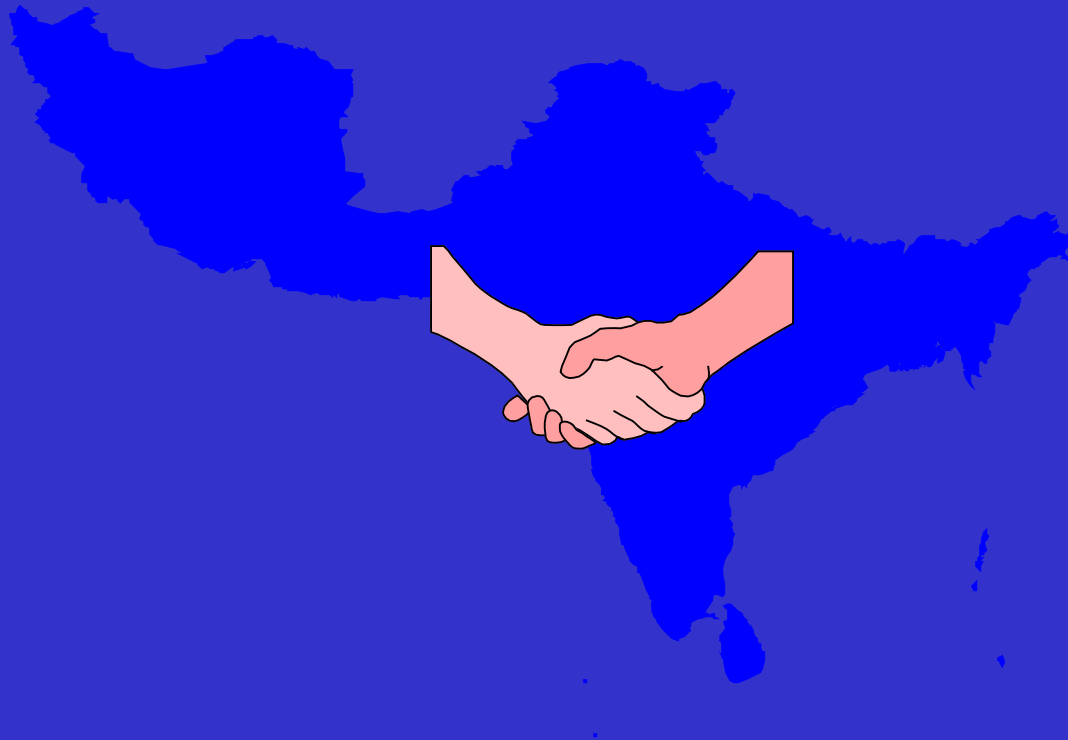


# The Male' Declaration



Data reporting September 2007

# Monitoring site under Phase III

## Monitoring Station

Eight Monitoring stations

Two New monitoring stations in Sri Lanka and Bhutan

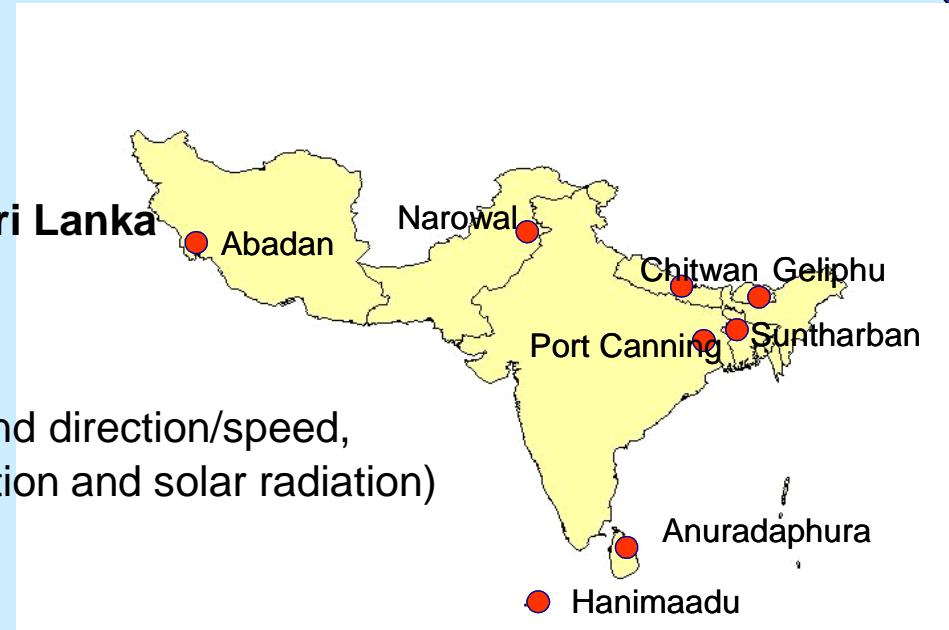
**Meteorological parameters** (wind direction/speed, temperature, relative humidity, precipitation and solar radiation)

- Bangladesh, Iran and Pakistan

## Ozone monitoring

Introduced to all the monitoring sites since April/May 2006

All Countries



# Air Concentration Monitoring

## Method

- High Volume Sampler (HVS)
- Diffusive Samplers



**AAS : Bangladesh, Bhutan, Nepal, Sri Lanka**

## Results of Monitoring

**Nepal and Iran : continuous monitoring data on air concentration through HVS**

**Pakistan and India: one time data**



**For Diffusive sampler all the countries have send their samples to IVL for analysis and the data has been updated regularly.**

