

The Sixth Session of the Scientific Advisory Committee
on Acid Deposition Monitoring Network in East Asia
25-27 October 2006, Pathumthani, Thailand

**Activities in line with
“The Strategy Paper for Future Direction of Soil and Vegetation Monitoring of EANET”**

Network Center for EANET

1. Strategy Paper for Future Direction of Soil and Vegetation Monitoring of EANET

The Strategy Paper for Future Direction of Soil and Vegetation Monitoring of EANET was endorsed by the Scientific Advisory Committee at its Second Session (SAC2) in November 2002 in Bangkok, Thailand, with a few modifications for the final draft developed by the Task Force on Soil and Vegetation Monitoring.

The Strategy Paper describes that the following four items would be implemented as the milestones, which are reflected to the specific work plan for coming five years:

- Joint Workshop by ICP Forests and EANET: 2002
- Implementation of the next monitoring: 2002-2005
- Start of case studies in selected reference catchments: 2006
- Preparation of sub-manual on forest monitoring: 2005

Task Force has been promoting some of the above activities in line with the Strategy Paper, and the Network Center for EANET (NC) has been supporting their activities as the secretariat of the Task Force.

2. Clarification of sampling plan/schedule for soil and forest monitoring

Soil and vegetation monitoring is carried out at 3-5 years interval. For surely implementation of the next monitoring in the respective monitoring sites, detailed next sampling plan/schedule should be clarified based on the National Monitoring Plans. The following items should be described in the detailed plan:

- a) Monitoring sites: locations, soil types, and vegetation types
- b) Monitoring items: soil and/or forest
- c) Parameters: pH, exchangeable cations, exchangeable acidity, etc. for soil; general description of forests, survey of tree decline, etc.
- d) Monitoring year: 2003, 2004, 2005, 2006, and/or 2007
- e) Monitoring seasons and/or months: spring, summer, autumn, and/or winter; rainy season or dry season; month
- f) Organizations in charge of the sampling and analysis:

Consequently, Network Center (NC), as the secretariat of the Task Force, prepared a document "Sampling Plan/Schedule for Soil and Vegetation Monitoring of EANET 2003-2007", and the document has been updated based on the latest information several times. The document might be effective for implementation of the survey as well as informative for data compilation. The document was updated as "Sampling Plan/Schedule for Soil and Vegetation Monitoring of EANET 2006-2009" for coming years.

Sufficient efforts should be made in the participating countries to implement the described plan for promotion of continuous monitoring. The document will be updated based on the latest information.

3. Promotion of studies for catchment analysis

NC promoted studies on catchment analysis in Japan and Thailand. A study plot was established in a small catchment area in Shibata City, Niigata Prefecture, in Japan. In the area, monitoring on input (deposition) and output (stream water) fluxes in/from the catchment area, and analyses on other biogeochemical aspects have been carried out continuously, and nutrient dynamics and acid deposition impacts in the area were discussed. Based on this experience, NC started the joint research project on catchment analysis in Thailand with Royal Forest Department (RFD) and Environmental Research and Training Center (ERTC), as introduced in the ongoing joint research activities. Scientific and technical information obtained by these studies will be shared in the EANET region for future monitoring.

4. Discussion on sub-manual for forest monitoring in East Asia

EANET - ICP Forests Joint Workshop was held in Seremban, Malaysia in 2002 as one of the milestones described in the strategy paper, and some technical subjects for forest monitoring were clarified based on discussions at the workshop. Task Force and NC developed the document "Procedures and schedule for preparing sub-manual on forest monitoring in East Asia (EANET/SAC3/8/2/Annex3)" taking these technical subjects into account. Task Force and NC are preparing the sub-manual according to the procedures and schedule.

Contents and the leading authors of the sub-manual were decided in March 2004, and the manuscripts are under preparation by the leading authors. Most of manuscripts have been prepared and now being edited for the reviewing. The manuscripts were reviewed by Task Force Members as well as SAC Members from October 2005 to January 2006. NC edited and compiled the manuscripts as the draft sub-manual in cooperation with TF members. The draft sub-manual was reviewed again by relevant experts. Detailed reviewing processes were described in the Attachment.

The sub-manual is expected to be endorsed at SAC6 in 2006.

Reviewing processes of the draft sub-manual on forest vegetation monitoring

Network Center for EANET

1. Review for the respective manuscripts on the web: from October 2005 to January 2006

Manuscripts were reviewed by the following members:

- Task Force on Soil and Vegetation Monitoring
- Network of Soil and Vegetation Monitoring Specialists
- Scientific Advisory Committee (SAC)
- National Focal Points (NFPs)
- Experts of ICP Forests, including Chairmen of Expert Panels/Working Group

Most manuscripts were revised based on comments and suggestions. Moreover, the structure of the sub-manual, including structures of sections, and order of contents, was modified. After the major revision, NC compiled the draft sub-manual in cooperation with several TF members, who were the leading authors.

