

The Fourteenth Session of the Intergovernmental Meeting
on the Acid Deposition Monitoring Network in East Asia
26-27 November- 2012, Yangon, Myanmar

**REPORT ON THE REVIEW OF THE PERFORMANCE OF THE NETWORK
CENTER (2010-2011)**

I. INTRODUCTION

1. The Reports on the Review of the Performance of the Secretariat and the Network Center (NC) in 2002-2004, 2005-2007 and 2008-2009 prepared by the Secretariat and the NC were reviewed and adopted (accepted/endorsed) at the Seventh Session of the Intergovernmental Meeting (IG7) on the EANET held in Niigata, Japan in November 2005, the Tenth Session of the Intergovernmental Meeting (IG10) on the EANET held in Chiang Mai, Thailand in November 2008 and the Twelfth Session of the Intergovernmental Meeting (IG12) on the EANET held in Niigata, Japan in November 2010, respectively.
2. The IG12 also decided to include the review of the performance of the Secretariat and the NC during the year 2010-2011 in the Terms of Reference (TOR) of the Working Group on Future Development of the EANET (WGFD) for 2011-2012.
3. This draft document was prepared by the NC to report the review on the performance of the NC focusing on the activities in 2010-2011 for discussion and further comments at the Eleventh Session of the Working Group on Future Development of the EANET (WGFD11) in August 2012 and revised based on the discussion at the WGFD11 in order to submit to the Fourteenth Session of the Intergovernmental Meeting (IG14) on the EANET to be held on 26-27 November 2012 for endorsement. Major points of at the WGFD11 included the following:
 - (i) It was suggested to streamline the Report on the Review of the Performance to avoid overlapping content with other reports.
 - (ii) It was suggested to cover a broader range of air pollution issues in the public awareness activities, not focusing only on acid deposition.
 - (iii) It was clarified that the Report for the Policy Makers is used as a mean to raise awareness of the policy makers on the acid deposition issue.

II. RELEVANT INFORMATION FOR THE PERFORMANCE REVIEW

4. Although the Instrument for Strengthening the Acid Deposition Monitoring Network in East Asia (EANET) was adopted at the IG12 in 2010 and operational from 1st January 2012 in accordance with the DECISION 1/IG12, activities of the EANET in 2010-2011 were implemented in accordance with the “Joint Announcement on the Implementation of the EANET” (EANET/IG

2/5/2 rev.) (hereinafter referred to as the JA) which was issued by the DECISION 2/IG2 adopted at the Second Session of the Intergovernmental Meeting (IG2) on the EANET held in October 2000 in Niigata Japan, and the Tentative Design of the EANET (EANET/IG 2/5/3) (hereinafter referred to as the TD) which was taken note in the JA at the IG2.

5. To achieve the objectives of the EANET, the following major activities of the EANET included in the TD were implemented in 2010-2011:

- (i) Acid deposition monitoring including related chemical substances;
- (ii) Compilation, evaluation, storage and provision of data;
- (iii) Promotion of quality assurance and quality control (QA/QC) activities;
- (iv) Periodic reports on the state of acid deposition in East Asia will be produced and made available to the public;
- (v) Implementation of technical support and capacity building activities;
- (vi) Promotion of research studies related to acid deposition problems;
- (vii) Promotion of public awareness activities; and
- (viii) Other relevant activities to achieve the objectives of the Network.

6. The NC, designated to handle scientific and technical matters of the network activities, and to facilitate cooperation among the participating countries in a transparent manner, carries out the following tasks under the guidance of the IG on the EANET:

- (i) Central compilation, evaluation and storage of data, etc.;
- (ii) Preparation of data reports on acid deposition in East Asia;
- (iii) Dissemination of data and relevant information;
- (iv) Provision and strengthening technical capacity in the participating countries;
- (v) Implementation and coordination of QA/QC activities;
- (vi) Implementation of training activities;
- (vii) Research activities;
- (viii) Technical support for the EANET meetings; and
- (ix) Other tasks as requested by the IG and administrative works.

7. The budget of the NC is divided into two categories, core budget and additional budget. The core and additional budgets are defined as follows:

Core Budget: The cost of all activities indispensable for promoting the Network activities in the participating countries under the framework of the EANET and which are approved by the IG

Additional Budget: The cost of strengthening the Network by providing technical assistance to the participating countries and by promoting further research activities and which are approved by the IG

8. The Strategy on the EANET Development (2006-2010) (hereinafter referred to as the Strategy) was adopted at the Eighth Session of the Intergovernmental Meeting (IG8) on the EANET held in November 2006 in Hanoi, Vietnam. In order to implement the activities after 2010, the Medium Term Plan for the EANET (2011-2015) (hereinafter referred to as the MTP) was adopted at the IG12 in 2010.
9. The activities of the EANET in 2010 and 2011 were implemented in accordance with the Strategy and MTP, respectively.
10. The Final Report on Implementation of the Strategy on the EANET Development (2006-2010) (EANET/IG 13/9) was endorsed at the Thirteenth Session of the Intergovernmental Meeting (IG13) on the EANET held in Hanoi, Vietnam in November-December 2011.

III. PERFORMANCE REVIEW OF THE NC (2010-2011)

(1) Goals and Purpose of the Performance Review

11. The purpose of the performance review is to provide information to the IG for its consideration on proposals to enhance the performance of the NC by analyzing its progress and achievements against the goals set. The following strategic goals serve as the framework of the performance measures:
 - Improve compilation, evaluation, storage and provision of data;
 - Promote quality assurance and quality control (QA/QC) measures;
 - Enhance technical support to the participating countries;
 - Enhance capacity building within the participating countries;
 - Promote research studies on acid deposition and other relevant issues;
 - Promote public awareness on acid deposition; and
 - Improve efficiency and transparency in management of budget and staff management.
12. The performance of the NC during 2010-2011 had been reported annually in the progress reports presented during the Sessions of the IG, Scientific Advisory Committee (SAC), the WGFD and the Senior Technical Managers' Meeting (STM) on the EANET.

(2) Status of Implementation of the NC Activities

13. The NC has carried out its functions as defined in the JA and the TD. During 2010-2011, the NC had successfully implemented the activities in the Work Program and the Budget of the EANET for each year as approved by the Sessions of the IG. Annex 1 on the "Improvement of the EANET Activities in 2010-2011" shows the progress made and some of the achievements since the start of the regular phase activities of the EANET in 2001 in tabular and graphical format. The detailed status of the implementation of the activities in 2010-2011 is attached as Annex 2 on

“Status of Implementation of the Activities of the Strategy on the EANET Development (2006-2010)”. Annex 3 shows the “Status of Implementation of the Medium Term Plan (MTP) for the EANET (2011-2015)”.

14. The summary of the status of the implementation of activities in 2010-2011 is as follows. In addition to the activities in 2010-2011, some of the activities in 2012 were also included in the following formats:

1: Improve compilation, evaluation, storage and provision of data

Plan (2010-2011)	Implementation
To complete compilation and verification of the monitoring data by August of the following year.	Data compilation and verification was in accordance with the decided schedule in 2010 and 2011, though submission of the data from some participating countries was delayed.
To develop the Second Periodic Report on the State of Acid Deposition in East Asia (PRSAD2).	PRSAD2 was approved at the SAC11 in October 2011, and endorsed at the IG13 in November/December 2011.
To complete the Data Reports and distribute to member countries by November-January of the following year.	Data Report 2009 and Data Report 2010 were published and distributed according to the decided schedule in 2010 and 2011.
To disclose the Data Reports outside of the EANET by January two years after adoption.	Data were disclosed according to planned schedule. The NC provided the downloadable monthly data in excel format in the EANET web site.
To assist the SAC to carry out an evaluation of state of acid deposition in East Asia.	The Drafting Committee (DC) for the PRSAD2 was held three times in 2010 and 2011 for submission of the draft PRSAD2 to the SAC11.

2: Promote quality assurance and quality control (QA/QC) measures

Plan (2010-2011)	Implementation
To implement the Inter-laboratory Comparison Projects for Wet deposition, Dry deposition (filter pack method), Soil and Inland aquatic environment every year.	The Inter-laboratory Comparison Projects for Wet deposition, Dry deposition, Soil and Inland aquatic environment were implemented as scheduled in 2010 and 2011.
To encourage all the laboratories to participate in the Inter-laboratory Comparison Projects.	The number of participating laboratories participating in the project on wet deposition in 2009 was 34 and 2010 was 33.
To improve data quality through the implementation of fundamental activities to achieve the objectives of the EANET QA/QC program.	The high percentage of reliable data from the network is maintained although there are fluctuations from year to year. See “Results from the Inter-laboratory Comparison Projects for Wet deposition” in Annex 1 of this document.

3: Enhance technical support to the participating countries

Plan (2010-2011)	Implementation
To assist the participating countries to improve monitoring, chemical analysis and assessment of national data through expert missions.	Technical missions were dispatched to 8 countries in 2010 and 5 countries in 2011. See “Network Center Technical Missions to Participating Countries”, and “Outcomes of the Network Center Technical Missions in 2010 and 2011” in Annex 1 of this document.
To assist the participating countries to implement monitoring acid deposition by providing equipment.	Necessary equipment was provided to Cambodia, China, Indonesia, Lao PDR, Mongolia, Myanmar and Vietnam in 2010-2011.
To assist the participating countries in continuing their monitoring by providing spares and consumables, reagents.	Spares, consumables and/or reagents were provided to Cambodia, China, Indonesia, Lao PDR, Mongolia, Myanmar, Russia and Vietnam during 2010-2011.

4: Enhance capacity building within the participating countries

Plan (2010-2011)	Implementation
To increase the number of personnel trained on acid deposition monitoring in the participating countries through conducting individual training at the NC.	6 personnel from Cambodia, China, Indonesia, Lao PDR, Myanmar and Vietnam received training in 2010, 3 personnel from China, Malaysia and Russia received training in 2011. Altogether 74 personnel received training on acid deposition monitoring as of July 2012.
To build capacity in the participating countries on acid deposition and related issues through the JICA courses.	<u>JICA Training Courses on the EANET</u> Number of personnel trained: 7 in 2010 (Cambodia, China, Lao PDR, Myanmar, (2), Thailand and Vietnam). The NC dispatched experts to Kobe, Japan and Thailand during the training as lecturers of the training courses. The training was terminated in 2010. <u>JICA Country Focused Training Course on Capacity Building on Acid Deposition and Impact Assessment Analysis</u> Number of personnel trained: 10 trainees of Thailand received the training in March 2012.
To build capacity on Modeling and Emission Inventories	Modeling and Emission Inventory Training Workshop” was held from 30 January to 3 February 2012. Around 20 participants from 11 EANET participating countries attended the training workshop.
To promote knowledge dissemination on acid deposition to local staff.	During the NC technical missions, the NC disseminated knowledge on acid deposition and air pollution issues to the local staff in the participating countries.

