

The Thirteenth Senior Technical Managers' Meeting  
of the Acid Deposition Monitoring Network in East Asia  
30-31 August 2012, Hanoi, Vietnam

## **MINUTES OF THE MEETING**

### **I. Introduction**

1. The Thirteenth Senior Technical Managers' Meeting (STM13) of the Acid Deposition Monitoring Network in East Asia (EANET) was held in Hanoi, Vietnam on 30-31 August 2012. The Meeting was organized by the Network Center (NC) for the EANET in collaboration with the Secretariat for the EANET, and hosted by the Government of Vietnam.
2. Senior technical officials involved in the EANET monitoring activities from Cambodia, China, Indonesia, Japan, Lao PDR, Malaysia, Mongolia, Myanmar, the Philippines, Russia, Thailand and Vietnam participated in the Meeting. The representatives of the Secretariat and the NC for the EANET attended the Meeting. Observers from the Government of Vietnam and relevant organizations in Vietnam also attended. The List of Participants is attached as Annex.

### **II. Opening of the Meeting (Agenda Item 1)**

3. The meeting was opened by Dr. Supat Wangwongwatana, Coordinator of the Secretariat for the EANET, Regional Resource Center for Asia and the Pacific (RRC.AP) at Asian Institute of Technology (AIT). He welcomed the participants from participating countries of the EANET and expressed his appreciation to the support, efforts and cooperation of all participating countries which has led to the success of the EANET. He introduced the history of the EANET from the early nineteen-nineties and adoption of the Instrument for Strengthening the Acid Deposition Monitoring Network in East Asia (EANET) including signature by eleven participating countries during and after the High Level Segment of the Twelfth Session of the Intergovernmental Meeting (IG12) held in October 2010. The Meeting was informed that although signature of the remaining two countries has not been made yet, the Instrument became operational since 1 January 2012 in accordance with the Decision of the IG12. He also introduced discussion on expansion of the scope of the EANET regarding the activities and chemical substances to be monitored, and the Second Periodic Report on the State of Acid Deposition in East Asia (PRSad2), which was endorsed at the Thirteen Session of the Intergovernmental Meeting (IG13) in 2011 and published in 2012.
4. Dr. Hajime Akimoto, Director General of the Asia Center for Air Pollution Research (ACAP) made the welcome and introductory remarks. He mentioned that a new direction of the EANET

after 10 years from the commencement of the EANET regular phase activities in 2001 will be discussed at the Scientific Advisory Committee (SAC). He emphasized the importance of the monitoring of air concentrations and dry deposition, especially ozone and PM. He expressed his expectation that the national centers consider how to strengthen the monitoring on ozone and PM.

5. Dr. Nguyen Le Tam, Deputy Director General of Department of Science and Technology, Ministry of Natural Resources and Environment, made a welcome remark. He and Vietnamese staffs cordially welcomed all delegates of the EANET participating countries.

### **III. Election of the Officers (Agenda Item 2)**

6. Mr. Hitoshi Yoshizaki, Deputy Director, Air Environment Division, Environmental Management Bureau, Ministry of the Environment, Japan and Mr. Hong V. Nguyen, Head, Environmental Researcher Division, Sub-Institute of Hydrometeorology and Environment of South Vietnam (SIHYMETE), Vietnam were elected as Co-chairpersons of the Meeting.

### **IV. Adoption of the Agenda (Agenda Item 3)**

7. The Agenda was adopted as proposed (EANET/STM 13/3/1).

### **V. Report on Progress of the EANET since the Twelfth Senior Technical Managers' Meeting (STM12) (Agenda Item 4)**

8. The Secretariat and the NC made presentations on the "Report on the Progress of the Acid Deposition Monitoring Network in East Asia (EANET) since the Twelfth Senior Technical Managers' Meeting (STM12)" (EANET/STM 13/4/1) and the "Outcomes of the Thirteenth Session of the Intergovernmental Meeting (IG13) on the EANET, the Eleventh Session of the Scientific Advisory Committee (SAC11) and the Eleventh Sessions of the Working Group on Future Development (WGFD11) of the EANET (EANET/STM 13/4/2). The presentations also included the results of the Task Force and Expert Group under the SAC and brief introduction of the PRSAD2.

