



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




Thirteen Session of the Intergovernmental Meeting and Seventh Regional Stakeholders cum Coordination Meeting (RSC7)

18-19 May 2013
Dhaka, BANGLADESH



Ministry of Science, Technology and Environment
Government of Nepal

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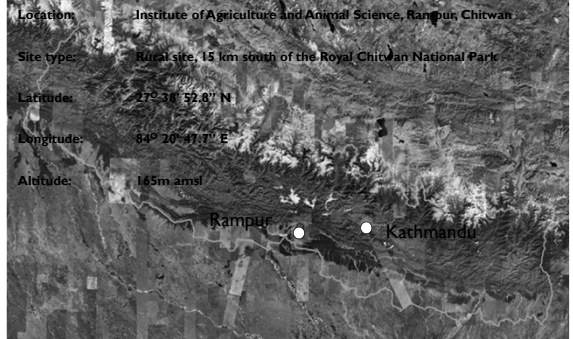
Organizations involved in Air Quality in Nepal

- Ministry of Science, Technology and Environment, lead organization and national focal point of Male Declaration.
- Department of Environment, implementing agency of MoSTE in all environmental issues
- ICIMOD, (International Centre for Integrated Mountain Development) national implementation agency for Male Declaration

Members:

- Institute of Agriculture and Animal Science (IAAS) TU, Chitwan
- Clean Air Network Nepal-representing from NGOs
- Center for Pollution Studies, Institute of Engineering (IoE-TU) representing from academic institutions
- Department of Hydrology & Meteorology, GoN

Monitoring Station



Location: Institute of Agriculture and Animal Science, Rampur, Chitwan

Site type: Rural site, 15 km south of the Royal Chitwan National Park

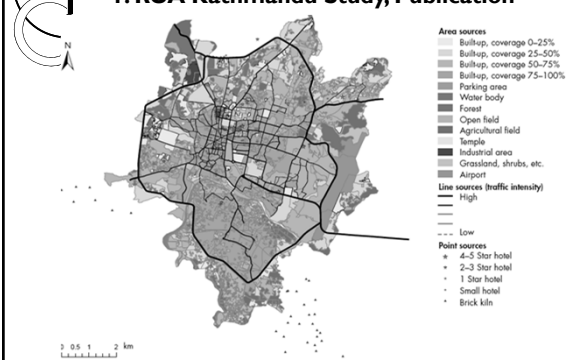
Latitude: 27° 38' 32.8" N

Longitude: 84° 20' 41.7" E

Altitude: 165m amsl

Achievements

I. RUA Kathmandu Study, Publication



Area sources

- Builup, coverage 0-25%
- Builup, coverage 25-50%
- Builup, coverage 50-75%
- Builup, coverage 75-100%
- Parking areas
- Water body
- Forest
- Open field
- Agricultural field
- Temple
- Industrial area
- Grassland, shrubs, etc.
- Airport

Line sources (traffic intensity)

- High
- Low

Point sources

- 4-5 Star hotel
- 2-3 Star hotel
- 1 Star hotel
- Small hotel
- Brick kiln

Achievements

Air pollutants threatening health: Study


Reducing particulate matter could save lives



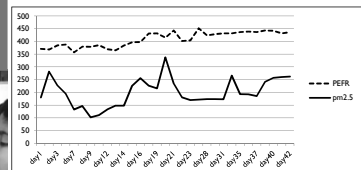
Huge Media Attention/Coverage

2. Health Study

In collaboration with Nepal Health Research Council (NHRC)



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



Correlation of Peak Expiratory Flow Rate (PEFR) and PM 2.5 for St. Xavier's (Urban roadside school)


3. Crop Study –IAAS, Rampur

Experimental site

- Institute of Agriculture and Animal Science (IAAS) Rampur, Chitwan
- Latitude - 27°37 North
- Longitude - 84°25 East
- Altitude - 165 m above mean sea level.
- Inner Terai region of Nepal.

Duration of the study

- April, 2012 to July, 2012.




