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Reconstructing Glacial History of Jorya Garang Glacier from Little Ice Age to Present

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Abstract

The Jorya Garang glacier of Baspa valley is characterized by landforms that have preserved the imprints of glacial processes and are sensitive indicators of climate change. The geomorphic features *viz*. accumulation zone, ablation zone, snout, de-glaciated U-shaped valley, trim lines, hanging valley and moraines are mapped through satellite data and topographic map. Glacial history since the Little Ice Age (LIA) has been reconstructed for the Jorya Garang glacier based on the position of terminal moraines, lateral moraines, snout, de-glaciated valley and trim lines. The trim lines indicate much higher thickness of ice for Jorya Garang glacier above the present bed in the past. Results suggest that the Jorya had advanced up to the junction of Baspa river around 1885 (LIA) and then started retreating with an accelerated average rate until 2005. The rate of retreat however is seen to be reduced in the decade that followed. The present study thus supports the theory that the climatic conditions were warmer post LIAto which the Himalayanglaciershave responded.

Keywords: Geomorphic indicators, Glacial history, Little Ice Age, Baspa Valley.