## Wet Deposition Monitoring using Wet only collector and Bulk collector

<i>Country</i>	<i>Name of site</i>	<i>Characteristics of sites</i>	<i>Sampling Interval</i>	<i>Sampling Months</i>
<b><i>Bhutan</i></b>	Bhur, Gelephu	Remote	Daily	2003: Jul, Aug, Sept, Dec 2004: Jan, Feb, Aug, Dec
<b><i>Bangladesh</i></b>	Kaikhali Forest station, Shamnagar, Satkhira	Remote	Daily	2004: Jul, Oct 2005: August, Sept, Oct 2006: April, Jun 2007: May, Jul, Aug
<b><i>Iran</i></b>	Chamsari, Ilam	Remote	Weekly	2004: Nov, Dec 2005: Jan, Nov, Dec 2006: Jan, Feb, Oct, Nov, Dec 2007: Jan, Feb
<b><i>Sri Lanka</i></b>	Dutuwewa	Remote	Weekly	2003: Nov, Dec 2004: Jan to Jul
<b><i>Nepal</i></b>	Rampur	Rural	Monthly	2006: Jul to Dec 2007: Jan to Aug
<b><i>Pakistan</i></b>	PBO Bahawal Nagar	Rural	Random	2007: Feb

# Monitoring Status of Male' Declaration sites

Parameter	Bangladesh	Bhutan	India	Iran	Maldives	Nepal	Pakistan	Sri Lanka
TSP	no	yes	Yes	Yes	No	Yes	Yes	No
PM <sub>10</sub>	no	No	Yes	Yes	No	Yes	Yes	No
SO <sub>2</sub> , NO <sub>2</sub> , O <sub>3</sub> with passive sampler	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SO <sub>2</sub> , NO <sub>2</sub> with active method	no	Yes	Yes	Yes	No	Yes	No	No
pH (rain water)	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
pH (Surface water)			Yes					
EC	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Rain Chemistry (Mg <sup>2+</sup> , Na <sup>+</sup> , K <sup>+</sup> , Ca <sup>2+</sup> , NH <sup>4+</sup> , SO <sub>4</sub> <sup>2-</sup> , NO <sub>3</sub> <sup>-</sup> , Cl <sup>-</sup> )	Yes	no	Yes	Yes	No	Yes	no	Yes

Yes= 41 , No= 14

# Monitoring : data reporting

Parameter	Bangladesh	Bhutan	India	Iran	Maldives	Nepal	Pakistan	Sri Lanka
TSP	no				no			no
PM <sub>10</sub>	no	no			no			no
SO <sub>2</sub> , NO <sub>2</sub> with passive sampler								
SO <sub>2</sub> , NO <sub>2</sub> with active method					no			no
pH			no		no			
EC					no			



