

The Seventh Senior Technical Managers' Meeting
of the Acid Deposition Monitoring Network
in East Asia
1-3 August 2006, Yangon, Myanmar

Overview of Ongoing Research Activities

Network Center for EANET

NC has implemented research activities in the cooperation with the organizations in participating countries of EANET and independently. Recent major activities are introduced in the followings.

- Joint research project with Mongolia on plant sensitivity

Two scientific papers were published in the international journal of plant science, *Phyton*, Austria, in 2005, based on the joint research project on plant sensitivity in Mongolia. NC and Central Laboratory of Environmental Monitoring (CLEM), Mongolia, continue passive sampling of O₃ and SO₂ and measurement of tree growth in the Bogdkhan Mountain, where tree decline is reported. The data will be informative for discussion on acid deposition impacts on forest ecosystems.

- Joint research project with Republic of Korea on dry deposition (aerosol concentration) monitoring methodology

In the discussion at SAC4 for the improvement of dry deposition monitoring methodologies, it was suggested that a study on PM₁₀, PM_{2.5} and their components in special sites should be considered. In line with the suggestion of SAC4, the project on aerosol monitoring was planned as a joint research between National Institute of Environmental Research (NIER), Ministry of the Environment, Republic of Korea and NC. Preliminary research was implemented in October 2005 and the workshop to be discussed the results was held in February 2006 in Republic of Korea. In order to evaluate aerosol sampling methodology and PM_{2.5} behavior in Japan and Republic of Korea, intensive monitoring is planned in October 2006.

- Joint research project with Russia on evaluation of East Siberian atmospheric environment

NC has implemented the joint research project Phase III with the Limnological Institute, Russian Academy of Science, Siberian Branch (RAS/SB) in cooperation with National Institute for Environmental Studies, Japan. Annual acid deposition as well as heavy metals (mercury and lead) and lead isotope ratio in rain and snow have been determined at four sites in East Siberia and

Primorsky Region in Russia. The monitoring data are expected to be important for evaluation of long-range transportation of air pollutants from Europe and industrial regions of Russia to East Asia. The methodologies on data analysis used in the project expected to be useful for evaluation of EANET monitoring data.

➤ Joint research project with Thailand on dry deposition flux

In order to investigate the deposition velocities above specific surfaces in East Asia, NC had been promoting a joint research project on dry deposition flux with Pollution Control Department (PCD), Thailand. A flux observation system using micrometeorological techniques was established in a teak forest located in Mae Moh, Lampang Province, Thailand, and then the observation was started in late 2001. Since the available data for more than four years were accumulated, both organizations decided to finish the project in December 2005. Data evaluation will be continued by NC and the Japanese experts (Meisei University, Japan) in cooperation with the experts in Thailand.

➤ Joint research project with Thailand on dry deposition (gas concentration) monitoring methodology

Following the termination of the Joint Research on dry deposition flux (Phase I) from January 2000 to December 2005, NC and PCD agreed to establish Phase II of the Joint Research Project focusing on QA/QC of gas concentration monitoring method in tropical region in August 2005. The difference of gas concentrations among some different types of monitoring methods (automatic monitor, filter-pack method, and passive sampling method) in southern sites of EANET region will be evaluated through the joint research between both organizations in cooperation with Meisei University, Japan.

➤ Joint research project with Thailand on catchment analysis

NC started the joint research project on catchment analysis in Thailand in 2005 with Royal Forest Department (RFD) and Environmental Research and Training Center (ERTC) in cooperation with National Institute for Agro-Environment Sciences, Japan by using the Global Environment Research Fund, the Ministry of the Environment, Japan. Monitoring on input (deposition) and output (stream water) fluxes in/from a small catchment area, and analyses on other biogeochemical aspects have been carried out continuously, and nutrient dynamics and acid deposition impacts in the area would be estimated. The project will be informative for evaluation of adverse effect on ecosystems in line with the Strategy Paper for Future Direction of Soil and Vegetation Monitoring of EANET.

➤ Other research activities (Independent and multilateral research activities)

Catchment analysis is one of the issues described in the Strategy Paper for Future Direction of Soil and Vegetation Monitoring of EANET. For obtaining basic data on this issue, research activities are implemented in a small catchment area in Shibata City, Niigata Prefecture, Japan. The data will be informative for development of guidelines or manual on catchment monitoring as well as implementation of the joint research project on catchment analysis with Thailand.

In order to investigate the differences among the long-range transport models developed for East Asian region, NC has been collaborating with the Model Inter-comparison Study (MICS-Asia) Phase II. The Eighth Workshop on the Transport of Air Pollution in Asia was held at the International Institute for Applied Systems Analysis (IIASA), Austria on 18-19 January 2006, financially supported by ADORC. The progress on the model simulation (Phase II) was presented by each participant. It was decided at the Workshop that the relevant scientific papers would be prepared under the cooperation with MICS participants and would be submitted to the scientific journal, "Atmospheric Environment".