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# Mission Mausam Urban Testbed Launched to Improve Monsoon Forecasting

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The Ministry of Earth Sciences (MoES) launched the Mission Mausam Urban Testbed and Aerosol Observatory in Chennai to strengthen urban weather monitoring and improve monsoon prediction capabilities. The initiative is part of the Government of India's flagship Mission Mausam programme aimed at building a "weather-ready and climate-smart" India.



## About the Urban Testbed:?

The Urban Testbed has been established by the Indian Institute of Tropical Meteorology (IITM), Pune, under Mission Mausam at the SRM Institute of Science and Technology (SRMIST), Chennai. The facility includes advanced atmospheric observation systems and a Centre for Atmospheric Science Research and Innovation (CASRI).

## The project will help scientists collect high-resolution urban weather data related to:

Rainfall

Aerosols

Wind patterns

Humidity

Temperature variations

Cloud dynamics

This data will improve local-level weather forecasting and nowcasting, especially during the monsoon season.

## Objectives of Mission Mausam:

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Plot A P.127, AF block, 6 th street, 11th Main Rd, Shanthi Colony, Anna Nagar, Chennai, Tamil Nadu 600040  
Phone: 044 4353 9988 / 98403 94477 / Whatsapp : 09710729833

Mission Mausam was launched in September 2024 with an outlay of ₹2,000 crore to modernise India's weather forecasting infrastructure and climate services.

**The mission aims to:**

Improve monsoon prediction accuracy

Strengthen severe weather forecasting

Enhance urban climate modelling

Improve disaster preparedness

Develop high-resolution atmospheric observation systems

**The initiative also focuses on the deployment of:**

Next-generation Doppler radars

Satellites with advanced sensors

Wind profilers and radiometers

High-performance computing systems

AI and Machine Learning-based forecasting models

**Significance of the Urban Testbed:**

Improving Monsoon Forecasting

Urban weather systems are highly complex due to factors such as heat islands, pollution, and dense infrastructure. The Urban Testbed will help improve city-level monsoon forecasts and rainfall prediction accuracy.

**Disaster Risk Reduction:**

**Better forecasting can help reduce losses caused by:**

Urban flooding

Heatwaves

Cyclones

Extreme rainfall events

It will strengthen early warning systems and disaster management responses in vulnerable urban regions.

**Support for Climate Research:**

The observatory will help researchers study:

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Aerosol-cloud interaction

Urban climate variability

Air pollution impacts

Coastal weather systems

The collected data will improve climate models and numerical weather prediction systems.

### **Institutions Involved:**

Mission Mausam is being implemented mainly through three institutions under the Ministry of Earth Sciences:

India Meteorological Department (IMD)

Indian Institute of Tropical Meteorology (IITM)

National Centre for Medium Range Weather Forecasting (NCMRWF)

### **Importance for India:**

India's economy, agriculture, water security, and disaster preparedness are highly dependent on accurate monsoon forecasting. With increasing climate variability and extreme weather events, advanced forecasting systems are becoming essential for sustainable urban planning and climate resilience.

### **Challenges:**

#### **India continues to face challenges such as:**

Complex monsoon dynamics

Rapid urbanisation

Climate change impacts

Limited hyper-local forecasting capability

High infrastructure and data-processing requirements