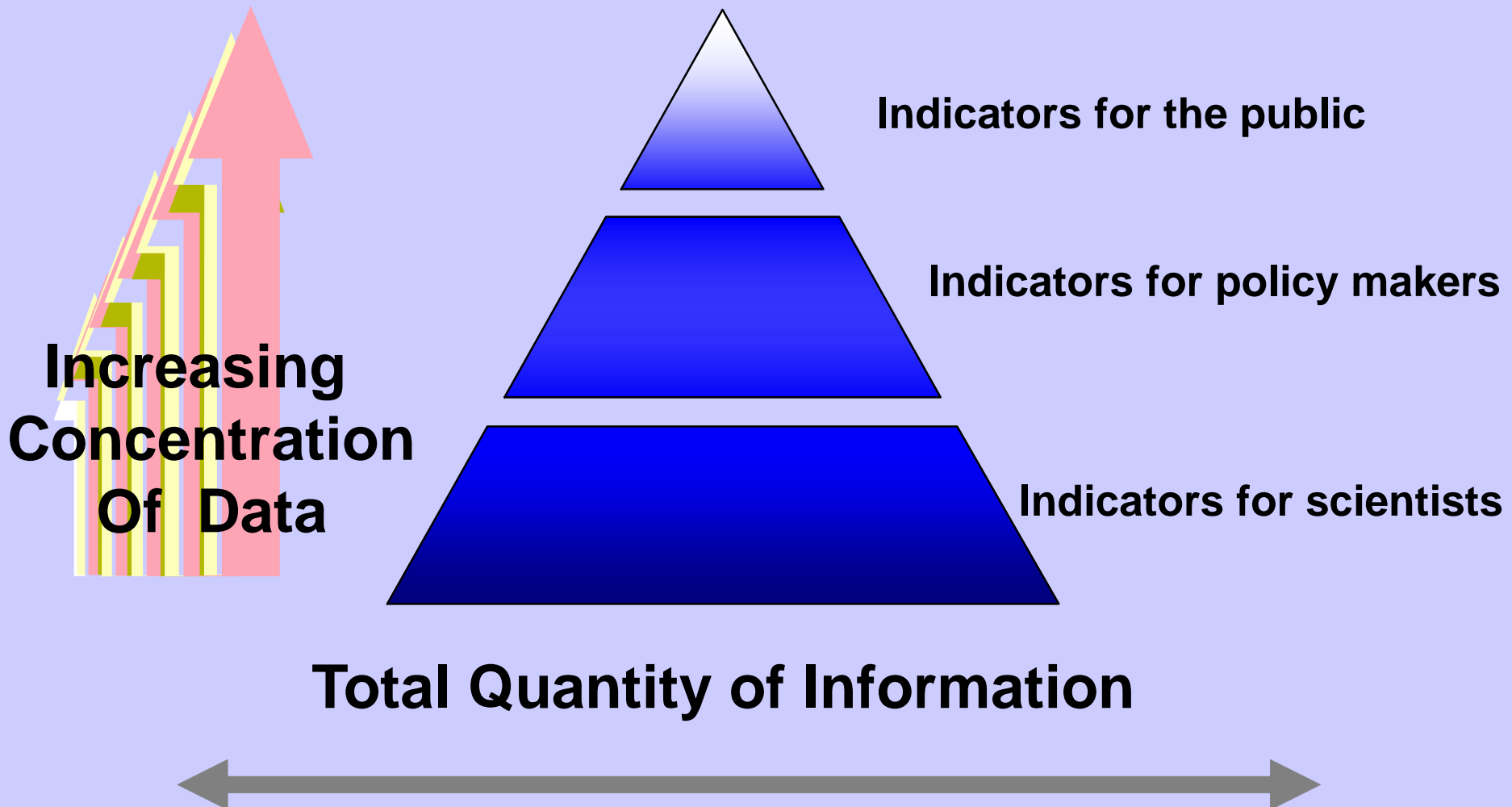
# Results of Monitoring Data Analysis

## Website

<http://www.rrcap.unep.org/airindicator/index.cfm>

<http://www.rrcap.unep.org/md/malereport/meeting.cfm>

# ***DATA, INFORMATION & INDICATORS RELATIONSHIP***





# Improve the National QA/QC programme

## Monitoring Site Audit

Bhutan	Gelephu	16-17 September 2006
Bangladesh	Kulna	4-5 May 2007
Nepal	Rampur	10-11 May 2007
Sri Lanka	Mihintale	13-14 June 2007
Maldives	Hanimaadhu	4-5 October 2007

**Conduct audits of the national monitoring programmes.**

**Discuss with the NIA ways of improving the national QA/QC programme.**

## Inter Laboratory Comparison

- **Guideline for sample handling: Attachment A**
- **The sampler will be send during October 2007**

# Update for the technical manual

- **Integrate technical and instrument user manuals into user-friendly several small manuals**
- **A Standard Operating Procedures manual will be prepared as part of the technical manual update**
- **Prepare a manual for data manipulation, analysis, interpretation and dissemination**

# Strengthen Monitoring Equipment

- **Spare parts for site and Laboratory equipment**
- **Meteorological equipment**
- **Laboratory equipment**

# Data Reporting frequency

Based on the national database, each participating country is invited to submit a report in the specified data reporting formats on **monthly basis**, to the extent possible with available resources.

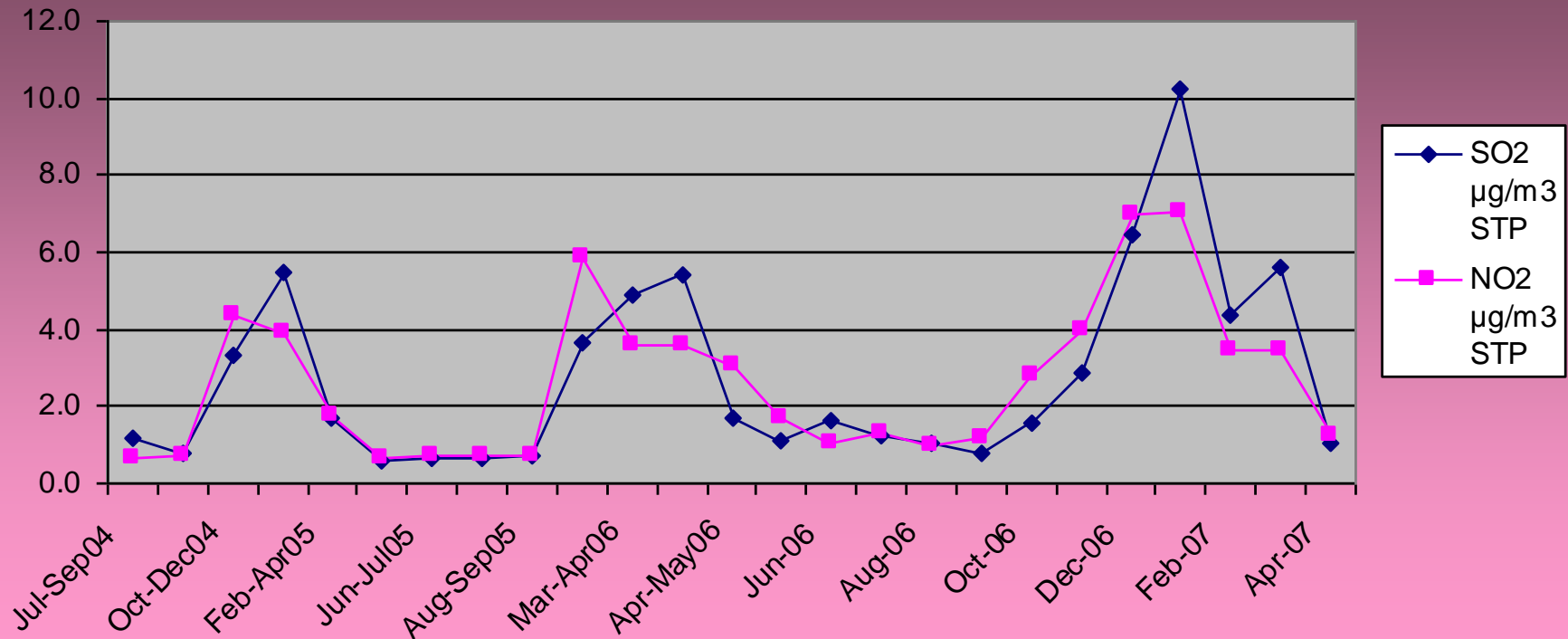
To reduce the workload during the data compilation process, the submission of the reports via **electronic media**, in addition to the documents, is strongly encouraged.

