

The Fifth Senior Technical Managers' Meeting
of the Acid Deposition Monitoring Network
in East Asia
28-30 September 2004, Niigata, Japan

Proposal for Future Research Activities of Highest Priority

(Draft)

Network Center for EANET

1. Introduction

The First Session of the Scientific Advisory Committee (SAC1) started to discuss the future research activities on acid deposition to be implemented by participating countries and Network Center (NC) according to "Tentative Design of the Acid Deposition Monitoring Network in East Asia (EANET)" (EANET/IG 2/5/3). It was clarified that clear prioritization for future research activities was needed for further elaboration of "Proposal for Future Research Activities in EANET" prepared by NC for consideration at SAC1.

NC considered that the future direction of investigations should be discussed before the proposal for more determined future research activities would be elaborated. For this purpose "Proposal for Future Direction of Research Activities in EANET" was presented by NC at the Second Session of the Scientific Advisory Committee (SAC2). In this document the proposed future direction of research activities was described as classifying into "highest priority researches" and "other important researches."

To promote exchange of opinions among SAC members with more specifically concern to highest priority researches NC has prepared a "Discussion Paper on Future Research Activities of Highest Priority" for presentation at SAC3 as the next step of consideration. Research activities of highest priority are suggested in the paper to be done currently in the shorter period (three-five years). Further elaboration of proposals is presented below based on decision of SAC3 and latest discussions.

2. Proposed research activities of highest priority

2.1. Evaluation of state of acid deposition in East Asia based on previous data

In line with the "Tentative Design of the EANET" the SAC3 organized a discussion on necessity to prepare the first periodic report on the state of acid deposition in East Asia. These activities pointed as one of the important tasks of SAC should include a set of researches on analysis and evaluation of EANET monitoring data during the regular phase.

As the first step for initiating of this process the First Scientific Workshop on Evaluation of the State of Acid Deposition in East Asia was proposed and has being organized by NC. The presentations on available monitoring data and methodologies for data analyzing are suggested to be done by NC. The tentative format and content of the first periodic reports and plan for its preparation are supposed to be worked out for consideration, discussion and approval by SAC4.

Based on preliminary discussion at the First Session of the Working Group for Future Development (WGFD1) held in Bangkok on 19-20 August 2004 the first periodic report would be developed by SAC before the end of 2006 with support by NC.

However, due to current necessity to support the feasibility study on regional agreement the Secretariat and NC shall consider the preparation of policy relevant report on acid deposition in East Asia with possible cooperation with some participating countries and related organizations.

2.2. Researches for improvement of monitoring activities

Joint research projects have been implemented by some countries and NC to promote improvement of monitoring activities in East Asian region that extends geographically from tropical to boreal zones with different characteristics of climate and vegetation.

These researches include study with Thailand on dry deposition flux in tropical regions and with Russia on monitoring methodologies and evaluation of atmospheric environment in boreal region as well as completed study with Mongolia on plant sensitivity to acid deposition in semi-arid zone.

An investigation of sampling techniques and procedures for dry deposition monitoring was started by NC, and catchment study for basic information to develop environmental indicators of acid deposition impact on ecosystems was going on under the cooperation with other research team.

These researches for improvement of monitoring activities should be continued while the specific subjects should be considered through reviewing the results of previous researches.

Some researches to promote efforts on expanding of monitoring network and on improvement of its effectiveness could be suggested:

- On implementation of low-cost methods to monitor air concentration of chemical species such as passive samplers;
- On evaluation of required network density in accordance with EANET objectives to utilize monitoring data.

These studies could be organized by some participating countries with cooperation of NC both as in-kind scientific contribution to EANET activities and with use of external support by national or international research funds.

2.3. Review of technical manuals and QA/QC programs

Most of the participating countries and NC have accumulated experience in EANET activities for more than 5 years since the start of the preparatory phase. Also, research activities including the above-mentioned joint research projects may provide basic knowledge and experience to improve monitoring methodologies.

The investigation on improvement of monitoring technologies as well as on advancement of effective data assurance and quality control for all monitoring fields has to be promoted with incorporating of them into revision of technical manuals and QA/QC programs. The present technical manuals, QA/QC programs and data reporting procedures/formats should be considered to review based on the knowledge and experience obtained through monitoring, research activities and international achievements.

As one of the important issues the discussion on revision of strategy paper on dry deposition monitoring should start taking into account the importance of pollutants to be measured as well as objectives and perspectives of EANET.

The preparation of the sub-manual on forest monitoring was started as one of the activities in line with the Strategy Paper for Future Direction of Soil and Vegetation Monitoring of EANET. The document will include methodologies to be suitable for EANET region based on scientific evaluation by the leading scientists. The sub-manual is expected to be prepared for endorsement at the SAC5 in 2005.

3. Consideration of longer term research activities

Besides consideration and implementation of mentioned research activities, discussion on research activities for longer term period should start taking the objectives of EANET into account. The priority directions and research areas should be defined taking into account the several enforced tendencies in EANET region and worldwide:

- The scientific evaluations of environmental issues and prospective outcomes of EANET activities should be prepared to consider regional agreement for EANET region.
- The acid deposition problems should be considered together with climate changes and other atmospheric environmental issues to provide the common decisions for their preventing, elimination or mitigation.
- The long term experience and correspondent effective scientific approaches of other international programs should be considered for implementation to EANET region with correspondent reviewing and modification. The possibility of development of EANET objectives should be taken into account as well as current environmental problems in East Asia.

The scope of these investigations could include the development of emission inventories and simulation models of long-range trans-boundary air pollution as well as development of methodologies for early detection of impacts and thresholds of acid deposition on soil, vegetation and inland aquatic environment. The studies could also be devoted to the environmental integrated assessments and development of environmental indicators which include certain economic and social issues.

4. Further steps toward implementation of research activities

The necessity to start preparation of the first periodic report on the state of acid deposition in East Asia was discussed at SAC3. The First Scientific Workshop on Evaluation of the State of Acid Deposition in East Asia (SWS1) is being organized by NC to observe existing monitoring data, methodologies for assessment and to review relevant case studies. The draft format is prepared to discuss at the SWS1 as well as the proposal on plan and measures for development of the Report. These documents will be submitted to SAC4 for consideration, improvement and adoption.

The Terms of Reference and Work Plan of the Working Group for Future Development of EANET (WGFD) include the development of 5-year medium term plan (MTP5) for EANET as suggested at the First Session of WGFD. The most of researches in the fields mentioned above should be described in MTP5 being discussed among the NFPs, SAC members and other resource bodies. NC will prepare a draft program on research activities for 5 years to be included into MTP5 after the consideration of WGFD, its sub-body and SAC members. The MTP5 is expected to be prepared before IG8 for implementation from 2007.

NC will continue its efforts to promote both on-going researches and new short-term studies to be organized together with some participating countries by the use of external support from national or international research funds. The in-kind contributions of participating countries to EANET scientific activities are welcomed and will be supported by cooperative efforts of NC.