. The deadline of the application was 18 November 2008.

Publication of proceedings, summaries of the meetings and newsletters, etc.

11. Two issues of EANET Newsletter dated December 2007 and July 2008 were published by the Secretariat in collaboration with the NC.

12. After IG9, publications of proceedings and summaries of the following meetings were completed and distributed to the participating countries and participants of the sessions:
 - Ninth Session of the Intergovernmental Meeting (IG9)
 - Seventh Session of the Scientific Advisory Committee (SAC7)
 - Fifth Session of the Working Group on Future Development of EANET (WGFD5)
 - Sixth Session of the Working Group on Future Development of EANET (WGFD6)
 - Eighth Senior Technical Managers' Meeting (STM8)
 - Eighth Workshop on Public Awareness for Acid Deposition Problems (WSPA8)
 - Capacity Building Course on Future Development of EANET for Officials and Experts in the Participating Countries of EANET

13. The Eighth Session of the Scientific Advisory Committee (SAC8) held in October 2008 in Hanoi Viet Nam endorsed the EANET Science Bulletin, Volume 1, prepared by the NC. The bulletin was published in early November 2008 and is being distributed to participating countries of EANET and related organizations.

III. EANET MEETINGS

Intergovernmental Meeting (IG)

14. The Secretariat sent a letter in January 2008 requesting the participating countries to inform their interest/willingness to host the IG10. There was no response received from the countries. The Secretariat then proposed to hold the IG10 in Thailand on 20-21 November 2008.

Scientific Advisory Committee (SAC)

15. The Center for Environment Research, National Institute of Meteorology, Hydrology and Environment, Ministry of Natural Resources and Environment (CER/MoNRE), Viet Nam hosted the Eighth Session of the Scientific Advisory Committee (SAC8) on 15-17 October 2008 in Hanoi, Vietnam. A Workshop of Task Force on Hemispheric Transport of Air Pollutants (TF HTAP) of CLRTAP was held back to back with SAC8 on 13-14 October 2008. (Ref.: para. 27)

16. Major issues discussed at SAC8 include the following:
 - Review and adoption of the Data Report 2007 of EANET;
 - Consideration of updated National Monitoring Plans of the participating countries;
 - Review and adoption of the Report of the Inter-laboratory Comparison projects 2007;
 - Consideration of the reports from the Chairs of Task Forces and Expert Groups under SAC
 - Consideration of scientific activities of EANET;
 - Review of progress of the scientific activities of the Strategy on EANET Development (2006-2010):

- Activities of other regional and international initiatives on acid deposition and transboundary air pollution.

Working Group on Future Development of EANET (WGFD)

[WGFD6]

17. WGFD6 was held on 9-11 April 2008 in Pattaya, Thailand in order to continue the discussion on the Draft Text of the Instrument to Provide a Sound Basis for Contribution to EANET as requested by IG9. It also reviewed the preliminary Draft RPM2 on EANET. The Session also discussed the provisional agenda for the Tenth Session of the Intergovernmental Meeting (IG10).
18. As an outcome of the discussions on the Draft Text of the Instrument to Provide a Sound Basis for Contribution to EANET, a preliminarily revised draft text reflecting the discussions at WGFD6 was prepared. The participating countries were encouraged to submit further comments to the Secretariat preferably before the end of June 2008. An outline of the report of the Working Group on Future Development on the Text of the Instrument to Provide a Sound Basis for Contribution to EANET to be presented at IG10 was prepared. Participating countries requested that the final report should be endorsed by the WGFD Session and not through Internet communication.

[WGFD7]

19. The Seventh Session of the Working Group on Future Development of EANET (WGFD7) was held on 29-31 July 2008 in AIT, Pathumthani, Thailand back to back with the Workshop on RPM2. It discussed the following issues for consideration at IG10:
 - Draft Text of the Instrument to Provide a Sound Basis for Contribution to EANET and Draft Report of the WGFD on the Text of the Instrument to Provide a Sound Basis for Contribution to EANET
 - Report on the Progress of EANET since IG9
 - Draft Report on the Review of Performance of the Secretariat and the Network Center (2005-2007)
 - Draft Work Program and Budget in 2009 for EANET
 - Activities of the WGFD after 2008
20. Regarding the Draft Text of the Instrument to Provide a Sound Basis for Contribution to EANET, WGFD7 reviewed the revised draft text of the Instrument and made further revisions based on comments submitted by the participating countries before the Session and the discussions and decisions during the Session. The Session prepared a revised draft text of Option A. At the suggestion of the Chairperson, the Session requested the Secretariat to merge Option B into Option A, to facilitate the discussion and accommodate the strong desire of the Session to make one consolidated text of the Instrument to submit to IG10.

Senior Technical Managers' Meeting (STM)

21. In February 2008, the NC invited participating countries to host the Ninth Senior Technical Managers' Meeting (STM9). As the NC did not receive any offer from participating countries, STM9 was held at the Acid Deposition and Oxidant Research Center (ADORC) in Niigata, Japan on 27-29 August 2008. Major discussion items were as follows:
- Report on progress of EANET since STM8
 - Update of National monitoring plans of the participating countries
 - Consideration of the preliminary draft EANET Data Report 2007 on the Acid Deposition Monitoring
 - Consideration of the preliminary draft Report on Inter-laboratory Comparison Projects in 2007
 - Consideration on improvement of the monitoring methodologies
 - Consideration of other scientific and technical issues

Task Forces and Expert Groups established under SAC

22. The NC was designated as the Secretariat of the Task Forces and Expert Groups established under SAC. In early 2008 the NC contacted the chairs of each of the 4 Task Forces and 4 Expert Groups to discuss on membership, TOR and dates of the first meeting. The Chairs, membership and the dates of the first meeting of each subsidiary body are attached as Annex 1. Outcomes of the meetings of these subsidiary bodies were discussed at STM9 and SAC8.

