



Melting of Glaciers in Sikkim

 drishtiias.com/printpdf/melting-of-glaciers-in-sikkim

Why in News

Recently, scientists from the Wadia Institute of Himalayan Geology (WIHG), Dehradun have found that glaciers in Sikkim are melting at a higher magnitude as compared to other Himalayan regions.

- The study published in Science of the Total Environment assessed the response of 23 glaciers of Sikkim to climate change for the period of 1991-2015.
 - This study studied multiple glacier parameters, namely length, area, debris cover, Snowline Altitude (SLA), glacial lakes, velocity, and downwasting.
 - The Sikkim glaciers have been poorly studied till now, and field-based mass balance measurements have been limited to only one glacier (ChangmeKhangpu) and for a short period (1980-1987)
- Wadia Institute of Himalayan Geology (WIHG), Dehradun is an autonomous research institute for the study of Geology of the Himalaya under the **Department of Science and Technology**.

Key Findings

- Glaciers in Sikkim have retreated and deglaciated significantly from 1991 to 2015.
- **Compared to other Himalayan regions, the magnitude of dimensional changes and debris growth are higher in the Sikkim.**
- Contrary to the western and central Himalaya, where glaciers melting is reported to have slowed down in recent decades, **the Sikkim glaciers have shown negligible deceleration (reduction in speed) in melting after the year 2000.**
 - Summer temperature** rise has been a prime driver of glacier changes.
- The **behavior of glaciers in the region is heterogeneous** and found to be primarily **determined by glacier size, debris cover, and glacial lakes.**
- The study revealed that Small-sized glaciers in Sikkim are retreating while larger glaciers are thinning due to climate change.

Benefit of the Study

- Accurate knowledge of magnitude as well as the direction of glacier changes can lead to awareness among common people regarding water supplies and possible glacier hazards, particularly to those communities that are living in close proximity.
- The study provides ample baseline data on glacier changes and systematically explores the causal relationship between glacier parameters and various influencing factors.
- A clear understanding of glacier state will help orienting future studies as well as taking necessary measures.

Source: PIB