2. Review for the draft sub-manual on the web and hardcopy: from September 2006

The draft sub-manual was reviewed by the following members:

- Task Force on Soil and Vegetation Monitoring
- Network of Soil and Vegetation Monitoring Specialists
- Scientific Advisory Committee (SAC)
- National Focal Points (NFPs)
- QA/QC Managers
- Experts of ICP Forests¹⁾, including Chairmen of Expert Panels/Working Group

Note: ¹⁾ Experts of ICP Forests

- Dr. Martin Lorenz: Head of Program Coordinating Center (PCC)
- Dr. Georg Krause: Former Chairman of Working Group of Ambient Air Quality
- Dr. Alfred Fürst: Foliar Coordinating Center
- Dr. Pasi Rautio: Chairman of Expert Panel of Foliar Analyses and Litterfall
- Dr. Silvia Stofer: Federal Research Institute WSL, Switzerland
- Dr. Nicholas Clarke, Chairman of Expert Panel on Deposition

3. Comments/suggestions and major modifications from “Draft” to “Revised draft”

(As of 13 October 2006)

Sections/Chapter	Comments for “Draft”	Modifications for “Revised draft”
General	It has been improved a lot since the last version. Many points were considered and I would like to give you my congratulations for yours excellent work (from an expert of ICP Forests).	-
Table of contents and Chapter 1	The location of Annex 4.1 and 4.2 is not appropriate. These methodologies should be moved to another chapter.	These annexes were moved to Chapter 2 as Annex 2.1 and 2.2. Introduction was modified accordingly as appropriate.
Section 3-b)/ Chapter 2.1	Descriptions on distance (12 m from the center) for selection of trees were very strict. The manual should be more open taking actual situations in tropical forests into account.	The following lines were added: <i>Trees may have huge crowns sometimes, and it may be difficult to select 5 trees just around the points of 12 m from the center, especially in tropical forests. Trees can be selected from wider area (lower or upper distance from the center) in such a case.</i>
Section 2)/ Chapter 3.1.2	Snowfall sampling should be considered.	Descriptions about snowfall collectors were added as Note.
Section 2)/ Chapter 3.1.2	Height of funnel at 1.3 m is too high for throughfall due to the possibility of low branches.	The following note was added: <i>The height of the sampler should be considered taking forest type into account. If effects of lower branches are significant, the height should be approximately 1m.</i>
Section 3-b)/Chapter 3.1.2	One set of sampler is not enough for open field rainfall. Three samplers should be installed at least.	The description was modified: <i>At least one set, preferably three sets of the sampler should be installed in open place near the</i>

		<i>forest.</i>
Section 3-b)/ Chapter 3.1.2	Descriptions about distance from trees should be modified	Descriptions about obstructions were added according to the Technical Manual on Wet Deposition Monitoring: <i>The horizontal distance between a large obstruction and the collector should be at least twice the height, or the top of an obstruction as viewed from the collector should be less than 30 ° above the horizon.</i>
Section 3-b)/ Chapter 3.1.2	Number of throughfall samplers should be more than 10 sets.	The following description was added: <i>It is recommended that 10 sets of the sampler will be installed to obtain representative data.</i>
Section 3-b)/ Chapter 3.1.2	Number of stemflow samplers should be 5-10 sets at least.	The following description was added: <i>It is recommended that 5-10 sets of the sampler will be installed to obtain representative data.</i>
Table 3-1-2-1/ Section 3-f)/ Chapter 3.1.2	List of recommended methods could be enlarged	The table was modified with some additional descriptions, referring the Technical Manual on Wet Deposition Monitoring.
Chapter 4	-	"4.8. QA/QC for advanced methods" was newly added.
Section 3)/ Chapter 5.1.2	Several comments on standardization of the methods were made.	More detailed explanations were added: <i>Distance between trees within plot should be about the same for all plots of the site (3-b).</i> <i>While selecting plots, no a priori information on lichen abundance at a plot is taken into account (3-b).</i> <i>The same number of trees for all</i>

		<i>plots is recommended (3-c).</i>
Section 8-b)/ Chapter 5.1.2	What are the best season and/or the best condition except rain?	Descriptions were modified as follows: <i>Lichen sampling can be conducted in any season and in any conditions under which lichens are dry. Avoid sampling under rainy and foggy conditions, and shortly after rain and fog.</i>