5: Promote research studies on acid deposition and other relevant issues

Plan (2010-2011)	Implementation
To increase the number of joint research projects with the participating countries for improving monitoring methodologies.	Joint research studies were implemented with Malaysia, Thailand, Japan, Russia and Republic of Korea during the period. The results were reported and also published in the EANET Science Bulletin (Vol. 2) in 2011.
To implement the EANET high priority research projects.	The three EANET high priority research projects were implemented from 2009 to 2010. The results were reported at the Sessions of the SAC, etc.
To promote the catchment analysis through the joint research project with Thailand, Malaysia and Japan.	The NC has implemented the joint research project on the catchment analysis in Thailand with the Royal Forest Department (RFD) and ERTC, in Malaysia with the Malaysian Meteorological Department (MMD), and in Japan with Niigata Prefecture and Niigata University.
To promote the research on modeling and emission inventory.	The International Workshop on Atmospheric Modeling Research in East Asia was held in 2010/2011 in China, based on the outcomes at the Model Inter-Comparison Study (MICS) workshops. Phase III activities of the MICS-Asia were developed.
To promote research on acid deposition among young scientists under the EANET Research Fellowship Program.	2 researchers from Thailand and Vietnam in 2010, and 2 researchers from China and Malaysia in 2011 participated in the program. They developed (will develop) their science papers. Their science papers will be published in the EANET Science Bulletin (Vol. 3) in 2012.

6: Promote public awareness on acid deposition

Plan (2010-2011)	Implementation
To produce information materials on acid deposition for dissemination to the general public in the participating countries.	The Fact Sheets on acid deposition and air pollution issues were developed by each participating country. All of the fact sheets were published by the NC in 2010 as a brochure.
To collaborate with the participating countries to organize in-country public awareness workshops on acid deposition.	In-country public awareness workshop was held in Philippines in 2011. About 100 government officials, students and general public in Philippines benefited from the workshop in 2011. The NC introduced

<p>To undertake joint project with the participating countries to support their environmental study activities on acid deposition in schools.</p> <p>To develop an e-Learning program on acid deposition and the environment in the EANET website.</p>	<p>atmospheric environment issues widely including ozone and particulate matter (PM).</p> <p>The NC undertook the joint project to support their environmental study activities on acid deposition in schools with China in 2010, and with Indonesia in 2011.</p> <p>An e-Learning program was implemented on the website from 2006.</p>
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7: Improve efficiency and transparency in management of budget

Plan (2010-2011)	Implementation
<p>To explore partnerships with other regional and international initiatives as a means of saving budget for the EANET activities.</p> <p>To ask the participating countries for voluntary financial contribution to the NC core budget.</p> <p>To seek additional sources of funds for the EANET activities from (international) funding agencies.</p> <p>To prepare the Draft Medium Term Plan for the EANET (2011-2015).</p> <p>To keep expenditures below the budget for NC core budget.</p>	<p>The representative of the NC attended at 28th and 29th Sessions of the Executive Body for the Convention on Long-Range Transboundary Air Pollution (CLRTAP) held by UNECE at the United Nations Office in Geneva, Switzerland in December 2010 and 2011, respectively. The NC also has communicated with other initiatives such as WMO to hold joint activities.</p> <p>In collaboration with the NC, the Secretariat sent the letter to the participating countries for voluntary financial contribution to the NC core budget. Several participating countries made their voluntary financial contribution to the NC core budget in 2010/2011. Table 1 below shows voluntary financial contribution to the NC core (and additional) budget from the participating countries in 2010-2011.</p> <p>In order to get the research funds, the NC sent the application to the relevant Japanese donor agencies. Most of the necessary costs of the “Joint research project on the catchment analysis with Thailand, Malaysia and Japan” and “Research for effects by priority pollutants” were provided by the relevant donor agencies in Japan.</p> <p>In collaboration with the Secretariat, the NC developed the Draft of the Medium Term Plan for the EANET (2011-2015) and submitted to the WGFD9, SAC10 and IG12 in 2010. It was adopted at the IG12.</p> <p>Actual expenditures in 2010 and 2011 were managed within the actual revenue.</p>

Table 1 - Voluntary financial contribution from the participating countries to the NC core and additional budgets in 2010-2011

Participating countries	2008		2009		2010		2011	
	Core	Additional	Core	Additional	Core	Additional	Core	Additional
Cambodia	47.6		47.6		48.0		56.0	
China								
Indonesia								
Japan	385,365	455,271	422,967	339,978	428,984	346,781	399,685.0	224,827.0
Lao PDR			50					
Malaysia	3,228							
Mongolia	50		50		50		47.5	
Myanmar								
Philippines								
R. of Korea								
Russia								
Thailand	3,160		3,160		3,160		4,051	
Vietnam			495		500			
Total	391,850.6	455,271	426,769.6	339,978	432,742.0	346,781	403,839.5	224,827.0

8: Improve efficiency and transparency in staff management

Plan (2010-2011)	Implementation
To follow a transparent procedure for recruitment of the NC staff.	The recruitment of the Deputy Director General (DDG) of the Asia Center for Air Pollution Research (ACAP) in charge of the NC was made in 2011 in accordance with the procedures established and adopted by the IG7. In accordance with the contract, the DDG of the ACAP in charge of the NC from Thailand started his second term from October 2011.

(3) Evaluation of Implementation of the Activities in the Strategy on the EANET Development (2006-2010) and the Medium Term Plan for the EANET (2011-2015)

15. Table 2 below shows the number of outputs from the implementation of the Strategy and other existing activities of the NC (and the Secretariat) in each year compared with the expected number of the outputs. A tally of the total number of manuals, reports, procedures, proceedings, etc. each year (in 2010) indicated that 100% of the expected number of outputs had been achieved in 2010.

Table 2 - Outputs from implementing the Strategy and other existing activities

Outputs	2006		2007		2008		2009		2010	
	Expected	Actual	Expected	Actual	Expected	Actual	Expected	Actual	Expected	Actual
Strategy Papers	-	-	-	-	1	1	-	-	-	1
Plans	-	-	-	-	-	-	-	-	2	2
Technical Manuals	1	1	2	3	2	-	1	1	1	2
Scientific and Technical Reports	8	8	8	8	7	7	7	6	11	11
Recommendations/ Decision on Instrument	-	-	1	-	1	1	1	-	1	1
Procedures	-	-	2	1	-	1	-	-	-	-
Proceedings	9	9	9	9	9	8	7	7	7	6
Public Awareness Materials and the EANET Newsletters, Scientific Bulletins	8	7	3	3	7	7	7	7	6	6
Others	2	1	2	2	-	-	-	-	3	2
Total	28	26 (93%)	27	26 (96%)	27	25 (93%)	23	21 (91%)	31	31 (100%)

16. The implementation period for the expected results and outputs was adjusted taking various factors into consideration. Whenever a change of the implementation period dates was made, the new implementation period (years) was inserted in brackets below the original implementation period in the “Status of Implementation of the Activities of the Strategy on the EANET Development (2006-2010) (Annex 2)”. A summary of the implementation status is shown in Table 3 below. 42 out of the 43 projects have been completed.

Table 3 - Implementation status of the activities of the Strategy

Number of activities	Number	Note
1. Number of activities ahead of schedule	1	No. 2 of “Expected results and Outputs” in the Table of Annex 2.
2. Number of activities on schedule	27	Other activities (except for 1, 3 and 4.)
3. Number of activities with adjusted implementation period (year)	14	Activities that the implementation period (year(s)) of red color letter was/were described in the column of the Implementation period in the Table of Annex 2.
4. Number of activities deferred for implementation under the next Medium Term Plan	1	No. 30 of “Expected results and Outputs” in the Table of Annex 2.
Total	43	

17. The additional budget of the NC had received external funds from local, regional and international donor agencies, research foundations and other organizations for the implementation of the Strategy activities. Several scientists and experts from the participating countries also contributed their services voluntarily through the activities of the task forces and expert groups of the SAC.
18. The actual expenditure of the NC was compared to the estimated total costs mentioned in the document “Workload and Cost for Implementing the Strategy on the EANET Development (2006-2010) (EANET/IG 8/7/2 rev)” and the “Medium Term Plan for the EANET (2011-2015) (EANET/IG 12/5.rev 1)” in 2010-2011. Table 4 below shows that the actual expenditure in 2010 and 2011 was close to the estimated cost.
19. Although actual expenditures for the core budget activities did not differ much from the estimated amount from year to year while there were some differences in the estimated cost and the actual expenditures of the additional budget activities, which depend on the availability of external funds, it was owing to much financial contribution from Japan to core budget and additional budget in both 2010 and 2011. Because if the Japanese contribution to the core budget in 2010 and 2011 were same as the expected amount in the Procedure and Guidelines for Voluntary Financial Contribution to the EANET for 2008-2010 and 2011-2013, the negative balances of the NC core budget in 2010 and 2011 became US\$ 156,347 and 130,475 respectively even if including the cash reserve.
20. However due to serious disaster and some other factors in Japan, since financial contribution much bigger than estimated amount from Japan will not be expected in the future, financial contribution to the core budget of the NC from all of the participating countries in accordance with the Procedure and Guidelines for Voluntary Financial Contribution to the EANET is essential for sustainable development of the NC activities.
21. The detailed tables of actual expenditures and the budget of the NC in 2010 and 2011 (Core budget activities and Additional budget activities) are attached as Annex 4 of this document.

Table 4 - Estimated Cost and Actual Expenditure of the NC (2010-2011) (thousands USD)

		2008		2009		2010		2011	
		Estima- ted cost	Actual Expendi- -ture	Estima- ted cost	Actual expendi- -ture	Estima- ted cost	Actual expendi- -ture	Estima- ted cost	Actual expendi- -ture
NC	Core	369.6	369.5	411.1	415.0	407.3	432.0	396.0	407.3
	Addi- tional	800.8	809.6	803.0	795.6	753.0	825.0	737.0	703.5
	Total	1,170.4	1,179.1	1,214.1	1210.6	1160.3	1,257.0	1,133.0	1,110.8

22. The tables and figures in Annex 1 show that significant progress has been made towards achieving the goals and objectives of the Strategy in terms of the following:
- Improvement in number of monitoring sites;
 - Improvement in data quality;
 - Promotion of technical support in participating countries.
 - Development of scientific research on atmospheric environment in East Asia; and
 - Promotion of public awareness in the participating countries.

IV. ACTION REQUIRED

23. The IG14 is invited to review the “Report on the Performance of the Network Center (2010-2011)” and may wish to discuss, consider, provide guidance, and endorse the report.

