

Malé Declaration Implementation in NEPAL

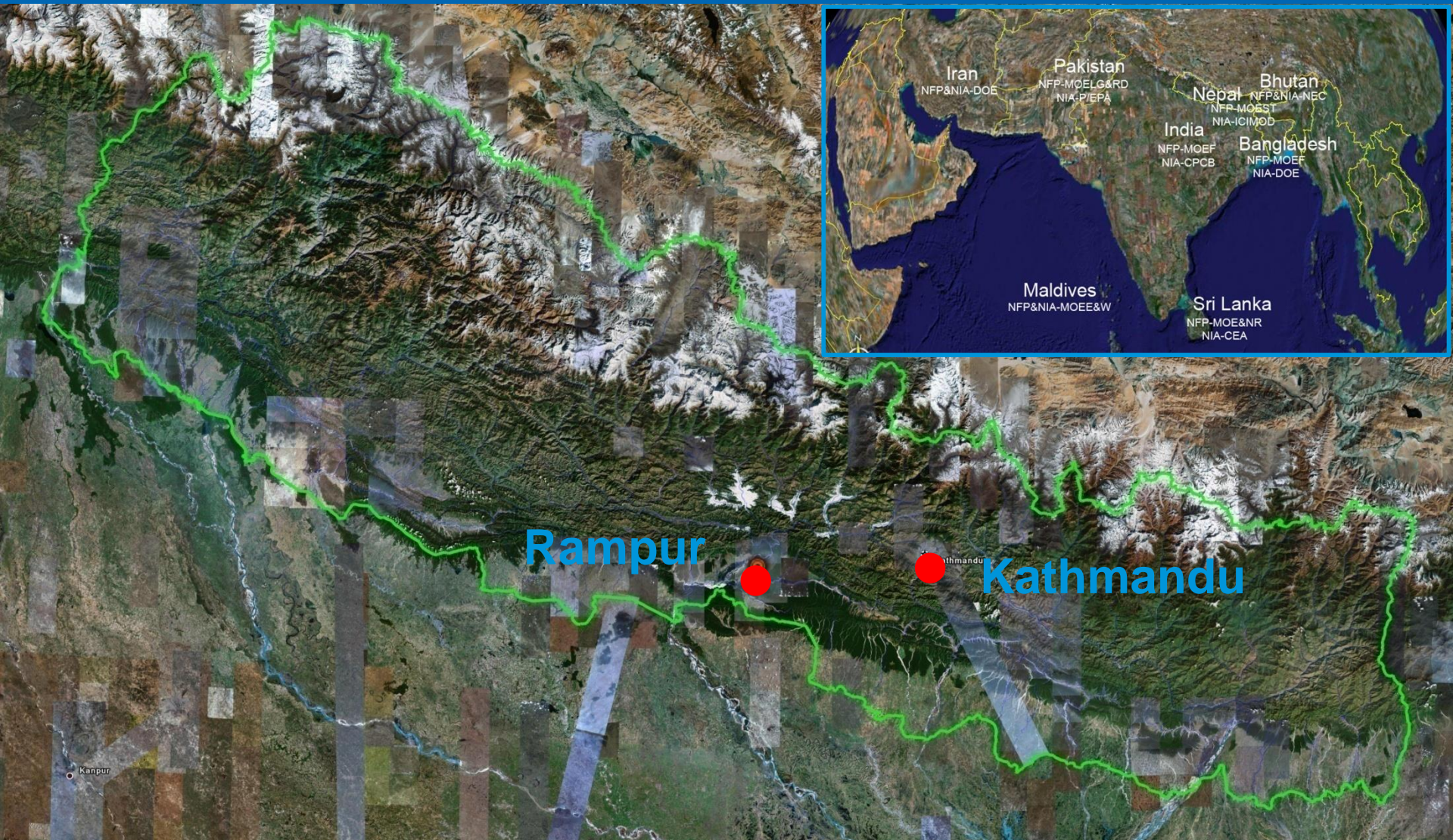
ICIMOD

Pradeep Dangol

International Centre for Integrated Mountain Development

Kathmandu, Nepal

Monitoring Site



Monitoring Site

Country:	Nepal
Location:	Institute of Agriculture and Animal Science, Rampur, Chitwan
Site type:	Rural site, 15 km south of the Royal Chitwan National Park
Latitude:	27° 38' 52.8" N
Longitude:	84° 20' 47.7" E
Altitude:	165 mamsl

