

ANNEX 3  
SUPPLEMENTARY NOTE  
ON THE PREPARATORY-PHASE ACTIVITIES

I Implementation of preparatory-phase acid deposition monitoring

1. Each participating country will designate a national center, develop, as appropriate, a preparatory-phase national monitoring plan, and implement monitoring of acid deposition to assess its adverse impacts.

2. When developing and implementing a preparatory-phase national monitoring plan, a participating country may take into full consideration the Guidelines and Technical Manuals for Acid Deposition Monitoring in East Asia adopted at the expert meetings (1993 to 1997), with respect to such items as:

- 1) selection of monitoring sites to monitor acid deposition, including mid/long-range transport of related substances;
- 2) monitoring methods; and,
- 3) establishment of quality assurance/quality control (QA/QC) programs related to the monitoring system.

3. Acid deposition monitoring during the preparatory phase will be implemented by each participating country as indicated in the attachment to this annex, to the extent practical with available resources.

4. Technology transfer and training programs will be implemented to facilitate the development of the preparatory-phase national monitoring.

II Reporting, compilation, evaluation and storage of, and access to information

II.1 Reporting of information by participating countries

5. Each participating country will provide the interim Secretariat with the names and addresses of the focal point of the government and contact person(s) including telephone/facsimile numbers and e-mail address (if any) by the end of April 1998. Whenever changed, up-to-date information will be reported as soon as possible.

6. Each participating country, through its national center and according to the reporting format specified by the interim network center, will provide the interim network center with the data and other information listed below:

- 1) names and addresses of national center and contact person(s) including telephone/facsimile numbers and e-mail addresses (if any);
- 2) preparatory-phase national monitoring plan (for those countries which do not have a preparatory-phase national monitoring plan, a description of the existing national monitoring system will suffice);
- 3) names, addresses and geographical descriptions of the monitoring sites;
- 4) monitoring data during the preparatory phase; and,
- 5) other relevant information such as the existing monitoring data from 1993 to 1997 as appropriate.

7. Each participating country will provide the interim network center with the above mentioned data and other information by the end of June 1998. Monitoring data gathered during the preparatory phase will be provided by the end of October 1999. When additional data is obtained after this date or when information pertaining to the preparatory-phase activities changes, it will be reported as soon as possible.

II.2 Compilation, evaluation and storage of, and access to information

8. The interim network center will compile, evaluate and store the monitoring data and other information submitted by participating countries. Any participating country may request the interim network center to provide it with the data and other information submitted by other participating countries. Upon request by a participating country, the interim network center should provide any such data and other information. Such requests will be made through the focal point of the government or the national center with a document that specifies the requested items.

III Implementation of QA/QC program

9. In order to ensure obtaining high quality monitoring data, the interim network center will implement QA/QC programs with full participation of the participating countries.

IV Preparation and publication of a report

10. The interim network center, following the guidance by the interim scientific advisory group, will prepare a data report on the acid deposition in East Asian region. The interim scientific advisory group will prepare on the basis of such data report, a report on the state of the acid deposition in East Asian region and present it to the second intergovernmental meeting. After approval by the second intergovernmental meeting, the report will be made accessible to the public.

V Promotion of relevant activities

11. Participating countries are encouraged to carry out other relevant activities, in order to improve understanding of acid deposition-related processes of emission, transport and deposition of air pollutants, and to disseminate the reports of such activities to the interim scientific advisory group for its information.

12. Bilateral and multilateral cooperation among the participating

countries is indispensable for the effective implementation of the preparatory-phase activities. The preparatory-phase activities, in particular, should be reinforcing and mutually supportive of existing subregional and national initiatives in East Asia.

13. Collaboration should be promoted with other international monitoring networks and programs in the world, such as the Cooperative Programme for the Monitoring and Evaluation of Long-Range Transmission of Air Pollutants in Europe (EMEP) of the United Nations Economic Commission for Europe (UN/ECE) and the Global Atmosphere Watch (GAW) of the World Meteorological Organization (WMO), etc.

#### VI Other activities

14. In addition to the activities listed above, other activities necessary to achieve the objectives of the preparatory-phase activities may be implemented, if so decided by the working group.

#### VII Review of the preparatory-phase activities

15. The results of the preparatory-phase activities will be reviewed by the second intergovernmental meeting.

**ATTACHMENT**

**COMPONENTS OF ACID DEPOSITION MONITORING  
DURING THE PREPARATORY PHASE**

1 Wet Deposition

1.1 Monitoring Site

- more than one site that is clearly defined as either urban, rural or remote (rural or remote sites are recommended)
- the same site(s) as used for the soil and vegetation, and inland aquatic environment monitoring

1.2 Monitoring Interval

- every 24 hours or every precipitation event for an urban, rural or remote site
- once a week to once a month for the sites where soil and vegetation, or the inland aquatic environment is monitored

1.3 Measurement Parameters

(a) Required

- Precipitation analysis

pH, electric conductivity (EC), and concentrations of sulfate ( $\text{SO}_4^{2-}$ ), nitrate ( $\text{NO}_3^-$ ), chloride ( $\text{Cl}^-$ ), ammonium ( $\text{NH}_4^+$ ), sodium ion ( $\text{Na}^+$ ), potassium ion ( $\text{K}^+$ ), calcium ion ( $\text{Ca}^{2+}$ ) and magnesium ion ( $\text{Mg}^{2+}$ )

1.4 Meteorological Measurement

wind direction/speed, temperature, humidity, precipitation amount and solar radiation (in accordance with the measurement frequency of the meteorological monitoring system of each country)

1.5 Other Information

- Monitoring site  
land use, potential contamination sources, geographical

description, climate, etc.

