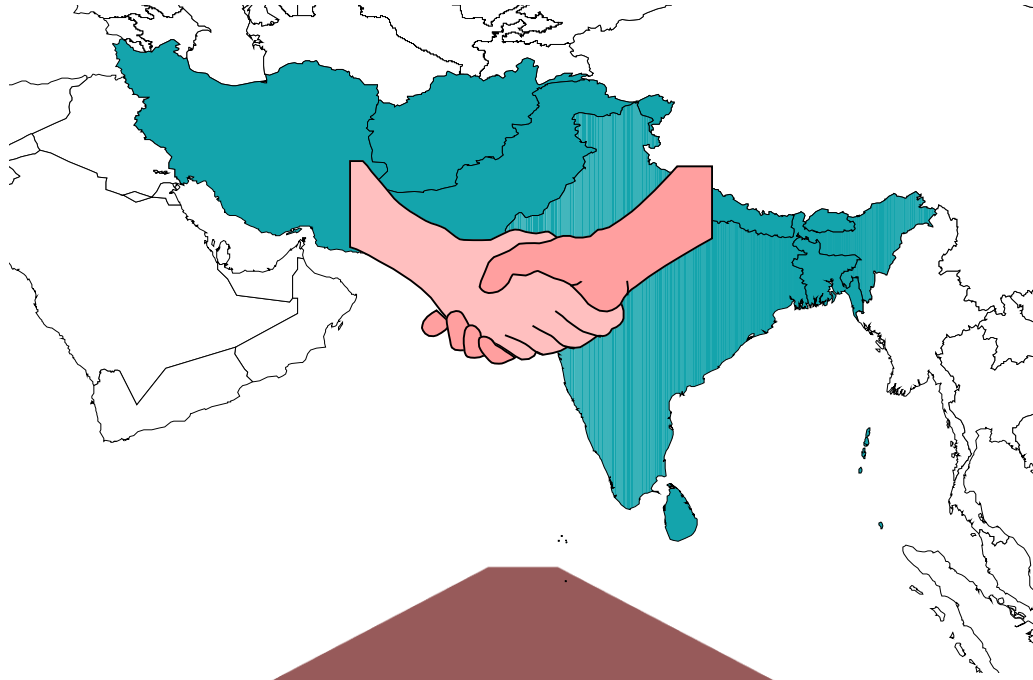


# MALÉ DECLARATION



Progress

# CONTENTS

## Progress

Technical Details  
Capacity building  
Stakeholders participation

## About Phase III

Monitoring  
Science  
Mitigation

# Progress since Network meeting 2002



Last Network meeting was held in July 2002 at Kathmandu reiterated the need for **Capacity building through training and equipments**

# Progress: Equipment Details

## Completed technical details for the equipments

**Technical Manual**

**Training materials**

**Equipments (site and lab)**

**Consumables (site and lab)**

**Venders:(formal contract)**

**Envirotech, India**

**IVL, Sweden**

**MISU, Sweden**

**Malé Declaration on Control and  
Prevention of Air Pollution and Its Likely  
Transboundary Effects for South Asia**



June 2003



# Progress: Equipment Details

Sampling

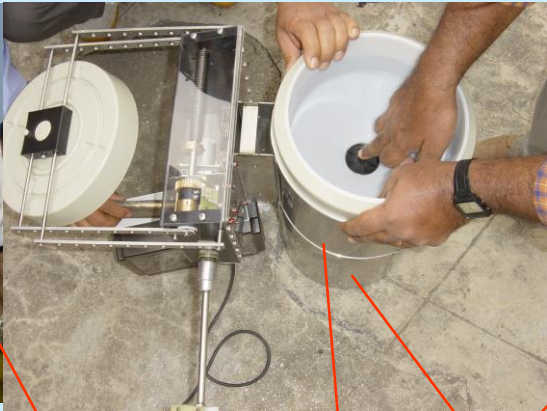
Analysis

HVS

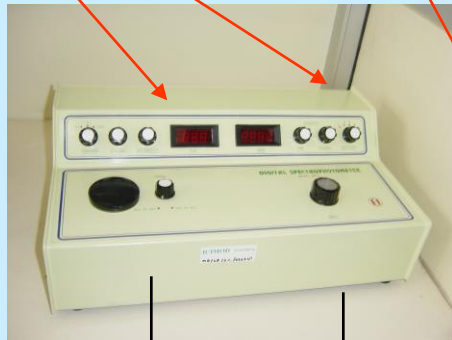
Diffusive

Wet only Col.

