

## **RISK MITIGATION OF A LANDSLIDE DAMMED ALPINE TORRENT**

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On the 29<sup>th</sup> of August, 1999 at 8.40 pm parts of the so called “scheiße Riepe”, the largest colluvial fan of the Eastern Alps collapsed. Within seconds about 3 million cubicmeters of debris moved down into the valley of Starkenbach, district of Imst, Tyrol, and filled the channel on a length of about 700 meters up to 70 meters. Because of this natural dam of dolomitic debris all runoff was stored behind this dam. Several residents in the lower catchment and in the Inn-valley were evacuated. About 50 hours later an outflow of at least 200 liter per second at the foot of the dam started. The worst case scenario includes a full storage of the basin behind the dam during snowmelt season that may lead to an overtopping of the dam. Consequently the dam will be eroded and hundredthousands of cubicmeters of debris will be deposited in the village and will block the highway and railroad.

Immediate measures during wintertime include the construction of a 40 meter deep cut into the dam for a natural channel and 2 pipes to overcome a vertical difference of about 120 meter for a discharge of 30 m<sup>3</sup>/s with a stilling pool at the lower end.

Longterm measures are not defined yet. They may consist of a series of checkdams or an artificial bypass.