9. Major points of the discussion were:

- i. It was explained that the name and numbering of the Meeting will be revisited after the Fourteenth Session of the Intergovernmental Meeting (IG14) in 2012 makes a decision on the issues of renaming of the meetings, including the STM.
- ii. One country suggested that the presentation should be more focused on scientific and

technical issues, and the future plan should be also included.

- iii. It was introduced by the NC that calibration of ozone monitor has been implemented in Thailand by the NC, and China, Japan, Republic of Korea and Russia have the national Standard Reference Photometer (SRP) so that the ozone monitors in these countries can be calibrated inside of the each country. For other countries, it was informed that the NC will be able to provide ozone standard. Information on the ozone traceability system was also discussed.

## **VI. Overview of the Preliminary Draft Data Report 2011 (Agenda Item 5)**

10. The NC presented the Preliminary Draft Data Report 2011 (EANET/STM 13/5), which contains wet deposition, dry deposition, soil and vegetation, inland aquatic environment and catchment-scale monitoring including a summary of the monitoring data in 2011 and related information submitted by the participating countries. The document was distributed to the participants with a CD. The meeting was invited to discuss and provide comments, as appropriate.

### (Wet deposition)

- i. It was clarified that some data in the Philippines are still under processing. The data will be submitted to the NC hopefully in the middle of September 2012.
- ii. It was explained that the data from Lao PDR was not able to be submitted because of IC problems, especially on suppressor for cations. It was clarified that the samples were stored in refrigerator and the NC has been contacting with Lao PDR.
- iii. It was clarified that the data submission from Thailand was delayed because of the flood last year.
- iv. One country asked the NC if it's possible to analyze the samples for the countries, in which the samples are stored in refrigerator but not able to be analyzed. Cooperation among neighboring countries to analyze them may be one of the options.
- v. It was suggested that pH and EC of the samples should be measured immediately after sampling and measured again before IC analysis to confirm the sample condition if the samples are stored in refrigerator for long time.

### (Dry deposition)

- i. It was informed that the data of some participating countries could not be submitted before the meeting because of technical problems and delay of data compilation. These data should be submitted as soon as possible after the communication with the NC.
- ii. It was informed that the NC will contact Republic of Korea for the monitoring data submission.

(Soil and vegetation)

- i. No data in Thailand and Mongolia was collected in 2011.
- ii. Malaysia and the Philippines will contact collaborators in the universities to check the actual situation on soil and vegetation monitoring data.
- iii. It was informed that Russia submitted the data last year and the NC was asked to check the latest status.
- iv. Sampling in Mongolia was not implemented in 2011.

(Inland aquatic environment)

- i. The Philippines will submit the data of Pandin Lake soon. The data of Anblalakao Lake is still under processing.
- ii. Lao PDR has not analyzed the samples of inland aquatic environment because of the problems of the IC due to same reason as wet deposition.

11. According to the agreed procedures, the participating countries were requested to submit their data and information to the NC before the deadline, by the end of June every year, after they have been compiled, checked, stored and analyzed. Specifically, the participating countries which have not submitted the 2011 data were requested to submit the data as soon as possible, so as to complete the Data Report 2011 for adoption at the Twelfth Session of the SAC (SAC12) to be held in November 2012 in Myanmar.

**VII. Evaluation for the Results of the Inter-laboratory Comparison (ILC) Projects 2011 (Agenda Item 6)**

12. The NC presented the preliminary draft Report on the Inter-laboratory Comparison Projects in 2011 for wet deposition, dry deposition (filter pack method), soil and inland aquatic environment (EANET/STM 13/6). The participating countries were requested to submit the results of the Inter-laboratory Comparison Project by the deadline, the end of February every year. The meeting was invited to discuss and provide comments, as appropriate.

13. Major discussion on this topic included the following:

(Wet deposition)

- i. R1 and R2 values should be checked before data submission.

(Dry deposition)

- i. The samples should be analyzed as soon as possible after arrival.
- ii. It was pointed out that high blank values may cause bad performance.

(Inland aquatic environment)

- i. It was recommended that the flags should be attached to right side of the values, if necessary.

