# “SAFAR-India”: At a Glance

## TECHNOLOGY DEVELOPMENT

*Development of an Early Warning System-*
*"System of Air Quality and Weather Forecasting and Research” -SAFAR–India*

- **ACCEREDATION**

1. **Global Recognition:** Project recognized by World Meteorological Organization (WMO), United Nations (UN) as its pilot project and provided the "**Certificate of Excellence**".
2. ***National Certification***: ***ISO 9001:2008*** -Standard Certification Council of India.

- **PROJECT OBJECTIVE**

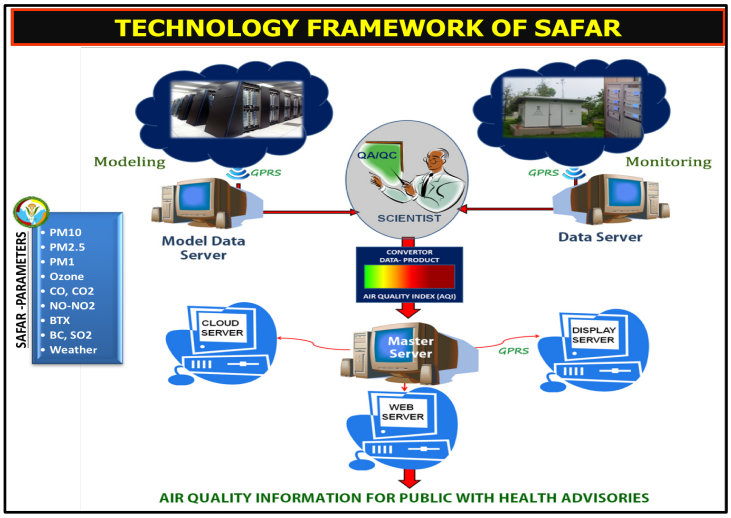
***Providing location specific information on current and up to 3-days advance forecast for air quality and weather along with current ultraviolet index (skin related) and emission scenarios over the city area. Disseminating the information in an easy to understand format and issuing health advisories leading to self-mitigation and policy help, sequentially benefitting the society.***

- **FOUNDATION**

SAFAR-India as a mission mode project of Ministry of Earth Sciences (Govt. of India) which is conceived, developed and implemented by its constituents Indian Institute of Tropical Meteorology, Pune for 4 Metro cities namely, Delhi, Pune, Mumbai and Ahmedabad for the first time in the country. A balanced proposition where mitigation measures goes hand in hand with development linked to economic growth and better health benefits to society.

- **‘SAFAR’ TECHNOLOGY**

The SAFAR system integrates data gathering, forecasting, translating data in to information and it systematic dissemination on air quality and weather.

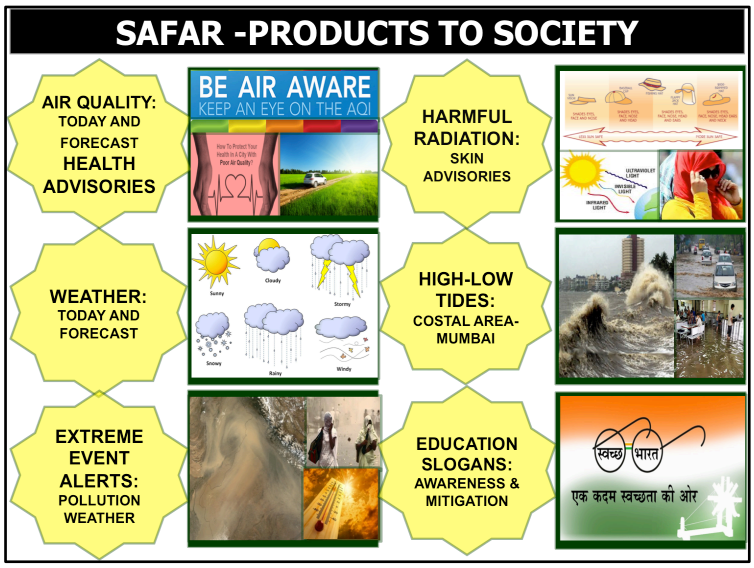



- **‘SAFAR’ PARAMETERS**

*Air Quality:* PM10, PM2.5, PM1, O3, CO, NOx (NO+NO2), BC, SO2, Benzene, Toulene, Xylene.
*Weather*: Rainfall, Temperature, Humidity, Wind speed, Wind direction, UV Radiation.