Activities in Phase IV

- Regular monitoring Transboundary Air Pollution monitoring station – Rampur, Chitwan
- Emission inventories 2005 – Nepal
- Rapid Urban assessment – Kathmandu City report finalized
- Health Impact Assessment
- Crop Impact Assessment (2nd field assessment)

Transboundary Air Pollution Monitoring Station

ICIMOD

FOR MOUNTAINS AND PEOPLE

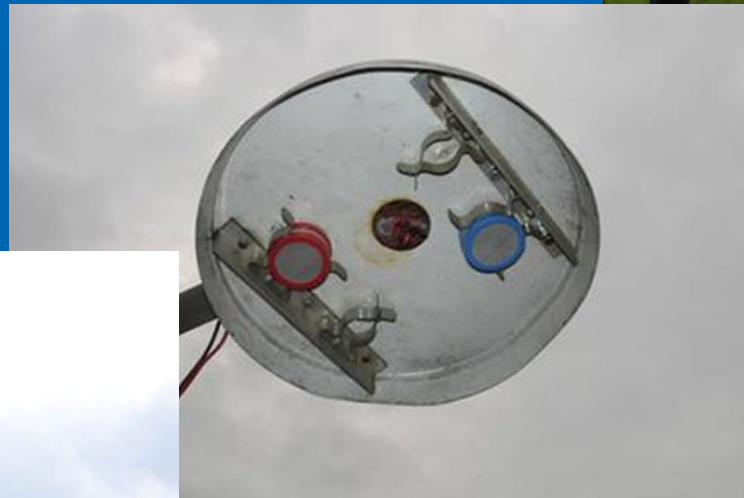


Instruments

High Volume Sampler



Passive Sample



Automatic Weather Station



Instruments

Wet Only Collector



Bulk Collector



Laboratory

Regular Monitoring Parameter at IAAS, Rampur

High Volume Sampler

PM₁₀

RSPM

TSP

Passive Samples:

SO₂

NO₂

O₃

Rain Water Chemistry (Wet and Bulk rain):

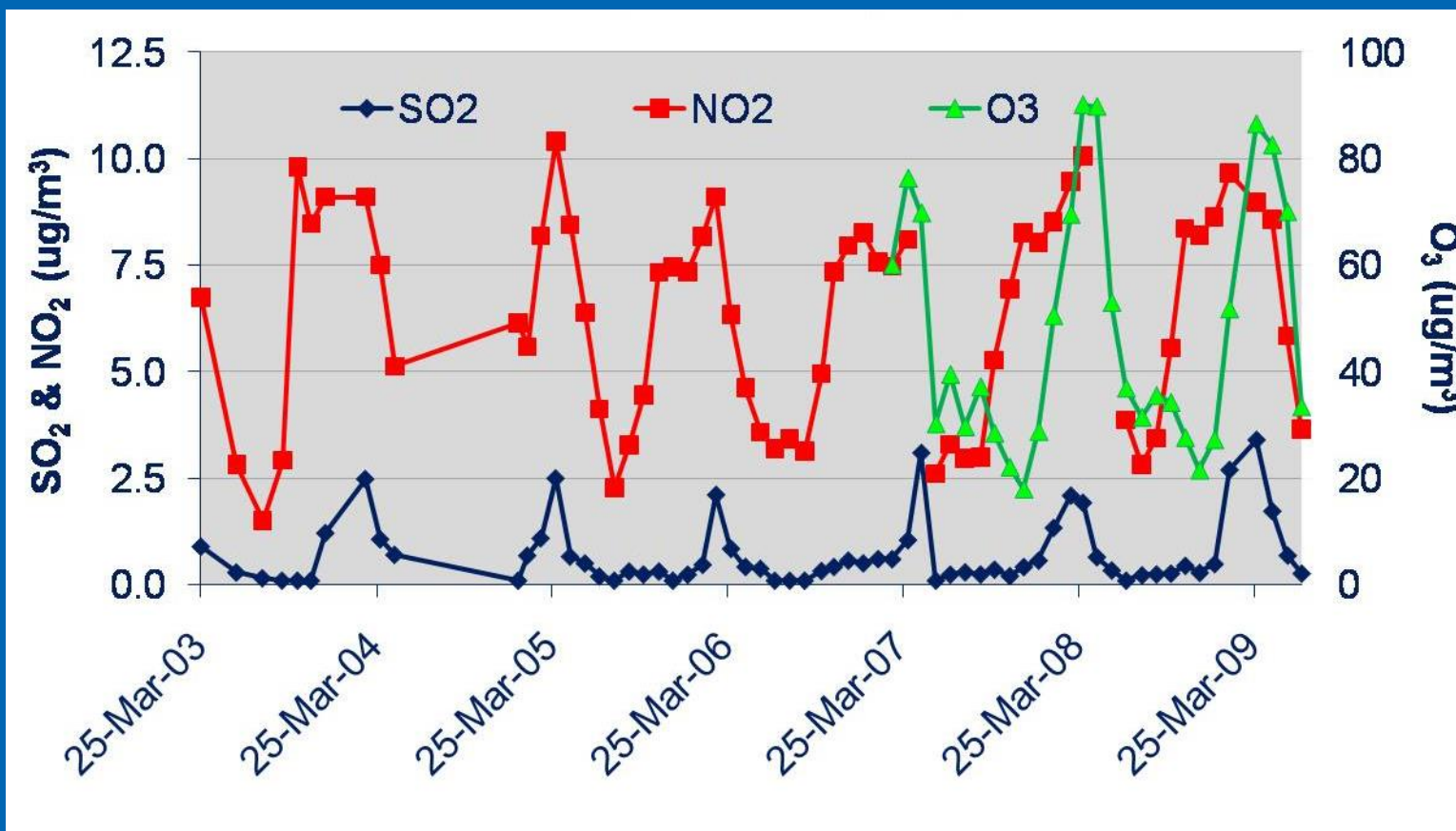
Rain Water volume, pH, Conductivity, Temperature, Calcium Hardness, Magnesium Hardness, Chloride, Sulphate, Potassium, Sodium, Ammoniacal-Nitrogen, Nitrate-Nitrogen

