

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
RAJYA SABHA
UNSTARRED QUESTION No. 486
TO BE ANSWERED ON THURSDAY, April 28, 2016
RAINFALL PREDICTION AT MICRO LEVEL**

486. SHRIMATI VANDANA CHAVAN:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether Government has made any analysis related to rainfall prediction and actual rainfall at micro level like, district, villages etc. if so, the details thereof; and**
- (b) whether Government has efficient technology for cloud seeding to improve rains in drought prone areas and whether Government has used that technology in last one year, if so, the details thereof?**

ANSWER

**MINISTER OF STATE FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND
MINISTRY OF EARTH SCIENCES
(SHRI Y. S. CHOWDARY)**

- (a) Yes Sir. At present district level weather forecast is generated for the next five days by India Meteorological Department (IMD) and based on that Agromet Advisories are prepared and communicated to the farming community in the country.**

Qualitatively the rainfall forecast was able to capture the event for most of the regions of the country more than 80% in most of the districts of the states. Quantitatively the accuracy of rainfall forecast was on an average 65% in many of the districts of states.

The performance evaluation of the updated global/meso-scale forecast systems for the past 5 years have demonstrated enhanced forecast skill. The success achieved in improving the accuracy of heavy rainfall warnings during the summer monsoon season is enumerated below:

- 1. Probability of Detection (PoD) has been assessed at 0.71.**
- 2. False Alarm Rate (FAR) has dipped to 0.13.**
- 3. Missing Rate (MR) has also reduced to 0.29.**
- 4. Percent correct (PC) of yes/no rainfall forecast for monsoon season 2014 is 91%.**

IMD is not providing forecast and advisory services at the Block Level at present. However research efforts are initiated by IMD to explore possibility of generating sub district scale Agrometeorological forecast with acceptable level of verification skill in a pilot mode.

- (b) No Sir. As things stand today, artificial rain making techniques involving cloud seeding cannot be used for bringing rain clouds to rainfall deficit/drought areas. These techniques can only induce potential preexisting clouds, already passing over a given place, to produce enhanced quantum of rain.**

Indian Institute of Tropical Meteorology (IITM) is putting its effort in understanding the rain formation in clouds through studying cloud microphysical characteristics through a research program Cloud Aerosol Interaction and Precipitation Enhancement Experiment (CAIPEEX).
