



## Cloud Chamber Under Mission Mausam

[Source: IE](#)

India plans to establish a **cloud chamber** at the [Indian Institute of Tropical Meteorology \(IITM\), Pune](#) as part of [Mission Mausam](#).

- It will enable detailed studies of **cloud formation and behaviour**, particularly relevant to [Indian monsoon](#) conditions.
- The cloud chamber is a **closed cylindrical drum** where [water vapour](#) and [aerosols](#) are injected.
  - Under controlled [humidity](#) and [temperature](#), the chamber allows scientists to study **seed particles** that contribute to **cloud droplets and ice particles**.
- India's cloud chamber will have **convection properties** to gain a better understanding of **cloud physics** under conditions commonly affecting **Indian weather systems**.
- India has prior experience with [cloud seeding](#), notably through the [Cloud Aerosol Interaction and Precipitation Enhancement Experiment \(CAIPEEX\)](#).
  - [CAIPEEX](#) has shown that rainfall could **increase** by up to **46% ( $\pm 13\%$ )** at some locations on an average and about **18% ( $\pm 2.6\%$ )** over a 100 square kilometre area in the **rain shadow region**.
- **Mission Mausam** aims to enhance [weather forecasting](#) and manage specific weather events in India like enhancing or suppressing **rainfall, hail, fog, and lightning strikes**.

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# Cloud Seeding

Cloud seeding is the process of spreading either dry ice or more commonly, silver iodide aerosols, into the upper part of clouds to try to stimulate the precipitation process and form rain.

It uses planes to spray clouds with chemicals to condense smaller particles into larger rain droplets.



## Cloud Seeding Methods:

### Hygroscopic Cloud Seeding:

- Disperses salts through flares or explosives in the lower portions of clouds. The salt grows in size as water joins with them.

### Static Cloud Seeding:

- It involves spreading a chemical like silver iodide into clouds. The silver iodide provides crystal around which moisture can condense. Silver iodide essentially makes rain clouds more effective at dispensing their water.

### Dynamic Cloud Seeding:

- It aims to boost vertical air currents, which encourages more water to pass through the clouds, translating into more rain.

## Applications:

### Agriculture:

- It creates rain, providing relief to drought-stricken areas. 'Project Varshadhari' in Karnataka is an example.

### Power Generation:

- Augment production of hydroelectricity during the last 40 years in Tasmania, Australia.

### Water and Air Pollution Control:

- Settle down toxic air pollutants through the rain.

Read More: [Cloud Seeding](#)

PDF Reference URL: <https://www.drishtias.com/printpdf/cloud-chamber-under-mission-mausam>