

National Focal Points (NFP) and National Implementing Agencies (NIA)

Bangladesh NFP: Ministry of Environment & Forest NIA: Department of Environment, Dhaka	India NFP: Ministry of Environment and Forest NIA: Central Pollution Control Board, New Delhi	Maldives NFP & NIA: Ministry of Home Affairs, Housing & Environment, Malé Nepal NFP: Ministry of Population & Environment NIA: International Center for Integrated Mountain Development, Kathmandu	Pakistan NFP: Ministry of Environment, Local Govt. & Rural Development NIA: Pakistan Environment Protection Agency, Islamabad
Bhutan NFP&NIA: National Environment Commission, Thimphu	Iran NFP & NIA: Department of Environment, Tehran		Sri Lanka NFP: Ministry of Forest & Environment NIA: Central Environment Authority, Colombo

Malé Declaration on Control and Prevention of Air Pollution and Its Likely Transboundary Effects for South Asia is being implemented by UNEP Regional Resource Center for Asia and the Pacific in Collaboration with the National Implementing Agencies, South Asia Cooperative Environment Program (SACEP) and Stockholm Environment Institute (SEI) with the financial support from Sida, the Swedish International Development Agency.

Contributors to this Document

Compiled and prepared by UNEP RRC.AP

Introduction

The United Nations Conference on Environment and Development (UNCED), produced a major strategic outlook for the 21st century in Agenda 21. In addition to the many important sectoral declarations, it made some important observations on vital cross-cutting issues. One of these vital issues is described in Chapter 40 on Information for Decision Making: which underlines the importance of improved availability of information on all aspects of environment and development for decision making towards sustainable development. Agenda 21 also emphasizes the need for improved collection as well as presentation of data and information.

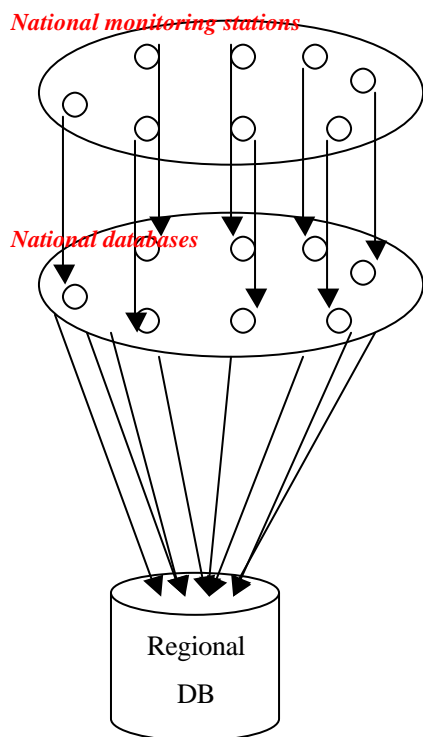
Decision making for sustainable development should be based on sound, reliable and timely information. Environmental development is one of the three pillars of sustainable development and it needs regular assessment. Sustainable development cannot be achieved without incorporating environmental conservation within the development process.

Land, air, water and biodiversity are the major components of environment which need regular assessment. Malé Declaration provide the basic framework for assessment of transboundary air pollution in South Asia. Hence, it is very important for the Malé Declaration to compile the monitoring results in a systematic database. Information on outcomes of monitoring activities is only known by their monitoring data.

This document is prepared to provide guidance for the National Implementing Agencies in reporting the monitoring data from the Malé Declaration monitoring sites.

Data reporting procedures

Reporting system



After the review of national advisory committee, monitoring results from the national monitoring sites are being stored at the national database developed based on the standardized reporting format. National databases are housed at the NIAs as part of their database management system.

After the verification from the monitoring committee, the data from the NIAs will be stored at the regional database.

UNEP Regional Resource Center for Asia and the Pacific has installed a middle range server operating the MS Access database system in a Windows operating system to ensure processing and storage of the incoming monitoring data.

The database is designed in considering future data dissemination through web site and data update by NIAs through the website.

Reporting frequency

Based on the national database, each participating country is invited to submit a report in the attached data reporting formats on monthly basis, to the extent possible with available resources. To reduce the workload during the data compilation process, the submission of the reports via electronic media, in addition to the documents, is strongly encouraged.

Data reporting procedures

Reporting system

Data reporting formats for the Malé Declaration network should be further elaborated, taking into account the progress of monitoring methodologies and so on. By using the format, the Network should be able to share regional data with known quality and in common formats, to best meet the objectives of the Network, i.e. to provide useful inputs for decision-making at local, national and regional levels.

