

## Attabad landslide risk management

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### Abstract

Landslides are among the most destructive natural disasters in the Himalayan Karakorum Hindu-Kush mountain ranges which possess some of the largest glaciers in the world. The northern part of Pakistan, Gilgit-Baltistan, falling in this region is no exception to that. Attabad is a remote village in Gilgit Baltistan situated on the right bank of Hunza River at a ground distance of almost 125 km from Gilgit city. The village constitutes over 100 settlements with approximate population of 800 individuals. The upper part of the village was settled on slope profile, a landslide prone area, which was activated several times in past and the locals were evacuated from the area prior to the disaster event.

The devastating landslide incident occurred in Attabad near Hunza on the 4th of January, 2010 at 12:10 pm. The rock fall events started 2 days before the disaster event on the eastern end of the unstable slope. The people were already evacuated from Attabad (Bala) due to the movement of the landslide. The whole slope mass including hard rock and unconsolidated material detached suddenly from the slope. The debris material hit the opposite side rock ridge and landslide mass diverted with air pressure due to narrow gorge towards upstream and downstream direction. As a result of debris surges downstream 8 houses in lower Attabad came under the rubble in which 19 people were killed and several injured.

FOCUS Pakistan undertook a study where the occurrence and impact of the seismic events and anthropogenic activities in the activation of the landslide were analyzed. The study also highlighted the lake monitoring data (lake level, seepage and flow data before overtopping and after overtopping) and the installation of an Early Warning System. The lake is still present in the valley. Through the timely risk anticipation the precious lives in Attabad were saved and almost 25 houses at high risk were evacuated and saved.

Monitoring of the Attabad Lake provided an updated data on the increasing level of the lake, inflow at the upstream and seepage at the toe of the dam which enabled the local government, NGOs other stakeholders to take timely decision to reduce the risk of any outburst flood.