

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
RAJYA SABHA
UNSTARRED QUESTION No. 6
TO BE ANSWERED ON THURSDAY, APRIL 23, 2015
CAIPEEX PROGRAMME**

6. SHRI AAYANUR MANJUNATHA:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether the Cloud Aerosol Interaction and Precipitation Enhancement Experiment (CAIPEEX) programme is functioning in the country;**
- (b) if so, the details of the locations where it has been started and whether its second phase has also started; and**
- (c) the achievements made under the said programme?**

ANSWER

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

- (a-b) Yes Sir. Phase I of the Cloud Aerosol Interaction and Precipitation Enhancement Experiment (CAIPEX) consisted of cloud aerosol observations using instrumented aircraft over different parts of the country during the period 24 May – 30 September 2009 from the air-bases of Pathankot, Bareilly, Guwahati, Hyderabad, Pune, and Bangalore. The aircraft observations covered almost all the Indian region and some coastal Arabian Sea and Bay of Bengal sea region up to 20 km from the coast.**

Phase II of the CAIPEX consisted of cloud aerosol observations using instrumented aircraft flights were conducted from Hyderabad base for the randomized cloud seeding experiment. C-Band Doppler Weather Radar (DWR) was operated from Sholapur in the monsoon season 2010 and from Mahabubnagar in the monsoon season 2011. The area encompassed by the 200 km radius from the DWR location has been the target area for the seeding operations. The aircraft flights were organized for research and seeding purposes using two aircrafts. On the whole, 28 randomized seeding experiments were carried out both by flares and fine grained salt powder following WMO Weather Modification Expert Committee recommendations.

CAIPEX was carried out over Ganges valley during monsoon- 2014, with specific focus on the monsoon clouds formation and their propagation over land with augmented ground based observations so as to investigate the effect of aerosol-clouds and monsoon rainfall. Such observations near Mahabaleshwar are scheduled during the 2015 monsoon season.

- (c) CAIPEX has contributed to total of 745 hours of intense observations based on aircraft, radars and other surface based instruments. These observations have helped in better understanding of characteristics of monsoon clouds and interactions of clouds and aerosols. Specifically, the findings suggest the key role of dust aerosol (pollutant) on cloud and rain processes over the Indian monsoon region. These observations are being used to improve the representation and characterization of clouds in the weather and climate models.**
