

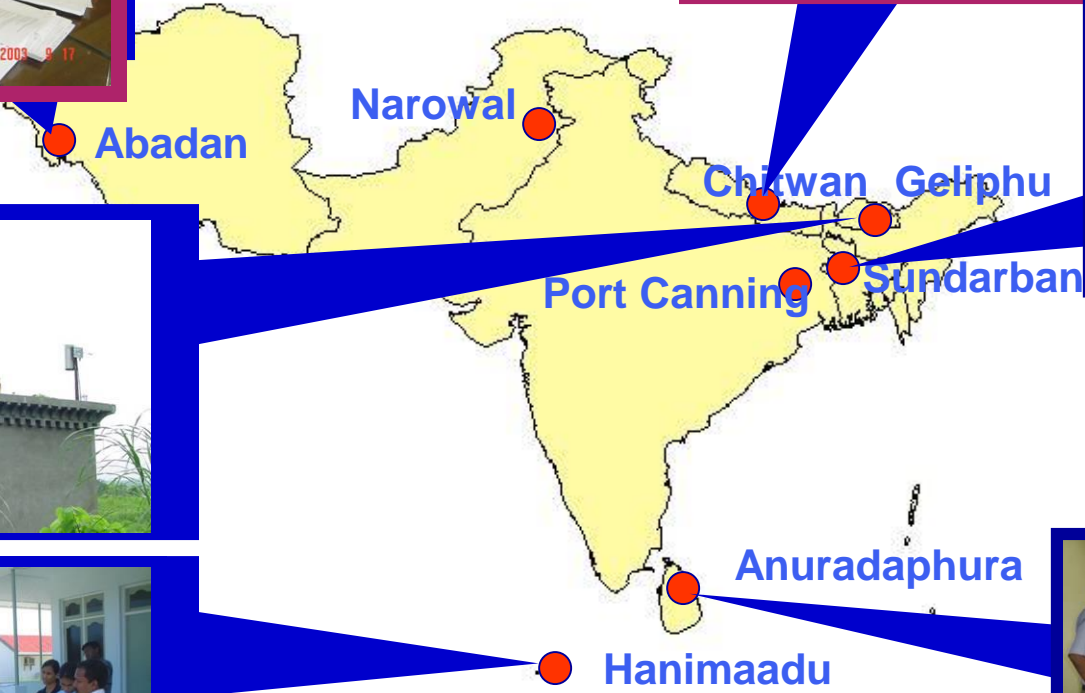
Emission Inventory of Nepal for the Year 2005

International Centre for Integrated Mountain Development

Kathmandu, Nepal

Male' Monitoring Stations

MOUNTAINS AND PEOPLE



Regional Network

Monitoring site

Country: Nepal

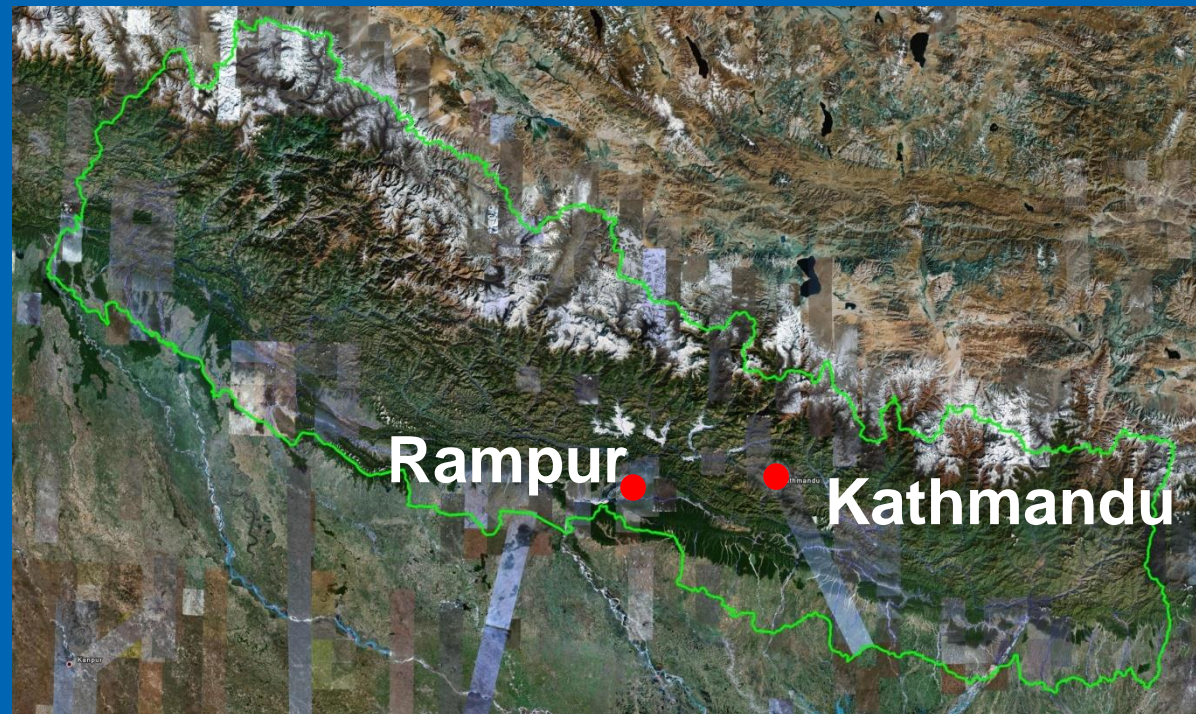
Location: Institute of Agriculture and Animal Science, Rampur

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



Instruments



High Volume Sampler

Wet Only Collector



Passive Sample

Bulk Collector



WS

Laboratory



Impact studies Under Male' Declaration Project

Corrosion study in Kathmandu

Passive Samples:

