

The First Session
of the Scientific Advisory Committee
on the Acid Deposition Monitoring Network
in East Asia
14-16 November 2001, Chiang Mai, Thailand

**Report on the Progress
in Developing Strategy Paper for
Future Direction of Soil and Vegetation Monitoring of EANET**

1. Background

In the Technical Manual for Soil and Vegetation Monitoring (2nd ISAG, 2000), objectives of soil and vegetation monitoring were clarified, and stepwise approach for the ultimate objective was proposed. As the first step, for the initial objectives, methods of basic survey of soil and vegetation were described in the Technical Manual. However, the next steps for the ultimate objective have not been clarified, and needs of development of strategy have been discussed.

Task Force for soil and vegetation monitoring was established based on the recommendation of the second Interim Scientific Advisory Meeting (ISAG) in Jakarta, March 2000, and the Task Force was requested to develop a step-wise strategy towards the ultimate objective of soil and vegetation monitoring.

2. Procedures and schedule

The strategy paper will be established with the following procedures and schedule. Based on previous discussions in the relevant international meetings/workshops and advices of Japanese experts, the preliminary draft outline of the strategy was drafted.

Spring, 2001: Preliminary draft outline of the strategy paper (ANNEX) was circulated in the Task Force members by the end of July.

Summer, 2001: The draft outline is being elaborated based on the comments from the members (now on going).

Autumn, 2001: The draft strategy paper will be developed based on the comments from the members.

Spring, 2002: The strategy paper will be completed.

Table. Members' list of Task Force for Soil and Vegetation Monitoring (August 2001)

Country	Name	Position
CHINA	Mr. Liu Fang	Senior Engineer, China National Environmental Monitoring Centre (CNEMC)
INDONESIA	Dr. Le Istiqlal Amien	Senior Scientist, Agroclimate and Hydrology Research Division, Center for Soil and Agroclimate Research
JAPAN	Dr. Tsumugu Totsuka	Professor, Department of Environmental Science and Information, Faculty of Sociology, Edogawa University
MALAYSIA	Dr. Muhamad Bin Awang	Deputy Vice Chancellor, Universiti Putra Malaysia
MONGOLIA	Mr. Bayar Erdembileg	Agrochemist and Soil Scientist, Central Laboratory of Environmental Monitoring, National Agency for Meteorology, Hydrology and Environmental Monitoring, Ministry of Nature and Environment
PHILIPPINES	Dr. Wilfredo M. Carandang	Associate Professor, Silviculture and Resources, Rehabilitation Division, Institute of Renewable Natural Resources, College of Forestry and Natural Resources, University of the Philippines at Los Banos
	Mr. Apolonio M. Ocampo	University Researcher II, Institute of Plant Breeding, University of the Philippines at Los Banos
Republic of KOREA	Dr. Suh Min-Hwan	Senior Researcher, Environmental Ecology Division, National Institute of Environment Research (NIER)
	Dr. Lee Min-Hyo	Director, Soil Environment Division, National Institute of Environment Research (NIER)
RUSSIA	Dr. Tatiana A. Mikhailova	Laboratory of Plant Pathology, Siberian Institute of Plant Physiology and Biochemistry, Russian Academy of Sciences/Siberian Branch (RAS/SB)
THAILAND	Dr. Jesada Luangjame	Royal Forest Department, Forest Research Office, Division of Silvicultural Research, Sub-Division of Forest Ecological Research
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ANNEX

**Strategy Paper for
Future Direction of Soil and Vegetation Monitoring of EANET
(Preliminary Draft Outline)**

1. Introduction

Major previous discussions on soil and vegetation monitoring in East Asia and the scope of the paper will be briefed.

The candidate topics for this chapter:

- *Discussions in the Workshop on ecological impact monitoring of acid deposition in East Asia in Beijing*
- *Concept of approach on soil and vegetation monitoring (described in Table 1.1. in the technical manual)*
- *Establishment of Task force of soil and vegetation monitoring and Network of soil and vegetation monitoring specialists*
- *Scope of the paper*

2. Present status of soil and vegetation monitoring

Essence of the technical manual will be briefly explained, and the present status of the soil and vegetation monitoring and surveys, especially progress of the basic survey in East Asia will be briefly highlighted.

2.1. The technical manual of soil and vegetation monitoring

Contents of the technical manual and the present issues will be explained.

2.2. The present status of basic survey in the participating countries

The monitoring data during the preparatory phase and the present status of the basic survey in the participating countries will be described.

