



Risk Management Lattenbach: A case study

J. Huebl, M. Moser

University of Natural Resources and Applied Life Sciences Vienna

The catchment area of Lattenbach in the District of Landeck (Tyrol) is prone to debris flows because of spacious mass movements act as debris sources within the catchment. Debris flows are documented since the beginning of the last century, showing that some buildings of the village of Pians are endangered.

The construction of technical mitigation measures goes back to 1908. Up to now numerous checkdams have been built, but in the middle reach many of them are damaged or destroyed. Therefore the former protection concept has to be reconsidered. A general risk management conception was conducted, including a detailed risk analysis.

The risk analysis is based on a detailed analysis of past debris-flow events and field survey in order to collect input parameters for process analysis.

Different scenarios were calculated varying the input hydrograph, the volume of potential debris sources and the sediment concentration. The simulation results were used to derive intensity maps for the settled area. In combination with an effect analysis a map of safety deficits could be mapped.

Risk management is based on a protection concept that combines active and passive mitigation measures. Active measures are a temporary debris storage basin in the middle reach to lower the peak discharge and an improvement of the hydraulic transport capacity of the receiving stream Sanna to reduce backwater effects. Out of the huge number of checkdams only a few of them stay to be maintained. Passive mitigation measures are based on an already existing monitoring system which will be technically enlarged to an information system in order to provide information to local authorities if a debris flow will occur.