- **PRODCUTS TO SOCIETY**

1. AIR QUALITY: Current & Forecast with health advisories for advance preparedness.
2. HARMFUL RADIATION: Severity of UV radiation (UVI) with associated skin advisories.
3. WEATHER: Current & Forecast
4. EXTREME EVENTS: Alert for extreme pollution events.
5. EMISSION SCENARIO: Accounting sources of air pollution to identify hot spots.

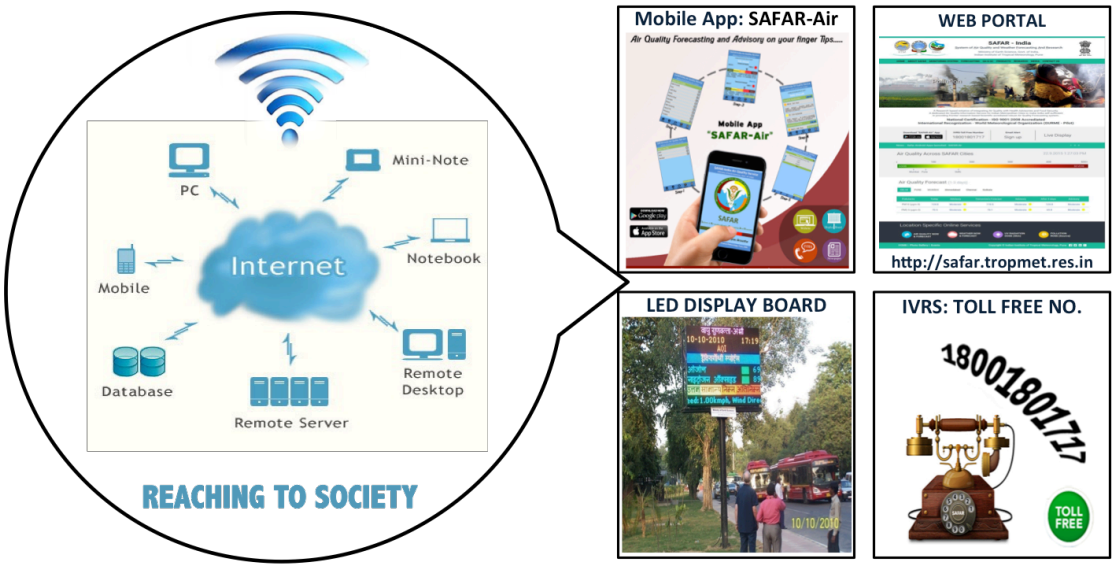



- **SAFAR OFFERING**

- Increase in awareness among the communities on the quality of air we breathe and its effect on health in terms of advisories, which is low at present.
- Awareness of field level functionaries on preventive measures to help timely detection of air pollution linked morbidity information.
- To provide research based evidence connecting climate change, air pollution and health;
- Preparing the community and medical fraternity to deal with extreme pollution risk

- **SAFAR INFORMATION TOOLS**

The data and product dissemination to society is done through various media-



- **SAFAR BENEFICIARIES**

1. Society at large –Spreading awareness and advance preparedness
2. Researcher in the field of Short Term Climate Change
3. Health Professionals to plan strategy for Protecting Human Health
4. Local Executive Agencies like Municipal Corporations
5. Disaster Management Unit, Environment Department
6. Educational Institutes and policy makers.
7. Planning of agricultural crop yield benefit
8. Basis for mitigation strategies to protect Human health

- **SOCIO-ECONOMIC BENEFITS**

1. SAFAR system contributing to national building in reducing the cost of air quality related diseases like Asthma, COPD, etc. A pilot case study of socio-economic benefits reveals that the cost saving involved in treatment of patient, ICU and hospitalization would be as follows: Delhi ~Rs. 1157Cr in 5 years; Pune ~371Cr in 5 years and ~98 lakh and 31 Lakhs patients may get benefited respectively from precautionary measures and advisory based on SAFAR forecast.
2. Promoting an integrated approach for air quality and climate mitigation co-benefitting Human health by providing tools and systems to strengthen decision support system.
3. The "SAFAR-India" framework will eventually lead, to the preparation of science-based "Air Quality Action Plan" for the first time specific to Indian Metropolitan cities.
4. It is accelerating the research and application's partnership to improve air quality and health sector and public preparedness from air pollution and weather extremes.

- **FUTURE VISION**

Bringing together air quality researchers, Health professional, policy maker, innovators and implementers on a common platform to build a sustainable early warning system transforming SAFAR-India to Regional Research Units to serve the country as Early Warning Systems to help decision support system.

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