IV. INTERNATIONAL COOPERATION - PARTICIPATION IN MEETINGS AND WORKSHOPS RELATED TO EANET

Workshop on Second Report for Policy Makers (RPM2)

23. As in the Work Program and Budget in 2008, the Secretariat will coordinate with the NC and participating countries in developing materials for public awareness including RPM2 on EANET. The Workshop on RPM2 was convened on 28 July 2008 in Pathumthani, Thailand back to back with WGFD7. Prior to this workshop a draft outline and timetable for preparing the RPM2 was circulated to the participating countries for comments. A revised preliminary draft RPM2 was discussed in this workshop. The revised draft RPM2 was discussed at SAC8.

Long-Range Transboundary Air Pollutants in Northeast Asia (LTP)

24. The NC has been participating in the International Joint Research of LTP between Korea, China, and Japan. The NC representatives attended the 11th Expert Meeting for Long-range Transboundary Air Pollutants in Northeast Asia, organized by NIER, Republic of Korea, and held in Incheon, Republic of Korea from 11 to 13 November 2008. The reports on monitoring and modeling activities in each country were presented by the experts of three countries.

CLRTAP Meetings

25. Representatives of EANET participated in the 25th session of the Executive Body of the CLRTAP held in Geneva, Switzerland on 10-13 December 2007. EANET's recent achievements and highlighted the existing and future collaboration with CLRTAP were reported. EANET will continue to explore opportunities for collaboration with relevant experts, programs, task forces and expert groups of the Convention, in particular the TF HTAP. The TF HTAP has proposed to hold a workshop back to back workshop with SAC8 in 2008.
26. The NC was invited to attend the Workshop of TF HTAP under the European Monitoring and Evaluation Programme (EMEP) held in June 2008 in Washington D.C. and exchanged information on the hemispheric air pollution issues. The plan for the workshop of TF HTAP in collaboration with EANET was also discussed.
27. TF HTAP of CLRTAP held a workshop back-to-back with SAC8 on 13-14 October 2008 in Hanoi, Viet Nam to discuss on modeling (regional to global linkages), impacts of transboundary transport, emissions inventories and observations. Participants of SAC8 were invited to attend the meeting.

Model Inter-Comparison Study in Asia (MICS-Asia)

28. In order to investigate the differences among the long-range transport models developed for East Asian region, the NC has been collaborating with MICS-Asia. The 10th Workshop on the Transport of Air Pollution in Asia held at the International Institute for Applied Systems Analysis (IIASA), Austria on 18-19 February 2008 was financially supported by ADORC. The workshop discussed the activities to be conducted in Phase III. It was decided that the following would be conducted as Phase III activities;
 - 1) Collaboration between MICS and TF HTAP
 - 2) Source-Receptor relationship analysis in EANET region (Urban-Regional)
 - 3) Ensemble analysis based on plural models
 - 4) Studies related to Climate
 - 5) Studies related to Emission scenarios

Strategic Workshop on Forest Ecosystem in a Changing Environment

29. The NC attended the Strategic Workshop on Forest Ecosystem in a Changing Environment held on 11-13 March 2008 in Sisili, Turkey. The main purpose was to identify future forest monitoring and research needs. In the Quality Assurance (QA) Session, the NC introduced the EANET forest monitoring and exchanged information on QA of forest monitoring.

Tripartite Workshop on Scientific Research of Photochemical Oxidant

30. Taking the current situation on photochemical oxidant issue in northeast Asian region into account, the Tripartite Workshop on Scientific Research of Photochemical Oxidant hosted by the MOE, Japan was held on 5 September 2008 in Tokyo, Japan. The NC attended the Workshop as well as the researchers from China, Japan and Republic of Korea.

Greater Mekong Sub-region (GMS) - Core Environment Program (CEP): Capacity Development Workshop on Regional Air Pollution

31. The Secretariat and the NC were invited to share the results from the acid deposition and ozone monitoring activities of EANET with the participants of the Greater Mekong Sub-region (GMS) - Core Environment Program (CEP): Capacity Development Workshop on Regional Air Pollution held in Bangkok from 8-10 October 2008. This is the first of 4 workshops to build capacity and knowledge base to adapt to climate change developed in partnerships with local institutions in the GMS countries.

V. COMMUNICATION WITH PARTICIPATING COUNTRIES AND OTHER RELEVANT AGENCIES

Communication with the participating countries, etc.

32. The Secretariat received communications from some NFPs regarding a few changes on institutional bodies of EANET in their respective countries, e.g. NFPs, SAC members, etc. from time to time and circulated this information to all concerned.
33. The Secretariat is communicating continuously to all concerns regarding administrative and financial matters for EANET which include: contracting with ADORC for the NC activities and the MOE, Japan. In December 2007, the Secretariat also sent communication to all participating countries regarding transfer of voluntary contributions to EANET which included the Secretariat budget in 2008 and the NC core budget in 2008.
34. The Secretariat and the NC maintained close communication with the participating countries in all related activities of EANET and relevant international organizations such as United Nations Economic Commission for Europe (UN/ECE), UNEP, etc.
35. The NC also communicated with countries regarding scientific and technical issues to improve monitoring and assessment of acid deposition in the region.