## What to report

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

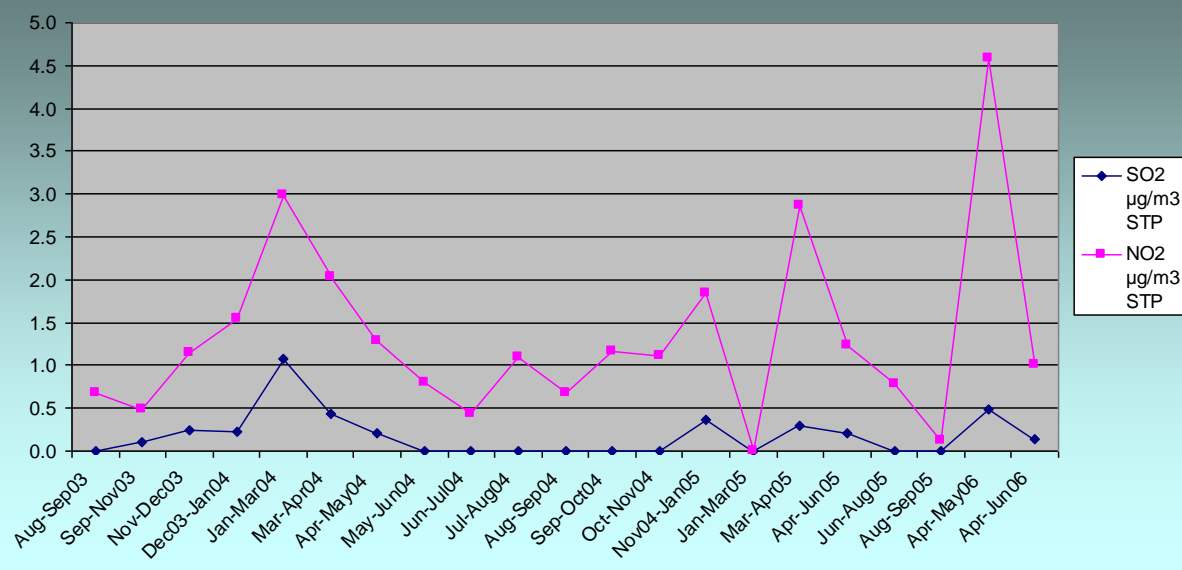
# Bangladesh: Results of Air Concentration Analysis

## Bangladesh: Passive Sampler (2004-2007)



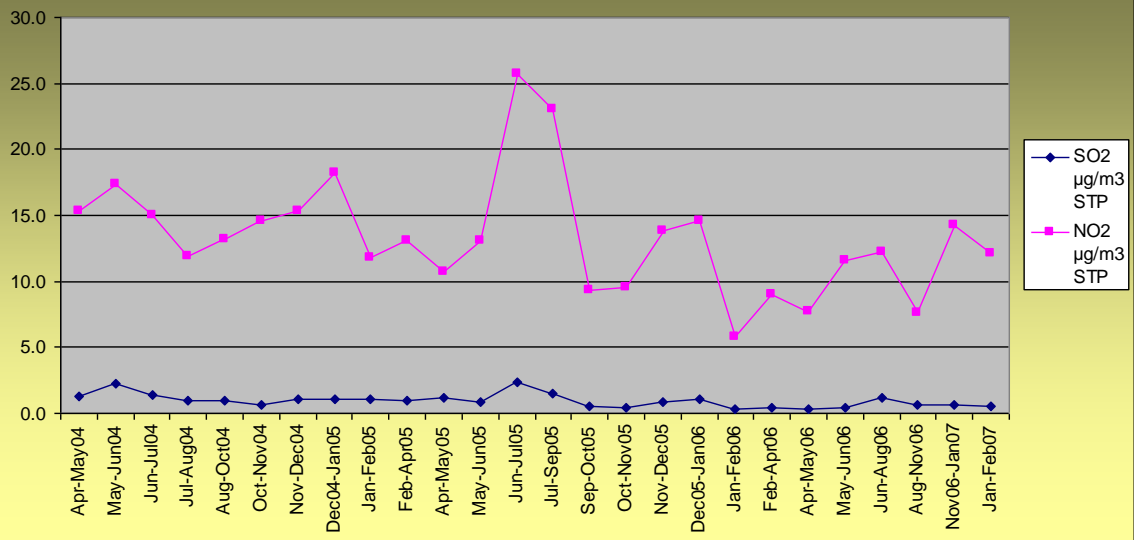
# Bhutan: Results of Air Concentration Analysis