Annex 1

Improvement of the EANET Activities in 2010-2011

i) Improvement of the EANET monitoring

Wet Deposition Monitoring Sites

Country	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Cambodia	0	0	0	1	1	1	1	1	1	1	1	1
China	9	9	9	9	9	9	8	8	8	8	8	8
Indonesia	4	4	4	4	4	4	4	5	5	5	5	5
Japan	10	10	11	11	11	11	12	12	12	12	12	12
Lao PDR	0	0	1	1	1	1	1	1	1	1	1	1
Malaysia	2	2	2	2	3	3	3	4	4	4	4	4
Mongolia	2	2	2	2	2	2	2	2	2	2	2	2
Myanmar	0	0	0	0	0	0	1	1	1	1	1	1
Philippines	2	2	2	2	2	3	3	3	3	3	3	3
R. of Korea	3	3	3	3	3	3	3	3	3	3	3	3
Russia	3	4	4	4	4	4	4	4	4	4	4	4
Thailand	4	4	4	5	5	6	6	6	6	6	6	6
Vietnam	2	2	2	2	2	2	2	2	4	4	4	4
Total	41	42	44	46	47	49	50	52	54	54	54	54

Air Concentration (Dry Deposition) Monitoring Sites

Country	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Cambodia	0	0	0	0	0	0	0	0	1	1	1	1
China	4	4	4	4	4	4	3	3	3	3	3	3
Indonesia	1	1	1	1	1	1	3	4	4	4	4	4
Japan	10	10	10	10	10	10	11	12	12	12	12	12
Lao PDR	0	0	0	0	0	0	0	0	1	1	1	1
Malaysia	2	2	2	2	2	3	3	3	3	3	3	3
Mongolia	2	2	2	2	2	2	2	2	2	2	2	2
Myanmar	0	0	0	0	0	0	0	0	0	0	0	1
Philippines	2	2	2	2	2	3	3	3	3	3	3	3
R. of Korea	0	3	3	3	3	3	3	3	3	3	3	3
Russia	4	4	4	4	4	4	4	4	4	4	4	4
Thailand	4	4	4	5	5	6	6	6	6	6	6	6
Vietnam	2	2	2	2	2	2	2	2	2	4	4	4
Total	31	34	34	35	35	38	40	42	44	46	46	47

Soil and Vegetation Monitoring Sites

Country	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Cambodia	0	0	0	0	0	0	0	0	0	0	0	0
China	4	4	4	4	4	4	4	4	4	4	4	4
Indonesia	1	1	1	1	1	1	1	1	1	1	1	1
Japan	2	2	2	2	2	2	2	2	2	2	2	2
Lao PDR	0	0	0	0	0	0	0	0	0	0	0	0
Malaysia	1	1	1	1	1	1	1	1	1	2	2	2
Mongolia	0	0	0	0	1	1	1	1	1	1	1	1
Myanmar	0	0	0	0	0	0	0	0	0	0	0	0
Philippines	1	1	1	1	1	1	2	3	3	3	3	3
R. of Korea	1	1	1	1	1	1	1	1	1	1	1	1
Russia	3	3	3	3	3	4	4	4	4	4	4	4
Thailand	1	1	1	1	1	1	1	1	1	1	1	1
Vietnam	1	1	1	1	1	1	1	1	1	1	1	1
Total	15	15	15	15	16	17	18	19	19	20	20	20

Note 1: The figures indicate the number of the area. In each area, one, two, or three plots are established. The data of 29 plots have been submitted to the Network Center (NC) so far.

2: Surveys on soil and forest vegetation are conducted every 3-5 years, while observation of tree decline should be done every year.

Inland Aquatic Environment Monitoring Sites

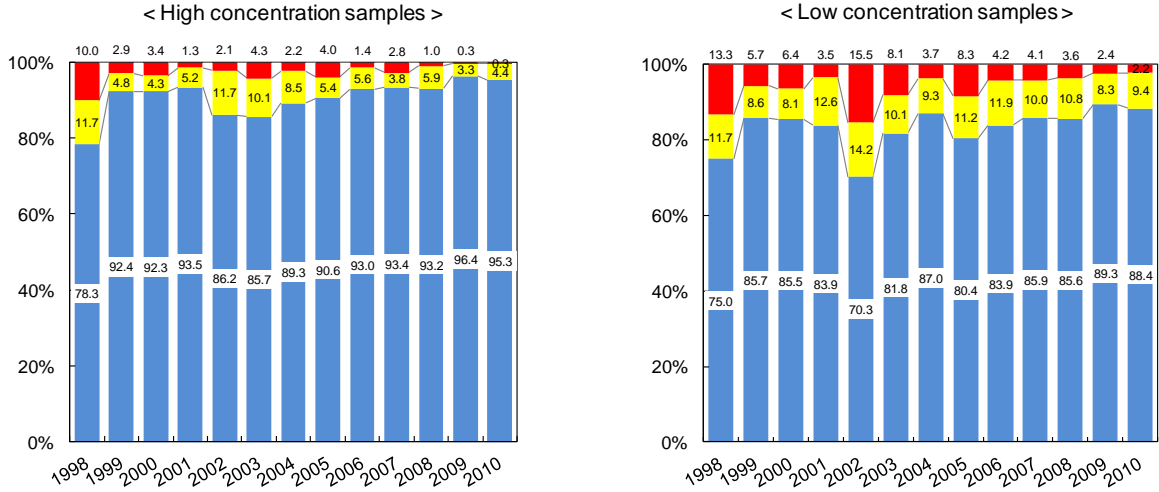
Country	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Cambodia	0	0	0	0	0	0	0	0	0	0	0	0
China	4	4	4	4	4	4	4	4	4	4	4	4
Indonesia	1	1	1	1	1	1	1	2	2	2	2	2
Japan	2	2	2	2	2	2	2	2	2	2	2	2
Lao PDR	0	0	0	0	0	0	0	1	1	1	1	1
Malaysia	0	0	0	0	0	1	2	2	2	2	2	2
Mongolia	1	1	1	1	1	1	1	1	1	1	1	1
Myanmar	0	0	0	0	0	0	0	0	0	0	0	0
Philippines	1	1	1	1	2	2	2	2	2	2	2	2
R. of Korea	0	0	0	0	0	0	0	0	0	0	0	0
Russia	1	1	1	1	1	2	2	2	2	2	2	2
Thailand	1	1	1	1	1	1	1	1	1	1	1	1
Vietnam	1	1	1	1	1	1	1	1	1	1	1	1
Total	11	12	12	12	13	15	16	18	18	18	18	18

Catchment Monitoring Sites

Country	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Cambodia												
China												
Indonesia												
Japan								1	1	1	1	1
Lao PDR												
Malaysia												
Mongolia												
Myanmar												
Philippines												
R. of Korea												
Russia												
Thailand												
Vietnam												
Total								1	1	1	1	1

ii) Improvement in data quality

Results from the inter-laboratory comparison projects for wet deposition



Flag "E" was applied to data that exceed the DQOs by a factor less than 2 ($\pm 15\% \sim \pm 30\%$)
 Flag "X" was applied to data that exceed the DQOs by more than a factor of 2 ($< -30\%$ or $> 30\%$).

Note: Inter-laboratory comparison projects (including development of the report) in 2011 will be finished in 2012.

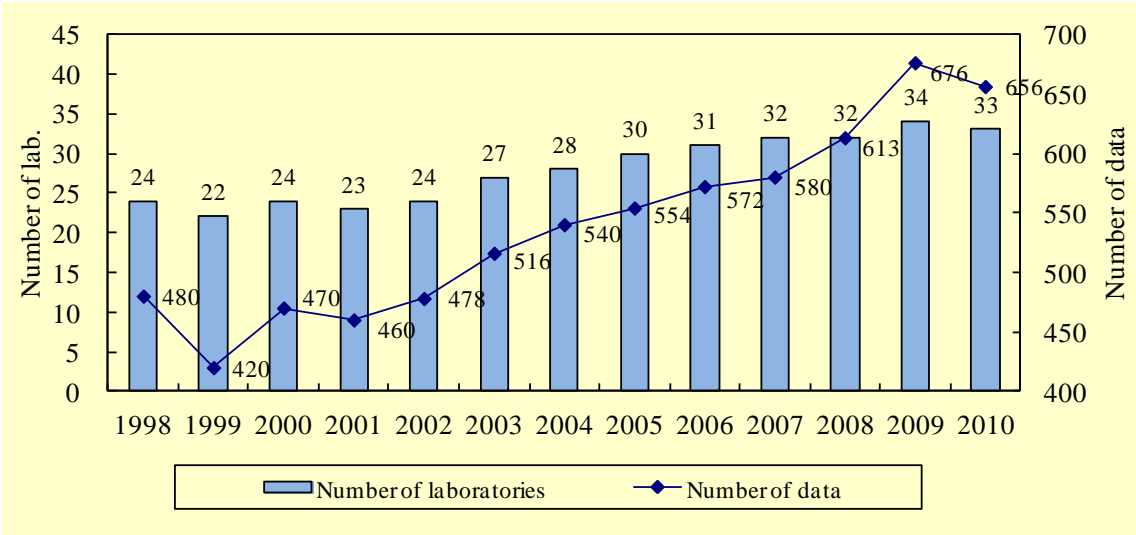


Figure - Number of participating laboratories and data received

iii) Providing technical support to the participating countries (as of June 2012)

Equipment Provided to the Participating Countries for Monitoring Activities

Year (JFY)	Country Assisted	Equipment Provided
1998	Mongolia Russia	IC, Wet-Only Sampler, Filter pack Sampler Kit Wet-Only Sampler
1999	China Philippines Vietnam	Wet-Only Sampler, Filter pack Sampler Kit Wet-Only Sampler, Refrigerator Wet-Only Sampler, Filter pack Sampler Kit
2000	Indonesia Malaysia Vietnam	Wet-Only Sampler Filter pack Sampler Kit Filter pack Sampler Kit, Flow meter
2001	-	-
2002	Cambodia Lao PDR Mongolia Vietnam	Wet-Only Sampler, Power Stabilizer Wet-Only Sampler, Power Stabilizer Pure Water Generator Boiler Flow meter
2003	Cambodia Lao PDR Mongolia Philippines Russia	pH and EC meter pH and EC meter Digital pipette, Flowmeter Filter pack Sampler Kit, Computer, Digital Camera AAS (used)
2004	Philippines Vietnam	Filter pack Sampler Kit, Refrigerator Filter pack pump
2005	Lao PDR Vietnam	Refrigerator Refrigerator
2006	Cambodia China Lao PDR Myanmar Philippines	IC (purchased using Secretariat's savings) Filter pack Sampler Kit IC (purchased using Secretariat's savings) Wet-Only Sampler , pH and EC meter Rain sensor
2007	Cambodia Lao PDR	Filter pack Sampler Kit Filter pack Sampler Kit
2008	Cambodia Philippines Vietnam	Refrigerator of Wet-Only Sampler Refrigerator of Wet-Only Sampler Passive samplers (3 sets)
2009	Myanmar Lao PDR Vietnam	IC and pure water generator (donated by JICA), electric balance IC suppressor, etc. Filter pack pump
2010	China Lao PDR Mongolia Myanmar Vietnam	Filter pack sampler kit pH meter, EC meter electrode and IC parts (column) pH meter electrode Refrigerator, pH meter electrode Gas meter, optical sensor (wet only sampler), etc.
2011	Cambodia Indonesia Lao PDR Myanmar	Wet only sampler Filter-pack kit (2) Parts of IC (columns, suppressor) and distilled water generator Filter pack sampler kit, distilled water generator
2012	Lao PDR Myanmar Philippines	Parts of IC (column) and parts of distilled water generator Parts of distilled water generator Parts of wet only sampler, etc.