Discussion with potential donors

36. During the Eighth Session of the Intergovernmental Meeting (IG8), the Secretariat and the NC were encouraged to communicate with the potential donors to identify their interest and priority to further develop good concept papers/project proposals. The IG9 endorsed the

“Capacity Building Workshops for Policy Makers of the Participating Countries of EANET”, with a funding support from UNEP. The workshops will be implemented for a period of two years (2008 and 2009). The first workshop was held on 23-26 September 2008 in Pathumthani, Thailand.

37. A face-to-face meeting with the Asian Development Bank (ADB) was convened by the Secretariat and the NC on 8 October 2007, in Manila, Philippines, ADB Headquarters. The ADB was represented by senior staff of the Regional and Sustainable Development Department and other relevant staff. The Secretariat and the NC made a presentation on EANET including the Strategy on EANET Development (2006-2010) and exchanged views on priority projects that might have potential for collaboration. Two options were discussed for potential support from ADB as follows:
- Seek a possibility for integrating EANET priority projects into ADB on-going projects.
 - Seek a possibility if EANET can develop a new Technical Assistance (TA) project for EANET under the new scheme that ADB is developing.

It was agreed to make further discussions with ADB on this issue.

VI. CENTRAL COMPILATION, EVALUATION, STORAGE AND DISSEMINATION OF DATA AND RELEVANT INFORMATION

38. The NC published the Data Report 2006 in November 2007 and distributed it to NFPs, National Centers, SAC members and other relevant organizations in December 2007. Data Report 2007 will be finalized based on the comments at SAC8 and will be published soon.
39. In accordance with the Detailed Mechanism of Article 4 of the Procedures on Data and Information Disclosure for EANET adopted at the Fifth Session of the Intergovernmental Meeting (IG5) held in Pattaya, Thailand in 2003, all the EANET monitoring data in 2001, 2002, 2003, 2004 and 2005 were disclosed outside of EANET in January 2008 with dissemination on CD upon request. The data of 2006 will be disclosed in January 2009.

VII. STRENGTHENING THE CAPACITY IN THE PARTICIPATING COUNTRIES

Dispatch of technical missions

40. The NC dispatched technical missions to the participating countries in 2007-2008 to exchange information and experiences, provide technical advices and disseminate the latest technical information. As of 19 November 2008, the NC missions visited Cambodia and Lao PDR (December 2007), Thailand (December 2007), China (December 2007), Myanmar (December 2007), Malaysia (January 2008), Philippines (January 2008), Viet Nam (March 2008), R. of

Korea (March 2008), Russia (September 2008), Viet Nam (October 2008) and Mongolia (November 2008). The mission members checked the condition of the instruments provided to countries and also provided advice on the suitability of proposed sites for future EANET monitoring. (Ref. Annex 2: Summary of Technical Missions of the NC since IG9).

Implementation of the technical cooperation programs

41. With the financial support from MOE, Japan, the NC, under its technical cooperation program, has assisted some participating countries in 2007 and 2008 by providing technical and financial support in their monitoring activities. Among the assistance rendered, filter-pack sampling kits were provided to Cambodia, China, Lao PDR, Mongolia, Myanmar, Philippines and Viet Nam. In September 2008, the Japan International Cooperation Agency (JICA) decided to provide an ion chromatography and a pure water generation apparatus for Myanmar. The equipment will be provided in early 2009.

Capacity Building Workshop for Policy Makers of the Participating Countries of EANET

42. The Secretariat made an arrangement regarding the “Capacity Building Workshop for Policy Makers of the Participating Countries of EANET”. The workshop’s main objective is to enhance the capacity of officials and those involved in the policy making process in order to contribute to the process of discussion necessary for future development of EANET. It was held on 23-26 September 2008 in Pathumthani, Thailand. A Handbook on Multilateral Cooperation on Air Pollution: Science, Policy and Negotiations for Agreements/Instrument for this workshop was prepared and compiled by Mr. Lars Olof Nordberg, Adviser, Scand Environment, Sweden, the consultant hired by UNEP. Major progress was made at the workshop on capacity building for policy makers, awareness was raised on air pollution issues and exchanged of information and opinion was successful during the group exercise.

VIII. IMPLEMENTATION AND COORDINATION OF QA/QC ACTIVITIES

Inter-laboratory comparison projects

43. The NC published the Report of Interlaboratory Comparison Project 2006 comprising the 9th Inter-laboratory comparison project on wet deposition, the 2nd Inter-laboratory comparison project on dry deposition (filter pack method), the 8th Inter-laboratory comparison project on soil and the 7th Inter-laboratory comparison project on artificial surface water, which were all conducted in 2006, and distributed to the participating laboratories in January 2008.
44. The NC finalized the Report of the Interlaboratory Comparison Project 2007 comprising the 10th Inter-laboratory comparison project on wet deposition, the 3rd Inter-laboratory comparison project on dry deposition (filter pack method), the 9th Inter-laboratory comparison

project on soil and the 8th Inter-laboratory comparison project on artificial surface water based on the comments at SAC8. It will be published soon.