Ambient ozone conc. and meteorological recordings during experimental period

Date	Max.Temp.°C	Min.Temp.°C	Avg. Rainfall mm	Avg RH %	Sunshine(hrs)	Ozone level µg/m ³
3 April-31 May	34.04	16.58	4.32		8.53	79.2
5 May-30 May	37.4	22.92	1.96	81.0	8.96	99.0
30 May-30 June	35.1	25.22	8.2	87.5	6.20	65.5
30 June-29 July	33.3	23.17	16.5		2.22	34.5

Measurements of yield attributing parameters of mungbean during experimental period

Yield parameters	Mean(control)	Mean(EDU treated)
Pods weight/plant	7.20	7.39
Mature pods weight (gm)	34.42	36.97
Immature pods weight (gm)	16.90	12.10
NO. of mature pods/plant	74.40	97.65
No of immature pods/plant	25.15	16.10
No of seeds/pod	4.22	4.51
No of seeds/plant	307	425
Seed dry weight/plant (gm)	7.90	10.31
Test weight of seed/plant	38.24	40.49
Above ground biomass (gm)	35.34	36.22
Shelling %	23.24	28.65

- No significant difference in plant height and branch per plant
- Number of leaves significantly higher in EDU treated
- Number of seeds per plant was significantly higher in EDU



Issues about current monitoring station

- ✓ Long hours of power outage – hamper in sample collection from High volume sampler
- ✓ IAAS is in transition to become a separate campus from Tribhuvan University
- ✓ Modality will have to change
- ✓ Transfer of the personnel who was looking after the monitoring activities

Existing Legal Framework on Air Quality

- ✓ Interim Constitution of Nepal, 2007
- ✓ Nepal Environmental Policy and Action Plan (NEPAP I), 1993
- ✓ National Transport Policy, 2002
- ✓ Environment Protection Policy, 1987
- ✓ Industrial Policy, 1992
- ✓ Environment Protection Act and Rule, 1997
- ✓ Ozone Depleting Substances Consumption (Control) Rules, 2001
- ✓ Industrial Enterprises Act, 1992
- ✓ Transport Management Act, 1992 and Regulation 1997

Existing Legal Framework on Air Quality

- National Ambient Air Quality Standard, 2012
- Nepal Vehicle Mass Emission Standard, 2012
- Standard on Emission and Chimney Height for Industrial Boiler, 2012
- Standard on Emission for Diesel Generator, 2012
- Standard on Emission for Cement and Crusher Industries, 2012
- National Indoor Air Quality Standard and Implementation Guidelines, 2009
- Standard on Emission and Chimney Height for Brick Kilns, 2008

Recent Activities of Ministry of Science, Technology and Environment


- **Department of Environment has been established**
- Formulation of new standards
- Environmental Policy (Draft)
- Running 4 air quality monitoring stations in Kathmandu valley
- Planning to measure other parameters related with air quality from next fiscal year
- Planning to establish 6 air quality monitoring stations out of Kathmandu valley in coming fiscal years (Pokhara, Birgunj, Butwal, Bharatpur and Nepalguni)

Recent Activities of Ministry of Science, Technology and Environment

6 stations in the Katmandu Valley:


- Putalisadak & Patan (Urban Traffic Roadside station)
- Thamel (Residential station)
- Bhaktapur & Kirtipur (Urban Background)
- Matsyagaon (Valley Background)

Measured Parameter: PM10



Issues on Air Pollution

- Rapid Urbanization
- Brick kilns in operation in Kathmandu Valley
- Growing Numbers of Vehicles
- Traffic Congestion and Increasing Demand of Fossil Fuel
- Industrialization



Challenges on Air Quality

- To regulate the fuel quality for vehicle
- On road monitoring of the vehicle mass emission
- Protest (Burning of tire)
- Rapid and haphazard urbanization
- Maintaining the rule of law
- Sustainability of program
- Issue on climate change
- Public health

Major other Studies Related to Air Pollution


Government announcement of “Clean Cooking Solution for All by 2017 (CCS 2017)” thereby ensuring Indoor Air Pollution free Nepal. (AEPCC)

Reducing Impact of Black Carbon & other Short Lived Climate Pollutants (ICIMOD)

- Improving the science of SLCP in the Himalaya
- Knowledge dissemination
- Analysis of mitigation options
- Contribution to policy development

Emission Inventory of Diesel Gensets (CANN)

Glimpses of Nepal



Glimpses of Nepal

