GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
RAJYA SABHA
UNSTARRED QUESTION NO. 2753
ANSWERED ON 19/12/2024

MISSION MAUSAM

2753. # SHRI BABURAM NISHAD:
DR. BHAGWAT KARAD:

Will the Minister of EARTH SCIENCES be pleased to state:

(a) the steps taken to develop cutting-edge weather surveillance technologies and systems as part of Mission Mausam;
(b) the specific timelines for the installation of key infrastructure such as Doppler Weather Radars and Radiosonde stations; and
(c) the manner in which the entire project would help Marathwada, which is one of the most draught prone area of the country?

ANSWER
THE MINISTER OF STATE (INDEPENDENT CHARGE) FOR
MINISTRY OF SCIENCE AND TECHNOLOGY
AND EARTH SCIENCES
(DR. JITENDRA SINGH)

(a) Mission Mausam is envisaged to be a multi-faceted and transformative initiative to tremendously boost India's weather and climate-related science, research, and services. It will help better equip stakeholders, including citizens and last-mile users, to tackle extreme weather events and the impacts of climate change. The Mission Mausam is launched to make Bharat a "weather-ready and climate-smart" nation, with the following objectives:

- Strengthening observations (in-situ & remote sensing) and improved model capability to be able to plan and protect life and property from extreme and high-impact weather
- Gaining a better understanding and use of Science, Innovation and Technology, and Data Science for societal benefit
- Improve our Model/Data Assimilation/HPC for giving accurate information to the Public and stakeholders (Numerical+Artificial Intelligence and Machine Learning)
- Trained Manpower in Earth System Science for today and tomorrow
- Forecast dissemination: Effective communication with Society: Early Warning for ALL

To achieve the above, Mission Mausam intends to augment the Doppler Weather Radars (DWRs) network across the country for complete radar coverage along with other surface and upper air observing networks and enhance the accuracy of weather monitoring. The data collected from these networks will be ingested into numerical weather prediction (NWP) models through sophisticated data assimilation techniques to improve weather forecasts. Also, a 21.1 petaflops High-Performance Computing System (HPC) has been augmented, which provides improved computing power.

Artificial Intelligence (AI) is being used to improve weather, climate, and ocean forecasting skills across the country. MoES has established a dedicated AI virtual center tasked with developing and testing multiple AI techniques and capacity-building activities by conducting workshops and conferences. A computing environment and virtual workspace for training and deploying AI models have been established at the India Meteorological Department (IMD).

Upgraded Information & Communication Technology (ICT) for improved forecast product generation at a granular level with more extended lead period and better accuracy required for socio-economic applications and further reduction in loss of lives and properties are planned towards rendering uniform focus over every part of the country

(b) Key infrastructure like DWRs, radiometers, radiosondes, and wind profilers across the country are planned to be installed by 2026.

(c) The mission's focus will include improving the observations by augmenting various observational networks for providing highly accurate and timely weather and climate information across temporal and spatial scales, including monsoon forecasts, alerts for air quality, extreme weather events, and cyclones, weather interventions for managing fog, hail, and rain, etc., capacity building and generating awareness throughout the country, including Marathwada region.

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