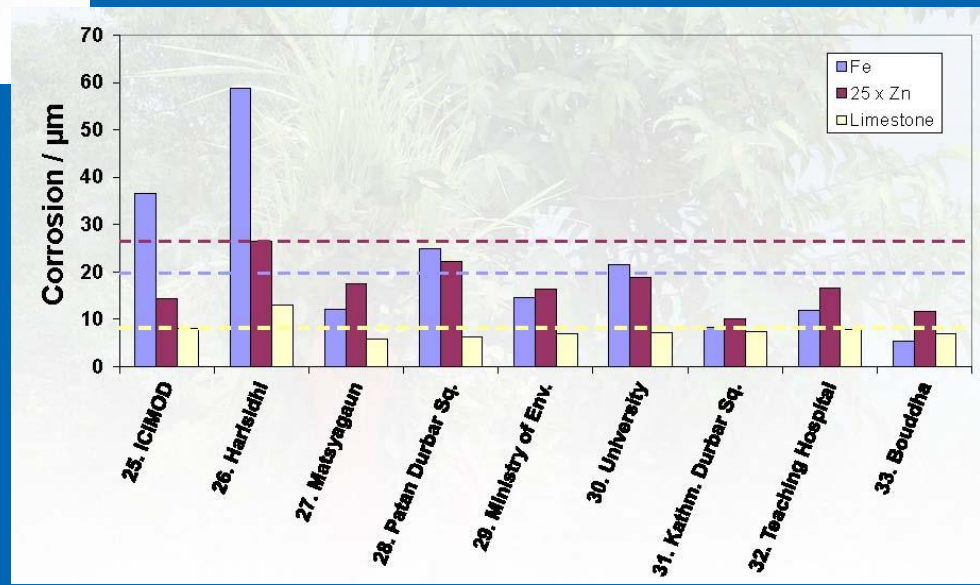
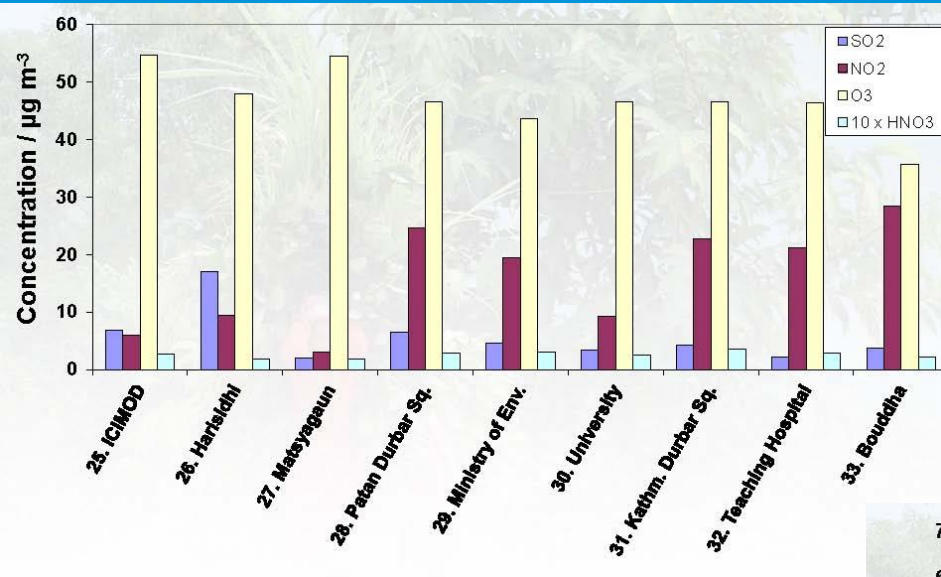
SO₂ NO₂ O₃ HNO₃ PM₁₀



Material Exposed:

Carbon Steel, zinc steel, Copper, Coated steel and lime stone

Results



Impact of Ambient Ozone Concentrations on Crop with the use of Ethylendiurea (EDU)

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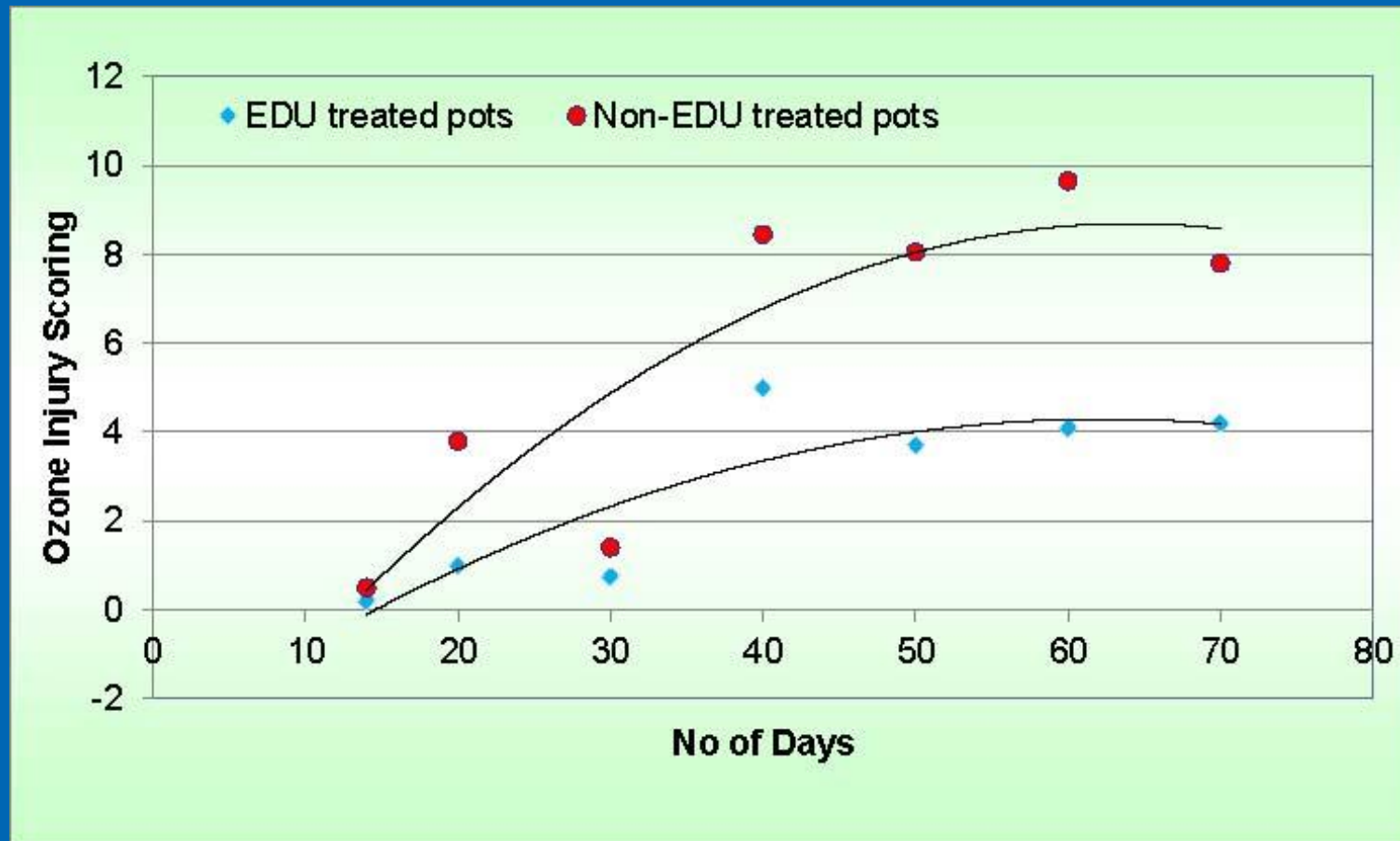
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Field –layout