Bulk Col.



PM<sub>1</sub>  
0

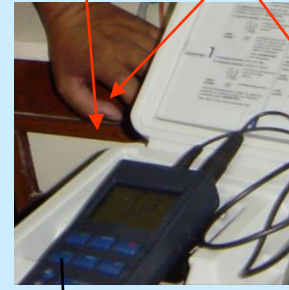


SO<sub>2</sub>  
2

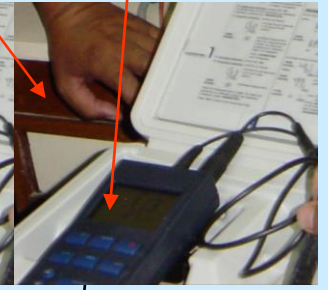
NO<sub>x</sub>

IVL

SO<sub>2</sub>  
NO<sub>2</sub>



EC



pH

## Progress: In-country training program

### Monitoring air concentration using HVS

- Sampling
- Analysis

### Monitoring air concentration using Passive sampler

- Sampling
- Sample handling

### Monitoring wet deposition

- Sampling by wet only collector
- Analysis of rainwater for pH and EC

### QA/QC and Data management

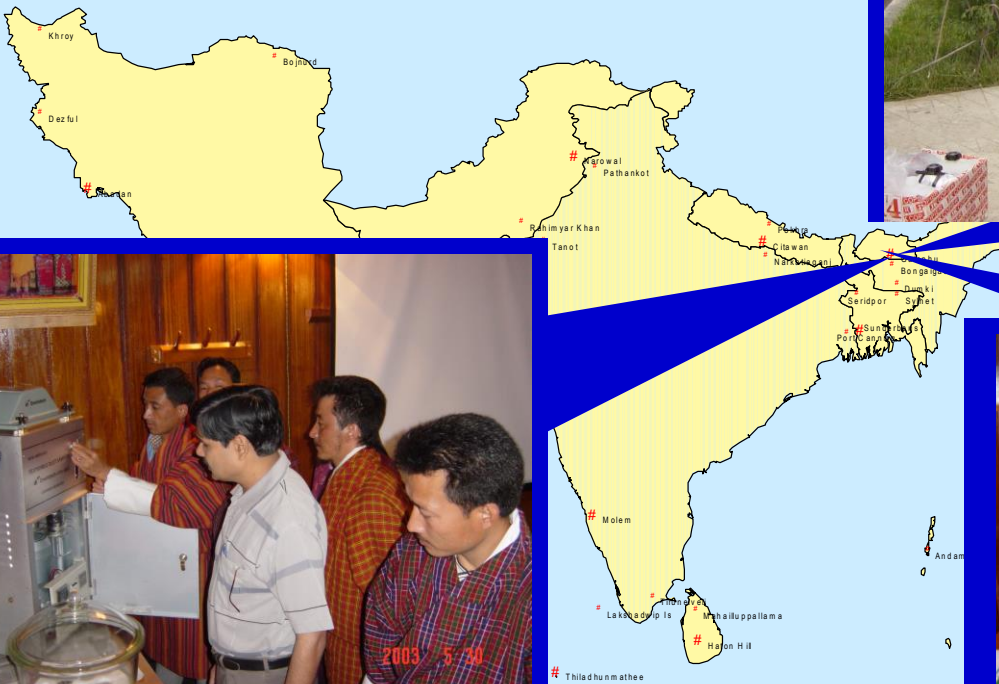
**OBJECTIVES:** to familiarize the participants with the handling of air monitoring instruments and laboratory equipment.