3. Objectives of soil and vegetation monitoring of EANET

3.1. Initial objectives of soil and vegetation monitoring

The initial objectives, "establishment of baseline data" and "early detection of possible impact", should be clarified individually, then short-term, and middle- and long-term objectives will be described.

3.1.1. Establishment of baseline data

Long-term monitoring of soil and vegetation will be discussed.

- **Short-term objective of establishment of baseline data**

➤ *To collect baseline information on soil chemical properties and flora.*

● **Middle- and long-term objectives**

- *To establish monitoring sites considering climatic zones in the participating countries.*
- *To accumulate long-term monitoring data on trends of soil chemical properties and flora.*
- *To understand implication among atmosphere, soil and plant.*

3.1.2. Early detection of possible impacts

Evaluation of direct effect of air pollution on plant will be discussed.

● **Short-term objective**

- *To describe the present status of forest decline.*

● **Middle- and long-term objectives**

- *To establish the inventory of major plant sensitivities.*
- *To describe maps of vegetation and air pollution in local area.*
- *To evaluate dose-response implication.*
- *To detect impact of acid deposition on plant in early stage.*

3.2. The ultimate objectives of soil and vegetation monitoring

3.2.1. Clarification of the ultimate objectives

The ultimate objective, "To assess impact of acid deposition on terrestrial ecosystem with comprehensive and systematic manner through maintenance of good quality database", will be clarified. It may be clarified as follows: "To estimate future effects of acid deposition on terrestrial ecosystem using catchments analysis and simulation model of acidification."

● **Middle-term objectives**

- *To describe elemental dynamics utilizing catchments analysis in selected reference sites.*

● **Middle- and long-term objectives**

- *To construct the simulation model of acidification and estimate future impact of acid deposition on terrestrial ecosystem.*

4. Steps to achieve the objectives

4.1. Steps to achieve the initial objective

4.1.1. Steps for the establishment of baseline data

● **In the short-term**

- ***Promotion of continuous monitoring***

It will be discussed that continuous monitoring should be promoted in appropriate number of monitoring site taking account of monitoring situation of each country.

- **In the middle- and long-term**

- *Improvement of methodologies*

For the long-term monitoring, the present methodologies will be reviewed and the methodologies to be improved will be clarified, especially for vegetation monitoring.

- *Review of site location*

Based on the experiences in initial stage of monitoring, location of monitoring site will be reviewed for the long-term monitoring.

4.1.2. Steps for the early detection of possible impacts

- **In the short-term**

- *Intensive survey to describe the status of forest decline*

Implementation of intensive survey to describe the present status of forest decline will be discussed.

- **In the middle and long-term**

- *Accumulation of data regarding plant sensitivities*

Procedures for the accumulation of data regarding plant sensitivity will be discussed. Need of intensive research may be also discussed.

4.2. Steps to achieve the ultimate objective

4.2.1. Steps for the middle objectives

- *Promotion of case study in reference site*

Case study at the selected reference catchments will be discussed. In the case study, methodologies of catchments analysis may be elaborated through the following steps:

- *Design of the case study and selection of reference catchments*

- *Estimation of inputs (deposition) and outputs (e.g. stream water) amounts*

- *Studies on black boxes in soil and plant system*

4.2.2. Steps for the middle and long-term objectives

- *Construction and evaluation of simulation model*

Process of development of simulation model will be discussed.

- *Selection of sites for application of the model and establishment of database for modeling*

Selection of the sites for application of the model, and establishment of database for modeling in the participating countries will be discussed.

4.3. General matters to be elaborated

4.3.1. Monitoring system

The following items on the monitoring system should be discussed.

- *Number and location of monitoring sites*
Considering climatic zones, air pollution, etc., monitoring sites should be reviewed.
- *Continuously involved experts*
- *Budgets*

4.3.2. Capacity building and training

Necessary items of the capacity building and training will be clarified based on the discussion about the present status of the basic survey.

4.3.3. Collaboration with the relevant networks

Collaboration with the other relevant networks in and out of the East Asian region will be discussed.

4.4. Overall strategy and milestones

Overall strategy to achieve the Ultimate Objective will be described. Milestones in each step and the ways to examine such milestones will be identified.

5. Specific work plans

This chapter will identify major issues to be investigated/undertaken in about five years to come and specific work plans (research schemes or possible funding sources to be used, implementing agencies, project duration and time tables, possible cost estimates for such projects etc.).

E.g.

- *Promotion of continuous monitoring*
- *Intensive survey to describe the status of forest decline*
- *Intensive research on plant and/or microbial sensitivity to acid deposition*
- *Design of case study and selection of reference catchments*