- Sampling method and sample handling
- Analytical method
- Measurement laboratory
- QA/QC

## 2 Dry Deposition

### 2.1 Monitoring Site

- the same site(s) as used for the wet deposition monitoring (in particular, a remote or vegetation site is recommended)

### 2.2 Monitoring Interval

- every two weeks to one month
- every hour when measured by automatic instruments

### 2.3 Measurement Parameters

#### (a) Required

- Gases:  
concentrations of sulfur dioxide ( $\text{SO}_2$ ), nitrogen dioxide ( $\text{NO}_2$ ),  
nitrogen monoxide ( $\text{NO}$ )(\*) and ozone ( $\text{O}_3$ )

(\*)only if the chemiluminescence method is available

#### (b) Optional

- Aerosol:  
concentrations of sulfate ( $\text{SO}_4^{2-}$ ), nitrate ( $\text{NO}_3^-$ ), chloride ( $\text{Cl}^-$ ), ammonium ( $\text{NH}_4^+$ ), sodium ion ( $\text{Na}^+$ ), potassium ion ( $\text{K}^+$ ), calcium ion ( $\text{Ca}^{2+}$ ), magnesium ion ( $\text{Mg}^{2+}$ ) and aerosol mass concentration

### 2.4 Meteorological Measurement

the same parameters as described in 1.4

### 2.5 Other Information

the same items as described in 1.5

### 3 Soil and Vegetation

#### 3.1 Monitoring Site

- more than one site that is clearly defined as urban, rural, remote and/or ecological
- when wet/dry deposition monitoring at the same site is not feasible, select a site within 50 km of a wet/dry deposition monitoring site

#### 3.2 Monitoring Interval

more than once during the preparatory phase

#### 3.3 Measurement Parameters

##### (a) Required

- Soil:  
pH (H<sub>2</sub>O), pH (KCl), cation exchange capacity (CEC) and concentrations of exchangeable ions (sodium (Na<sup>+</sup>), potassium (K<sup>+</sup>), calcium (Ca<sup>2+</sup>) and magnesium (Mg<sup>2+</sup>))
- Vegetation:  
degree of decline of trees, and abnormalities of leaves and branches

##### (b) Optional

- Soil:  
concentrations of exchangeable aluminum ion (Al<sup>3+</sup>), sulfate (SO<sub>4</sub><sup>2-</sup>) and available phosphate
- Vegetation:  
chemical content of fresh leaves (sulfur, potassium, calcium and magnesium)

#### 3.4 Meteorological Measurement

the same parameters as described in 1.4

#### 3.5 Other Information

- Monitoring site
  - soil profile, vegetation, surface geology, geographical description, climate, etc.
- Sampling method and sample handling
- Analytical method
- Measurement laboratory
- QA/QC

#### 4 Inland Aquatic Environment

##### 4.1 Monitoring Site

more than one site which is clearly defined as rural, remote and/or ecological (the same site as used for the soil and vegetation monitoring)

##### 4.2 Monitoring Interval

more than four times a year (seasonally)

##### 4.3 Measurement Parameters

###### (a) Required

- Inland water:

pH, electric conductivity (EC) and alkalinity

###### (b) Optional

- Inland water:

concentrations of sulfate ( $\text{SO}_4^{2-}$ ), nitrate ( $\text{NO}_3^-$ ), chloride ( $\text{Cl}^-$ ), ammonium ( $\text{NH}_4^+$ ), sodium ion ( $\text{Na}^+$ ), potassium ion ( $\text{K}^+$ ), calcium ion ( $\text{Ca}^{2+}$ ) and magnesium ion ( $\text{Mg}^{2+}$ )

##### 4.4 Meteorological Measurement

the same parameters as described in 1.4

##### 4.5 Other Information

- Monitoring site

lake characteristics (origin, area, depth, volume), watershed



characteristics (area, land use, surface geology, geographical description), number of streams and their water volumes, residence time of water, climate, lake utilization, etc.

- Sampling method and sample handling
- Analytical method
- Measurement laboratory
- QA/QC

5 Note

Monitoring data that only partly satisfy the above criteria, will also be included in the report to the interim network center. In this case, the nature of the insufficiencies shall be made clear. This "partial data" will also be compiled, evaluated and stored at the interim network center, and reviewed as a result of the preparatory-phase activities at the second intergovernmental meeting.

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