**Abstract**

Glaciers are widely known as one of the best indicators of climate change. Arctic and Himalaya both are abode of densely distributed snow and ice cover other than Antarctic and Greenland. The Arctic covers an area of 14.5 million km2.  Out of this, Svalbard glaciers and ice caps cover about 34600 km2with a total ice volume of roughly 7000 km3. The Himalaya which covers 38000 km2 area, includes Chandra basin glaciers that are spread over 706 km2 area with ice volume of around 28.3 km3. Himalayan glaciers are unique in many respects and in view of their socio economic importance and complex environmental settings. For the past one and half decades, the process of glacier retreat has enhanced in the Himalayas.

 Arctic glaciers and ice caps play an important role in the global climate system.  In spite of the Arctic and the Himalayas having contrasting climate set ups i.e. high latitude and low latitude glaciated regions of Northern Hemisphere respectively, the glaciers here have been experiencing enhanced melting during recent years. The climate response of a large fraction of glaciers of Arctic and Himalayan regions is linked with atmospheric changes and oceanic circulation. While atmospheric changes are one of the main influencing factors for Himalayan glaciers, the ocean-atmosphere coupled system significantly influence Arctic glaciers.  Snow and glaciers melting in Arctic has enhanced essentially due to large temperature changes, changes in sea ice cover, atmospheric flow patterns and precipitation. Ocean circulation close to fjord modulate melt rates of marine-terminating glaciers all over the Arctic.

The mass balance data from both the region are used to address how rapidly these glaciers are adjusting to changing climate. The mean annual mass balance of Chandra basin and Svalbard Arctic are -0.67±0.14m w.e. and -0.36±0.02 m w.e. during last one and half decades, respectively. Artic glaciers and ice caps have been losing more glacier mass than Himalaya in total but melting rate of Himalayan glaciers is significantly higher than Arctic.   There has been a gradual warming with an apparent stronger trend observed in both the regions during the last one and half decades. The temperature trends are more pronounced for the winter seasons than for the summer seasons. This seasonality in climate change has been observed over most of the Himalayan and Arctic Region. Data revealed that the majority of the glaciers and ice caps of Arctic and glaciers of Himalaya are in a state of instability and their volume may significantly reduce if the climate stabilizes at its present state.