Equipment, Spares and Consumables Provided to the Participating Countries EANET Monitoring

Year (JFY)	Country										
	Cambodia	China	Indonesia	Lao PDR	Malaysia	Mongolia	Myanmar	Philippines	Russia	Thailand	Vietnam
1998						E, C			E		
1999		E, C						E			E,C
2000			E		E,C	C					E,C
2001			C								E
2002	E			E		E					E
2003	E	E		E		E		E,C	E		
2004	E		C, S			E, C		E, C	C, S C, S		E
2005	S		S	S, E		E, C	S	C, E	C, S		E, C,S
2006	E, C, S	E, C		S, C, E		E, C	E, S	E, C, S	C, S C, S		S
2007	E, C, S	S		E, C			E		C, S		C
2008	E, S	S		S		C, S		E	C, S		S
2009	C	C		E		S	E (JICA)		C, S		
2010	C,S	E,C		E,C, S		C	E,C,S		C, S		E,C
2011	C,E	C	E	E,C, S			E,C,S		C, S		S
2012				E,C		C	E,C	E, C	C,S		

Note: E: equipment, spare parts, C: consumable, S: standard solution, reagent

Network Center Technical Missions to the Participating Countries (2007-2012)

Country	2007	2008	2009	2010	2011	2012 (as of end of Oct)
Cambodia	5-8 Dec	14-16 Dec		9-13 Feb	10-13 Jan 16-19 Oct	
China	17-21 Dec		23-28 Mar			
Indonesia	8-11 Aug		24-29 May			13-17 Feb
Lao PDR	9-12 Dec	10-14 Dec		21-25 Mar 7-11 Nov	15-17 Sep	9-11 May
Malaysia		4-10 Jan	31 Aug-7 Sep	20-25 Sep		
Mongolia		10-14 Nov				
Myanmar	18-22 Dec		23-27 Nov	25-29 Oct	8-11 Nov	13-15 May
Philippines		14-18 Jan		16-21 Jan		23-27 July
R. of Korea	20-22 Feb	18-20 Mar	9-11 Mar			
Russia	16-23 Sep	21-28 Sep	6-11 Sep	15-20 Aug	20-26 Aug	
Thailand	16-21 Dec	15-20 Dec		18-21 Oct		
Vietnam		17-21 Mar 18-24 Oct				
Total	8	10	6	8	5	4

Outcomes of the Network Center Technical Missions in 2010

Country	Duration	Major Activities/Outcomes of the Mission
Philippines	16-21 January 2010	The mission requested moving positions of the wet-only sampler and the rain gauge of Mt. St. Thomas site in order to remove obstruction to collection of the sample based on the site criteria because the distance between those instruments and the fence of 2 meters in height was less 2 meters. Regarding results of Inter-laboratory comparison projects 2008, the mission requested to select appropriate concentration range of standard solutions for every ion to measure. Although filter-pack in Metro-Manila site has been broken, the data will be submitted after it is repaired.
Cambodia	9-13 February 2010	The mission requested to start filter-pack monitoring as soon as possible because almost one year has passed since they received necessary equipment and so on from the NC, and the monitoring equipment was installed appropriately to the Phnom Penh monitoring site. Cambodia decided to start filter-pack monitoring from 12 February 2010. The mission instructed all of necessary technical matters of the monitoring to the staff in charge again during the mission.
Lao PDR	21-25 March 2010	The filter-pack monitoring has not been implemented yet though long time has passed since Lao PDR received necessary equipment and so on from the NC. The mission instructed all of necessary technical matters of the monitoring to the staff in charge again during the mission. With regard to the Inter-laboratory comparison projects 2008, since there are many flagged data, the mission confirmed the reasons including the contamination of pure water for the projects.
Russia	15-20 August 2010	The mission discussed the MOA of the Joint Research Project. It was contracted by the ACAP and Limnological Institute (LIN). The mission visited LIN and Primorsky Center for Environmental Monitoring (PCEM) and discussed the EANET activities in Russia. The Mission also visited three atmospheric monitoring stations and a monitoring site for inland aquatic environment.
Malaysia	20-25 September 2010	The mission visited the organizations relevant to the EANET and exchange information and views on QA/QC activities on acid deposition monitoring including calibration of the automatic ozone monitors in Malaysia. The mission visited monitoring sites, Kuching and Bintulu (candidates) to know onsite information as the EANET monitoring sites.
Thailand	18-21 October 2010	The mission visited the organizations relevant to the EANET (PCD, Thai Meteorological Department and Chiang Mai Univ.) exchange information and views on QA/QC activities on acid deposition monitoring including calibration of the automatic ozone monitors in Thailand. The mission visited monitoring sites, Bangkok, Samut Prakan and Chiang Mai to know onsite information as the EANET monitoring sites.
Myanmar	25-29 October 2010	The mission visited Department of Meteorology and Hydrology (DMH) to exchange information and views with the staffs of the DMH, and visited the lab of the DMH to hold a seminar of the EANET activities including analytical instrument such as IC and so on.
Lao PDR	7-11 November 2010	The filter pack monitoring has started since May 2010, and the instrument is installed about 2 meters away from wet only sampler. The mission found that there was mistake in the order of connecting instruments, therefore corrected it. Since IC for cation analysis had had problems, they have not been able to analyze sample. All of problems of IC were resolved and IC condition became improved due to replacement of the guard column to a new one, etc.

Outcomes of the Network Center Technical Missions in 2011

Country	Duration	Major Activities/Outcomes of the Mission
Cambodia	10-13 January 2011	<p>The mission visited the laboratory and provided some consumables for the wet and dry deposition monitoring. The mission confirmed that almost all equipment for the wet and dry monitoring sample analyses had been operated well without pure water generator. The mission also visited the wet and dry deposition monitoring site located on the roof of MOE building and confirmed that the wet only sampler worked properly and that the filter pack sampling system had also operated without any troubles.</p> <p>The mission also visited two candidate monitoring sites for inland aquatic environment which are located in a mountainous area far about 100 km west of Phnom Penh. The mission recommended to select a natural small lake as the EANET monitoring site.</p>
Russia	20-26 August 2011	<p>The mission discussed the MOA of the Joint Research Project. It was contracted by ACAP and Limnological Institute (LIN). The mission visited LIN and Primorsky Center for Environmental Monitoring (PCEM) and discussed the EANET activities in Russia. The Mission also visited three atmospheric monitoring stations and a monitoring site for inland aquatic environment.</p>
Lao PDR	15-17 September 2011	<p>The mission discussed all of necessary technical matters of the monitoring including suitability of siting for inland aquatic environment monitoring with the staff in charge, and checked condition of analytical instruments during the mission. The mission fixed the ion chromatograph for cation analysis by exchanging the suppressor and to optimize its operating condition. New high efficiency distilled water generator was installed with technical and financial support of the NC. The mission also visited Vientiane site and confirmed that the monitoring has being implemented without any serious problem.</p>
Cambodia	16-19 October 2011	<p>The mission visited the wet and dry deposition monitoring site Phnom Penh located on the roof of MOE building and confirmed that the wet only sampler worked properly and the filter pack sampling system had also operated without any troubles. However, there is a problem that high concentration of ammonium has been detected due to exhaust gas from the building. The mission visited the laboratory and confirmed that almost all equipment for wet and dry monitoring sample analyses had been operated well. The mission also visited monitoring site of Siem Reap and confirmed that the wet only sampler worked properly.</p>
Myanmar	8-11 November 2011	<p>The mission exchanged views and information on the data quality on the acid deposition monitoring of the EANET in Myanmar, such as QA/QC activities, quality management, quality system, etc. The mission also set up the sampling instruments for air concentration monitoring by filter-pack method and implemented initial training for the implementation of the dry deposition monitoring. The mission also set up the high efficiency distilled water generator in the laboratory.</p>

Outcomes of the Network Center Technical Missions in 2012

Country	Duration	Major Activities/Outcomes of the Mission
Indonesia	13-17 February 2012	The mission exchanged views and information on the data quality on the acid deposition monitoring of the EANET in Indonesia. The mission visited three monitoring sites in Indonesia (Jakarta, Serpong and Bandung), and confirmed that monitoring of these three sites were performed without any serious problems. The mission was requested to support installation of filter-pack kit to Jakarta and Bandung sites. The NC decided to support Indonesia to start filter-pack monitoring at the two sites.
Lao PDR	9-11 May 2012	The mission discussed all of necessary technical matters of the monitoring and checked condition of analytical instruments during the mission. The mission fixed the ion chromatograph for both cation and anion analysis. Broken part of the high efficiency distilled water generator was repaired. The mission also visited Vientiane site and confirmed that the monitoring has being implemented without any serious problem.
Myanmar	13-15 May 2012	The mission exchanged views and information on the implementation of soil-vegetation and inland aquatic environment monitoring of the EANET for considering the implementation of these monitoring activities in Myanmar. The mission also confirmed appropriate operation of the high efficiency distilled water generator in the laboratory.
Philippines	23-27 July 2012	The mission exchanged views and information on the data quality on acid deposition monitoring of the EAENT in the Philippines. The mission also visited three wet and dry deposition monitoring sites in the Philippines (Metro Manila, Los Banos and Mt. Sto. Tomas), and confirmed that parts of monitoring was not performed properly due to serious damages and/or troubles on sampling instruments. The mission was also informed that monitoring will be restarted soon after the instruments will be repaired by the Philippines.

Individual Training the Network Center

Year	Number of Participants	Countries	Training Provided
1998	2	Thailand, Russia	Filter-pack monitoring
1999	10	China (9), Indonesia	Training on the EANET activities
2000	4	Philippines, Russia, Thailand (2)	Training on the EANET/ Wet and dry deposition monitoring, data management
2001	6	Indonesia(3), Malaysia, Philippines, Vietnam	Wet and dry deposition, soil and vegetation, inland aquatic environment monitoring and data management
2002	6	China (2), Indonesia, Mongolia, Philippines, Thailand	Wet and dry deposition, soil and vegetation, inland aquatic environment monitoring and data management
2003	6	Cambodia, China, Lao PDR, Thailand (2), Vietnam	Wet and dry deposition, soil and vegetation, inland aquatic environment monitoring and data management/EANET activities
2004	5	Cambodia, China, Lao PDR, Malaysia, Philippines	Wet and dry deposition, soil and vegetation, inland aquatic environment monitoring and data management
2005	6	Cambodia, China, Indonesia, Lao PDR, Thailand, Vietnam	Wet and dry deposition, soil and vegetation, inland aquatic environment monitoring and data management
2006	2	Cambodia, Lao PDR	Wet and dry deposition, soil and vegetation, inland aquatic environment monitoring and data management
2007	5	Cambodia, China, Indonesia, Lao PDR, Myanmar	Wet and dry deposition, soil and vegetation, inland aquatic environment monitoring and data management
2008	5	Cambodia, China, Lao PDR, Myanmar, Vietnam	Wet and dry deposition, soil and vegetation, inland aquatic environment monitoring and data management
2009	6	Indonesia, Malaysia (2), Mongolia, Russia, Thailand	Wet and dry deposition, soil and vegetation, inland aquatic environment monitoring, data management and atmospheric transport modeling
2010	6	Cambodia, China, Indonesia, Lao PDR, Myanmar, Vietnam	Wet and dry deposition, soil and vegetation, inland aquatic environment monitoring and data management
2011	3	China, Malaysia, Russia	Wet and dry deposition, soil and vegetation, inland aquatic environment monitoring and data management
2012	2	Lao PDR, Philippines	Wet and dry deposition, soil and vegetation, inland aquatic environment monitoring and data management
Total	74		

JICA Training Course on the EANET (collaboration with JICA)

Year	97	98	99	00	01	02	03	04	05	06	07	08	09	10**	Total
Cambodia	1		1	1	1	1	1	1	1	1	1	1	1	1	13
China	1	1	1	1	1		1	1	1	1	1	1		1	12
Indonesia	2		1	1	1		1	1	1	1	1				10
Lao PDR		1			1	1	1	1	1	1	1	2	2	1	13
Malaysia	1	1	2	1	2	2	1	1	1	1	1				14
Mongolia	1	1	1	1	1	1	1	1	1	1	1				11
Myanmar								1	1	1	1	1	1	2	8
Philippines	1	1	1	1	1	1	1	1	1	1	1				11
R. of Korea	1	1													2
Russia															0
Thailand	1	1		1	1	1	2	1	1	1	1		1	1	13
Vietnam		1	1	1	1	1	1	1	1	1	1		1	1	12
Total	9	9*	8	8	10	9	10	10	10	10	10	5	6	7	121*

Note: * These figures included one trainee from India.

