

GLACIERS: PRESENT AND FUTURE UNDER CHANGING CLIMATE

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ABSTRACT

Most of the Himalayan glaciers are melting over past 3-4 decades with accelerating rate, which is alarming to the scientific community. The Mt Everest glacier has already retreated 5km since 1953. The melting glaciers results in breaking of banks of glacier lakes and resulting in flooding and landslide in the area. Rivers originating from these glaciers, especially in Asia, may experience excess flow of water, which in future may experience flow with much lower water levels owing to insufficient glacier mass. The rate of shrinkage of glaciers worldwide has changed from 6.5 % to 7.3 % per decade. Latest report show that retreating rate of Asian glaciers are accelerating due to global warming. Himalayan glaciers cover about three million ha, or 17% of the global mountain area. They are the largest bodies of ice outside the polar caps. The total area of the Himalayan glaciers is 35,110 sq km. The total ice reserve of these glaciers is 3,735 km³, which is equivalent to 3,250 km³ of fresh water. Himalayas are receding faster than in any other part of the world. For example, the rate of retreat of the Gangotri glacier over the last three decades has been more than three times the rates of retreat during the preceding 200 years. Glaciers are one of the utmost important component of hydrological cycle and the indicator of energy balance on the earth. They are also important for water resources to the concerned people. Therefore, the accelerated melting of glaciers should be checked and it should be a part of future planning.