# Capacity building in Bhutan

Trained 8 technical persons during May 28 – Jun 1 in Bhutan



Learning rainwater sampling



Learning air sampling

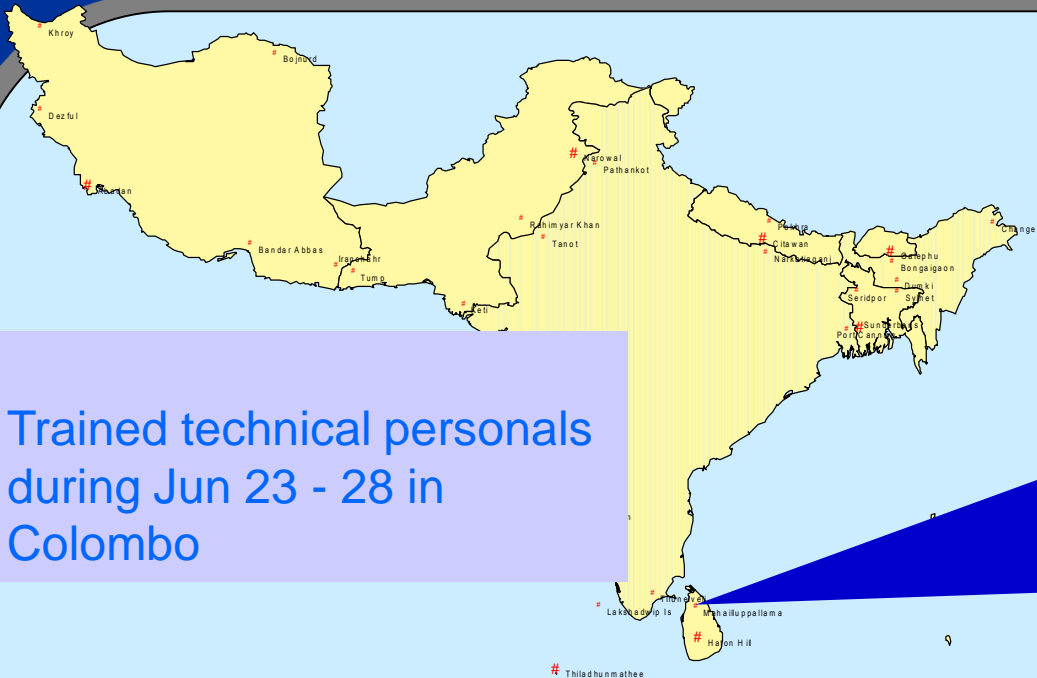


Analyzing the sample

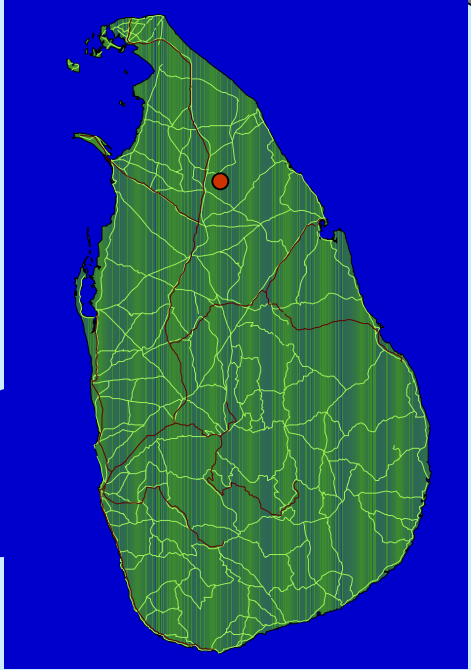




# Capacity building in Sri Lanka



Trained technical persons during Jun 23 - 28 in Colombo



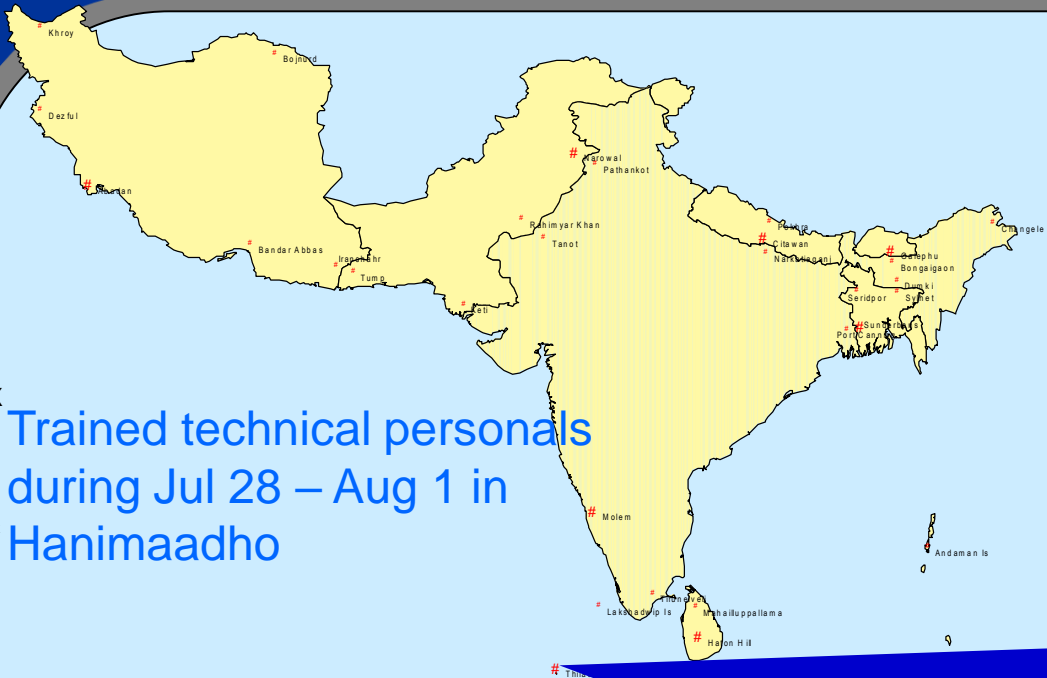
Learning rainwater sampling



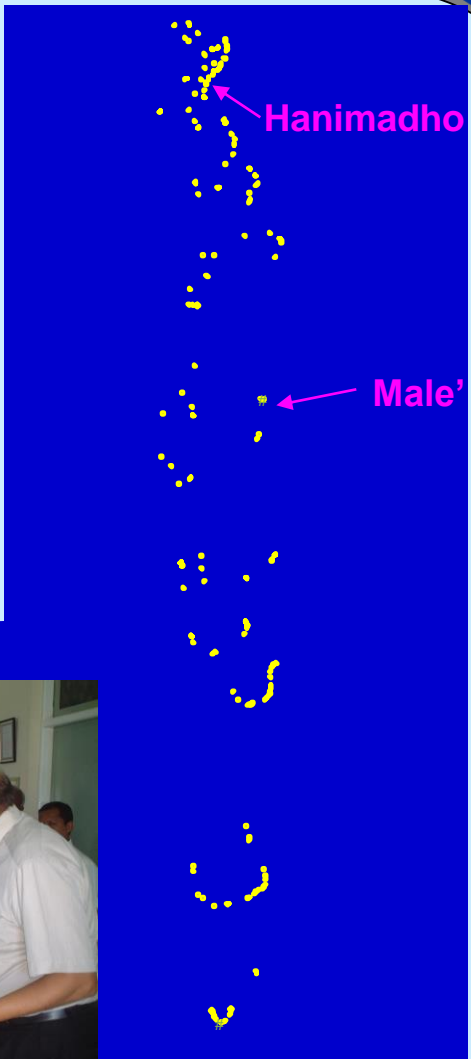