** The training was terminated in 2010.

JICA Third Country Training Course on Acid Deposition Monitoring and Assessment in Thailand in 2004-2009, and JICA Country Focused Training Course on Capacity Building on Acid Deposition and Impact Assessment Analysis in 2012

Year	2004	2005	2006	2007	2008	2009	2012*	<u>Total</u>
Cambodia	2	3	2	2	3	2		14
China	2	2	2	1	1			8
Indonesia		1	3	3				7
Lao PDR	2	2	2		3	2		11
Malaysia		2	1	1		2		6
Mongolia	2	2	3	1	2	2		12
Myanmar		2	2	3	2	3		12
Philippines		1	1		2	2		6
R. of Korea								0
Russia								0
Thailand	6	4	6	6	6	8	10	46
Vietnam	4	3	2	2	3			14
Total	18	22	24	19	22	21	10	136

Note: * In 2012 the training was implemented as JICA Country Focused Training Course on Capacity Building on Acid Deposition and Impact Assessment Analysis in JFY 2011 for Thai trainees.

iv) Development of scientific research on atmospheric environment in East Asia

Joint research project carried out with the participating countries

Year	Country	Research Objectives	Funding Source
1998-	Russia	To improve monitoring methodology and monitor acid deposition as well as heavy metals and lead isotope ratio in the frigid zone.	Ministry of the Environment, Japan and ACAP (ADORC)
1999-2005	Thailand	To investigate the concentration of air pollutants and dry deposition velocities above specific surface of tropical zone.	ADORC/AEON Fund
2001-2003	Mongolia	To investigate plant sensitivity to acid deposition in the (sub-) arid zone in Mongolia. Concentrations of the air pollutants have been also monitored.	Ministry of the Environment, Japan/ADORC
2005-	Thailand, Malaysia and Japan	To estimate the ecological effects of acidic deposition on tropical seasonal forested catchment in Thailand, Malaysia and Japan based on the measurement of elemental budget, etc.	Ministry of the Environment, Japan
2005-2008 2010-	Republic of Korea	To evaluate aerosol sampling methodology (There are two methods in this region.) and PM2.5 behavior in R. of Korea and Japan.	ACAP (ADORC) /NIER, R. of Korea
2007-2009	Thailand	To study whether there are differences in concentration of air pollutants with use of different methods (automatic monitor, filter-pack method and passive sampling method) in the tropical zone.	ADORC /AEON Fund

EANET Research Fellowship Program

Year	Researchers	Country	Research Themes
2005	Mr. Eyi Wang	China	Assessment of Ozone Variability in East Asia During Recent Years
	Ms. Arcely C. Viernes	Philippines	Determination of Unanalyzed Components in Rainwater
2006	Ms. Bulgan Tumendemberel	Mongolia	Determination of Unanalyzed Components in Precipitation Water
	Ms. Elena Gritsan	Russia	Application of scientific climatological approach and statistical methods for optimization of the EANET network
2007	Dr. Yibing Lu	China	Comparison of Air Pollution and Acid Deposition between Two Mega-cities
	Mr. Son Anh Truong	Vietnam	Assessment of Ozone and Other Gaseous Concentrations in East Asia
2008	Ms. Yani Sumarriani Sutaryo	Indonesia	Studies on effect of acid deposition and related air pollutants on ecosystems/ inland water aquatic
	Ms. Soontree Khuntong	Thailand	Ion chromatographic determination of organic acids in rainwater
2009	Dr. Rattapon Onchang	Thailand	Effect of haze on wet and dry deposition at the EANET sites in Thailand
2010	Ms. Sopittaporn Sillapapiromsu	Thailand	Effect of Biomass Burning on Atmospheric Acid Deposition in Chang Mai-Lamphun Basin, Thailand
	Mr. Sy Van Pham	Vietnam	Study on the Wet-and Dry-Deposition over the Southeast Asia by the CMAQ model and the EANET data
2011	Dr. Chu Baolin	China	Improvement of the QA/QC activities for air monitoring in China
	Dr. Susilawati Kasim	Malaysia	Effect of simulated acid rain (SAR) on Leachate and selected chemical characteristics on the soil
2012	Mr. Ittipol Paw -Armart	Thailand	Comparison of aerosol and rainwater composition in urban and rural areas and their relationship to emission characteristics in Thailand
Total	14		

v) Promotion of public awareness

Joint public awareness activities on acid deposition with participating countries

Year	Target Audience	Activity	Number of participants
1998	School children and general public	Development of public awareness brochure (To Protect Our Common Earth) and Videotape (Acid Deposition/To Protect our Beautiful Earth)	
1999	School children and general public	Development of national public awareness brochures (with China and Thailand)	
2000	School children and general public	Development of national public awareness brochures (with Malaysia and Philippines)	
2001	School children and general public	Development of national public awareness brochures (with Indonesia and Vietnam)	
2001	School children and general public	In-country workshop (Philippines)	38
2002	School children and general public	Development of national public awareness brochure (with Mongolia)	
2002	School children and general public	In-country workshop (Indonesia and Vietnam)	Indonesia 100 Vietnam 60
2003	School children and general public	Development of national public awareness brochure (with Russia)	
2003	School children and general public	In-country workshop (Mongolia)	80
2004	School children and general public	Development of national public awareness brochures (with Cambodia)	
2004	School children and general public	In-country workshop (Russia)	300
2005	School children and general public	Development of national public awareness brochure (with Lao PDR)	
2005	School children and general public	In-country workshop (Cambodia)	45
2006	School teachers and NGO leaders	e-Learning Program on the EANET website (Acid deposition and the Environment)	
2006	School children and general public	Development of national public awareness brochures (with Myanmar)	
2006	Government officials, private sector and NGOs	Public awareness workshop on acid deposition (Philippines)	36
2006	School children and general public	In-country workshop (Lao PDR)	50
2006	Government officials and general public	Public awareness workshop on acid deposition (Lao PDR)	100
2006	Government officials private sector and general public	Public awareness workshop on acid deposition (Cambodia)	80
2007	School children and general public	In-country workshop (Myanmar)	30
2008	Government officials private sector and NGOs, etc.	Public awareness workshop on acid deposition (Indonesia)	65
2009	Government officials NGOs, etc.	Public awareness workshop on acid deposition (Mongolia)	60
2010	School children and experts, NGOs, etc.	Environmental conference of school children (Japan)	160
2011	Government officials, students and experts, NGOs, etc.	Public awareness workshop on acid deposition (Philippines)	100
2012	School children and experts, NGOs, etc.	Environmental conference of school children (Japan)	140
2012	Government officials, experts, etc.	Public awareness workshop on acid deposition (Lao PDR)	25

EANET Workshop on Public Awareness concerning acid deposition problems

Year	Target Audience	Activity	Number of participants
2001	Participating countries	First Public Awareness Workshop on Acid Deposition Problems (Niigata)	20
2002	Participating countries, relevant officials, NGOs	Second Public Awareness Workshop on Acid Deposition Problems (Beijing)	50
2003 (Feb)	Participating countries	Third Public Awareness Workshop on Acid Deposition Problems (Niigata)	30
2003 (Dec)	Participating countries, school children and general public	Fourth Public Awareness Workshop on Acid Deposition Problems (Niigata)	200
2005	Participating countries, school children and general public	Fifth Public Awareness Workshop on Acid Deposition Problems (Niigata)	300
2006	Participating countries	Sixth Public Awareness Workshop on Acid Deposition Problems (Niigata)	30
2007	Participating countries, NGOs, private sectors, etc.	Seventh Public Awareness Workshop on Acid Deposition Problems (Niigata)	60
2008	Participating countries and school children, etc	Eighth Public Awareness Workshop on Acid Deposition Problems (Internet conference for school children in Bangkok and Niigata)	350
2009	Participating countries and school children, etc	Ninth Public Awareness Workshop on Acid Deposition Problems (in Niigata)	150
2012	Participating countries and school children, etc	Tenth Public Awareness Workshop on Acid Deposition Problems (in Niigata)	140

Annex 2

Status of Implementation of the Activities of the Strategy on the EANET Development (2006-2010)

i. Promotion of acid deposition monitoring

No.	Activities to be undertaken	Targets	Expected results and Outputs		Implementa-tion period	Implementation status
(1)	Improvement of implementation of all required monitoring items with necessary data completeness and accuracy	To provide complete sets of high quality monitoring data in terms of accuracy, complete (up to 100%) coverage of all mandatory parameters and appropriate application of sampling/ analytical equipment in all the participating countries	[1]	Report on improvement of data completeness and on application of sampling/analytical equipment at the EANET monitoring sites (including recommendation for improvement of equipment and proposal on cooperation with equipment makers for technical support and maintenance of equipment)	2007-2008 (2007-2010)	A report on activities to improve data completeness in the EANET has been prepared by the NC and was submitted to the SAC9 in 2009. Discussions with equipment manufacturers to provide more technical support to countries using their brand of equipment were also made.
			[2]	A set of Standard Operating Procedures (SOPs) for operational monitoring	2006-2008 (2006-2007)	A manual and CD containing a set of SOPs were prepared by the NC in 2007 and distributed to the participating countries to provide guidance on preparation of national SOPs.
			[3]	Data sets of all the mandatory items to analyze spatial distribution and trends, and to estimate acid deposition fluxes for assessment of impact (e.g. critical load analysis, catchment analysis, etc.)	2006-2010	Data on wet and air concentration, soil and vegetation and inland aquatic environment monitoring from all the EANET sites are compiled annually by the NC and stored in the EANET database.
(2)	Consideration and efforts on appropriate distribution of monitoring sites	To increase the density of monitoring sites	[4]	Establishment of the new EANET sites	2007-2010	The number of the EANET sites has increased from 49 wet, 38 dry, 26 soil and vegetation, 15 inland aquatic environment at beginning of 2006 to 54 wet, 46 dry, 26 soil and vegetation, 18 inland aquatic environment as of 2010. (Annex 1)
(3)	Development and application of monitoring methods for dry deposition considering current country-specific monitoring	To ensure the implementation of improved/ modern methods for dry deposition	[5]	Technical Manual for dry deposition fluxes estimation prepared by Task Force on Dry Deposition Monitoring	2008-2010	The Technical Manual was prepared by the Expert Group on Dry Deposition Flux Estimation and submitted to SAC10 and adopted. After that, the document was submitted to IG12 in 2010, and endorsed.