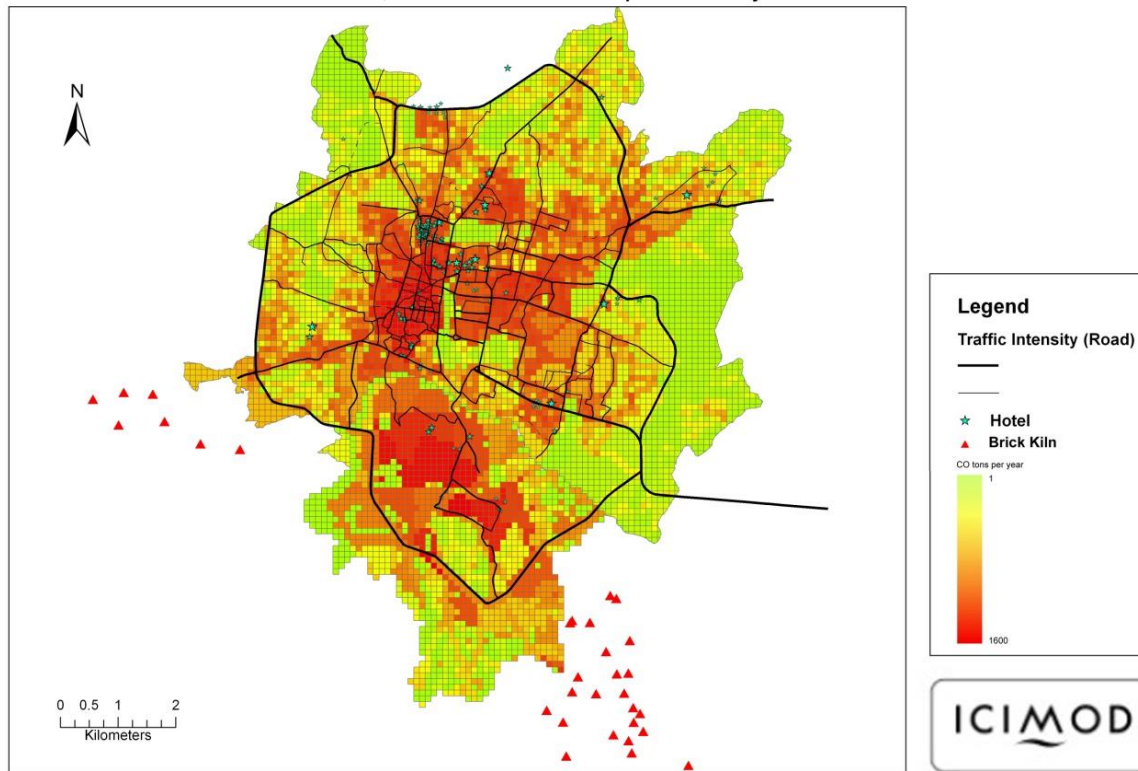


EDU and Non-EDU treated Plant



Rapid Urban Assessment Kathmandu

Concentration of CO, Kathmandu Metropolitan City



- prepared the concentration maps of selected pollutants (SO_2 , NO_x , CO, NMVOC, NH_3 , PM_{10} and $\text{PM}_{2.5}$) in Kathmandu
- find out the hotspot areas in Kathmandu

Application of Emission Inventory

Malé Emissions Inventory Workbook Template - Version 2.4

Prepared within the Sida-funded Regional Air Pollution In Developing Countries (RAPIDC) programme as a contribution towards the Implementation of the Malé Declaration on Control and Prevention of Air Pollution and its Likely Transboundary Effects

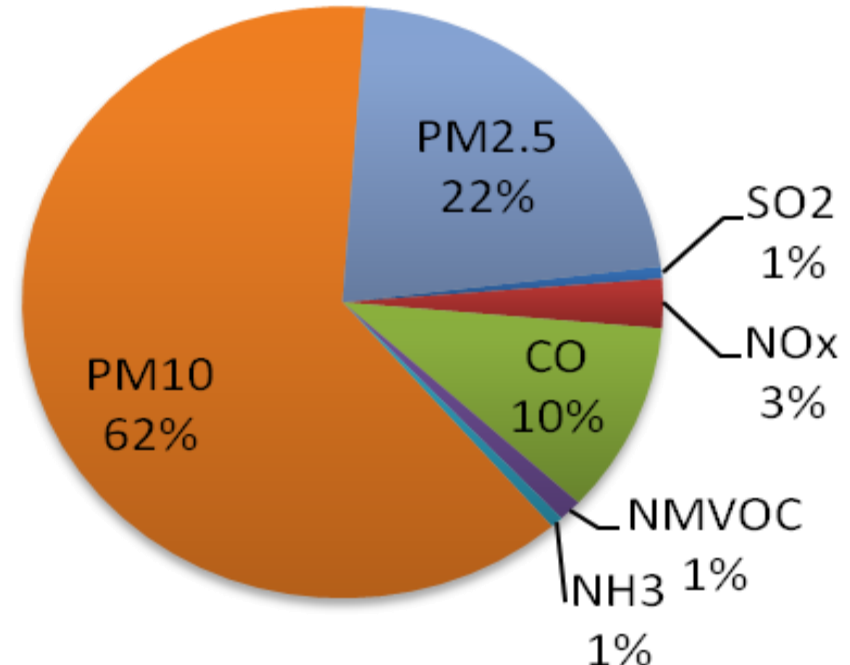
Template prepared by: Stockholm Environment Institute at York (SEI-Y), UNEP RRC-AP and SACEP
 Date last modified: 2008-01-28

User must enter inventory details here:

Inventory year:	2005
Region:	South Asia
Country:	Nepal
Province:	Kathmandu

MENU OVERVIEW

GO	Menu1	Sectors 1. to 4. Fuel combustion activities
GO	Menu2	Sector 5. Fugitive emissions (non-combustion) for fuels
GO	Menu3	Sector 3. Fuel combustion activities. Sector: Transport (De
GO	Menu4	Sector 6. Industrial processes (non-combustion) emission:
GO	Menu5	Sector 7. Solvent and other product use
GO	Menu6	Sector 8. Agriculture
GO	Menu7	Sector 9. Vegetation fires and Forestry.
GO	Menu8	Sector 10. Waste
GO	Menu9	Large Point sources
GO	Sheet 9	Summary sheet - Annual emissions of each pollutant by so
GO	References	