Water Chemistry Analyze method:

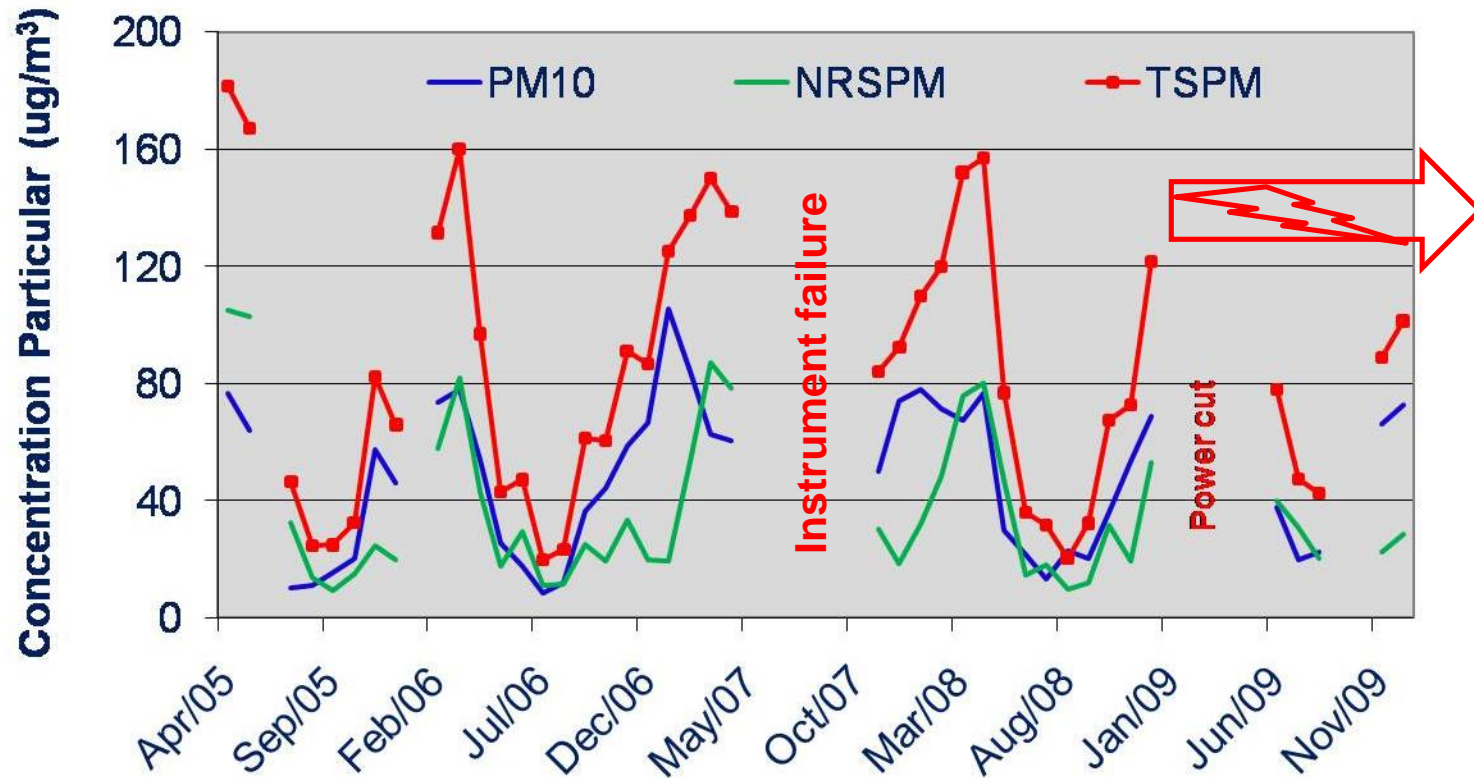
<u>Parameter</u>		<u>Analyze method</u>
Rain Water volume	-	Measuring cylinder
pH	-	pH meter
Electric Conductivity	-	Conductivity cell
Temperature	-	“
Calcium Hardness	-	Titrimetry
Magnesium Hardness	-	“
Chloride	-	“
Potassium	-	AAS
Sodium	-	“
Ammoniacal-Nitrogen	-	Distillation
Sulphate	-	Spectrophotometry
Nitrate-Nitrogen	-	“

