

Inventory mapping of gigantic landslides that might dam up the Hunza River using ALOS/PRISM images, Karakoram, Pakistan

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Gigantic landslides usually dammed up the rivers and subsequent debris flows affected in the watersheds along the lower course. A landslide of 1000m in width and relative height and 1500m in slope length occurred near Atta Abad on a right bank of the Hunza River, northern Pakistan in Jan., 2010. Detritus with a volume of ca 40million cubic meters dammed up the Hunza River. They mainly consist of boulders in a maximum scale of 10m long with fine sand to silt as matrix. Such fine materials were squeezed up and flew on the mound as mudflow. The mudflow killed 19 peoples in the down stream. 3D interpretation of space images of ALOS/PRISM clarified development of scarplets deforming valley slope as pre-cautious signs of a landslide on a gigantic scale.

Based on a result of the study, 3D interpretation of ALOS/PRISM images along the Hunza River was carried out and that found a newly activated gigantic landslide near Khana Abad that is at high risk of landslide damming. This study will report the case of Atta Abad landslide and Khana Abad landslide. And it will present an inventory map of gigantic landslides that might cause natural damming in the Hunza area.

Keywords: ALOS/PRISM images, 3D interpretation, Hunza River_Karakoram, gigantic landslides, landslide dams