Air sampling



# Capacity building in Maldives



X Trained technical personal  
during Jul 28 – Aug 1 in  
Hanimaadho



Learning rainwater sampling



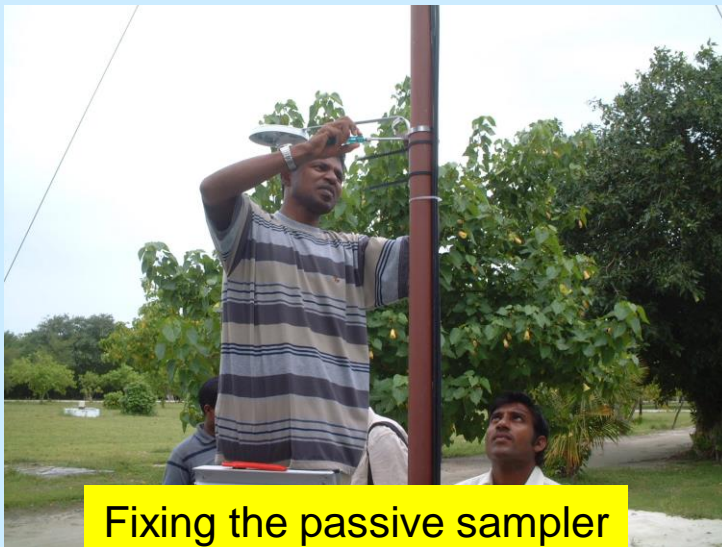
Air sampling



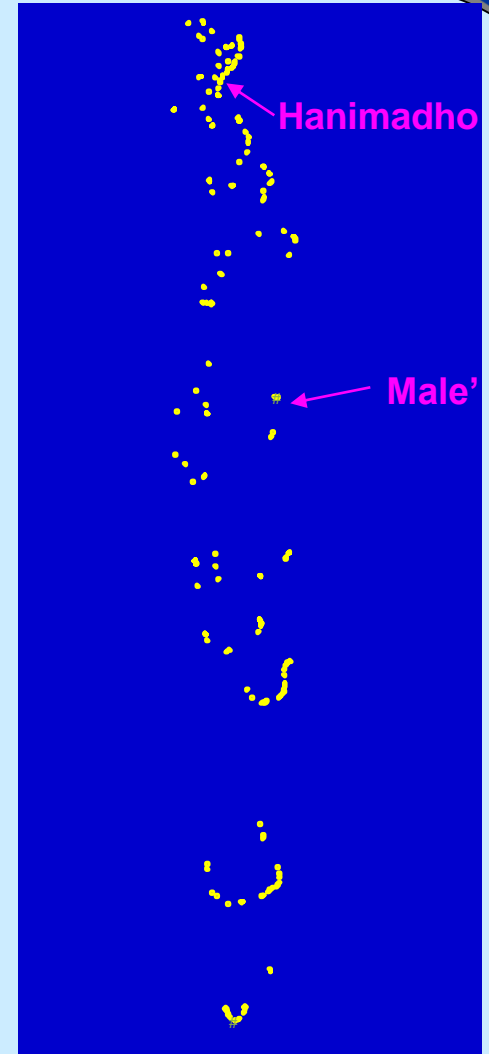
# Capacity building in Maldives



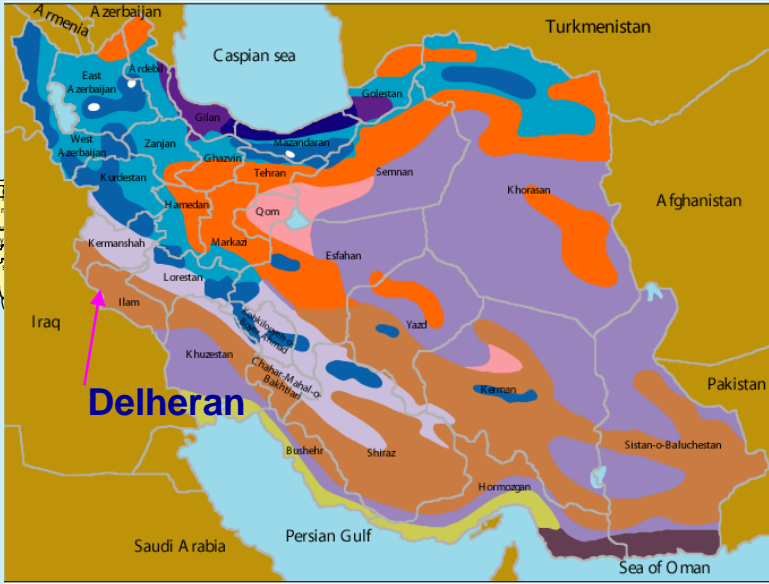
Existing Met station



Fixing the passive sampler



# Capacity building in Iran



x Trained technical persons  
during Sep 13 – 17 in  