45. The NC distributed samples for the 11th Inter-laboratory comparison project on wet deposition, the 4th Inter-laboratory comparison project on dry deposition (filter pack method), the 10th Inter-laboratory comparison project on soil and the 9th Inter-laboratory comparison project on artificial surface water to the participating countries in October 2008.
46. Several national centers and EANET laboratories in Japan, Philippines, Russia, Thailand and Viet Nam also took part in the international inter-comparison 2007 organized by the Convention on Long-range Transboundary Air Pollution (CLRTAP) International Cooperative Programme on Assessment and Monitoring of Acidification in Rivers and Lakes (ICP-Waters). The NC also promoted participation of EANET laboratories in the EMEP 25th inter-laboratory comparison on artificial rain water.

IX. IMPLEMENTATION OF TRAINING ACTIVITIES

Assistance for national training activities

47. The NC implemented a “Questionnaire Survey for National Training Activities in 2007” in July-August 2008. The result was summarized as Annex 3, National Training Activities in the Participating Countries of EANET in 2007. The tables in Annex 3 include training requirements and suggestions from the participating countries. According to the survey, 26 kinds of national training activities such as “Training on automatic air quality monitoring” were implemented in 12 EANET countries in 2007. Many participating countries have training requirements and some suggestions to the NC.

JICA Area Focused Training Course on EANET

48. The “JICA Area Focused Training Course on EANET” in 2007 was held from 10 October through 16 December 2007 in Kobe and some other places in Japan. Ten trainees from ten EANET participating countries, namely Cambodia, China, Indonesia, Lao P.D.R., Malaysia, Mongolia, Myanmar, Philippines, Thailand and Viet Nam attended this course. Several lectures were delivered by the NC staffs. During the visit of JICA trainees to Niigata, the NC also presented lectures and demonstrated practices on acid deposition monitoring of EANET.
49. The NC maintained close communication with the organizers of the JICA training course on the curriculum by attending the meetings of the steering committee and briefing them on EANET activities regularly. The training course in 2008 is being carried out according to the plan from 5 October to 13 December 2008 in Kobe, Japan, etc. The participants are from Cambodia, China, Lao PDR and Myanmar.

JICA Third Country Training Course

50. JICA Third Country Training Course on “Control Strategy and Mitigation Measures of Acid Deposition” was held in Environmental Research and Training Center (ERTC), Thailand from 14 January through 1 February 2008. This is the first year of Phase II of the training course. (Phase I of this course was implemented in 2004-2007.) The NC dispatched an expert to Thailand as one of the lecturers of the training course. There were 22 trainees from 8 EANET countries, namely Cambodia, China, Lao PDR, Malaysia, Mongolia, Myanmar, Thailand and Viet Nam. The participants informed that they had acquired useful knowledge and information on acid deposition problems and development of appropriate mitigation measures and control strategy for abatement of acid deposition in the region.
51. The training course in 2009 will be held from 19 January to 6 February 2009 in ERTC, Thailand. The General Information (GI) was already sent to the NFPs of Cambodia, China, Indonesia, Lao PDR, Malaysia, Mongolia, Myanmar, Philippines, Thailand and Viet Nam on 5 September 2008.

EANET individual training at ADORC

52. The individual training at the NC/ADORC had been implemented taking into account specific situations in the participating countries. One trainee each from Cambodia, China, Lao PDR, Myanmar and Viet Nam participated from 12 February through 6 March 2008 to receive individual training on wet deposition monitoring, dry deposition, soil/vegetation monitoring, inland aquatic environment monitoring, and data management including instruction on how to use the laboratory instruments. The next course will be carried out early next year.

X. RESEARCH ACTIVITIES

53. The research activities of EANET are important to evaluate the environmental impacts of acid deposition on the region’s diverse ecosystem, to improve the monitoring methodologies, and develop analytical methods suitable for East Asia. The NC performed research activities with consideration of the regional characteristics.

EANET research fellowship program

54. Due to the strong interest from member countries, the NC agreed to continue the EANET research fellowship program in 2007. However, as the Secretariat did not have the budget to support the fellowship program in 2007, this activity was carried out using additional funds directly contributed by the government of Japan to the NC (ref. paragraph 7).
55. In response to the invitation letter sent by the NC to the NFPs and the SAC members on 22 June 2007, the NC received 6 applications from 6 countries namely Cambodia, China,

Mongolia, Myanmar, Philippines and Vietnam. Based on the procedures of the fellowship research program, the Selection Committee of the NC considered the proposed research plans submitted by the applicants and decided to invite the researchers from China and Viet Nam to conduct their research in ADORC for two months from the end of January to end of March 2008. The titles of their researches were “Comparison of Air Pollution and Acid Deposition between Two Mega-Cities” and “Assessment of Ozone and Other Gaseous Concentrations in East Asia” respectively. The researchers submitted scientific reports on mentioned themes after completing their research.

56. In June 2008, the NC sent a letter to NFPs and SAC members inviting applicants for the research fellowship in 2008. The NC received 7 applications from 3 countries namely Indonesia, Malaysia and Thailand. The Selection Committee of NC considered the proposed research plans and decided to invite the researchers from Indonesia and Thailand to conduct their researches in ADORC for two months in 2008. The titles of their researches are “Studies on effect of acid deposition and related air pollutants on ecosystems/inland water aquatic” and “Ion chromatographic determination of organic acids in rainwater” respectively.

Joint research project with Russia

57. The joint research project Phase 3 with the Limnological Institute, Russian Academy of Science, Siberian Branch (RAS/SB) was started since 2002. Annual acid deposition as well as heavy metals (mercury and lead) and lead isotope ratio in rain and snow have been determined at four sites in East Siberia and Primorsky Region in Russia. The methodologies on data analysis used in the project for the acid deposition data were expected to be useful for evaluation of EANET monitoring data. The monitoring data were important to evaluate long-range transportation of air pollutants from Europe and industrial regions of Russia to East Asia.