## Bhutan: Passive Sampler (Gelephu)



◆ SO2  
 µg/m3  
 STP  
 ■ NO2  
 µg/m3  
 STP

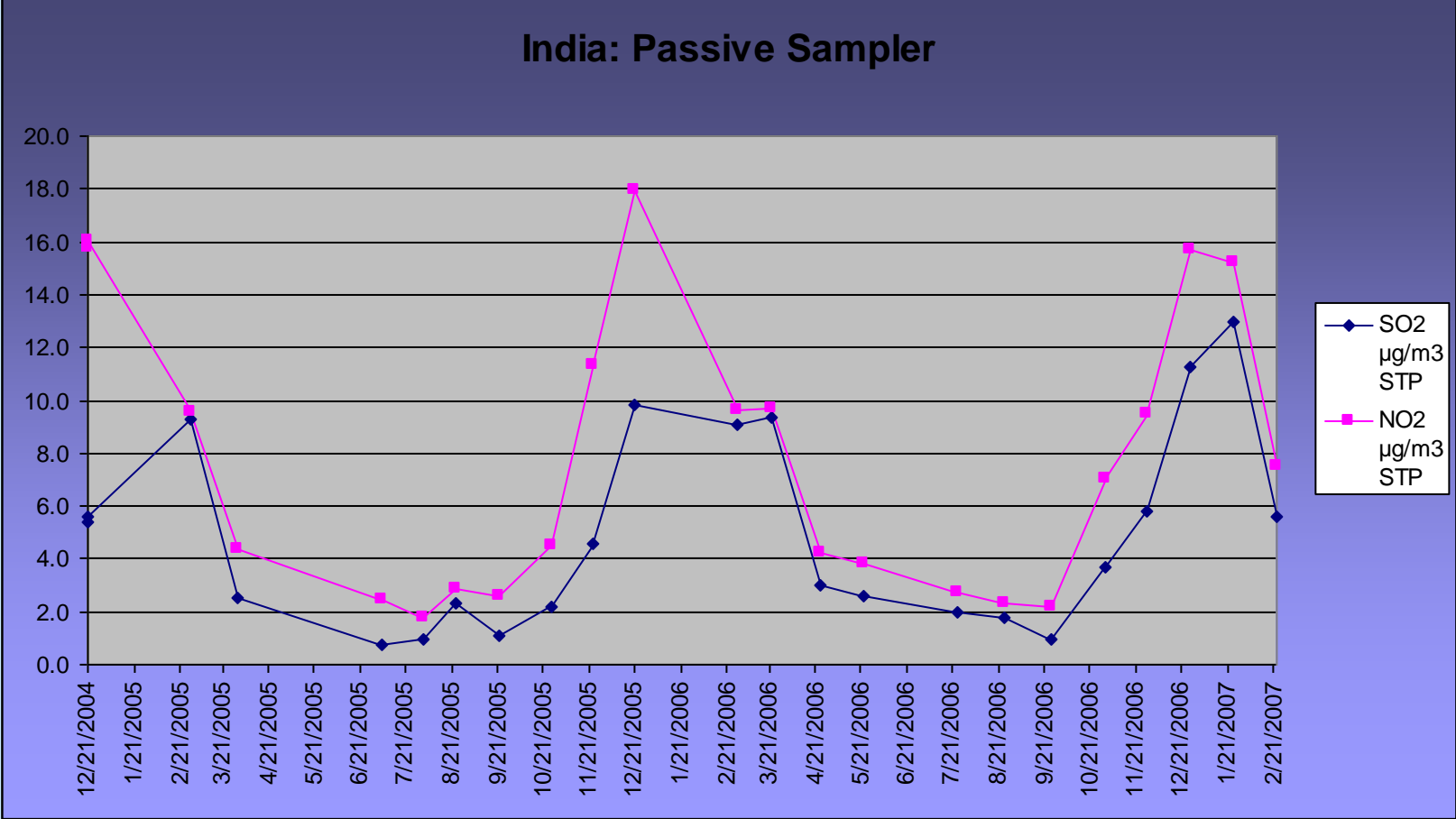
## Bhutan: Passive Sampler(Thimphu)



