SAFAR

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Why in News

Recently, **SAFAR (System of Air Quality and Weather Forecast and Research)** has studied post Diwali Air Pollution in the **four Indian Cities** (Delhi, Ahmedabad, Mumbai and Pune).

- Air pollution during the Diwali period in 2021 was higher compared to 2020 in the three metropolitan cities of **Delhi, Ahmedabad and Mumbai, whereas** Pune was the **only city among the four** which had lower pollution levels.
- High PM in Delhi during the Diwali period **is due to high local emissions,** combined with the **biomass** burning effect.

Key Point

- **About:**
  - SAFAR is a national initiative introduced by the **Ministry of Earth Sciences (MoES)** to measure the air quality of a metropolitan city, by measuring the overall pollution level and the location-specific air quality of the city.
  - It is an integral part of **India's first Air Quality Early Warning System** operational in Delhi.
  - It monitors all weather parameters like **temperature, rainfall, humidity, wind speed, and wind direction, UV radiation, and solar radiation.**
  - The **World Meteorological Organization** has recognized SAFAR as a prototype activity on the basis of the high-quality control and standards maintained in its implementation.
- **Pollutants Monitored:**
  PM2.5, PM10, Ozone, Carbon Monoxide (CO), Nitrogen Oxides (NOx), Sulfur Dioxide (SO2), Benzene, Toluene, Xylene, and Mercury.
- **Developed By:**
  The system is indigenously developed by the **Indian Institute of Tropical Meteorology (IITM),** Pune and is operationalized by the **India Meteorological Department (IMD).**
    - IITM has a giant true color LED (Light Emitting Diode) display that gives out **a real-time Air Quality Index** (AQI) **on a 24x7 basis** with color-coding (along with 72 hours advance forecast).

- **Objectives:**
  - To **increase awareness among the general public regarding the air quality** in their city so that appropriate mitigation measures and systematic action can be taken up.
  - To help the policy-makers develop **mitigation strategies keeping in mind the nation's economic development.**
- **Significance:**
  - It will **benefit cost savings** to several other sectors like agriculture, **aviation**, **infrastructure**, **disaster management**, **tourism**, etc. which directly or indirectly gets affected by air quality and weather.

Air Quality Index (AQI)

- It is an index for reporting daily air quality. It displays the **changes in air pollution in the atmosphere.**
- It focuses **on health effects one might experience within a few hours or days after breathing polluted air.**
- AQI keeps a tab on **8 major air pollutants in the atmosphere namely,**
  - **Ground-level ozone,**
  - PM10,
  - PM2.5,
  - Carbon monoxide,
  - Sulfur dioxide,
  - Nitrogen dioxide,
  - Ammonia,
  - Lead,
- Ground-level ozone and airborne particles are the two pollutants that pose the greatest threat to human health in India.

Source: DTE