Joint research project on dry deposition monitoring with Thailand

58. The Joint Research Project on dry monitoring was carried out by the NC and Pollution Control Department (PCD), Thailand focusing on QA/QC of gas concentration monitoring method in tropical region. Under Phase II of the Joint Research Project, measurement of gas concentrations by several types of monitoring methods has been carried out at Bangkok EANET monitoring site in order to evaluate the difference of gas concentrations among some different types of monitoring methods (automatic monitor, filter-pack method, and passive sampling method) in tropical region in East Asia.

Joint research project on catchment analysis with Thailand, Malaysia and Japan

59. The NC has implemented the joint research project on catchment analysis in Thailand with the Royal Forest Department (RFD) and ERTC by using funds from the Global Environment Research Fund of the Ministry of the Environment, Japan. Monitoring on input (deposition)

and output (stream water) fluxes in/from a small catchment area, and analyses on other biogeochemical aspects was carried out continuously, and nutrient dynamics and acid deposition impacts in the area would be estimated.

60. In addition to Thailand, a new project with the Malaysian Meteorological Department (MMD) has just started in 2008 in the EANET monitoring site in Danum Valley which is also a site under the Global Atmosphere Watch (GAW) Program of the World Meteorological Organization (WMO). Passive samplers for NO₂, SO₂, NH₃, NO_x, and O₃ were installed at the GAW station for a comparison study. Chemical analysis of the stream water has also started in a small catchment near the EANET site. Outcomes of this project will be informative to evaluate impacts of acid deposition on terrestrial ecosystems in tropical region including Thailand and Malaysia as well as other regions in East Asia.
61. Catchment analysis is one of the issues described in the Strategy Paper for Future Direction of Soil and Vegetation Monitoring of EANET. For obtaining basic data on this issue, joint research project with Japan has been implemented in a small catchment area in Shibata City, Niigata Prefecture, Japan. The data will be informative for development of guidelines or manual on catchment monitoring as well as implementation of the joint research project on catchment analysis with Thailand and Malaysia.

Joint research project on aerosol monitoring with Republic of Korea

62. In the discussion at SAC4 for the improvement of dry deposition monitoring methodologies, it was suggested that a study on PM₁₀, PM_{2.5} and their components at special sites should be considered. In line with the suggestion of SAC4, the project on aerosol monitoring was planned as a joint research between National Institute of Environmental Research (NIER), Ministry of the Environment, Republic of Korea and the NC. Based on the discussion between NIER and the NC at the workshop during the NC technical mission in 2007, intensive monitoring was conducted at Cheju in Korea and ADORC, Niigata in Japan during the period from 16 through 31 April 2007. Parallel measurements of aerosol were carried out using 4 kinds of method (Andersen sampler was also used at ADORC for reference). In order to evaluate aerosol sampling methodology and PM_{2.5} behavior in Japan and R. of Korea a workshop was held in March 2008 in NIER, R. of Korea during the NC mission in March 2008. The future plan was also discussed in the workshop.

XI. BUILDING PUBLIC AWARENESS

Joint public awareness project with Myanmar

63. The NC supported an in-country public awareness workshop held in Yangon, Myanmar in December 2007. About 30 people attended the “Workshop on Dissemination of Public

Awareness Brochure on Acid Deposition". The NC experts disseminated information on acid deposition and air pollution issues and EANET activities. (Ref.: Annex 2/Myanmar.)

Joint project on environmental education activities with Thailand

64. The NC undertook a joint project with Thailand to support their environmental education activities on acid deposition in schools from July 2007 to January 2008. School children from one school in Bangkok and two elementary schools in Niigata Prefecture participated in measurements of the concentration of nitrogen oxides and dust around their schools and experiments involving measurement of rainwater pH, dissolution of seashell and other objects in rainwater, and growing sprouts. The results of the project were presented by school children at the internet conference in the Workshop on Public Awareness for Acid Deposition Problems in January 2008 (Ref. paragraph 66-67). The follow-up activities of the project have been implemented in 2008 in the schools including expansion of these activities to the other grade of schools.

Joint project on environmental education activities with China

65. The NC made the plan for a joint project with China to support the environmental education activities on acid deposition in schools of China and Japan in 2008. The NC and China are considering the project plan in detail based on the experience from the project with Thailand, and the results of the project will be reported through the next workshop.

Workshop on Public Awareness for Acid Deposition Problems 2008

66. The Eighth Workshop on Public Awareness for Acid Deposition Problems was held in Bangkok, Thailand, on 22 and 23 January 2008, organized by the NC in collaboration with the Niigata Prefectural Environment Conservation Corporation (NPECC), Japan PCD, Thailand. The Workshop consisted of two parts, Part I and Part II. Part I consisted of an internet conference between schoolchildren from a school in Bangkok, Thailand and 2 schools in Niigata, Japan. Approximately 140 school children and teachers of Thailand and 40 participants and observers from EANET participating countries attended Part 1 of the workshop in Bangkok and approximately 170 school children, teachers and observers participated in the internet conference from Niigata, Japan.
67. In Part II, presentations on country experiences on public awareness and environment education were made by the participating countries. It was discussed how to promote environmental education as well as public awareness activities to general public more effectively. The possibility to carry out a similar environment education course with experiments in each participating country of EANET was also discussed.

e-Learning program on EANET website

68. The NC continued to maintain the e-Learning program on acid deposition problems for environmental education which was developed in collaboration with Institute for Global Environmental Strategies (IGES) and issued on the EANET web site since March 2006.

