SAFAR: AN EARLY WARNING SYSTEM FOR AIR QUALITY

ISO 9001:2008 Accredited by Standard Certification Council-India
GURME, World Meteorological Organization (United Nations) Pilot

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PM2.5: DAYS (%) IN DIFFERENT HEALTH INDEX (2015)

DELHI – OVERALL (Annual) STATUS

LODHI ROAD (Greener)

DELHI (Overall)

NOIDA (Hot Spot)

- Good (0-60)
- Moderate (61-90)
- Poor (91-120)
- Very Poor (121-250)
- Severe (251 & Above)
SOUTH INDIA

MAPAN- Bangalore Station 2016 - PM2.5

- Good: 48%
- Satisfactory: 41%
- Moderate: 10%
- Poor: 1%

MAPAN- Chennai Station 2016 - PM2.5

- Good: 61%
- Satisfactory: 29%
- Moderate: 10%
- Very Poor: 0%
- Poor: 0%

MAPAN- Vishakapatnam Station 2016 - PM2.5

- Good: 52%
- Satisfactory: 34%
- Moderate: 11%
- Poor: 2%
- Very Poor: 1%

MAPAN- Trivendrum Station 2016 - PM2.5

- Good: 52%
- Satisfactory: 37%
- Moderate: 10%
- Poor: 1%

MAPAN- Hyderabad Station 2016 - PM2.5

- Good: 51%
- Satisfactory: 29%
- Moderate: 10%
- Poor: 1%
- Very Poor: 8%
- Severe: 1%
**NORTH INDIA**

**MAPAN- Srinagar Station 2016 - PM2.5**
- Satisfactory: 37%
- Good: 11%
- Moderate: 13%
- Poor: 8%
- Very Poor: 13%
- Severe: 18%

**MAPAN- Patiala Station 2016 - PM2.5**
- Good: 5%
- Moderate: 22%
- Severe: 3%
- Satisfactory: 18%
- Poor: 21%
- Very Poor: 31%

**MAPAN- Jabalpur Station 2016 - PM2.5**
- Satisfactory: 44%
- Good: 46%
- Moderate: 10%

**MAPAN- Udaipur Station 2016 - PM2.5**
- Satisfactory: 45%
- Good: 42%
- Moderate: 11%
- Poor: 2%
- Very Poor: 0%

**DELHI-SAFAR –PM2.5**
- Very Poor: 29.78%
- Poor: 14.48%
- Satisfactory: 28.96%
- Moderate: 21.58%
- Good: 5.55%
- Severe: 4.64%
- Very Poor: 29.78%
NORTH-EAST

MAPAN- Aizwal Station 2016 - PM2.5
- Good: 64%
- Satisfactory: 30%
- Poor: 1%
- Moderate: 4%
- Very Poor: 1%

MAPAN- Gwahati Station 2016 - PM2.5
- Good: 46%
- Satisfactory: 31%
- Poor: 2%
- Moderate: 20%
- Very Poor: 1%

MAPAN- Tezpur Station 2016 - PM2.5
- Good: 59%
- Satisfactory: 30%
- Poor: 3%
- Moderate: 5%
- Very Poor: 3%
Two most dominant source of PM2.5 in SAFAR cities

- Transport
- Windblown dust (WD)
- Industries

Emissions (Gg/year)

DELHI
AHMEDABAD
MUMBAI
PUNE
PM2.5 Emissions

Growth (2010-2015)

Growth = 11.5%

Sectorial Emissions Share
WORKING TOWARDS TRUE HEALTH INDICATOR FOR SOCIETY

AQ-HEALTH INDEX

\[ F (\text{SIZE, VOLUME, TOXIN}) = \text{LEVEL OF POLLUTION} + \text{CHEMICAL CHARACTERIZATION} \]
Composition of particle plays a critical role in Adverse Health Effect

PM2.5 = 110 µg/m³

PM2.5 = 150 µg/m³

Mumbai, at times, more toxic than Delhi

Mumbai: BC composition is more in PM2.5 as compared to Delhi
CHALLENGES

• RECONCILING HIGH RESOLUTION CITY BASED EMISSION INVENTORY AND LARGER COUNTRY LEVEL EMISSION INVENTORY

• PM2.5: NOT ONLY CONCENTRATION BUT CHEMICAL CHARACTER (TOXICITY) IS EQUALLY IMPORTANT. THEN COMES EXPOSURE. ARE WE CONSIDERING IT?

The END