

Uttarakhand Disaster

Why in news?

Various studies and reports on the flash floods in Uttarkhand are being published in identifying the cause.

Why did the flash floods occur?

- The area has seen two days of heavy snowfall & suddenly the weather became clear & little warmer.
- This has led to melting of snow & since glaciers in the area contain large amounts of debris when snow melts they carry large amounts of debris.
- This eroded everything that comes in the way thereby triggering an avalanche leading to the flash floods.

How big is the threat of such incidents continuing?

- When glaciers retreat due to rising temperatures, the snow melts but the debris remains which aids in the formation of lakes.
- Uttarakhand has 1,000 glaciers & over the years frequency of formation of such lakes has increased.
- But many glacial lake outburst flood events are not happening as in Sikkim because Uttarakhand has very steep slopes and the water manages to find a way out.
- But since the state has 1,200 big and small lakes in the high mountains, which are increasing in size, they do pose a threat of similar kinds of incidents.
- Hence it is extremely important to regularly monitor these lakes, measure the rates at which they are increasing or shrinking which needs to be incorporated into the planning process.

Why such preventive measures are not taken?

- Large numbers of glaciologists are working in the area and generating data but they lack of coordination and focus.
- Multiple scientific groups and institutions are involved, lots of data are generated but there is no coherent output.
- All these groups collect data, write reports and publish their findings but it will be forgotten until the next disaster strikes.

- Hence a nodal national agency needs to be created which can coordinate all the research and also the operational things happening in this region.

How does Mission on Himalayan Ecosystem functions?

- This mission was set up under the National Action Plan on Climate Change & there was a plan to set up a National Centre for Himalayan Glaciology but it was dropped.
- The separate centre functioning at the Wadia Institute of Himalayan Geology (in Dehradun) was merged with the institute.
- Hence there has to be one agency dedicated to this work which put these reports together, create a database and then focus on operational matters.

What can be done to minimise such risks?

- It is not possible to completely prevent these kinds of incidents but their potential to cause destruction can be certainly minimised.
- The Lonar lake in Sikkim is one of the largest glacial lakes & scientists have found a way to slowly drain the water in a nearby river at a regulated rate so that there is no flooding.
- Such solutions can be applied in Uttarakhand but this cannot be applied to each of the 1,000-plus lakes.
- So a detailed study needs to be conducted to identify which lakes pose maximum risk, monitor them and look for possible solutions that are suitable to local environments.
- This exercise needs to be done not just in Uttarakhand but in the entire Himalayan region.

Does large hydroelectric dams contribute to disaster?

- The hydropower projects in this area are run-of-the-river type & it is not prudent to construct dams at such heights.
- When DPR (detailed project report) for any project is done, study on glaciology is not carried out which is a major flaw.
- Hence overall environmental assessment must take into account the frequency of landslides and snow avalanches, the possibility of lake formation upstream, the ice volume in the glaciers.
- They should also find whether the glaciers are retreating or advancing and the rate at which these changes are happening.

Source: The Indian Express



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