x Tehran



Studying the passive samplers



Laboratory at Ilam





# National Monitoring: Data reporting

**objectives:** to provide useful inputs for decision-making at local, national and regional levels.

**Reporting frequency:** monthly basis

# Malé Declaration: Data Reporting

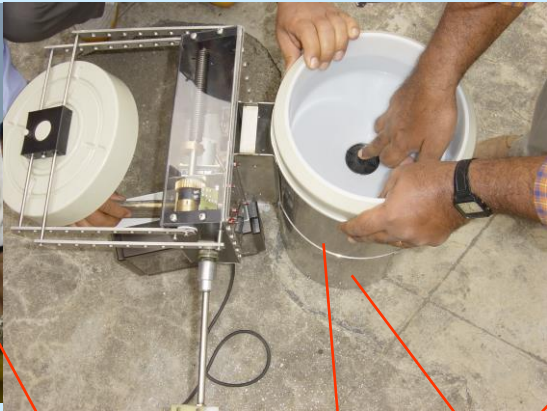
Sampling

HVS

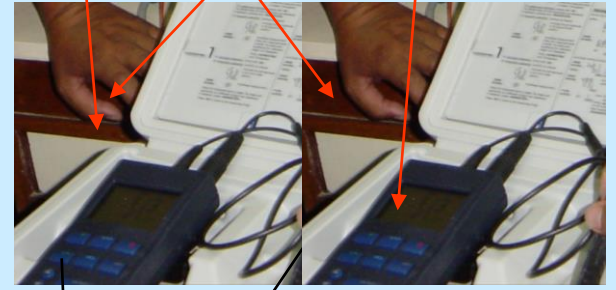
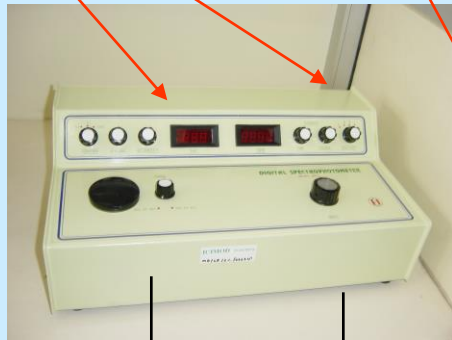
Diffusive

Wet only Col.

Bulk Col.



Analysis



Reporting

PM<sub>10</sub>

SO<sub>2</sub>

NO<sub>x</sub>

IVL  
SO<sub>2</sub>  
NO<sub>2</sub>

EC

pH

National DB

Regional DB



# National Reporting: Frequency

## Wet deposition monitoring

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

# National Reporting: Frequency

## Air Concentration Monitoring

**Gaseous samples:** 24 hr samples [ 9 am – 9 am];  
Sampling to be done for 10 days/month between 5<sup>th</sup> – 25<sup>th</sup> of each month.