No.	Activities to be undertaken	Targets	Expected results and Outputs		Implementa- tion period	Implementation status
	methodology	(especially in tropical region) including estimation of dry deposition fluxes in at least three EANET countries (as research studies)	[6]	Estimation of dry deposition fluxes at the selected monitoring sites in selected the EANET countries	2009-2010	The software to calculate dry deposition flux at selected sites in the EANET countries was prepared by the NC following the recommended procedures.
(4)	Consideration on possible application of less expensive methods of monitoring including passive samplers	To provide more extensive data sets on acid deposition in the EANET	[1]	Recommendation on use of less expensive methods to reduce monitoring cost and increase numbers of monitoring sites	2007-2008 (2009-2010)	A high priority research project on “Feasibility study on low cost methodologies for monitoring air concentrations” was proposed by the SAC in 2008 and endorsed by IG for implementation in 2009-2010. Reports were submitted to SAC10/SAC11 in 2010/2011.
(5)	Review and revision of the monitoring Manuals including operation manuals of monitoring equipment	To provide participating countries with revised guidelines for monitoring	[7]	A decision on the revision of Technical Manuals: for Wet Deposition Monitoring of the EANET, and for Monitoring on Inland Aquatic Environment	2007 (2007-2010)	A decision to revise the technical manuals was made in 2007 and the SAC established 2 expert groups to carry out the tasks. A first draft of the revised technical manuals was submitted to the SAC10 in 2010 for adoption. After that, the document was submitted to IG12 in 2010 and endorsed.
(6)	Review of Strategy Paper for future directions of soil and vegetation monitoring	To clarify particular objectives, ways, and milestones for ecological monitoring	[8]	A revised Strategy Paper for Future Direction of Soil and Vegetation Monitoring of the EANET	2007-2008	The Strategy Paper for Future Direction of Soil, Vegetation and related Ecosystem Monitoring of the EANET (2009-2014) was prepared by the Task Force on Soil and Vegetation Monitoring and adopted at the SAC in 2008.
(7)	Promotion of the future catchment monitoring in line with Strategy Paper	To provide the scientific data on effects of acidification on terrestrial ecosystem based on the elemental budget calculations	[9]	Guidelines/methodologies for the future catchment monitoring	2007-2010	The guidelines was prepared by the Task Force on Soil and Vegetation Monitoring and endorsed at SAC10 in 2010 according to the revised strategy paper. The guidelines were based on information obtained from joint studies conducted with Japan, Thailand and Malaysia funded by the Global Environment Research Funded for the Ministry of Environment, Japan.

No.	Activities to be undertaken	Targets	Expected results and Outputs		Implementa-tion period	Implementation status
(8)	Evaluation of monitoring data with application of approach for assessment of impacts (e.g. critical load analysis, catchment analysis, etc.)	To identify areas which has potential for damage by acid deposition	[10]	Identification of area or regions susceptible to acid deposition damages	2008-2010	A literature studies was carried out by the Task Force on Soil and Vegetation Monitoring. An initial map showing the hotspots was also discussed by the Task Force. This activity is expected to continue after 2010 with further updates and improvements of the initial map.

ii. Compilation, evaluation, storage and provision of data

No.	Activities to be undertaken	Targets	Expected results and Outputs		Implementa-tion period	Implementation status
(9)	Compilation and storage of monitoring data including assistance to participating countries on developing their national databases	To maintain the EANET database of monitoring data for support to reporting and scientific studies on acid deposition in East Asia	[11]	Databases of the EANET monitoring data in the NC and some participating countries	2006-2010 (2009-2010)	The NC communicated with the participating countries to identify the individual country's needs.
(10)	Evaluation of appropriateness of monitoring data	Improvement of data quality by data verification	[12]	Establishment of data verification system	2007 (2007-2008)	The procedures have been established in the NC. An update of the members of the verification groups was carried out in 2007-2008.
(11)	Promotion of access to monitoring data for data users	Provision of the EANET data through Internet	[13]	Website for data downloads system and communication system.	2006-2010 (2009-2010)	The NC provided the downloadable monthly data in excel format in the EANET web site. The download system of hourly data was also prepared by the NC in 2010, though improvement of the system is still necessary.

iii. Promotion of quality assurance and quality control (QA/QC) activities

No.	Activities to be undertaken	Targets	Expected results and Outputs		Implement- ation period	Implementation status
(12)	Evaluation of national QA/QC programs and their implementation	To review and develop national QA/QC programs of the EANET	[14]	Progress report on performance of the EANET monitoring in participating countries (including recommendation for QA/QC activities)	2008-2010 (2010)	Reports were submitted to the STM/SAC in 2010/2011. Quality Management Guideline will be prepared by the NC to submit to the STM13 /SAC12 in 2012.
(13)	Research on evaluation of inter-laboratory comparison project results to clarify and solve problems of laboratory analysis in the participating countries as well as for data quality assurance	To introduce measures for improvement of regular measurements by evaluating the results of inter-laboratory comparison projects on the regular phase	[15]	Report on the evaluation of inter-laboratory comparison tests in 2001-2005 and improvement of laboratory analysis	2007	An evaluation report of the Inter-laboratory Comparison Projects from 2001 to 2005 with recommendations was prepared by the NC and presented to SAC in 2007.

iv. Implementation of technical support and capacity building

No.	Activities to be undertaken	Targets	Expected results and Outputs		Implement- ation period	Implementation status
(14)	Promotion of systematic training and education, and cooperation in training activities implemented by the participating countries and other relevant organizations	To improve training activities by considering feedback of trainees and using better training materials	[16]	Report on results of questionnaires on implementation of training initiatives in participating countries and by other relevant organizations	2006-2010	The questionnaire was revised in 2008 to obtain more comprehensive information from the participating countries and efforts have been made by the NC to fulfill the training requirements of the countries. A summary of the questionnaire results are reported annually to the STM, SAC and IG sessions.
			[17]	A set of training materials (textbooks, reviews of basic knowledge with exercises, special topic brochures)	2006-2010	A Textbook on Fundamental Methodology for Monitoring Wet Deposition in the EANET was published in 2006. A set of environmental education tools was provided to the relevant schools in 2008-2010.

(15)	Promotion of technical support for monitoring in the participating countries	Improvement of capability for the EANET monitoring in participating countries	[18]	Support to current EANET monitoring activities in participating countries	2006-2010	Technical missions to the participating countries are made annually/ biennially by the NC. Equipment spares and consumables were provided as necessary. Two IC systems were provided to Cambodia and Lao PDR in 2006. The NC also made communications with countries to assist with instrument problems and monitoring issues. (Annex 1)
(16)	Promotion of technical assistance by other relevant organizations	Improvement of capability for the EANET monitoring and policy making of the participating countries	[19]	Providing necessary equipment for national EANET monitoring by means of projects supported by external resources	2006-2010	An IC and pure water generator were provided to Myanmar in 2009 by the JICA at the request of the NC. Capacity building workshops for policy makers of the participating countries were convened in 2007, 2008 and 2009 respectively by the Secretariat in cooperation with NC.

v. Producing periodic reports on the state of acid deposition in East Asia

No.	Activities to be undertaken	Targets	Expected results and Outputs		Implement- ation period	Implementation status
(17)	Preparation of periodic assessment reports on the state of acid deposition	To provide scientific assessment for the public, scientists and policy makers	[20]	The first periodic report (end of 2006)	2006	The First Periodic Report on the State of Acid Deposition in East Asia (PRSad1) was adopted at the SAC6 and endorsed at the IG8 in 2006.
			[21]	Preparation of the second periodic report	2009-2010 (2009-2011)	The Implementation Plan for the Second Periodic Report (PRSad2) was prepared by the Expert Group on Preparation for the Second Periodic Report and it was adopted by the SAC8 in 2008. The Drafting Committee (DC) was established in 2009 to start the tasks. DC1 was held in April 2010 and in 2011.
(18)	Studies for supporting assessment on the state of acid deposition by means of trend analysis, assessment indicators, numerical modeling, etc.	To provide scientific instruments for assessment of monitoring data such as trend analysis, assessment indicators, numerical modeling, etc.	[22]	Guidance on monitoring data application for assessment reports such as trend analysis, assessment indicators, numerical modeling and data presentation design	2007-2008 (before start of preparation of next periodic report) (2008-2010)	A high priority research project on “Analysis of existing data for improving the understanding of status of acid deposition in East Asia” was proposed by the SAC in 2008 and endorsed by the IG for implementation in 2009. Reports of the project were prepared in March 2010.

vi. Promotion of research activities related to acid deposition problems

No.	Activities to be undertaken	Targets	Expected results and Outputs		Implement- ation period	Implementation status
(19)	Consideration on general directions of research activities by the SAC	Consideration and preparation of general directions of research activities in a transparent manner	[23]	Recommendation on general direction for research activities related to acid deposition problems in East Asia	2006-2008	A list of potential research activities was prepared by the Task Force on Research Coordination and presented to the SAC in 2008. Three priority research projects were identified by the SAC8 and approved by the IG10 for implementation using the EANET budget.
(20)	Promotion of inter-comparison studies and validation of existing models on acid deposition in East Asia	Clarification of the differences among related models and recommendations on the harmonization of models	[24]	Recommendation on improvement of regional atmospheric transport/chemistry/ deposition models	2007-2010	The MICS-Asia project was initiated by the NC and IIASA to develop a better understanding of the performance and uncertainties of the Chemical Transport Models applied in East Asia. The scientific papers on the studies are published in a special issue of Atmospheric Environment. A report was submitted to the SAC9 in 2009 and the SAC10 in 2010.
			[25]	Support to initiatives of participating countries on atmospheric modeling and its application	2007-2010	The NC participated in the activities of the Long-range Transboundary Air Pollutants in Northeast Asia Project (LTP) initiated by Republic of Korea.

vii. Promotion of public awareness

No.	Activities to be undertaken	Targets	Expected results and Outputs		Implement- ation period	Implementation status
(21)	Promotion of public awareness for the EANET among the general public, policy makers, private sectors and local governments on acid deposition and its effects	To increase understanding and knowledge level of the general public, etc on acid deposition and its effects	[26]	Printed public awareness materials and updated e-Learning courses and Web-pages and provision of national workshops for the participating countries of the EANET	2006-2010	A video tape and brochures on acid deposition were developed together with Myanmar in 2006. The e-Learning course was updated in 2009 and the EANET homepage (top page) was improved in 2009 -2010. Fact Sheet was compiled in cooperation with the Secretariat and issued on the website in March 2010. National workshops on public awareness for acid deposition monitoring issues and problems were conducted in Cambodia, Lao PDR and Philippines in 2006, Indonesia and Mongolia in 2009,. In-country workshop on acid deposition issues was also held in Lao PDR and Myanmar in 2006 and 2007, respectively.
(22)	Efforts to help high-level policy makers to understand the importance of acid deposition problems in East Asia and the EANET activities	To make high-level policy makers understand the importance of acid deposition problems in East Asia and the EANET activities	[27]	Dissemination of information at a special session in high level meetings	2006 (2009-2010)	This event was held at the High Level Segment during IG12 in 2010.
			[28]	Dissemination of information at other regional meetings	2006-2010	Information on the EANET has been disseminated at all the regional/international meetings attended by the Secretariat and the NC.
			[29]	Second Report for Policy Makers “Clean Air for A Sustainable Future”, November 2009	2008-2009	The Second Report for Policy Makers (RPM2) was prepared by the Secretariat and the NC and was launched at IG11 in 2009.

viii. Other relevant activities including those for future development and new researches

viii-1. Modeling activities and emission inventories

No.	Activities to be undertaken	Targets	Expected results and Outputs		Implement-ation period	Implementation status
(23)	Discussion on promotion of modeling activities and emission inventories	Clarification of future direction on modeling activities and emission inventories in the EANET. Clarification of necessary measures to implement modeling activities and to develop emission inventories	[30]	Proposals on promotion of modeling activities and emission inventories	2007-2008 (next MTP)	A proposal from the SAC to establish an expert group for promotion of modeling activities and emission inventories was not approved by IG in 2007. It will be discussed to implement this activity in during the next Medium Term Plan (MTP).
(24)	Promotion of capacity building for model application on urban, national and regional scales	To enable interested participating countries to use existing models for their own objectives	[31]	Designation of suitable standard models of each scale for research/training application	2007 (2009-2010)	The NC consulted with relevant experts on the designation of suitable models through international workshop on atmospheric modeling research.
			[32]	Promotion of the training courses on application of the standard models including cooperation with other organizations	2006-2010	The NC provided training on the application of air pollution models during the JICA Training Course on the EANET and JICA Third Country Training Course, to the EANET research fellows in 2007, and at the Individual Training Course in ADORC in 2009 based on the request from the participating countries.

