

What are cloudbursts?

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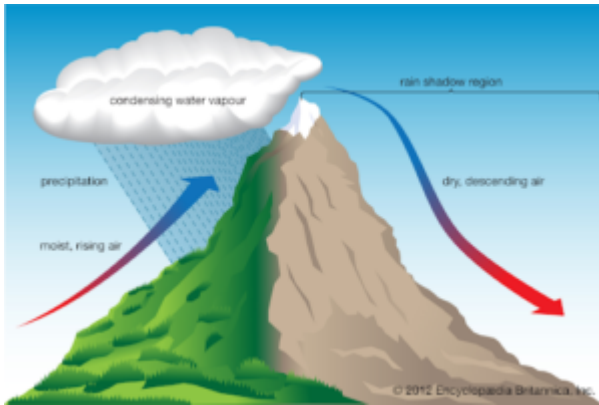
In news– Over twenty people have been killed in destruction caused by cloudbursts and flash floods in different parts of Himachal Pradesh and Uttarakhand recently.

What is a cloudburst?

- **A cloudburst is a localised but intense rainfall activity. Short spells of very heavy rainfall over a small geographical area** can cause widespread destruction, especially in hilly regions where this phenomenon is the most common.
- Not all instances of very heavy rainfall, however, are cloudbursts.
- **A cloudburst has a very specific definition: Rainfall of 10 cm or more in an hour over a roughly 10 km x 10-km area is classified as a cloudburst event.**
- By this definition, 5 cm of rainfall in a half- hour period over the same area would also be categorized as a cloudburst.
- To put this in perspective, in a normal year, India, as a whole, receives about 116 cm of rainfall over the entire year. This means if the entire rainfall everywhere in India during a year was spread evenly over its area, the total accumulated water would be 116 cm high.
- There are huge geographical variations in rainfall within the country, and some areas receive over 10 times more than that amount in a year. But on average, any place in India can be expected to receive about 116 cm of rain in a year.
- **During a cloudburst event, a place receives about 10% of this annual rainfall within an hour.**
- Most so-called cloudbursts occur in connection with thunderstorms. In these storms there are violent uprushes of air, which at times prevent the condensing

raindrops from falling to the ground.

- **Cloudbursts are especially common in mountainous areas. This is probably because** the warm air currents of a thunderstorm tend to follow the upward slope of a mountain.



- However, cloudbursts are infrequent as they occur only via orographic lift or occasionally when a warm air parcel mixes with cooler air, resulting in sudden condensation.
- The India Meteorological Department forecasts rainfall events well in advance, but it does not predict the quantum of rainfall – in fact, no meteorological agency does.
- The forecasts can be about light, heavy, or very heavy rainfall, but weather scientists do not have the capability to predict exactly how much rain is likely to fall at any given place.