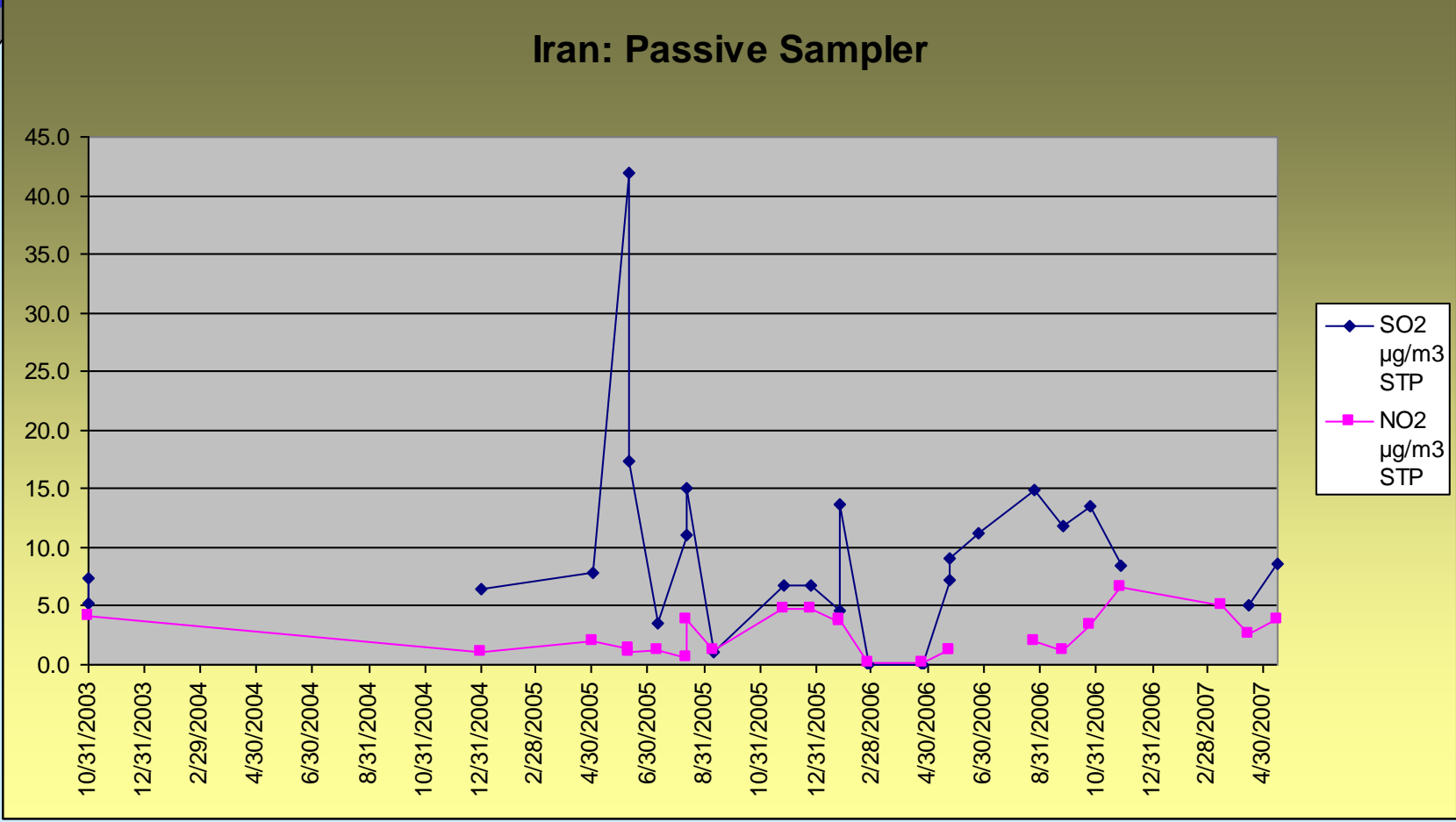
◆ SO2  
 µg/m3  
 STP  
 ■ NO2  
 µg/m3  
 STP



