Expert Teams to Assess High-Risk Glacial Lakes of Uttarakhand

Why in News?

Recently, the Uttarakhand government has formed **two teams of experts to conduct a risk assessment and survey of five glacial lakes** in the state that are highly vulnerable to "**outburst floods".**

Key Points

- It has been proposed that the teams will start their work on these lakes in May-June 2024.
- Of the **188 glacial lakes in Himalayan states, 13 are located in Uttarakhand.**
- Uttarakhand in **February 2021** saw a [glacial lake outburst in Chamoli district](#) that washed away a small hydel project on the **Rishiganga** and caused flash floods, killing many people.
- The **13 glacial lakes of Uttarakhand have been categorised as 'A', 'B' and 'C', with 'A' being highly sensitive.**
  - **Out** of the 13 glacial lakes in Uttarakhand, **Five** fall in **category 'A'**(highly sensitive), **four in category 'B'** (sensitive) and **four** in **category 'C'** (relatively less sensitive).
    - Out of the five highly sensitive lakes, **four are in Pithoragarh district and one in Chamoli,** and of the four sensitive lakes, **two are in Pithoragarh and one each in Chamoli and Tehri.**
- The **first team** consisting of experts from the National Institute of Hydrology, Roorkee; the [Geological Survey of India, Lucknow;](#) the Indian Institute of Remote Sensing, Dehradun; the Uttarakhand State Disaster Management Authority; and the Uttarakhand Landslide Mitigation and Management Centre **will assess the sensitivity of two glacial lakes.**
  - The work of the first phase will entail **satellite data study and data collection,** bathymetry and **area survey.**
- The **second team** headed by Centre for Development of Advanced Computing (C-DAC), Pune, as the lead technical agency and consisting of the Dehradun-based Indian Institute of Remote Sensing; the [Wadia Institute of Himalayan Geology;](#) the Uttarakhand State Disaster Management Authority; and the Uttarakhand Landslide Mitigation and Management Centre **will study and survey the other three glacial lakes falling in the 'A' category.**

The Indian Institute of Remote Sensing

- It is an institute for research, **higher education and training in the field of remote sensing**, geoinformatics and GPS technology for natural resources, environmental and disaster management.
- The institute was **established in the year 1966** under the Indian Department of Space.
- It is located in **Dehradun, Uttarakhand.**

Glacial Lake Outburst Flood (GLOF)

- It is a type of catastrophic flood that occurs when the **dam containing a glacial lake fails**, releasing a large volume of water.
- This type of flood is **typically caused by rapid melting of glaciers or the buildup of water** in

the lake due to heavy precipitation or the inflow of meltwater.
- In February 2021, **Chamoli district in Uttarakhand witnessed flash floods which are suspected to have been caused by GLOFs.**
- **Causes:**
    - These floods can be triggered by a number of factors, including **changes in the volume of the glacier,** changes in the **water level of the lake, and earthquakes.**
    - According to **NDMA (National Disaster Management Authority), glacial retreat due to climate change** occurring in most parts of the **Hindu Kush Himalayas** has given rise to the formation of numerous new glacial lakes, which are the major cause of GLOFs.

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