



KAMARAJ IAS ACADEMY
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Cloudbursts in Himachal Pradesh

Published On: 05-08-2024

Why in News?

Recently, a cloudburst, leading to flash floods in Himachal Pradesh has killed many people and several missing.

About Cloud burst:

Cloud bursts are commonly used to designate a torrential downpour of rain which by its relative high intensity suggests bursting and discharge of a whole cloud in one go **where more than 10 cm of rain falls in less than an hour over a small area, of about 10 square km.**

They often happen in mountainous areas, especially in the Himalayas.

Mechanism:

Cloudbursts occur when strong upward currents of hot air prevent raindrops from falling, allowing them to grow larger while new smaller drops form below.

This leads to a **significant accumulation of water in the atmosphere**, which is released abruptly when the upward currents weaken.

Cloudbursts frequently occur in the **hilly and mountainous areas** of the Indian subcontinent, largely due to the region's complex topography, which facilitates **orographic lifting**.

Orographic lifting occurs when air rises and cools as it travels up the windward side of a mountain.

This process enhances cloud development and rainfall as moist air ascends over the mountains, with monsoon dynamics and localised weather patterns further influencing these intense precipitation events.

Examples of Cloudbursts:

Uttarakhand Cloudburst (July 2021)

Himachal Pradesh Cloudburst (August 2020)

Chennai floods(2015)

Consequences of Cloudbursts

Flash floods

Land slide

Mud flows

Kamaraj IAS Academy

Plot A P.127, AF block, 6 th street, 11th Main Rd, Shanthi Colony, Anna Nagar, Chennai, Tamil Nadu 600040

Phone: **044 4353 9988 / 98403 94477 / Whatsapp : 09710729833**