# India: Results of Air Concentration Analysis

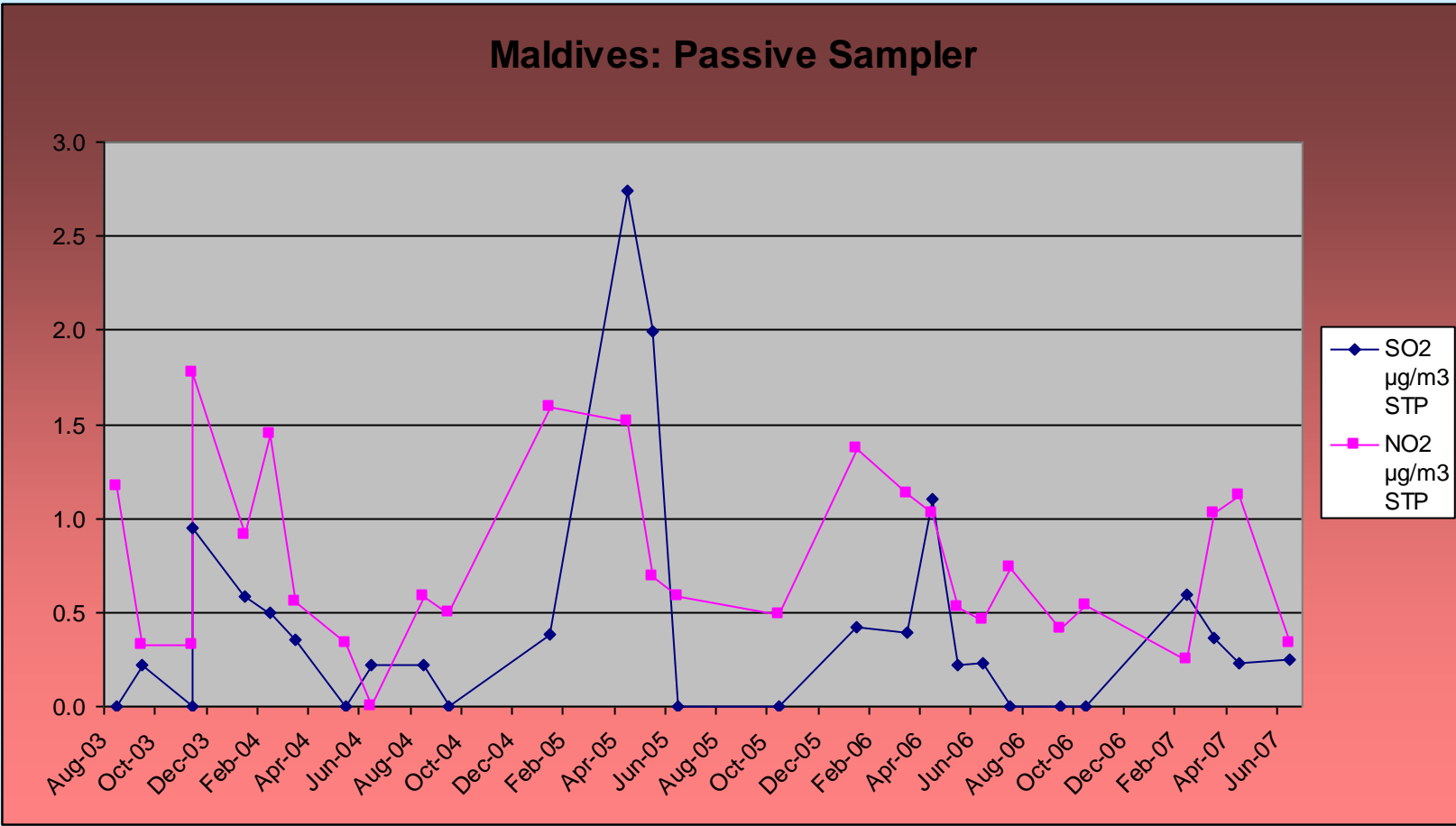


# Iran: Results of Air Concentration Analysis

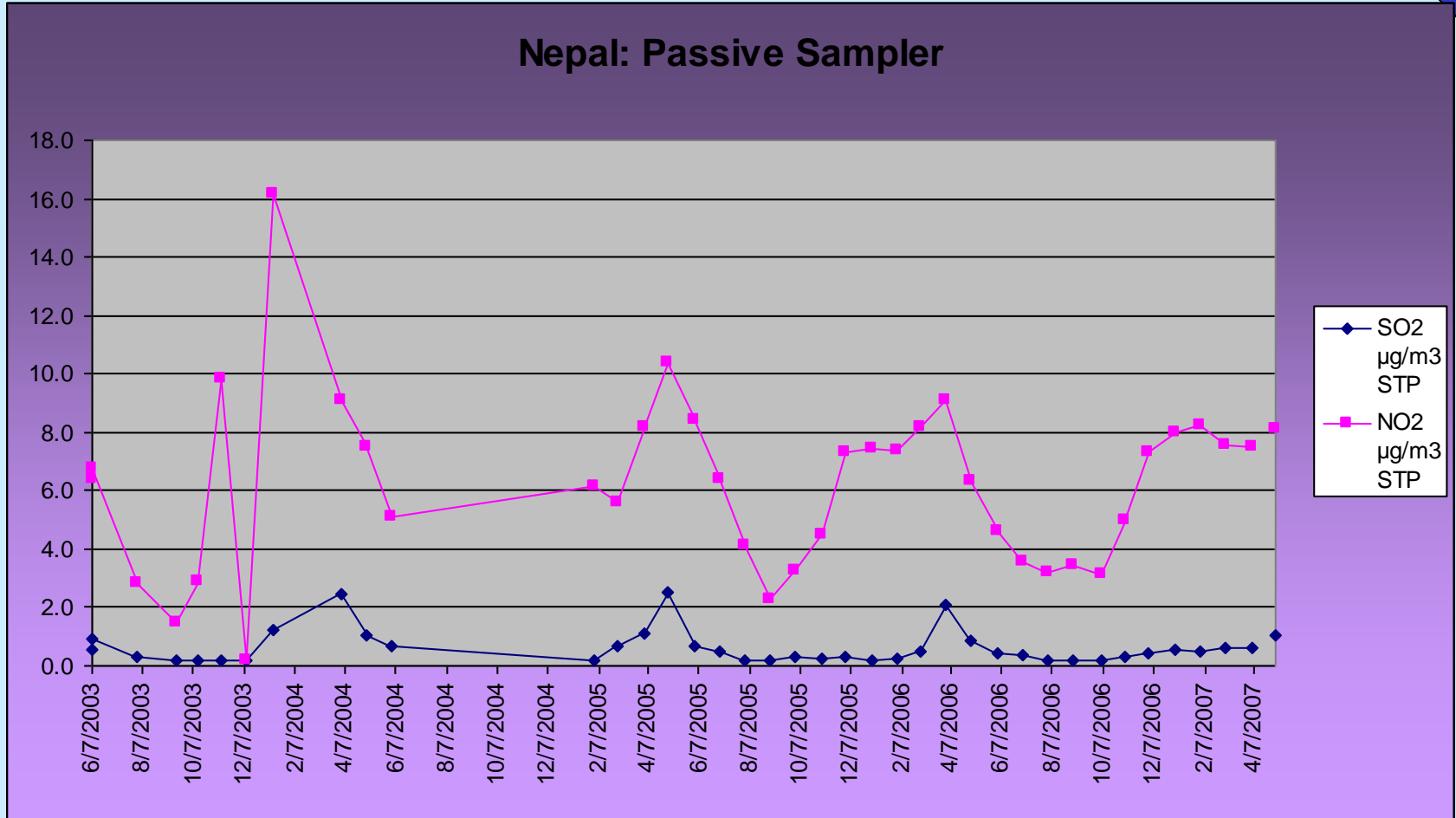




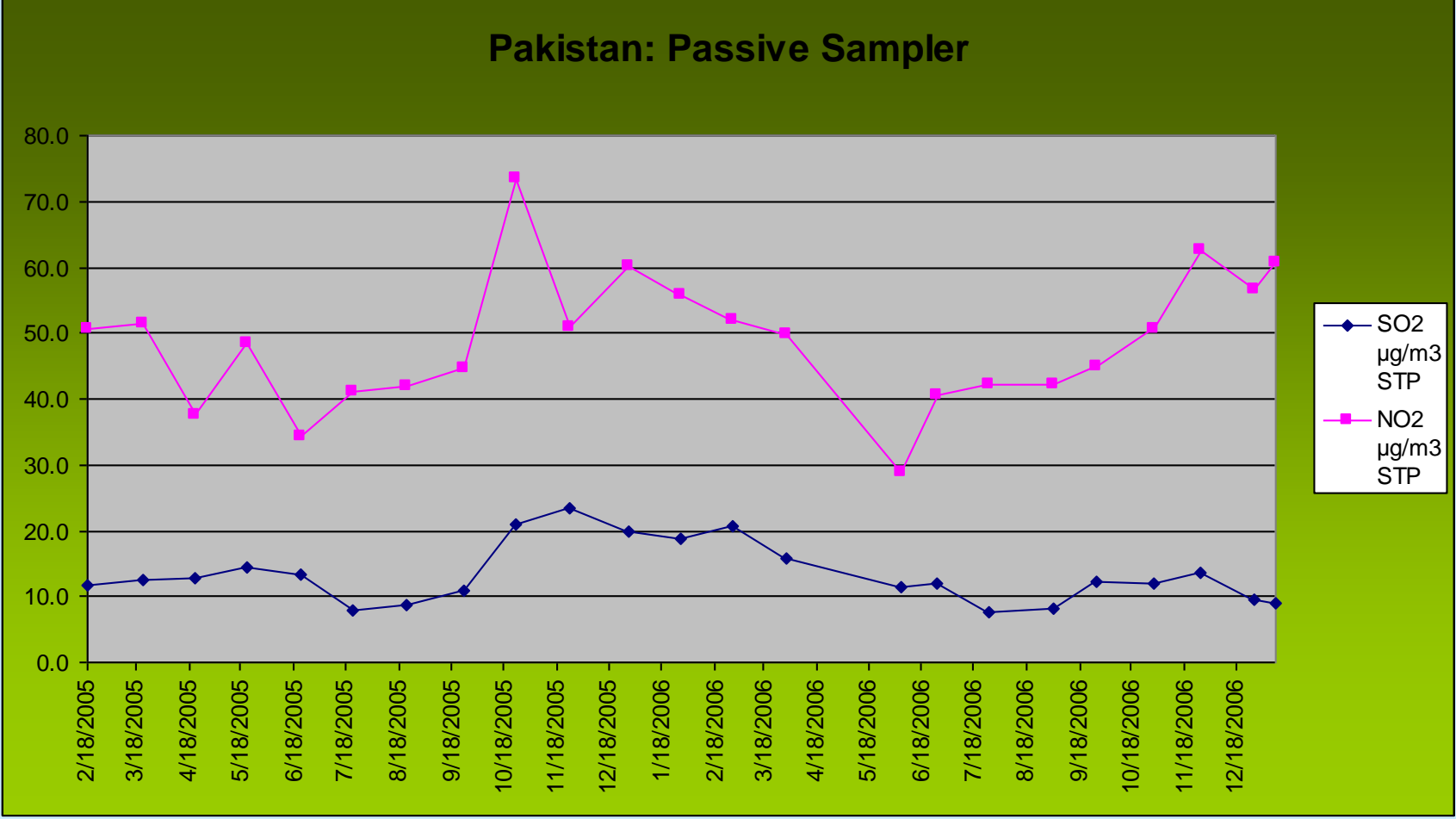
# Maldives: Results of Air Concentration Analysis



# Nepal: Results of Air Concentration Analysis



# Pakistan: Results of Air Concentration Analysis



# Sri Lanka: Results of Air Concentration Analysis

## Sri Lanka: Passive Sampler