**Dust samples:** 24 hr samples [9 am – 9 am next day]. Sampling to be done 10 days/month between 5<sup>th</sup> – 25<sup>th</sup> of each month.

(Valid sample: when machine up time is >60% of sampling time)

**Diffusive (passive ) samplers:** Monthly



# National Reporting: Meteorological measurements

wind direction/speed, temperature, humidity,  
precipitation amount and solar radiation

(in accordance with the measurement frequency  
of the meteorological monitoring system of  
each country)

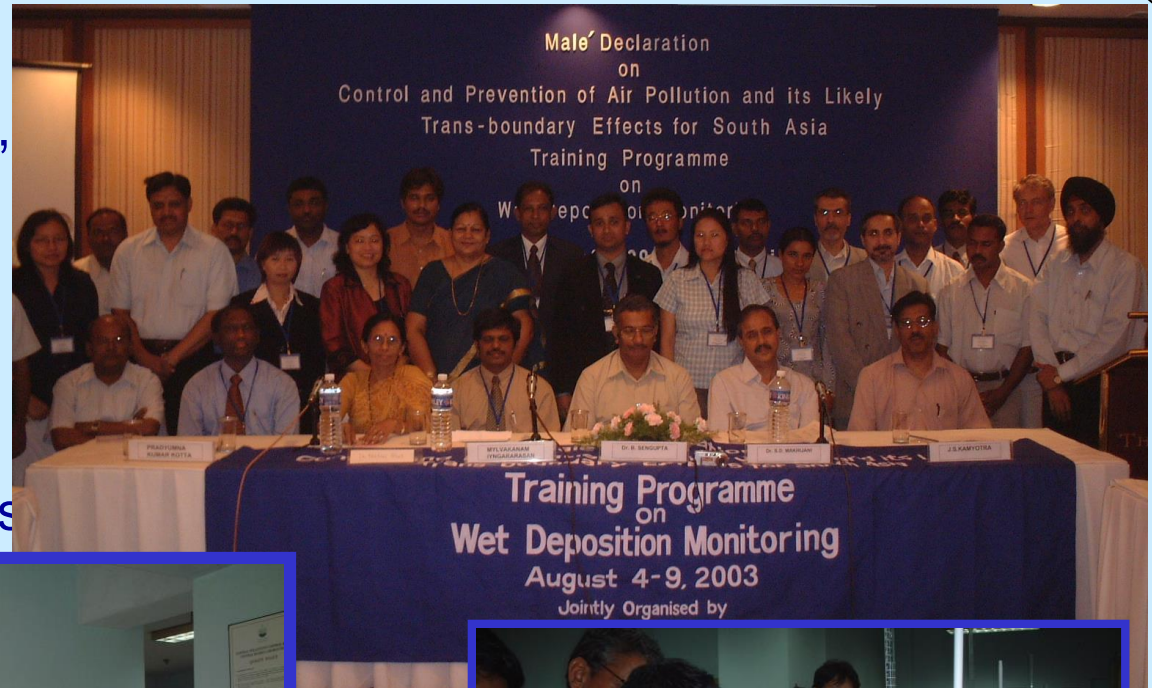
## National Reporting: Site Details

**Site details such as land use, potential contamination sources, geographical description, climate need to be documented using the reporting form S1, S2, and S3.**

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

# Regional Training: Wet deposition monitoring

- 4-9 Aug 2003, CPCB, Delhi
- To familiarize the participants on analyzing rainwater for anions and cations



**Emission Inventories**

**Integrated Assessment Model**

2003 9 16



# Stakeholder's participation

National Stakeholder meeting was held in Delhi on 24 September 2002.