XII. CHALLENGES/PROBLEMS/SOLUTIONS IN EANET IMPLEMENTATION

69. No serious problems have been encountered by the Secretariat and the NC in the implementation of the activities of EANET during this period. The Secretariat and the NC recognized that the participating countries are in consensus of a step-by-step approach regarding EANET activities and all countries have different situations and conditions.

Annex 1

Members and meeting schedule of the Task Forces and Expert Groups under SAC

Name	Members	Meeting date and venue
Task Force on Air Quality Monitoring and Dry Deposition	<p>Dr. Cho Seog-Yeon (R. of Korea) - Chair</p> <p>Members: to be nominated by the National Focal Points</p>	<p>14 October 2008 in Hanoi, Viet Nam (Back to back with SAC 8)</p>
Task Force on Soil and Vegetation Monitoring	<p>Dr. Wilfredo M. Carandang (Philippines) - Chair</p> <p>Mr. Liu Fang (China)</p> <p>Dr. Masamichi Takahashi (Japan)</p> <p>Dr. Nik Abdul Majid/Dr. Ahmad Makmum Abdullah (Malaysia)</p> <p>Dr. Apolonio M. Ocampo (Philippines)</p> <p>Ms. Hoe-Jung Noh (Republic of Korea)</p> <p>Dr. Tatiana A. Mikhailova (Russia)</p> <p>Dr. Jesada Luangjame (Thailand)</p> <p>Dr. Hiroyuki Sase (ADORC)</p>	<p>6-7 August 2008 in Niigata, Japan</p>
Task Force on Monitoring Instrumentation	<p>Prof. Wang Ruibin (China) - Chair</p> <p>Mr. Chhek Roth (Cambodia)</p> <p>Mr. Zheng Haohao (China)</p> <p>Ms. Novy Farhani (Indonesia)</p> <p>Dr. Hiroaki Yago (Japan)</p> <p>Ms. Setouvanh Phanthavongsa (Lao PDR)</p> <p>Ms. Wong Fook Lian/Ms. Siniarovina Urban (Malaysia)</p> <p>Mr. Barkhasragchaa Baldorj (Mongolia)</p> <p>Ms. Htwe Htwe Win (Myanmar)</p> <p>Engr. Arturo Bongco /Engr. Robert Co (Philippines)</p> <p>Dr. Han Jin Seok (Republic of Korea)</p> <p>Dr. Sergey Paramonov (Russia)</p> <p>Ms. Wassana Toruksa (Thailand)</p> <p>Mr. Tran Son (Viet Nam)</p>	<p>26 August 2008 in Niigata, Japan (Back to back with STM9)</p>
Task Force on Research Coordination	<p>Dr. Sergey Gromov (Russia) - Chair</p> <p>Prof. Wang Ruibin (China)</p> <p>Dr. Hajime Akimoto (Japan)</p> <p>Dr. Hiroshi Hara (Japan)</p> <p>Prof. Katsunori Suzuki (Japan)</p> <p>Dr. Elizabeth Phillip (Malaysia)</p> <p>Dr. Cho Seog-Yeon (R. of Korea)</p> <p>Dr. Wilfredo M. Carandang (Philippines)</p> <p>Dr. Tamara Khodzher (Russia)</p> <p>Dr. Pojanie Khummongkol (Thailand)</p> <p>Dr. Duong Hong Son (Viet Nam)</p> <p>Dr. Hiromasa Ueda (ADORC)</p>	<p>25-26 June 2008 in Niigata, Japan</p>

Name	Members	Meeting date and venue
Expert Group on Dry Deposition Flux Estimation	Dr. Pojanie Khummongkol (Thailand) - Chair Dr. Kazuhide Matsuda (Japan) Dr. Kentaro Hayashi (Japan) Dr. Akira Takahashi (Japan) Dr. Hong You-Deog (R. of Korea) Dr. Hiromasa Ueda (ADORC)	23-24 June 2008 in Niigata, Japan
Expert Group on Preparation of Second Periodic Report on the State of Acid Deposition in East Asia	Dr. Hiromasa Ueda (ADORC) - Chair Prof. Wang Ruibin (China) Dr. Wilfredo M. Carandang (Philippines) Dr. Sergey Gromov (Russia) Dr. Duong Hong Son (Viet Nam) Ms. Adelaida B. Roman (Secretariat)	16 October 2008 in Hanoi, Viet Nam (During SAC8 meeting)
Expert Group on Revision of Technical Manual on Wet Deposition Monitoring	Dr. Hiroshi Hara (Japan) - Chair 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)	2-3 October 2008 in Niigata, Japan
Expert Group on Revision of Technical Manual on Inland Aquatic Environment Monitoring	Dr. Tamara Khodzher (Russia) - Chair Dr. Senichi Ebise (Japan) Dr. Haruo Fukuhara (Japan) Prof. Seiichi Ohta (Japan) Prof. Tomonori Kawakami (Japan) Dr. Vu Van Tuan (Viet Nam) Dr. Hiroyuki Sase (ADORC) An expert from tropical inland aquatic systems from Southeast Asia	26-27 June 2008 in Niigata, Japan