Results

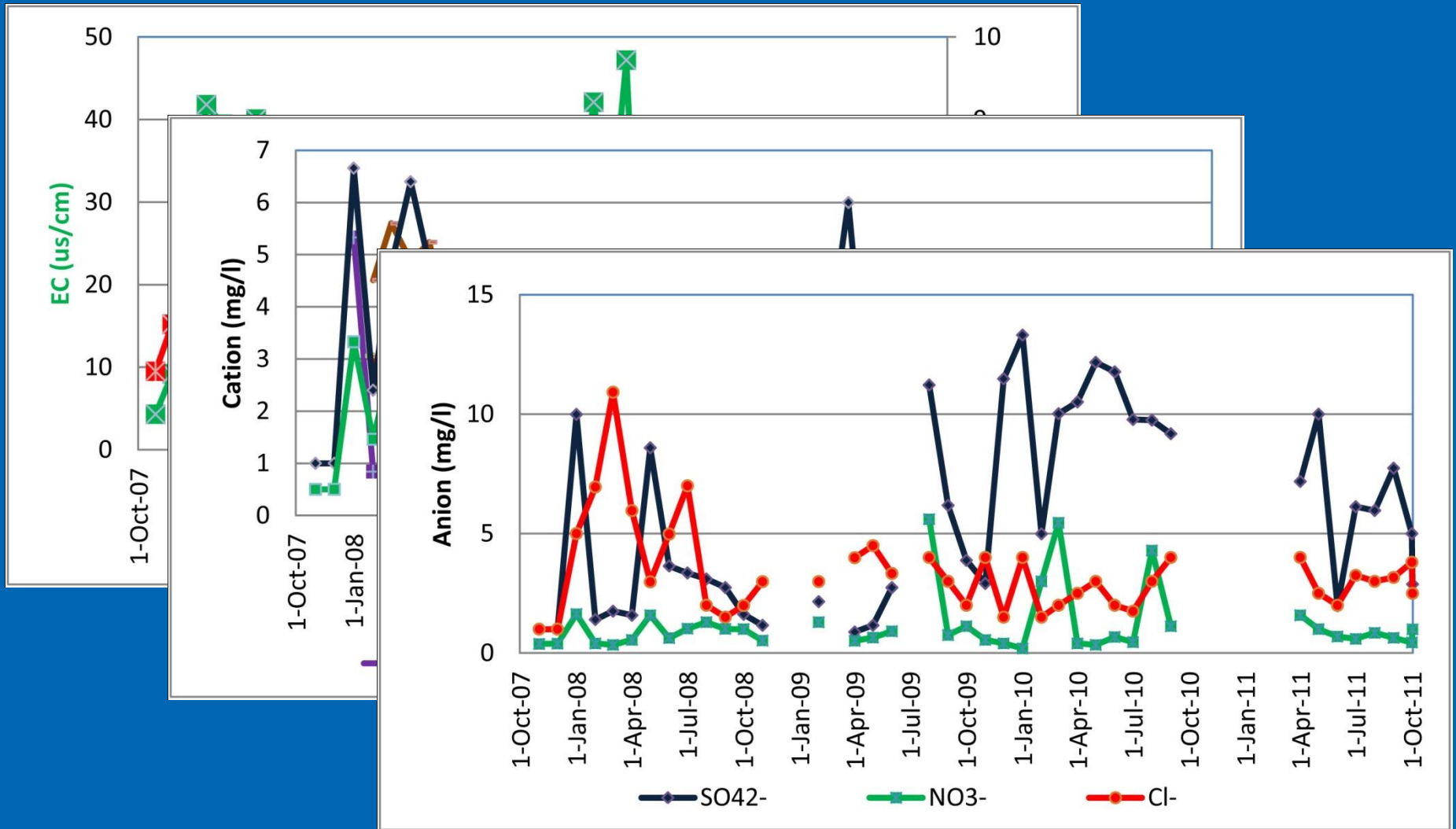
Passive sample- Rampur, Chitwan



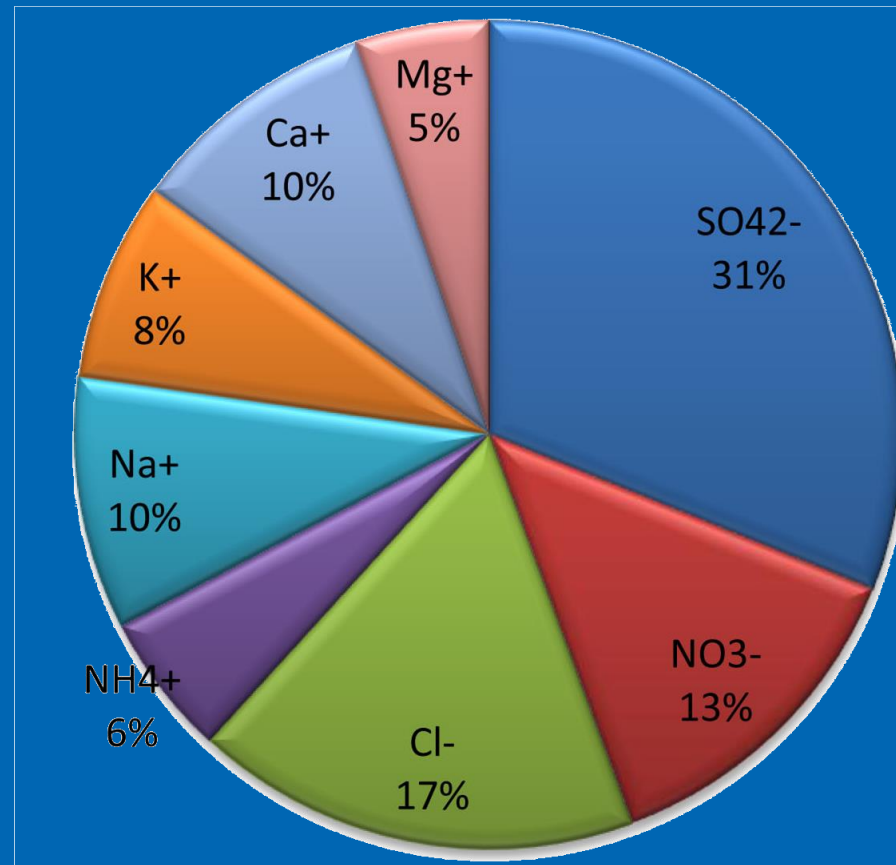
High Volume Sample – Rampur, Chitwan



Water Quality - Bulk collector

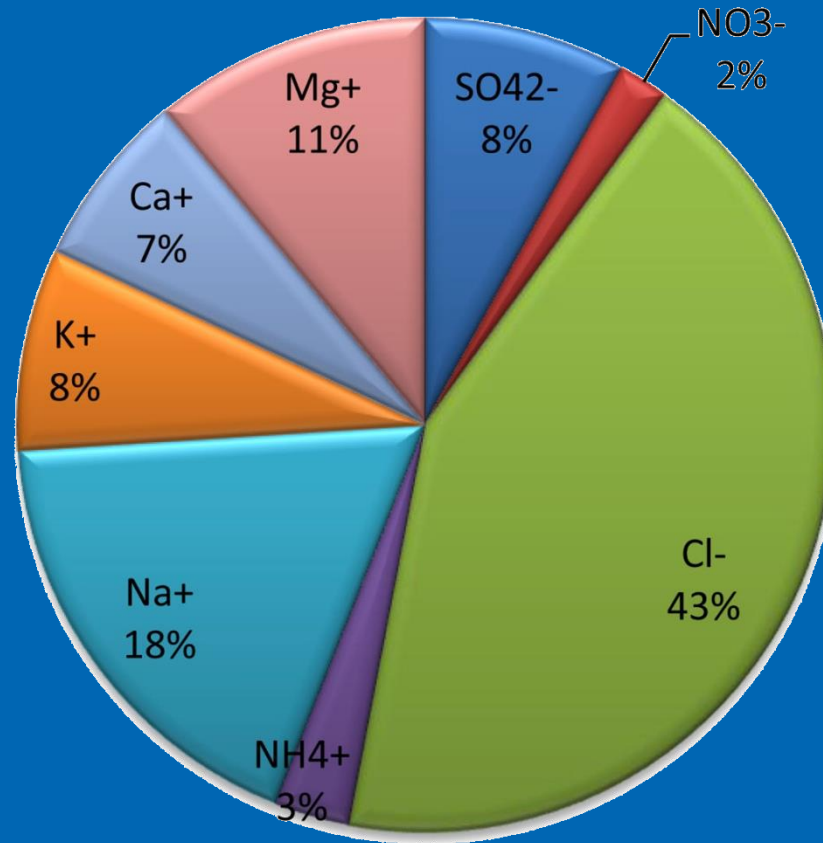


Water Quality - Bulk collector