Total Emission of the Pollutant of Kathmandu

Health Impact Assessment



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- **Field study Completed**

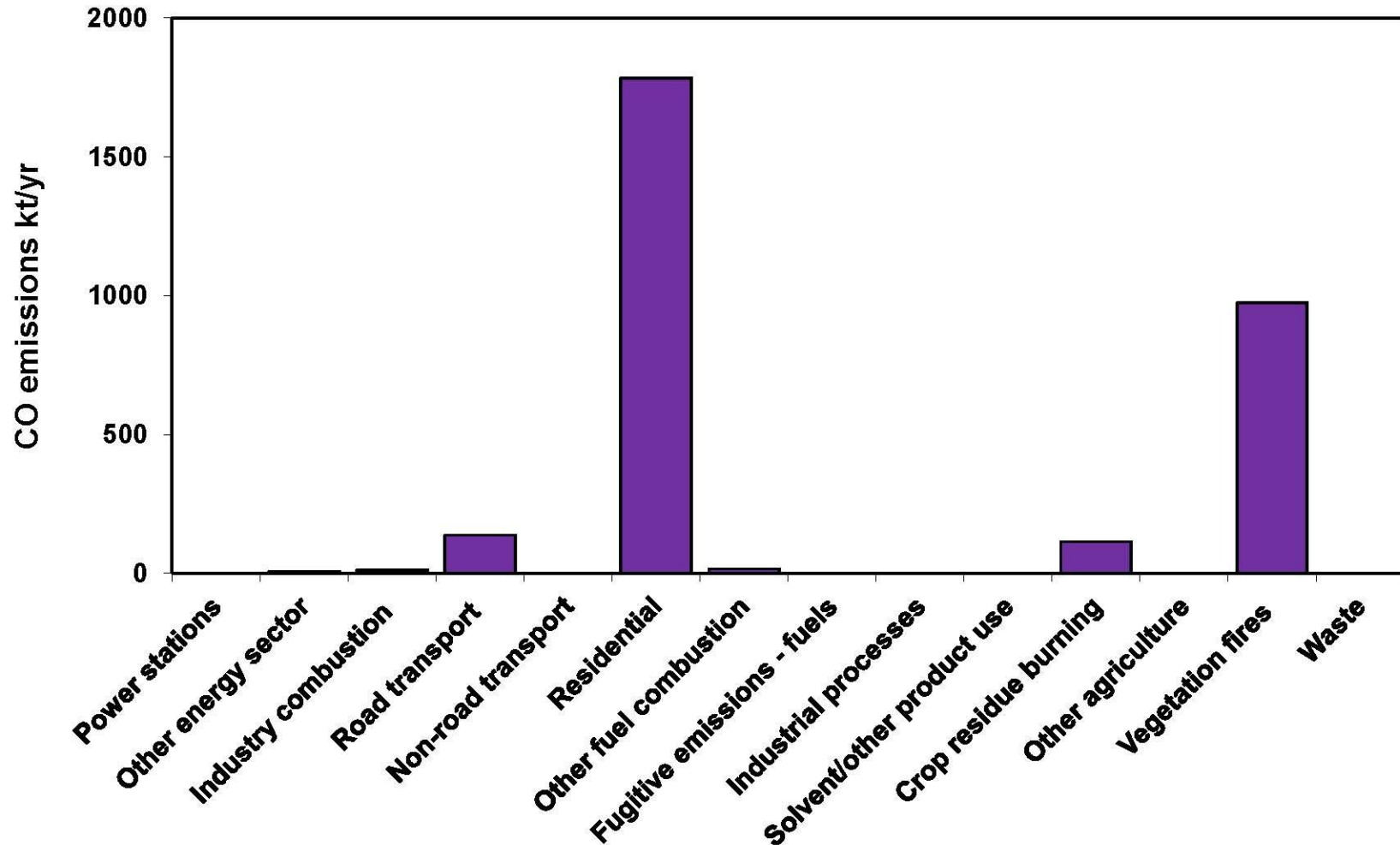
Emission Inventory of Nepal for the Year 2000 and 2005

Emission Inventory of Nepal for the Year 2005

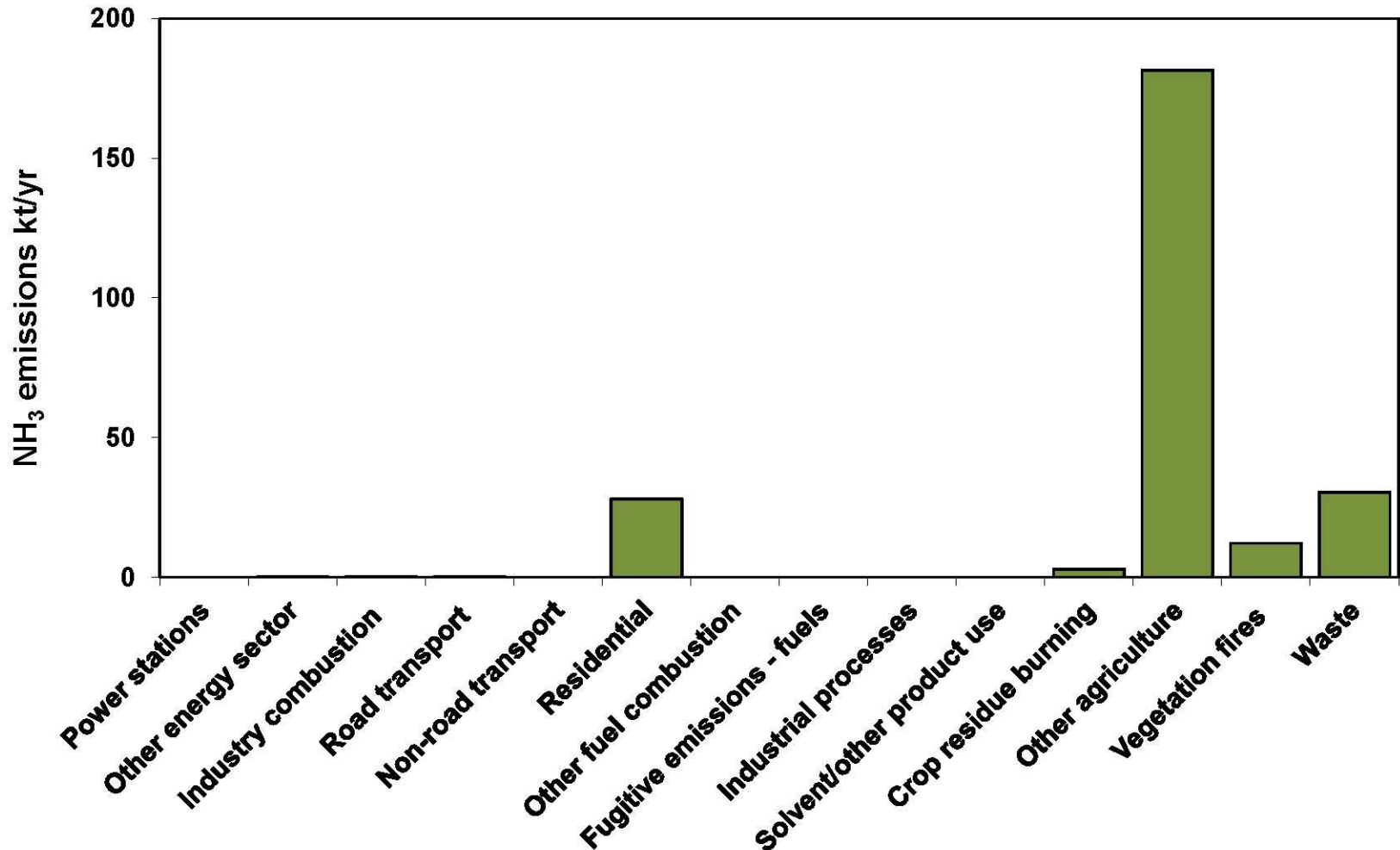
Activity data was collected from:

- Statistical Year Book of Nepal 2006-07
- Economic Survey of Nepal 2006-07
- Environment year Book of Nepal 2008
- IEA and FAO datasets
- Some other sources available on internet
- Different institution and Personal communication

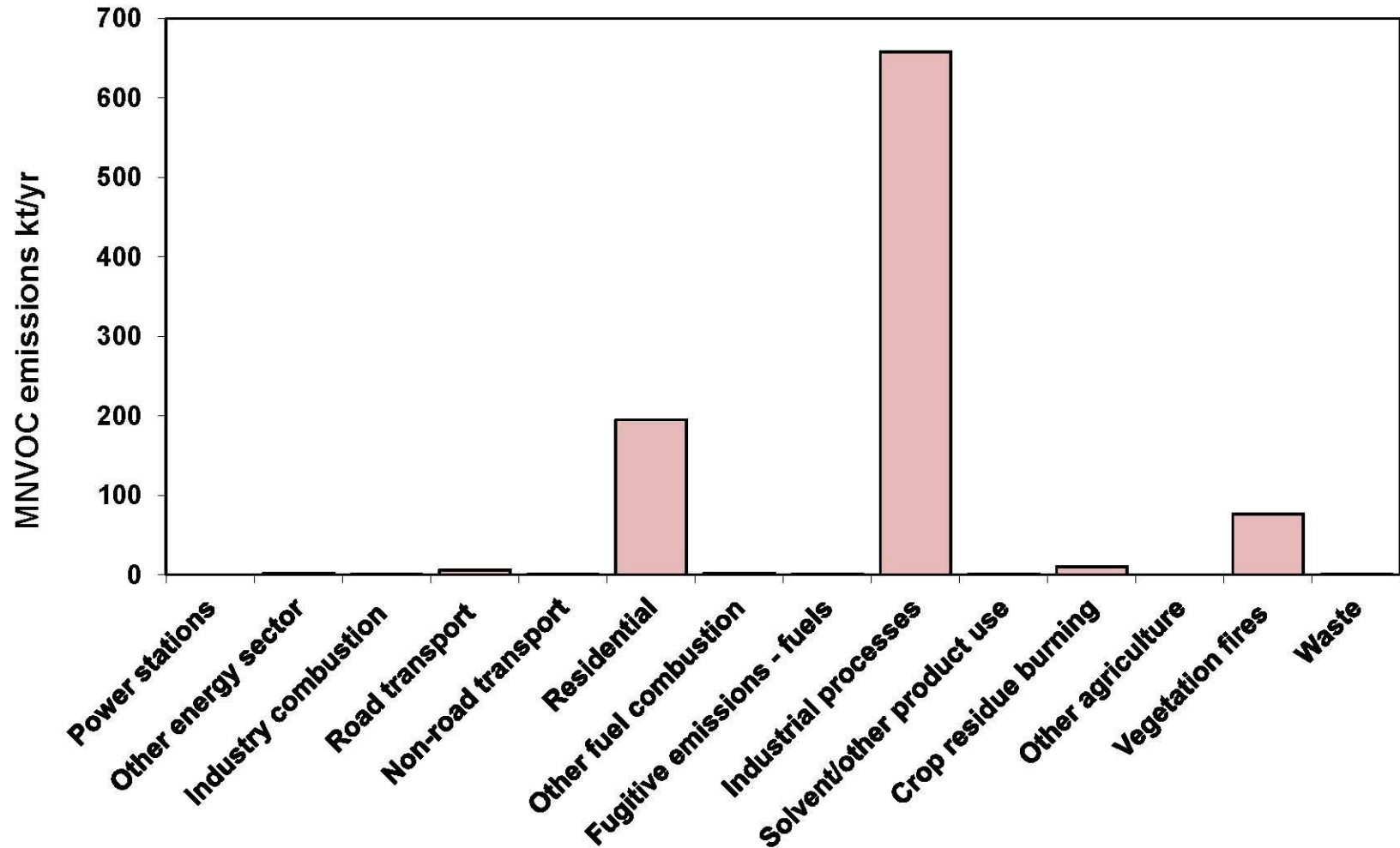
CO Emission form different sectors



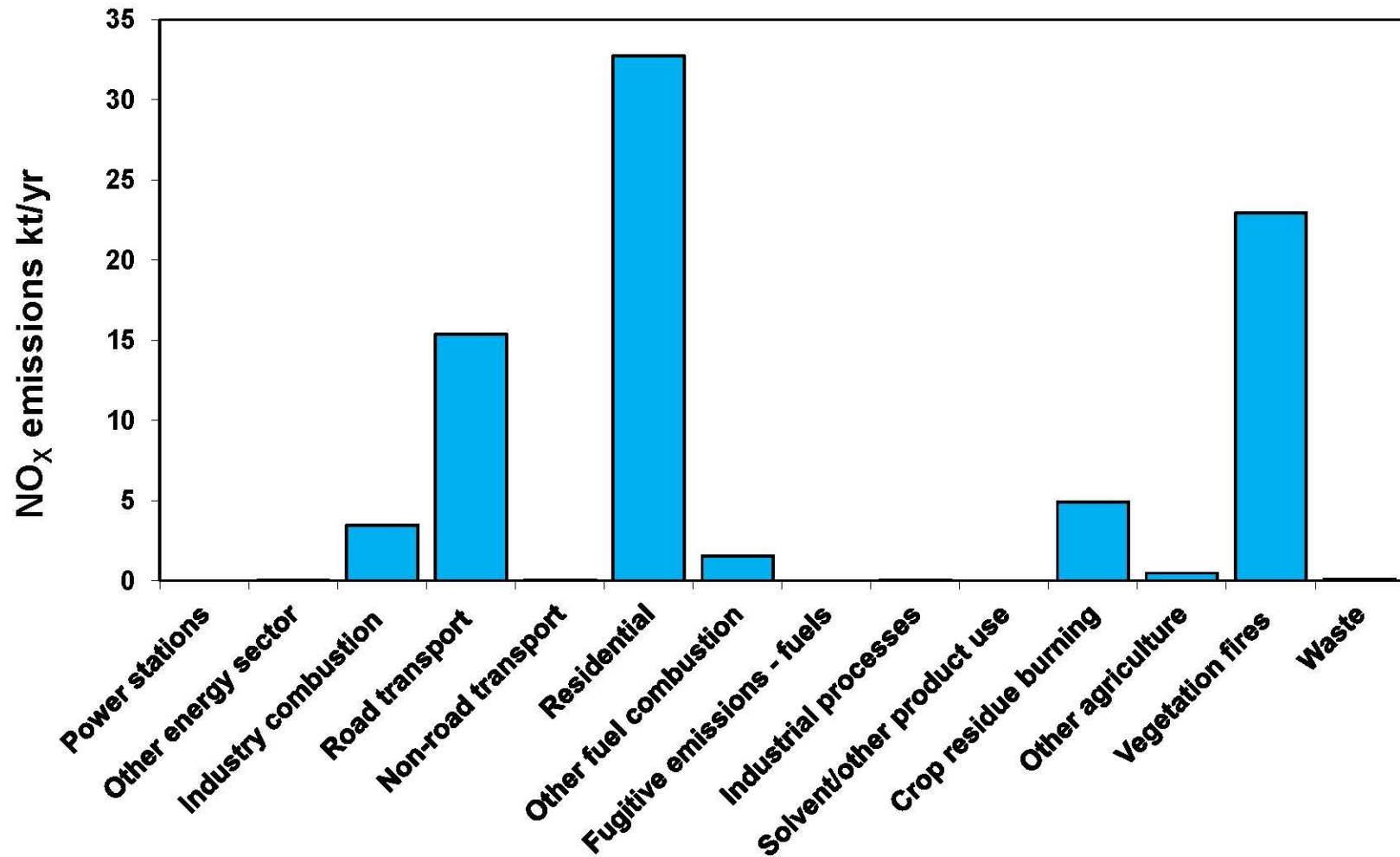
NH₃ Emission form different sectors



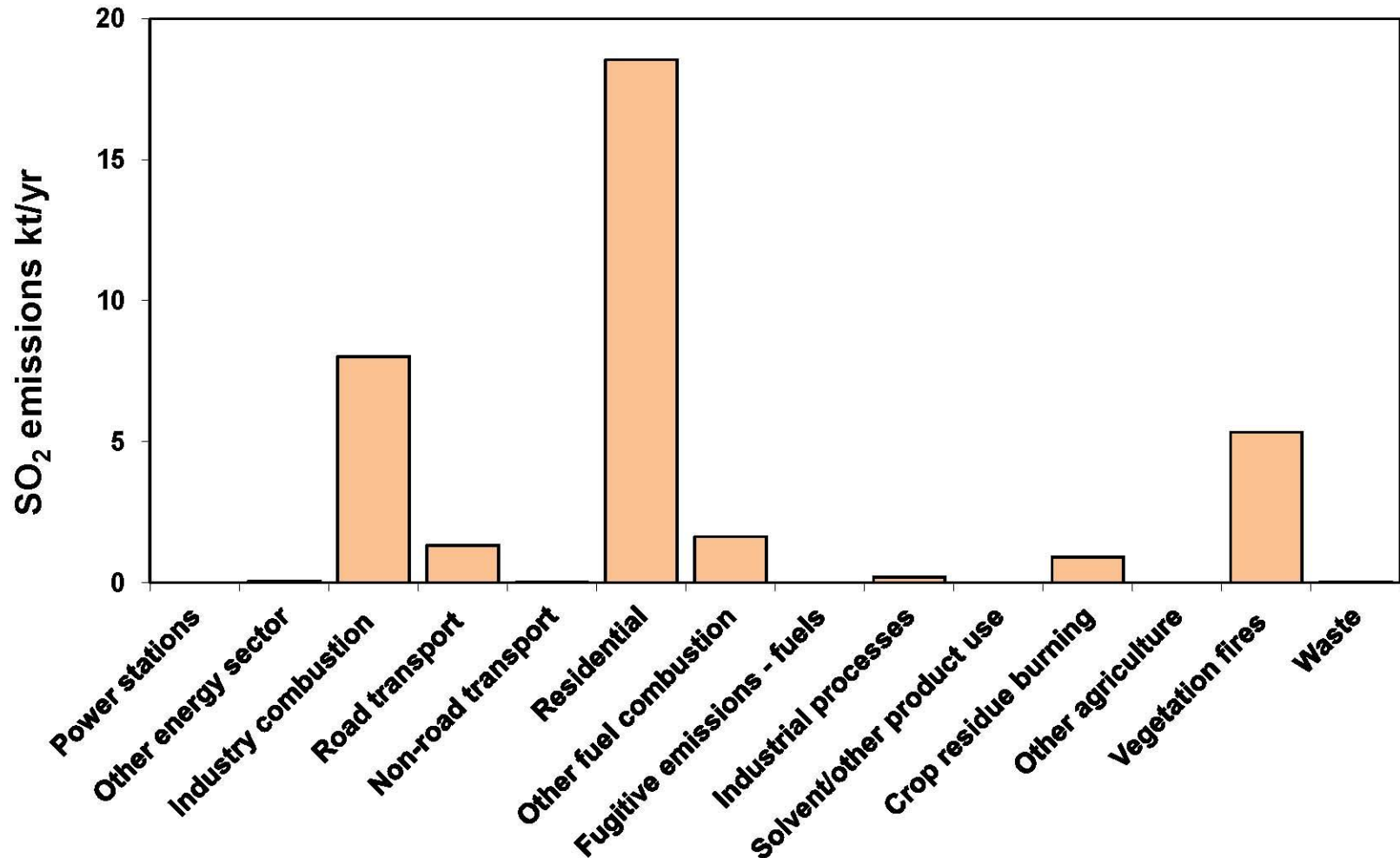
MNVOC Emission form different sectors



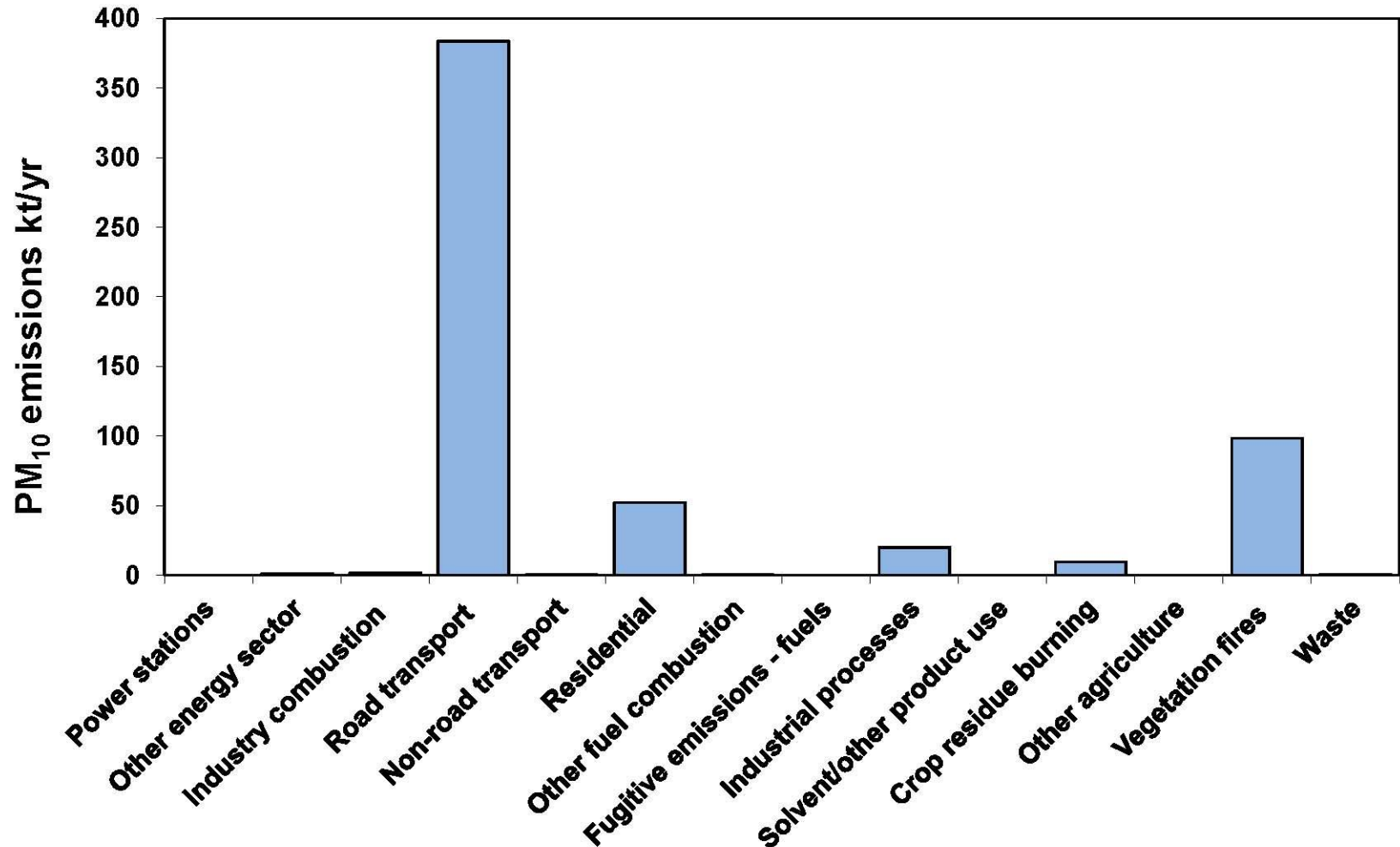
