



## **Denudational slope processes and slope response to global climate changes and other disturbances: insights from the Nepal Himalayas.**

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Hillslope geomorphology results from a large range of denudational processes mainly controlled by relief, structure, lithology, climate, land-cover and land use. In most areas of the world, the “critical zone” concept is a good integrator of denudation that operates on a long-term scale. However, in large and high mountain areas, short-time scale factors often play a significant role in the denudational pattern, accelerating and/or delaying the transfer of denudation products and fluxes, and creating specific, spatially limited disturbances. We focus on the Nepal Himalayas, where the wide altitudinal range of bio-climatic zones and the intense geodynamic activity create a complex mosaic of landforms, as expressed by the present geomorphology of mountain slopes. On the basis of examples selected in the different Himalayan mountain belts (Siwaliks hills, middle mountains, High Himalaya), we illustrate different types of slopes and disturbances induced by active tectonics, climate extremes, and climate warming trends. Special attention is paid to recent events, such as landslide damming, triggered by either intense rainfalls (Kali Gandaki and Sun Kosi valleys) or the last April-May 2015 Gorkha seismic sequence (southern Khumbu). Lastly, references to older, larger events show that despite the highly dynamic environment, landforms caused by large magnitude disturbances may persist in the landscape in the long term.