GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
**RAJYA SABHA**
**UNSTARRED QUESTION NO. 1961**
ANSWERED ON 12/12/2024

**MISSION MAUSAM**

**1961. SHRI S NIRANJAN REDDY:**

Will the Minister of **EARTH SCIENCES** be pleased to state:

(a) the details of AI tools to be used in weather forecasting under Mission Mausam;
(b) whether data under Mission Mausam will be made accessible, if so, the details thereof; and
(c) whether Mission Mausam will involve a component for training farmers in utilisation of provided weather data, if so, the details thereof?

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

(a) Following Artificial intelligence (AI) algorithms and models will be used to improve the forecast accuracy:

- Random forest model to Predict Extreme Rainfall Events
- Neural Network based models (e.g., Convolutional Neural Network-CNN, super-resolution CNN-srCNN, generative adversarial network-GAN, etc.) to downscale the model output to higher resolutions
- The above-mentioned Neural Network algorithms will also be used for improving various parameterizations, such as cumulus, radiation, land-surface, etc., in Numerical Weather Prediction Models
- AI/ML methods will be also used to efficiently manage the vast amount of varied meteorological data and enhance the data assimilation capabilities

Apart from the above-mentioned hybrid AI/ML techniques, following fully AI-based forecast models such as Fourcastnet, Graphcast and Pangu weather are also being trained to improve forecast accuracy over the Indian region.

(b) Yes. The data from Mission Mausam will also be made available to the research community.

(c) Yes. The India Meteorological Department (IMD) provides agrometeorological advisories twice a week in collaboration with the Indian Council for Agricultural Research (ICAR), and it will be continued.

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