Risk Posed by 13 Glacial Lakes During Monsoon | Uttarakhand | 28 Jun 2024

Why in News?

The Uttarakhand State Disaster Management Department (USDMA) is going to do a vulnerability study of the **13** glacial lakes, **five of them in "high risk zone".**

- The study aims to provide **data to help avoid** calamities such as lake outbursts.

Key Points

- According to the officials, the Himalayan glaciers are in danger due to climate change, and that this requires continued checks to ensure nothing untoward happens.
  - **13 high-risk lakes** are located in **Darma, Lasaryanghati, and Kutiyangti valley in Pithoragarh district, and Vasudhara Tal lake in Chamoli district.**
  - They range from 0.02 to 0.50 sq. km in size and are situated at elevations above 4,000 meters above sea level.
- In March 2024, the State government had formed two expert teams to assess the risks associated with these glacial lakes.
- The teams were composed of experts from the **Indian Institute of Remote Sensing**, the Geological Survey of India, the **National Institute of Hydrology, Roorkee**, the **Centre for Development of Advanced Computing**, and the Wadia Institute of Himalayan Geology.

Glacial Lake Outburst Flood (GLOF)

- **About:**
  - A glacial lake outburst flood (GLOF) 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.