

Glacier advancement hazards and its effect on local community: A case study of Hussaini, Hunza

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Hussaini is a small village of Gojal (Upper Hunza) in the Northern Areas of Pakistan. It is situated on the both banks of Hunza River. The old main village is on the western-bank and at the lateral moraine of Hussaini glacier and below Borith Lake. The newly irrigated land, called Zarabod, is on the left bank. The total population is 679 souls, living in 90 households (2007). Hussaini is 145 km North of Gilgit and 45 km from Ali Abad in Central Hunza. Hunza River flows in to the east while the Karakoram Highway (KKH) passes to its west. Hussaini Village is situated on 74°52'23.42" East longitude and 36°25'29.14" North latitude at an altitude of 2556 meters (Source-GPS) above sea level. South of Hussaini is Gulmit (the headquarters of Gojal magistracy - tehsil), Ghulkin is to the southwest, while Passu is in the north with famous Batura glacier. Hussaini glacier is located to the west with famous Shisper peak, 7611 meter.

Recently we observed with apprehension the glacial lake outburst flood (GLOF), last time in Passu and, now, in Ghulkin. The floods caused by these GLOF pose a great risk to these villages. The risks, however, can be minimized by employing modern technology. With the help of RS and GIS technology, these glacial lakes can be identified through Satellite images and Aerial photographs and after field verification and ground realities the sites can be observed and assessed in their early stages when the lakes are developing. Using proper techniques, the water can be released, not allowing the formation of dams which have the potential to annihilate human settlements and agricultural establishments. RS and GIS technologies can also be utilized in the region for the purpose of hazard mapping, land sliding, GLOF, soil erosion, glacier advancement etc.

Some glaciers are located within the vicinities of the villages and people, routinely, walk by or across them for one or the other reason. The people need to be vigilant and look for any unusual changes taking place in the glaciers. The changes, as and when observed, should be communicated immediately to the relevant public and non – governmental organizations. The area should be observed after February when the glaciers start melting and due to fluctuation and movement the streams block the natural gullies and make glacial lakes.

There is a disastrous situation in Hussaini village due the glacier advancement for the last many decades, resulting in much suffering of the local community Both for drinking and irrigation water, the people of Hussaini ware working on the glacier 8 to 12 hours on daily basis for many years now.

A glacier is located in the west and the Khunzhrav River is flowing to the East of the village but due to lack of resources there is no water in the village. A drought like situation hovers on the village for many years. As the glacier is advancing very fast toward the Khnzhrav River and

KKH - located at a distance of some 254 meters, the four channels dug out from the snout of the glacier have been destroyed and now the temporary solution was obtaining insufficient water through a vulnerable pipeline from the southern glacier's originated stream to the northern snout channels. This pipeline was also washed away by the recent flood and next GLOF is, again, in an alarming position.

The villages located along the Khunzhavr river and below the glaciers are in high risks specially in Gojal valley, Shimshal, Passu, Hussaini, Ghulkin, Gulmit are at risks of river flood, and GLOF can wash them out if proper protection is not taken. The communities, volunteers and scouts should be ready to handle these disastrous, terrible and very challenging situations.