## Dissemination

### Recommendations:

- clear scientific findings;
- Locate the source of concern and manner in which it can be addressed;
- Capability building should receive priority;
- Information sharing;
- Review action plans;
- Need financial support and countries to step up their investments, especially in kind



# Information Exchange

## Publication of Newsletters

A discussion group for the Male' Declaration network is developed  
<http://www.rrcap.unep.org/malewebboard>



### NEWS LETTER

Malé Declaration on Control and Prevention of Air Pollution and Its Transboundary Effects For South Asia

Volume 1 Number 1 April 2003

## Malé Declaration Entering into the Phase II

**I**mplementation of Malé Declaration aims to build the cooperation and national capacities in addressing the issue of transboundary air pollution. The implementation is considered to be broadly divided into three phases. Phase I included awareness raising, network development, and preparation of baseline information and action plans. Phase II will put in place the expertise and equipment to study the issue. The third phase will eventually provide appropriate information for the policymaking and mitigation options.

After the successful completion of Phase I, the Malé Declaration is now entering into the Phase II. The national level capacity building activities will begin from May this year with a technical training on monitoring and analysis of transboundary air pollution. Additional capacity will be built through training and strengthening of national monitoring stations in 2003.

In This Issue

Malé Declaration entering into Phase II

Network meeting 2001

History of Malé Declaration

Thermal power and bio-diversity

Malé Declaration at the world clean air & environment congress

Upcoming events





#### Network Meeting 2001

The 3rd Network Meeting was held in Colombo on 29 June 2001. The meeting was attended by over 40 participants from NIPs, NAs, South Asia Cooperative Development Council (SACD), UNEP Regional Environment Institute (REI), and members of the Malé Declaration Monitoring Committee (MC) also attended the meeting.

The meeting reviewed the MC report which is a strategy paper for Phase II implementation developed in consultation with the NIPs. The meeting also adopted the outline of the technical manual and requested the MC to develop a manual based on the agreed outline.

#### Upcoming events

- The First Training Program under the Malé Declaration is scheduled to be held on 20 - 31 May 2003 at ESCAP, Bangkok, Thailand.
- Annual Collaboration Meeting of RAEPC will be held on 8 June 2003. SACD and UNEP-RRCAP will make a presentation to the Swedish stakeholders on recent activities in tackling the transboundary air pollution in line with the focus on Malé Declaration.
- Annual Network Meeting (2002) of Malé Declaration is to be held tentatively on 16 - 17 July. The network meeting will be attended by National Focal Points and National Implementing Agencies of Malé Declaration, SACD, REI, and UNEP-RRCAP.
- A National Stakeholders Meeting is proposed to be held on September 2003 in India.

#### Technical manual for Malé Declaration

Final draft of the technical manual for monitoring the transboundary air pollution for Malé Declaration is completed. It is currently being reviewed by the Malé Declaration network. The manual is based on the Base Air Quality Assessment (BAQA) Report.



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[www.rrcap.unep.org/issues/air/maledec/](http://www.rrcap.unep.org/issues/air/maledec/)



# About Phase III

## Objectives

- ★ Capacity building activities initiated during the phase II implementation has made significant impacts at the national and regional level.
- ★ The general **objective of Phase III** is to continue the capacity building activities in terms of monitoring, training, quality assurance and quality control and initiate the load up of information to the policy making process.
- ★ This objective could be achieved through three major components namely **monitoring and science, analysis and impact studies, and policy setting.**

# About Phase III

## Monitoring and Science

- ★ Continue monitoring initiated during phase II
- ★ Establish / strengthen additional monitoring sites for monitoring air concentration and rainwater
- ★ Introduce Ozone monitoring in all the Malé sites
- ★ Training and refresher courses
- ★ Implementation of QA/QC program
- ★ Review of technical manual



## About Phase III

### Analysis and Impact Study

- ★ Emission inventory and modeling
- ★ Study the impacts of air pollution on health
- ★ Study the impacts of air pollution on agriculture
- ★ Promotion of research and data analysis at NIAs and participating institutions; staff exchange programs
- ★ Establishment and maintenance of monitoring data base

# About Phase III

## Policy Setting

- ★ Network activities
- ★ Strategy paper on future scenario of Malé declaration
- ★ Mitigation options