#### **VIII. Consideration of the National Monitoring Plans (NMPs) and Current Monitoring Activities for the EANET Monitoring of the Participating Countries (Agenda Item 7)**

14. The representatives of the participating countries made presentations on their national EANET activities and monitoring plans. Major comments and discussions were as follows:

##### i Cambodia

- Cambodia started the monitoring on inland aquatic environment at Krirom National Park. The sampling frequency was twice a year in 2012. It was suggested that the sampling frequency should be four times a year according to the relevant Technical Manual.
- The inland water samples were collected near the shore of the lake, though the Technical Manual recommended collecting samples at the center of the lake. It was suggested that the situation above should be described in the footnote for submission of the data, and the sampling procedures should be improved step by step.
- Wet deposition monitoring data at Siem Reap should be submitted, and monitoring frequency should follow the Technical Manual.
- It was informed that air quality monitoring by using passive sampler and aerosol sampler has been conducted under the national action plan.

##### ii China

- It was informed that soil and vegetation monitoring was conducted in Chongqing, Xian, Xiamen, and Zhuhai in September, October, September and November in 2012, respectively.
- Chongqing started the preliminary monitoring using filter pack. It was clarified that the possibility of data submission to the EANET should be discussed within the country.
- The filter pack in Chongqing did not collect air component sometimes. It was suggested that the leak might occur in the line between the pump and the filter pack. The leak check should be done at the site in addition to the laboratory.
- Regarding establishment of new background monitoring sites, the situation on the discussion in the country was clarified.

##### iii Indonesia

- It was informed that the laboratory of Environmental Management Center (EMC) had a certificate of the ISO17025, which included laboratory testing of sampling of analysis.

## iv Japan

- It was informed that the next national report will compile the data for the 5-year period from 2008 to 2012. Given the targeted period of the national report and the Periodic Report on the State of Acid Deposition in East Asia (PRSAD) (2004-2009 and 2010-2014), discussion in the country toward harmonization of the target periods was recommended.

## v Lao PDR

- It was informed that samples from 2010 to the present are stored in a refrigerator, and after the problems of IC are solved, they will analyze all the stored samples and consult the NC about validity of the data.

## vi Malaysia

- It was clarified that the location of Tanah Rata site was the same as that of the GAW station.
- It was informed that high precipitation may be one of the reason contributes to the large deposition of  $\text{NO}_3^-$  in Petaling Jaya.

## vii Mongolia

- Analysis of  $\text{HCO}_3^-$  is recommended to improve R1 and R2.
- It was informed that due to IC problems of the laboratory, Mongolia is planning to purchase a new IC. Samples have been stored until solving the problems.

## viii Myanmar

- Air concentration data in 2011 were too low. Calculation of the air concentration data should be checked again.
- It was informed that collection efficiency of distilled water generation system has been low, but purity of water satisfied the criteria.

## ix Philippines

- The Philippines started the preliminary surveys on catchment-scale monitoring at the La Mesa Watershed. It was suggested that the data on the catchment-scale monitoring be hopefully submitted to the EANET for the Data Report after a few years.
- It was clarified that the data at Metro Manila site near La Mesa Watershed will be utilized for calculation of input (total deposition) to the catchment. The NC may support the national center of the Philippines to estimate dry deposition flux as appropriate.
- With regard to the problems of the sampling instruments, the situation of improvement of the monitoring and analytical equipment was clarified.

- x Russia
  - It was suggested that increasing trend of SO<sub>2</sub> concentration may be related to decreasing trend of pH
  - It was recommended that a new wet only sampler should be installed at the Irkutsk site because the current sampling is bulk method.
  - It was informed that heavy metal, aerosol and rainwater samples have been also monitored.
  
- xi Thailand
  - The declining trend of pH in rainwater was observed at a few stations, such as Nakhon Ratchasima and Chonburi. It was pointed out that clear cause has not been identified. It was also suggested that calcium derived from limestone might contribute to neutralization of the rainwater at the stations where a pH increasing trend was observed.
  
- xii Vietnam
  - Ozone has been monitored at the stations in Cuc Phong and Da Nang, although the data has not been submitted to the NC because of the national monitoring plan.
  - A new national monitoring plan which aims to increase the monitoring sites was introduced. It was suggested that the ozone data should be submitted to the NC in accordance with the revised new monitoring plan.
  - Conditions of the station in Hanoi became worse, since the station was surrounded by new buildings. It was clarified that the station was relocated to the rooftop of the institute. It was recommended that parallel monitoring in the rooftop and the previous point should be conducted to determine the difference between the sites.
  
- xiii Network Center
  - It was suggested that classification of deposition sites, such as urban, rural and remote, should be included in the overview of the National Monitoring Plans of the Participating Countries next year.
  - It was also suggested that numbers of monitoring sites that monitor ozone, PM<sub>10</sub> and PM<sub>2.5</sub> should be included in the overview next year.