Annex 2

Summary of Technical Missions of the NC since IG9

Country	Duration	Major Activities/Outcomes of the Mission
Cambodia	5-7 December 2007	The mission confirmed that IC systems in Cambodia installed by using EANET Secretariat savings in 2006 have been operated without any problems. And the mission provided some consumables and apparatus for IC operation during the mission. The mission agreed to recommend DG to support filter-pack monitoring kit to Cambodia ASAP.
Lao P.D.R.	9-12 December 2007	The mission confirmed that IC systems in Lao PDR installed by using EANET Secretariat savings in 2006 have been operated without any problems. And the mission provided some consumables and apparatus for IC operation after the mission. The mission agreed to recommend DG to support filter-pack monitoring kit to Lao PDR ASAP.
Thailand	16-21 December 2007	The mission and Thai side agreed that outcomes of the project on the catchment study should be shared among the EANET participating countries. The outcomes of the project will be reported at the next session of the Scientific Advisory Committee. It was announced that development of a simulation modeling on the catchment scale would be a main target.
China	17-21 December 2007	The mission confirmed that dry deposition monitoring was conducted in the site of Xiamen with a filter-pack sampler since May 2007 and the filter-pack sampler moves properly (Flow rate is 1 L/min). And SO ₂ concentration of the filter pack and a gas monitor has been compared by Xiamen City, The mission suggested Xiamen Environmental Monitoring Center to assemble the filter-pack holder correctly.
Myanmar	18-22 December 2007	At the “Workshop on Dissemination of Public Awareness Brochure on Acid Deposition”, 30 people have attended. The mission disseminated information on acid deposition issues and EANET activities. Regarding installation of equipment, the mission was informed that JICA might offer some equipment to DMH as one of the following-up activities of JICA.
Malaysia	4-10 January 2008	The mission confirmed that monitoring activities have been managed very well by MMD and DOC in cooperation with MNRE, NFPs. The mission visited the candidate study site for the joint research project on the catchment analysis, Danum Valley Conservation Area, and discussed the detailed plan.
Philippines	14-18 January 2008	The mission discussed flagged concentrations of Inter-lab project in 2006 with EMB. As for NH ₄ ⁺ , the mission advised that it could be easy for them to use IC rather than spectrophotometer to solve this problem. The mission provided some consumables for wet/dry deposition monitoring.
Viet Nam	17-21 March 2008	The mission confirmed that the “Master plan of the monitoring network of Viet Nam up to 2020” was approved by the Prime Minister. It includes the monitoring network of VEPA and NCHM.

Country	Duration	Major Activities/Outcomes of the Mission
Republic of Korea	18-20 March 2008	In the Workshop on Joint Research Project, the results of NIER and ADORC were introduced. The results of the monitoring at Niigata showed close values among four kinds of methods. Future plan of the project was also discussed.
Russia	21-28 September 2008	The mission discussed the MOA of the Joint Research Project. It was contracted by ADORC and Limnological Institute (LIN). The mission visited LIN and Primorsky Center for Environmental Monitoring (PCEM) and discussed EANET activities in Russia. The Mission also visited three atmospheric monitoring stations and a monitoring site for inland aquatic environment.
Viet Nam	18-24 October 2008	The mission visited relevant agencies and (candidate) monitoring sites in Hanoi, Danang and Hochiminh, and discussed how to improve QA/QC, etc. The mission also visited JICA office and asked support from JICA to the “Capacity building project for air quality monitoring using passive sampling method” to proceed by Viet Nam.
Mongolia	10-14 November 2008	The mission visited relevant agencies and exchanged information on the views and progress of EANET including QA/QC activities. The Mission also visited the EANET sites in Ulaanbaatar and Terelj.

Annex 3

National Training Activities in the Participating Countries of EANET in 2007

Country Name	Title of Training course/ Meeting	Duration	No. of Participants	Major Topics
Cambodia	Training course on “ Air Pollution and Acid Deposition, Their Effluence, and Related Countermeasure”	7-9 May 2007	45	1. Air Pollution and their effects; 2. General aspect of deposition (wet and dry forms) and their impacts; 3. Countermeasure on acid deposition and air pollution ; 4. Some methodologies for monitoring wet deposition.
	Training course on “ Air Pollution and Acid Deposition, Their Effluence, and Related Countermeasure”	19-21 September 2007	50	1. Air Pollution and their effects; 2.General aspect of deposition (wet and dry forms) and their impacts; 3. Countermeasure on acid deposition and air pollution ; 4. Some methodologies for monitoring wet deposition.
China	Training on automatic air quality monitoring	6 days	93	Mechanism, operation and maintenance of automatic instruments for air quality monitoring
Indonesia	-	-	-	-
Japan	The training of atmosphere monitoring	19 Feb-2 Mar 2007	12	- Sampling/analytical methods for atmospheric monitoring
	The training of equipment operation	10-25 May 2007	34	- Equipment operation training
	The training of acid deposition monitoring for officials of municipalities	21-22 May 2007	16	1. General consideration of acid deposition 2. Sampling/analytical methods for acid deposition monitoring
	The training of atmospheric and traffic environment	5–8 Jun. 2007	90	-Atmospheric and traffic environment
	Audit (Inspection and guidance) of National monitoring sites (including EANET monitoring sites)	Aug.2007-Mar. 2008	59	1. Site and laboratory audit 2. Wet and dry deposition sites 15 3. Soil and vegetation Monitoring sites 3 4. Sites on inland aquatic environment 4
	The training of global environment conservation	4-7 Sep. 2007	47	- Global environment conservation