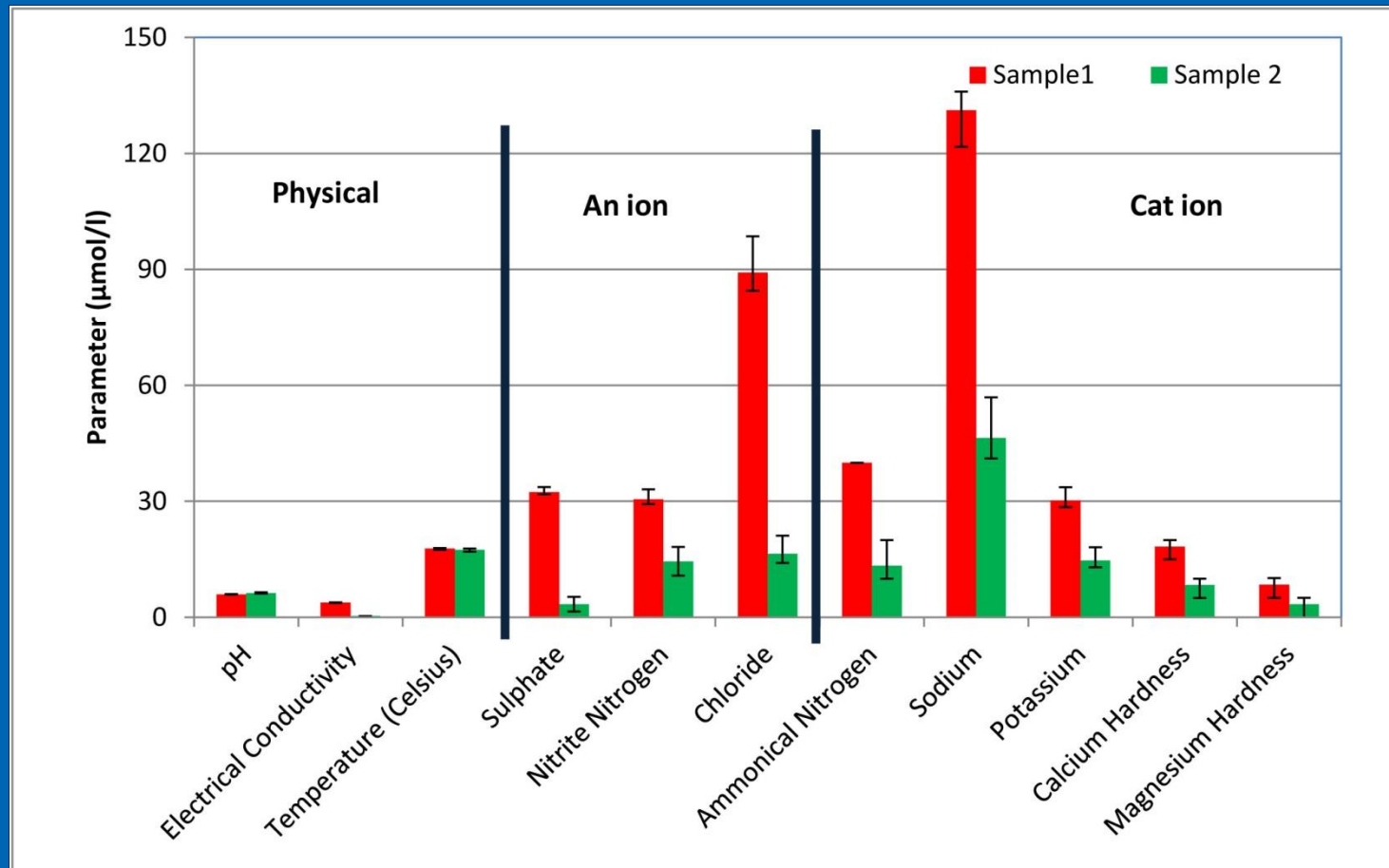
Data: mid 2007 to 2011

Water quality - Wet only collector



Data: mid 2007 to 2008

2nd water quality comparison






- Rapid Urban Assessment - Health Assessment

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

ICIMOD


FOR MOUNTAINS AND PEOPLE

Rapid Urban Assessment of Air Quality for Kathmandu, Nepal




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

Research Report




Assessment of Impacts of Particulate Air Pollutants on Respiratory Health of School Children in Kathmandu Valley

