Climate Change Impacts on Water Resources of Nepal with Reference to the Glaciers in the Langtang Himalayas

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ABSTRACT

The impacts of climate change on water resources of Nepal with reference to snow and glacier were assessed. Empirical glacier mass model was applied to all the glaciers upstream of the Kyangjing hydrological station in the Langtang Valley in the Nepal Himalayas in order to assess their sensitivity to the increases in temperature. The analysis has revealed that the glaciers in the study area of the Nepal Himalayas are shrinking rapidly and may disappear within less than two centuries, if the current glacier melting rate continues. Most of the glaciers will disappear within 3-4 decades; there may be only 24% of the present glacier-ice reserve left in the study basin of the Nepal Himalayas by 2100 AD even without any further warming which may result in serious adverse impacts on the water resources of Nepal.

Key Words: Climate Change, Water Resources, Nepal Himalayas, Glaciers