GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION NO. 4083
TO BE ANSWERED ON WEDNESDAY, 12TH AUGUST, 2026

SAFAR-MEGHA SYSTEM

†4083. SHRI TANUJ PUNIA:

Will the Minister of EARTH SCIENCES be pleased to state:

(a) whether the Government has installed AI-based Safar-Megha system for accurate predication of flash floods and extremely heavy rainfall in the hilly and plain areas of the country and if so, the details and the technical capabilities thereof; and
(b) the extent to which the forecasts made by the said system proved accurate during the massive devastation caused by the monsoon in Uttar Pradesh, Himachal Pradesh and Uttarakhand so far?

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

(a)-(b) The Central Water Commission (CWC), under the Ministry of Jal Shakti, functions as the designated nodal agency for operational flood forecasting in the country. Concurrently, the India Meteorological Department (IMD), under the Ministry of Earth Sciences, employs state-of-the-art Artificial Intelligence (AI) and Machine Learning techniques integrated with high-resolution dynamical Numerical Weather Prediction (NWP) models to generate precise weather forecasts across various spatial and temporal scales, covering both hilly and plain regions, including Uttar Pradesh, Himachal Pradesh, and Uttarakhand.

The technical framework utilizes multi-source data streams by blending real-time inputs from Doppler Weather Radars, automatic weather stations, meteorological satellites, and historical observation archives to generate impact-based forecasts and risk-based warnings at the district, block, and station levels. Owing to continuous augmentation of observational infrastructure and AI-driven predictive modeling, the operational accuracy for forecasting severe weather events—such as extremely heavy rainfall and localized extreme weather occurrences across monsoon-affected states—has improved by approximately 40 percent over the past decade compared to the preceding decade. These location-specific early warnings and suggested action guidelines are shared seamlessly with disaster management authorities and local administrations to facilitate timely preparedness and response measures.

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