September 2012



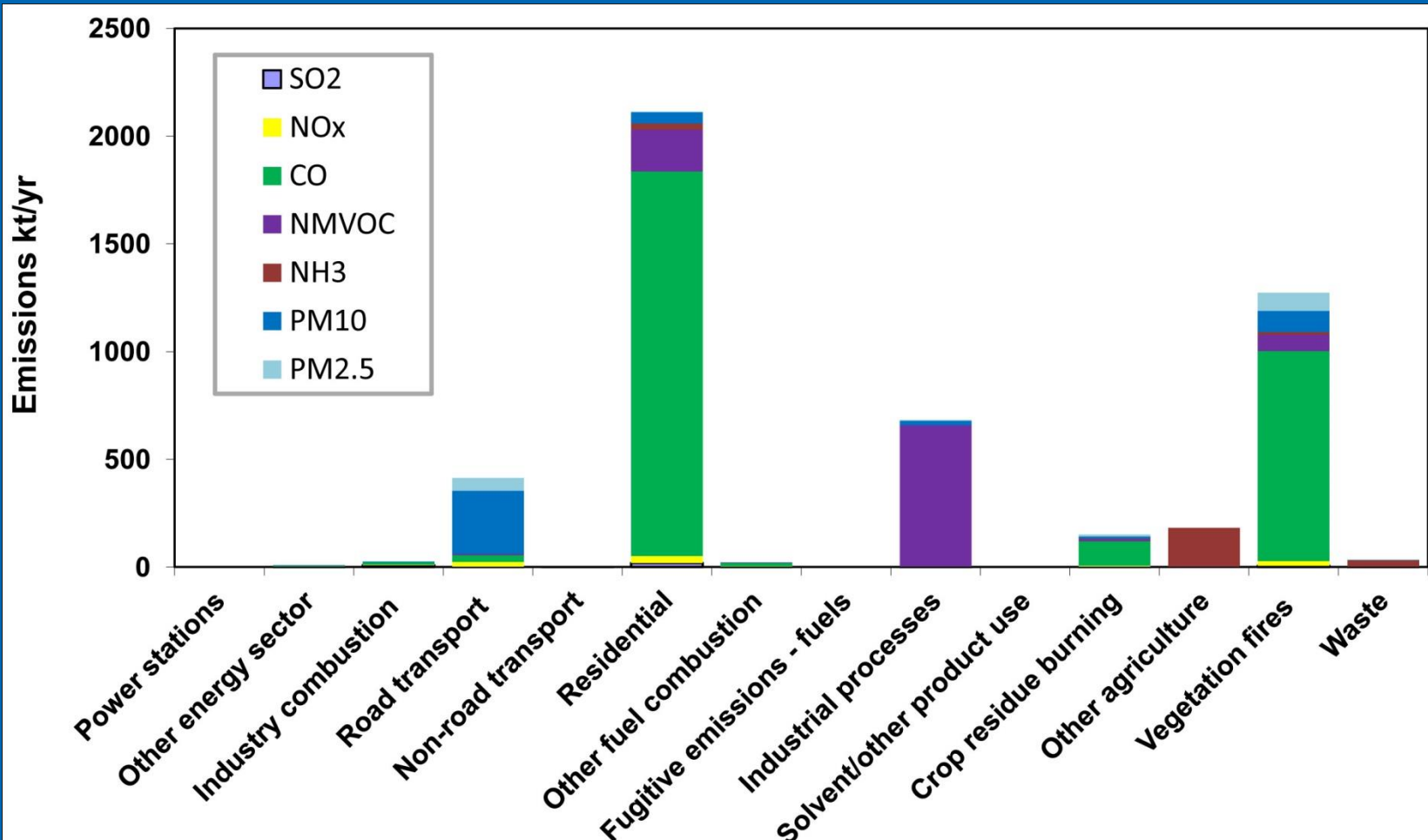
ICIMOD



2nd Crop Impact Assessment



Emission inventory- 2005, Nepal



Corrosion Study

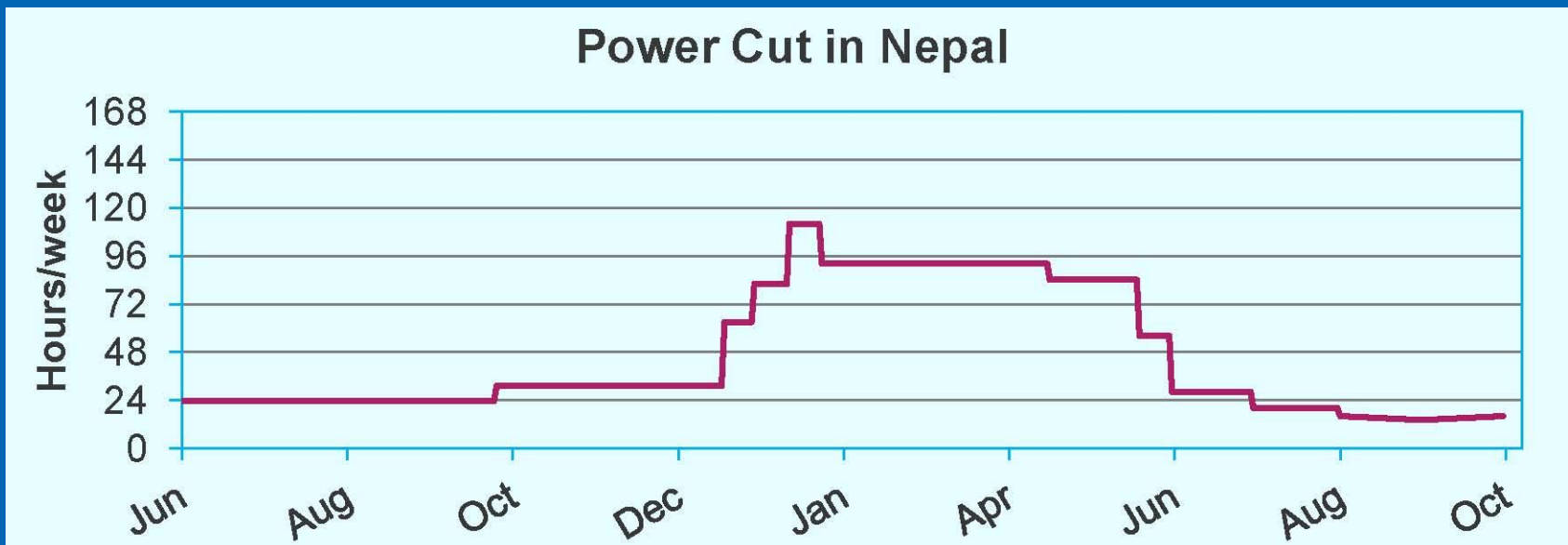


Main Rack



Challenges and difficulties

- Electricity reliability (up to 12-18hrs power cut) - back up system
- Instrument failure - time to maintenance
- Resolve instrument failure - lack of knowledge on instrument
- Political situation - staff change/shift, Strike, blockage



Thank you

ICIMOD

FOR MOUNTAINS AND PEOPLE