viii-2. Selection and review of priority substances to be assessed

No.	Activities to be undertaken	Targets	Expected results and Outputs		Implementation period	Implementation status
(25)	Establishment of the framework for reviewing substances to be monitored including other air pollutants and monitoring parameters	To establish the framework for reviewing substances to be monitored and necessary parameters for regular monitoring as well as equipment for that purpose	[33]	Transparent framework for reviewing substances to be monitored	2006-2007 (2008)	In 2008, the IG decided that the Task Force on Monitoring for Dry Deposition is the appropriate body to perform this activity.
			[34]	Recommendation on monitoring parameters, measurements and equipment for the EANET sites	2006-2007 (2009-2010)	This activity was implemented by the Task Force on Monitoring for Dry Deposition in collaboration with the Task Force on Monitoring Instrumentation in 2009-2010. "Strategy Paper for Future Direction of Monitoring for Dry Deposition" was adopted at the SAC10 in 2010.
(26)	Investigation on environmental/human effects of priority substances and their monitoring requirements such as monitoring equipment, sampling and analytical methods	To clarify the necessity, monitoring approaches and necessary activities to organize the monitoring of priority substances	[35]	Reports on environmental/human effects of priority substances and their monitoring requirements with available information such as good practices and results of case studies in the EANET region	2008-2009 (2009-2010)	The NC prepared reports on the environment/human health effects of ozone and PM from 2010.
			[36]	Action plans for monitoring priority substances	2010	A report to promote ozone monitoring activities in East Asia was prepared by the NC and submitted to the SAC10 in 2010.

viii-3. Promotion of formation of an "Epistemic Community"

No.	Activities to be undertaken	Targets	Expected results and Outputs		Implementation period	Implementation status
(27)	Improvement of communication and sharing common understanding on a wide range of issues on the atmospheric	To support formation of the Epistemic Community by the EANET scientists, researchers and government officials	[37]	Creating a network of experts concerning a wide range of issues of the atmospheric environment within the EANET	2006-2010	All the activities of the EANET are expected to contribute to efforts to creating a network of experts on issues related to the atmospheric environment in East Asia.
			[38]	Periodic issue of Newsletter	2006-2010	The EANET Newsletter has been published biannually since 2007.

	environment in East Asia among the scientists, researchers and government officials of the participating countries		[39]	Regional Workshop on Acid Deposition in one of the participating countries of the EANET for scientific community, national governments, civil society, academia, private sector and other international experts and agencies	2006	This activity was implemented in 2006.
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viii-4. Improvement and development of institutional arrangement

No.	Activities to be undertaken	Targets		Expected results and Outputs	Implementation period	Implementation status
(28)	Further improvement of the guidelines for transparency and efficiency of the EANET	To strengthen the EANET activities. To promote efficiency and transparency of the EANET	[40]	More transparent and efficient activities of the EANET bodies including the SAC, Task Forces and other sub-bodies	2006-2010	Performance Review Reports were submitted to the WGFD in 2005, 2008, and 2010, and accepted/ adopted/ endorsed at the IG in 2005, 2008 and 2010 respectively
(29)	Studies on the establishment of a sound financial basis and the further development of the EANET following the outcome of the feasibility study on an appropriate instrument	To support a process of development of an appropriate instrument	[41]	Report on future development of the EANET to establish a sound financial basis	2006-2008 (2006-2010)	A Report of the WGFD on the Instrument to provide a sound basis for contribution to the EANET was submitted to the IG10. The text of the Instrument was finalized without any brackets at the IG11 in 2009. It was adopted at the IG12 in 2010, and seven countries signed to the Instrument at the High Level Segment during the IG12. (Totally 11 countries signed as of end of June 2012.)
(30)	Consideration on future activities with discussions on possibilities of future development of the EANET including a possibility to establish additional institutional structures, if necessary.	Improvement of structures of the EANET to promote active participation. Preparation of the Medium Term Plan for next period	[42]	Second Report on Future Development of the EANET	2009-2010	The Draft Second Report on Future Development of the EANET was discussed at the WGFD8 and IG11 in 2009, and the WGFD9 in 2010. The report was submitted to the IG12 in 2010 and adopted. This activity is considered after finalization of the Instrument to provide a sound basis for contribution to the EANET.
			[43]	Medium Term Plan (MTP) for the EANET (2011-2015)	2009-2010	Discussions on the Draft Medium Term Plan started at the WGFD8, SAC9 and IG11 in 2009, and at the WGFD9/SAC10 in 2010. Draft MTP was submitted to the IG12 in 2010 and adopted.

Note: The dates in brackets () in the column of the “Implementation period” show the revised implementation period for the activity

Annex 3

Status of Implementation of the Medium Term Plan (MTP) for the EANET (2011-2015)

i. Promotion of acid deposition monitoring

No.	Activities to be undertaken	Targets	Expected Outputs		Implementation period	Implementation status
(1)	Promotion of continuous monitoring of all the EANET priority chemical species, improvement in monitoring methodologies and better instrument maintenance	To achieve more complete and precise data from all sites	[1]	More comprehensive monitoring of the priority chemical species at the EANET sites according to the recommended procedures	2011-2015	- The issue was discussed at the Senior Technical Managers' Meeting (STM) in 2010, 2011 and 2012
			[2]	Updated regional and national SOPs	2011-2014	- The NC explained the necessity of upgrading during the technical mission, etc.
(2)	Collaboration with participating countries to increase the number of regional monitoring sites	To increase substantially the number of regional monitoring sites for better coverage of the East Asian region	[3]	New EANET sites established by participating countries at appropriate locations	2011-2015	- Filter-pack monitoring was started at Cambodia, Lao PDR and Myanmar.
(3)	Continuation of activities to improve the current methods used to measure air concentrations and estimate dry deposition	To develop an accurate method to measure air concentrations and estimate deposition of priority chemical species in East Asia	[4]	Improved method to measure air concentrations and estimate dry deposition developed by the Task Force on Monitoring for Dry Deposition	2011-2015	- In order to improve monitoring methodologies, EANET high priority research projects were implemented in 2009-2010. - In accordance with the developed manual, dry deposition flux was estimated at the monitoring sites in Japan and reported in the PRSAD2.
(4)	Development/review of guidelines, technical manuals and	To provide guidance on the EANET monitoring including	[5]	New/revised guidelines, technical manuals and documents developed by the respective task	2011-2015	- New/Revised Technical Manuals (Wet Deposition, Dry Deposition Flux Estimation, Inland Aquatic Environment)

No.	Activities to be undertaken	Targets	Expected Outputs		Implementation period	Implementation status
	documents, as necessary	types of instrumentation		forces under SAC		were adopted in 2010 and issued on website in 2012. - New Technical Manual for Air Concentration Monitoring has being developed.
(5)	Development/update of strategy papers for guidance on future direction of the EANET monitoring, as necessary	To provide guidance on the future direction of the EANET monitoring	[6]	Strategy papers prepared by the respective task forces under the SAC	2011-2015	- The NC is discussing the new Strategy paper for future direction of on soil, vegetation and related ecosystems monitoring of the EANET.
(6)	Promotion of quality assurance and quality control (QA/QC) activities	To enable all sites to adopt a standard set of quality control and quality assurance measures	[7]	Annual inter-laboratory comparison surveys to identify analytical problems	2011-2015	- Inter-laboratory comparison surveys have being implemented annually to identify analytical problems.
			[8]	A QA/QC manual for the EANET monitoring	2011-2012	- Quality Management Guidebook has being developed in order to submit to the STM13 and SAC12 in 2012 for further elaboration.

ii. Compilation, verification, evaluation, storage and provision of data

No.	Activities to be undertaken	Targets	Expected Outputs		Implementation period	Implementation status
(7)	Routine compilation, verification, evaluation, storage and provision of data and maintenance of database	To ensure that all the EANET data are routinely compiled, verified and stored	[9]	A complete, updated dataset available within the next year	2011-2015	- Monitoring data in 2010 was issued on the website. - Monitoring data will be provided to the participating countries after endorsement at the SAC12 in 2012.
		To share the EANET dataset among participating countries	[10]	Annual publication of the EANET Data Report	2011-2015	- Data Report 2009: Issued in Jan 2011. - Data Report 2010: Issued in Jan 2012. - Data Report 2011: Will be issued in Jan 2013.

(8)	Upgrading of the data management system in the NC to enable easy access by approved users	To upgrade the EANET database management system to international standard	[11]	An improved data management system at the NC	2011-2013	<ul style="list-style-type: none"> - Monthly data can be obtained through the EANET website. - System on provision of raw data was already developed. Improved system will be developed in the near future.
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iii. Enhancement of data analysis and assessment

No.	Activities to be undertaken	Targets		Expected Outputs	Implementation period	Implementation status
(9)	Conduct continuous assessment of the state of acid deposition using trend analysis, indicators, numerical models etc.	To provide updated information on the state of acid deposition in East Asia to policy makers	[12]	Assessments of the EANET data by the Task Force on Research Coordination and SAC including assessment of current status, trends, and use of model outputs.	2011-2015	<ul style="list-style-type: none"> - Data in 2005-2009 were assessed in the Second Periodic Report (PRSAD2) issued in Mar.2012. - Task Force on Research Coordination will review the status of air pollution in East Asia in accordance with the discussion at the SAC/IG in 2011/2012.
(10)	Evaluation of the monitoring data to assess impact on ecosystems	To identify areas which have potential for damage by acid deposition and other priority chemical species	[13]	A report identifying areas or regions in East Asia susceptible to damage by acid deposition and other priority chemical species will be prepared by the Task Force on Soil and Vegetation	2011-2014	<ul style="list-style-type: none"> - The issue has being discussed at the Task Force on Soil and Vegetation Monitoring.
(11)	Preparation of periodic assessment reports on the state of acid deposition in East Asia	To provide useful scientific input to policy makers, scientists and the general public	[14]	Periodic Reports on the State of Acid Deposition in East Asia	2011 2014-2015	<ul style="list-style-type: none"> - The PRSAD2 was approved at SAC11, endorsed at IG13 in 2011 and issued in March 2012. It was distributed to the participating countries, and also issued on EANET website.

iv. Implementation of technical support and capacity building activities

No.	Activities to be undertaken	Targets	Expected Outputs		Implementation period	Implementation status
(12)	Promotion of capacity building for personnel of the participating countries including training courses, capacity building workshops, fellowships, etc.	To enhance capacity of personnel involved in the EANET activities	[15]	Annual STM meetings to strengthen technical capacity in participating countries	2011-2015	STM meeting has been held annually. - 2010: Held in Sep. in Niigata Japan. - 2011: Held in Sep. in Kuala Lumpur, Malaysia. - 2012: Held in Aug. in Hanoi, Vietnam.
			[16]	Technical support for the EANET meetings including meetings of the task forces and expert groups	2011-2015	- The NC provided technical support to the EANET Meetings (WGFD, SAC, IG) - Regarding the meeting of the task forces and expert groups, the NC played the roles of the Secretariat.
			[17]	Textbooks and other guidance materials	2011-2015	- The NC is considering this issue.
			[18]	Trained personnel on the EANET monitoring	2011-2015	- Individual training: 6 trainees in 2010, 3 trainees in 2011 and 2 trainees in 2012. - JICA Country Focused Training: 10 trainees in 2012 (JFY 2011)
			[19]	Workshops for policy makers to enhance knowledge on the EANET activities	2011-2015	- The NC will make effort to accumulated relevant information.
(13)	Promotion of technical support to participating countries by provision of advice, technical information and equipments to countries	To assist participating countries to conduct the EANET monitoring	[20]	Experts for advice and other technical support provided by the NC to participating countries focusing on QA/QC	2011-2015	- The NC dispatched technical missions to the participating countries (Ref.: Annex 1)
			[21]	Equipment and other assistance provided to participating countries especially using external funds from donor agencies	2011-2015	- The NC provided equipment, consumables taking into account the situation in the participating countries within the allocated budget. (Annex 1)