NO_x Emission form different sectors



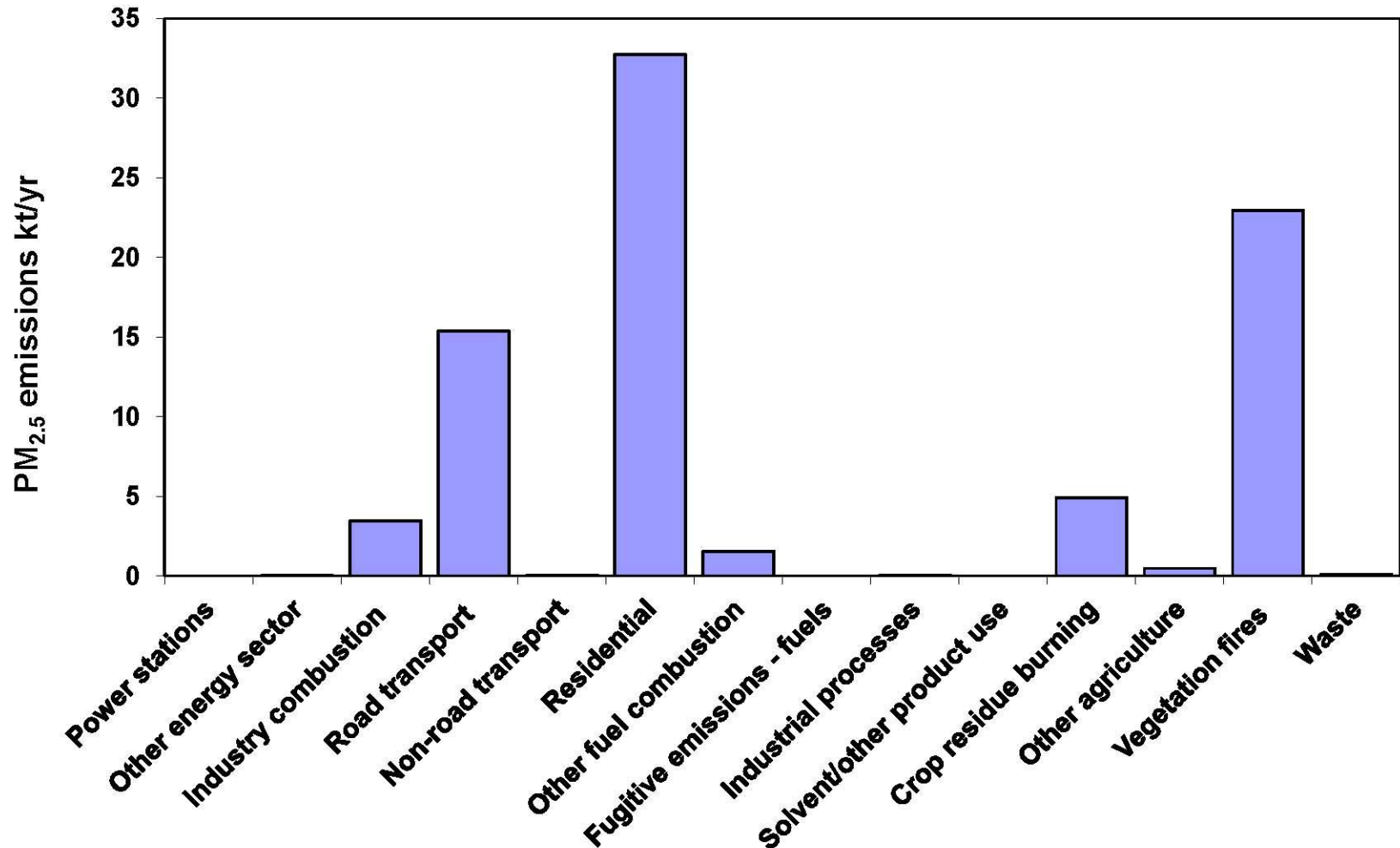
SO₂ Emission form different sectors



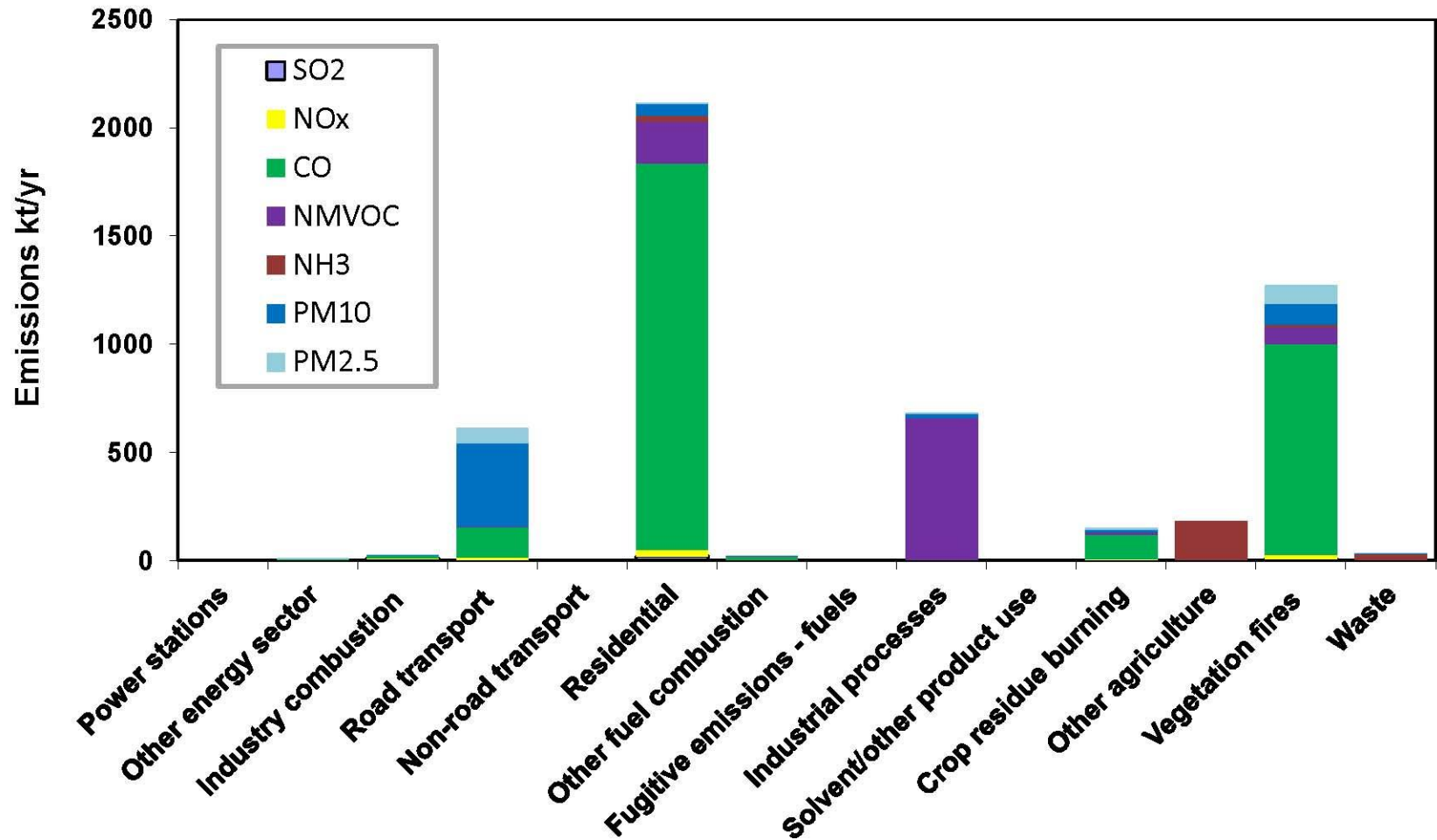
PM₁₀ Emission form different sectors



PM_{2.5} Emission form different sectors



Total emission form different sectors



Unavailable Datasets

- 1 **Waste burn data**
- 2 **Vehicle – Distance Travel**
- 3 **Burning of Forest/ Grass land**
- 4 **Lack of relevant activity data. The data available is not in proper format.**
- 5 **Process (non combustion) emission from the producing**
 - **NMVOC emission from Bread factory**
 - **Emission from Solvent and other products**
 - **others**

Challenges

- 1. Dataset in the scattered for**
 - **Difficulty in collection**
 - **Difficulty in comparison**
- 2. Dataset are poor and lack uniformity which might result in inaccurate analysis and results**
- 3. Frequent changes of the responsible officers**

Conclusions

- The major pollutants emitted from different sources are CO, NH₃, PM and NMVOC.
- The major source of CO are residential, vegetation fire and transportation.
- Where as PM is mainly emitted from the transport sector.
- Maximum emission of NH₃ is from Agriculture sector due to excessive use of N-containing fertilizers and manure management.
- NMVOC is mainly from Industrial process and resident sector

Data collection under progress for year 2010

Emission Inventory

Thank you

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Acknowledgements

Mr. Harry Vallack, SEI, York

UNEP RRC-AP, Bangkok Thailand

Sri lankan team