Country Name	Title of Training course/Meeting	Duration	No. of Participants	Major Topics
Lao PDR	National Public Awareness workshop on Acid Deposition	02 Feb. 2007	50	<ol style="list-style-type: none"> 1. Introduction of EANET activities in East Asia; 2. Objective of EANET; 3. Effect of acid deposition; and 4. EANET activities in Lao PDR.
Malaysia	Training on TEOM Maintenance and Multi-gas Analyzer	25 – 26 May 2007	15	<ol style="list-style-type: none"> 1. Principle Operation of TEOM 2. Troubleshooting of TEOM 3. Maintenance and Calibration of TEOM 4. Principle Operation of Multigas System 5. Maintenance and Calibration of NO, NO_x, NO₂, SO₂, O₃ and CO System
	Course on Meteorology Observation Aspects on Air Pollution	10 – 13 July 2007	16	<ol style="list-style-type: none"> 1. Meteorology of Air Pollution 2. Introduction of Air Pollution Monitoring and Activities of the Environmental Studies Division 3. Sampling of Wet and Dry Fallout 4. Sampling of High Volume Air Sampler 5. Quality Assurance / Quality Control
Mongolia	Yearly seminar for environmental monitoring	19-24 Mar. 2007	11	- Environmental quality monitoring including acid deposition monitoring, QA/QC program
	Individual training course	10-22 Sep. 2007	2	- Air pollution monitoring and control
Myanmar	Workshop on Air Quality Management	9-11 April, 2007	35	- Dry deposition
	Training on Air Pollution	18-20 September, 2007	30	- Analysis of Air Quality
Philippines	Seminar-Workshop on Soil and Vegetation Monitoring	07-09 November 2007/(3 days)	20	<ol style="list-style-type: none"> 1. Overview of EANET (Regional/ Philippines); 2. Basis survey of soil and forest, site selection criteria, general description of forest, description of trees, monitoring parameters for soil, etc.; 3. Soil acidification, soil pH requirement of some crops; 4. Nutrient imbalance / Deficiency symptoms; 5. Physiological damage; and 6. Forest decline

Country Name	Title of Training course/ Meeting	Duration	No. of Participants	Major Topics
R. of Korea	Dry Deposition Monitoring Technical Manager's Seminar	1 times/ year	20~30	- Data analysis and reporting QA/QC Data
	Air Pollution Monitoring Network Technical Manager's Workshop	1 times/ year	50~60	1. Air Pollutant Measurement Data analysis and reporting 2. QA/QC Data
Russia	Training on Instrumental Analysis of Environmental Samples	28 days	31	Practical course on application of atomic absorption spectrometry in heavy metal analysis; Using the high-performance liquid chromatography for analysis of chemical compounds in rain waters including procedures developed in the Limnological Institute SB RAS
	Annual training course on the surface water analysis	10 days	12	Update of practical knowledge on QA/QC in surface water monitoring (sampling, analysis, data processing and reporting; In-situ intergroup and interlaboratory comparison on analysis of major cations and anions of deep water samples taken in Lake Baikal
	Annual Scientific Meeting "Aerosols of Siberia"	5 days	78	Assessment of atmospheric pollution of Siberia and Far East of Russia, atmospheric compounds including greenhouse gases, biological aerosol, natural emissions, mathematical modeling of the atmospheric transport and diffusion
Thailand	JICA Third Country Training on Emission Inventory and Modeling for Acid Deposition Assessment	20 days (Jan.-Feb 2007)	19 (From 8 EANET countries)	1. General Information of acid deposition monitoring 2. Emission inventory 3. Air Pollution modeling 4. Discussion and exercise on emission inventory and modeling for acid deposition assessment 5. Field observation and study visit
Viet Nam	Training Course on Atomic Absorption Spectrometry for cation testing	7 days	5	- Use AAS for cation testing (19 elements)
	Training Course on Ion Chromatography for anion and cation testing	5 days	3	- Use IC for anion and cation testing
	SOPs for wet deposition	1 day	10	- Review SOPs for wet deposition

Training requirements from the participating countries

Country Name	Requirements
Cambodia	Air pollution and acid deposition, their influence, and related countermeasure
China	Basic training on acid deposition monitoring
Lao PDR	Dry deposition
Malaysia	Basic training on soil and vegetation monitoring
Mongolia	Training to qualify officer who will responsible to repair/maintenance all acid deposition monitoring instrumentations.
Philippines	Basic training on acid deposition monitoring and following specific fields: a) Training on EANET's methods of analyses for wet and dry deposition samples; b) Air pollution control techniques on mobile and stationary sources; c) Cost benefit analysis on air pollution control strategies; and d) Training on emissions inventory and modeling.
Russia	Ion Chromatography for cations including ammonium for the laboratory of Vladivostok
Thailand	QA/QC of the laboratory, laboratory analysis improvement and data analysis
Viet Nam	Basic training on acid deposition monitoring and specific topics

Other suggestions for EANET Training Activities

Other suggestions
<ol style="list-style-type: none"> 1. More training courses related on air pollution and acid deposition monitoring from EANET. 2. The simple, low cost and high accuracy monitoring method of air pollution. i.e. wireless sensor, passive sampler, etc. 3. Principle, operation and maintenance of environmental instrumentations. 4. Atmospheric chemistry and global warming. 5. The development of clean technology and alternative energy vehicles. 6. The training of environmental management in the factories (waste water, air pollution, solid waste, energy saving). 7. Indoor air pollution and Green building design. 8. Environmental learning in all educational level 9. Ecological and cultural impact monitoring in acid deposition problem (i.e. surface water (living organism), soil and vegetation, erosion of materials). 10. Dry deposition monitoring by Passive sampler