

UTTARAKHAND GLACIAL LAKE BURST OR AVALANCHE

TAGS: GS-3: DISASTER MANAGEMENT

CONTEXT:

- A glacial lake burst, a cloud burst or an avalanche, the effects of climate change or development-Scientists are not sure what caused the sudden water surge near Chamoli in Uttarakhand on Sunday morning, which briefly raised fears of a repeat of the 2013 disaster in the state.

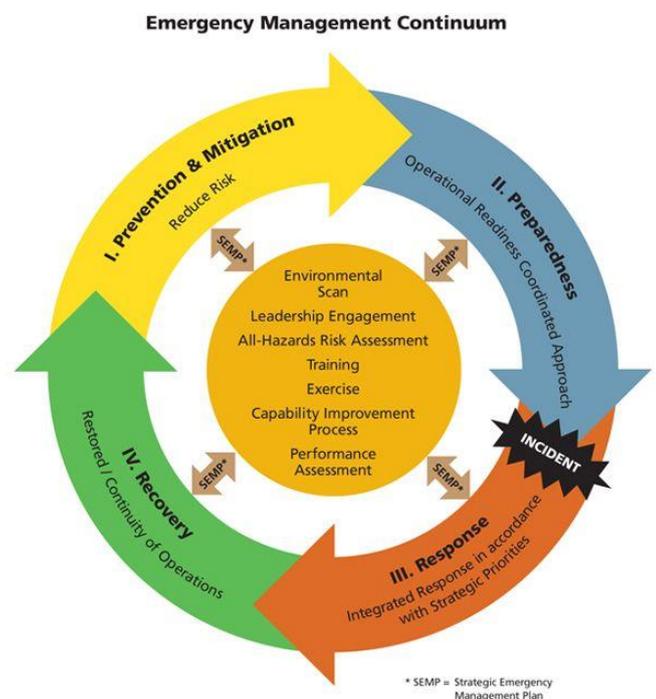


INCIDENT DETAILS:

- A glacier break in Uttarakhand's Chamoli district triggered huge flooding on Sunday followed by the evacuation of thousands - living near **Alknanda and Dhauliganga rivers** - to safety.
- The flooding **damaged nearby Rishiganga and NTPC power plants**. Officials said over **100 labourers** working in the power plant are **feared dead**.
- **Five NDRF teams** - one from Dehradun and four from Delhi - have been mobilised for the rescue operation. The **Army has committed six columns**, each with 100 soldiers. In addition, one Advanced Light Helicopter (ALH) and two Cheetah helicopters are also operating.

REASON FOR FLOODING DUE TO GLACIAL LAKE BREACH

- **Glacial lake outburst flood:** Being most talked about was what glaciologists like to call a **GLOF**, or **glacial lake outburst flood**. It is a reference to **flooding caused downstream due to a breach in a glacial lake**.



- **Retreating glaciers**, like several in the Himalayas, usually result in the **formation of lakes** at their tips, called **proglacial lakes**, often bound **only by sediments and boulders**.
- **Breach of Lake:** If the **boundaries of these lakes are breached**, it can lead to large amounts of water rushing down to nearby streams and rivers, **gathering momentum** on the way by picking up sediments, rocks and other material, and resulting in flooding downstream.
- **Intensity:** It depends on the **size of the proglacial lake that burst**, and **location**.

SUDDEN SURPRISE:

- **Timing:** The surprise is also because of timing — a possible reason for the sudden rush of water, like a **cloudburst, is not expected** at this time of the year.
- **Rare event:** “Cloudburst would be a rare event during this time of the year. It does look like a GLOF event right now.”
- **Makeshift dam-like situation:** “It is possible that an avalanche or a landslide created an obstruction in the flow of the river or streams in the upper mountains, resulting in a makeshift dam-like situation.
 - When the pressure of the flowing water became large, the dam probably gave away, leading to a sudden gush of water.
- **Climate change:** Then there are also **issues to consider**, like **climate change or disproportionate construction** in a fragile ecosystem, which were supposed to have **contributed significantly to the 2013 disaster as well**.

SOURCE: INDIAN EXPRESS

MCQs.

Q. Which of the following can cause the sudden water surge in downstream in Glacial region?

1. A glacial lake burst
2. A cloud burst or
3. An avalanche
4. The effects of climate change

Select the correct answer from the code given below.

- a) 1 and 2 Only
- b) 2, 3 and 4 only
- c) 1, 2 and 3 only
- d) 1, 2, 3 and 4**

ANS: D