The participating countries are expected to monitor and report the following items:

- Wet deposition monitoring data
- Air concentration monitoring data
- Meteorological parameters
- Information on respective monitoring sites

Wet deposition monitoring

Monitoring interval

- Weekly composite samples using **wet only collector**.
- Weekly composite samples using **bulk collector**.

Tip: Collector must be cleaned thoroughly at the beginning of each week to ensure that there is no dry deposition in the collector from the previous week. Rinsed water need to be analyzed for the monitoring parameters. Two bulk collectors should be used in parallel. Samples from the uncontaminated collector should be used for the analysis.



Wet Only Collector



Bulk Collector

Reporting format

Reporting the results from wet only collector

- pH, and electric conductivity (EC) should be reported in the reporting form Wet W No.3
- Concentration of NH_4^+ , Na^+ , K^+ , Ca^+ and Mg^+ should be reported in reporting form Wet W No.2
- Concentrations of SO_4^{2-} , NO_3^- , and Cl^- should be in reporting form: Wet W No.1

Reporting the results from bulk collector

- pH, and electric conductivity (EC) should be reported using reporting form Wet B No.3
- Concentration of NH_4^+ , Na^+ , K^+ , Ca^+ and Mg^+ should be reported using reporting form Wet B No.2
- Concentrations of SO_4^{2-} , NO_3^- , and Cl^- should be reported in reporting form Wet B No.1

Air concentration monitoring



High Volume Sampler

Monitoring interval

- **Gaseous samples:**
24 hr samples [9 am – 9 pm];
Sampling to be done for 10 days/month between 5th – 25th of each month.
- **Dust samples:**
1x24 hr samples [9 am – 9 am next day]. Sampling to be done 10 days/month between 5th – 25th of each month.

Tip: valid sample: when machine up time is >60% of sampling time

- **Diffusive** (passive) samplers:
Monthly



Diffusive sampler

Reporting format

- PM₁₀, NRSPM, TSPM, SO₂ and NO_x should be reported using reporting form: Air H
- Results of diffusive samplers (concentration of SO₂ and NO₂) should be reported using reporting form: Air P

Meteorological parameters

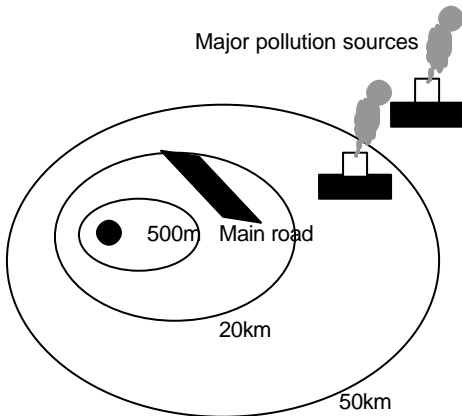


Reporting

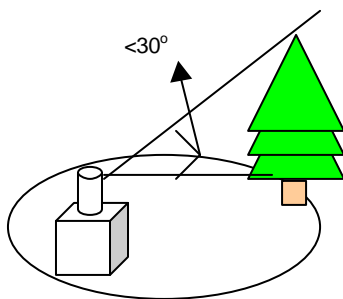
- wind direction/speed, temperature, humidity, precipitation amount and solar radiation should be reported in accordance with the measurement frequency of the meteorological monitoring system of each country

Information on monitoring sites

Reporting



Reporting site information



Sitting criteria

- Selection of sites is a critical factor in monitoring wet deposition as well as air concentration. Therefore sampling sites should be located in areas suitable for monitoring transboundary air pollution. Information on natural condition and emission sources etc. around the monitoring sites provide useful input to the evaluation of the data and need to be compiled.
- Format on information on respective monitoring sites includes basic properties of site, such as address, site classification, geographical coordinates, altitude, land use, potential contamination sources, geographical description, and so on.
- Formats on situation around the site of on-sitescale (within 150m), local scale (150m – 10km), and regional scale (10km – 50km) are provided in reporting form S1, S2, and S3. Description should be made for each item based on sitting criteria, because natural situation and land use around the site may affect monitoring data as well as existence of pollution sources. If precise figures are not available, description of topographical features around the site can help in understanding the situation.

Note: If the information submitted changes, the up-to-date information should be reported as soon as possible

Flags

- Data flags should be reported together with the monitoring data in the same data reporting format and problem occurred needs to be explained. Flags provide information to the processing of data quality assessment. Three position columns to each measured parameters are assigned to flag code.
- In the near future data flag system used by EMEP will be implemented under the Malé Declaration. for the time being flags could be reported in the form of remarks. Flags used in EMEP are listed in the Annex I as reference.