(14)	Provision of new and updated information and communication technologies	To provide access to the knowledge base and to enable EANET to operate in a manner that is comparable with other networks and programmes	[22]	Access to state-of-the-art information and communication technologies	2011-2015	- The Workshop on Capacity building for information and communication technologies for the EANET planned in 2011 was cancelled due to budget constraint.
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v. Promotion of research activities related to acid deposition problems

No.	Activities to be undertaken	Targets	Expected Outputs		Implementation period	Implementation status
(15)	Promotion of research studies particularly on the applicability of various methodologies for measurement of air concentrations in East Asia	To encourage research studies on acid deposition including improvement of methodologies for measurement of air concentrations in East Asia	[23]	Biennial publication of the EANET Science Bulletin	2012-2014	- EANET Science Bulletin (Vol. 2) was issued in Jan. 2011. - EANET Science Bulletin (Vol. 3) will be issued at the end of 2012.
			[24]	Research opportunities for young scientists through the EANET Research Fellowship Program	2011-2015	- Research fellowship in 2010: Researchers from Thailand and Vietnam were invited. - Research fellowship in 2011: Researchers from China and Malaysia were invited. - Research fellowship in 2012: Researchers from China and Thailand were invited.
			[25]	An evaluation of the performance of the various methodologies for monitoring air concentrations. A report with recommendation on the most appropriate methodologies will be submitted by the Task Force on Monitoring Instrumentation to the SAC.	2011-2015	- EANET high priority research projects were implemented in 2009-2010. - Joint research project with Korea has been implemented regarding the comparison study for filter pack method.

(16)	Promotion of studies on the effects of acid deposition and other priority chemical species on the ecosystem, human health and other social aspects from the viewpoint of the socio-economics	To determine the impacts of acid deposition and other priority chemical species in East Asia and further understand the inter-linkages between pollutants and effects	[26]	Scientific papers and reports on impacts of acid deposition and other priority chemical species on the ecosystem, human health, and other social aspects from the viewpoint of the socio-economics in East Asia, including results from simulation models. A recommendation on future direction of the EANET monitoring will be submitted by the SAC to the IG.	2011-2015	- Joint project on catchment analysis with Thailand, Malaysia and Japan has being implemented. Several scientific papers have been developed.
(17)	Promotion of studies on proposed models to assess and analyze the trend of national and regional acid deposition and other air pollutants in East Asia by evaluation of existing models and providing a suitable one, and promotion of atmospheric simulation model through workshops, training courses etc.	To accurately map deposition of the priority chemical species in East Asia and identify high concentration areas and enhance the capability of usage of modeling for all countries	[27]	Mapping of concentrations and deposition of priority chemical species, and elucidation of transport/deposition processes in East Asia. Trained and knowledgeable scientists on atmospheric chemical transport modeling in the EANET countries.	2011-2015	- The International Workshop on Atmospheric Modeling Research in East Asia has been held annually based on the outcomes of the Model Inter-Comparison Study (MICS) workshops. - The “Modeling and Emission Inventory Training Workshop” was held in 2012 in Niigata, Japan to learn the basic knowledge and fundamental skill to use the long-range chemical transport model and develop the emission inventories of air pollutants.
(18)	Promotion of emission inventories through workshops,	To provide the harmonized methodology on the	[28]	Reference document(s) for emission inventory	2011-2012	- At the “Modeling and Emission Inventory Training Workshop”, relevant materials were distributed.

	training courses, pilot studies, preparation of reference materials etc.	development of emission inventory and strengthen capacity of countries in air quality management	[29]	Trained and knowledgeable personnel on emission inventories in the EANET countries	2011-2012	- The “Modeling and Emission Inventory Training Workshop” was held in 2012 in Niigata, Japan to learn the basic knowledge and fundamental skill to use the long-range chemical transport model and develop the emission inventory of air pollutants.
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vi. Promotion of public awareness

No.	Activities to be undertaken	Targets	Expected Outputs		Implementation period	Implementation status
(19)	Promotion of public awareness on acid deposition and other priority chemical species, including their effects, control and mitigation measures, and activities of the EANET, to various levels of the community which include policy makers, scientists, youth, school children and others. Promotion of public awareness to multi-layer stakeholders through the joint project for	To enhance understanding and knowledge on air pollution to achieve better air quality in East Asia	[30]	Public awareness activities including workshops for participating countries and to multi-layer stakeholders.	2011-2015	- Joint projects on environmental education with Thailand (2009), China (2010) and Indonesia (2011) were implemented.
			[31]	Regular updating of the EANET webpage	2011-2015	- Regular updating of the EANET webpage has been implemented.
			[32]	Public awareness and environmental education materials disseminated through publications and the EANET webpage	2011-2015	- EANET e-Learning Program was updated.
			[33]	Periodic issues of the EANET Newsletter	2011-2015	- In cooperation with the Secretariat, the EANET Newsletter was issued biannually.
			[34]	Report for Policy Makers	2012-2013	(Will be developed in 2013.)
			[35]	Regional and national workshops held in the participating countries to promote good practices and best available technologies for prevention and control of air pollution and other workshops for the youth and school children	2011-2015	- National public awareness workshop was held in Philippines in Dec. 2011, and in Lao PDR in Mar. 2012. The NC introduced atmospheric environment issues widely including ozone and PM, and co-benefit/co-control issues. - Regional (International) public

	supporting the environmental education activities on acid deposition.					awareness workshop was held in Feb./Mar. 2012 in Niigata, Japan.
			[36]	A special High Level Segment at an EANET session to disseminate information to policy makers	2015	- It will be planned in 2015 in this moment.
(20)	Sharing a common understanding on atmospheric environment issues among the scientific community and policy makers by exchanging information through a network of experts	To support formation of an epistemic community in East Asia	[37]	Creation of a network of experts concerned with atmospheric environment issues within East Asia	2011-2015	- Relevant discussion was made during the Task Force Meetings.

vii. Further development of the EANET

No.	Activities to be undertaken	Targets	Expected Outputs		Implementation period	Implementation status
(21)	Consideration on the extension of the scope of the instrument and institutional arrangement of the EANET taking into account recent developments and future requirements, including a possibility of establishing additional bodies, e.g. network centers if necessary	To improve the existing activities and structure of the EANET to enable future development and continuation of benefits to participating countries.	[38]	Report with recommendations on extension of the scope of the instrument and institutional arrangement of the EANET to be submitted to IG	2011-2015	- Discussion on the expansion of the scope of the instrument was implemented at the WGFD10, SAC11, IG13, WGFD11, SAC12, and Task Force on Research Coordination in 2011 and 2012. - Review of the status of air pollution in East Asia will be implemented in 2012-2014.
(22)	Development of the next Medium Term Plan (MTP) for the EANET.	To plan a strategy for future development of the EANET	[39]	Medium Term Plan for the EANET (2016-2020)	2014-2015	- Discussion on new MTP will be started in 2014.

Annex 4

Budget and Expenditures of the Network Center in 2010-2010

Table 1 - Expenditures of the Network Center in 2010 (Core budget activities)

Activities	Budget in 2010			Expenditures in 2010		
	Direct Exp. (US\$)	Personnel Exp. (US\$)	Total (US\$)	Direct Exp. (US\$)	Personnel Exp. (US\$)	Total (US\$)
1. Central compilation, evaluation and storage of data etc.	34,300	44,800	79,100	54,741	44,538	99,279
2. Preparation of data report	7,500	17,500	25,000	7,682	17,996	25,678
3. Dissemination of data and relevant information	10,000	12,000	22,000	6,387	13,497	19,884
4. Strengthening technical capacity in participating countries	50,000	40,000	90,000	41,383	38,240	79,623
5. Implementation and coordination of QA/QC activities	26,000	17,000	43,000	25,108	26,993	52,101
6. Implementation of training activities	0	5,000	5,000	445	4,498	4,943
7. Technical support to the EANET meetings	49,700	69,500	119,200	50,289	69,730	120,019
8. Administrative works	10,000	14,000	24,000	23,721	6,748	30,469
Total	187,500	219,800	407,300	209,756	222,240	431,996

Table 2 - Expenditures of the Network Center in 2010 (Additional budget activities)

Activities	Budget in 2010			Expenditures in 2010		
	Direct Exp. (US\$)	Personnel Exp. (US\$)	Total (US\$)	Direct Exp. (US\$)	Personnel Exp. (US\$)	Total (US\$)
1. Strengthening technical capacity in participating countries	64,500	27,500	92,000	87,338	26,319	113,657
2. Implementation of training activities	38,500	81,500	120,000	32,877	62,760	95,637
3. Research activities	233,000	144,000	377,000	298,271	127,540	425,811
4. Other activities (Public awareness)	56,000	28,000	84,000	28,191	28,342	56,533
5. Administrative works	40,000	40,000	80,000	28,122	105,270	133,392
Total	426,000	327,000	753,000	474,799	350,231	825,030

Table 3 - Expenditures of the Network Center in 2011 (Core budget activities)

Activities	Budget in 2011			Expenditures in 2011		
	Direct Exp. (US\$)	Personnel Exp. (US\$)	Total (US\$)	Direct Exp. (US\$)	Personnel Exp. (US\$)	Total (US\$)
1. Central compilation, evaluation and storage of data etc.	68,500	79,500	148,000	69,222	78,126	147,348
2. Preparation of data report	8,000	19,000	27,000	6,126	18,858	24,984
3. Dissemination of data and relevant information	3,500	16,500	20,000	1,555	16,164	17,719
4. Strengthening technical capacity in participating countries	48,000	22,000	70,000	53,349	21,552	74,901
5. Implementation and coordination of QA/QC activities	19,000	33,000	52,000	18,039	32,328	50,367
6. Technical support to the EANET meetings	31,000	43,000	74,000	43,066	43,104	86,170
7. Other Activities	0	5,000	5,000	389	5,388	5,777
Total	178,000	218,000	396,000	191,746	215,520	407,266

Table 4 - Expenditures of the Network Center in 2011 (Additional budget activities)

Activities	Budget in 2011			Expenditures in 2011		
	Direct Exp. (US\$)	Personnel Exp. (US\$)	Total (US\$)	Direct Exp. (US\$)	Personnel Exp. (US\$)	Total (US\$)
1. Strengthening technical capacity in participating countries	80,000	45,000	125,000	93,772	37,715	131,487
2. Implementation of training activities	73,500	49,500	123,000	23,138	48,492	71,630
3. Research activities	169,000	141,000	310,000	184,452	118,536	302,988
4. Public awareness activities	18,500	26,500	45,000	28,214	26,940	55,154
5. Other activities	6,000	11,000	17,000	7,060	16,164	23,224
6. Administrative works	18,000	99,000	117,000	22,077	96,984	119,061
Total	365,000	372,000	737,000	358,713	344,831	703,544