## **IX. Consideration of the Quality Management Guidebook for the EANET (Agenda Item 8)**

15 The NC presented the Draft Quality Management Guidebook for the EANET (EANET STM/13/8) drafted by the NC and will be submitted to the SAC12 for its consideration.

16 Major discussion included the following:

- i. It was suggested that contents of the Technical Manual for Air Concentration Monitoring should be reflected to the Guidebook. Therefore, it was pointed out that the revised draft Guidebook to be submitted to the Session of the SAC in 2013 should be harmonized with the Draft Technical Manual for Air Concentration Monitoring to be submitted to the same Session of the SAC.
- ii. It was informed that a few countries developed their Standard Operation Procedures (SOP) in accordance with the certified ISO17025 in their institutions. It was suggested that contents of the Guidebook should be harmonized with the ISO. One of the countries whose institution was certified by the ISO suggested that contents of the Guidebook, such as participation in inter-laboratory comparison projects, should be harmonized with the ISO.
- iii. It was pointed out that some descriptions such as data management and the International System of Units (SI) traceability should be included in the Guidebook based on the regulations in the ISO17025.
- iv. It was suggested that the Guidebook should just refer the respective manuals, if the relevant descriptions/forms have already been included in the technical manuals and other related documents to avoid overlapping.
- v. It was also suggested that the descriptions in the Guidebook should be simplified as much as possible.
- vi. Necessity of the national monitoring plan should be included in the Chapter 2.
- vii. It was clarified that the main part of the Guidebook is Chapter 3, preparation of the national monitoring plans. It was suggested that descriptions and forms of the National Monitoring Plan in Chapter 3 should be elaborated in addition to avoidance of overlapping.
- viii. It was suggested that the chart of the institutional arrangements should be simplified but should state the role of national focal points.
- ix. Designation of Technical Managers was newly proposed in the Guidebook. It was suggested that the roles and nature of the Technical Manager should be more clearly stipulated in the Guidebook. It was clarified that the current QA/QC programs had already described clear assignment of responsibility, as “In the sampling and/or chemical analysis organizations, personnel in charge of data management and reporting and their supervisors should be appointed; their names should be reported by the National Center.” It was suggested that

organizational chart including the roles and responsibilities of each person should be prepared.

- x. It was requested that check lists on audit of the sites and laboratories in the participating countries be submitted to the NC, if available.

#### **X. Progress Report on Technical Activities of the EANET (Agenda Item 9)**

17 The NC presented the activities of the Expert Group on Preparation of the Technical Manual for Air Concentration Monitoring (EANET/STM 13/9/1) and Status of the Monitoring and QA/QC System of Ozone of the EANET (EANET/STM 13/9/2).

18 Major discussion included the following:

(Expert Group on Preparation of the Technical Manual for Air Concentration Monitoring,)

- i. It was pointed out that a high humidity condition may affect the monitoring data not only in the Southeast Asian region but also in the Northeast Asian region in the summer. The NC informed that the draft technical manual will be circulated among the STM and SAC members after revision of the 1<sup>st</sup> draft.
- ii. It was informed that the draft technical manual will be submitted to the SAC and Intergovernmental Meeting (IG) in 2013 for possible adoption and endorsement respectively.

(QA/QC System of Ozone in the EANET)

- i. Regarding the QA/QC system of ozone in the EANET, it was reported that the 3<sup>rd</sup> level standard was used for both calibration and parallel monitoring. It was expected that the participating countries submit the monitoring data to the NC after the calibration is implemented.

#### **XI. Other Issues (Agenda Item 10)**

19 Prof. Nguyen Thi Phuong Thao, Institute of Environmental Technology, Vietnam Academy of Science and Technology, presented the preparation and application of the diffusive passive sampler of SO<sub>2</sub> and NO<sub>2</sub> gases in Vietnam. Conversion coefficients may be affected by the meteorological parameters especially wind speed. Monitoring data by passive samplers were compared with those by automatic monitors. Application of the other gases will be investigated in the future.

**XII. Closing of the Meeting (Agenda Item 11)**

- 20 The Co-chairperson expressed his deep appreciation to all the participants for their active contribution and cooperation. He also thanked his Co-chair, government of Vietnam and the Meeting secretariat for their hard works. Then he officially closed the Meeting.

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