



Debris flow hazard assessment in the Langtauferer valley, South Tyrol, Northern Italy.

Martina Reichegger (1), Daniela Busetto (2), Thomas Glade (1), and Andreas Zischg (2)

(1) University of Vienna, Department of Geography and Regional Research, Vienna, Austria
(martina.reichegger@univie.ac.at, m.reichegger@abenis.at), (2) Abenis Alpinexpert GmbH, Bozen/ Bolzano, Italy

Debris flows pose a significant threat to the environment and society in numerous alpine valleys. Various approaches exist to assess the respective hazards in order to delineate regions, which are prone to a given magnitude and frequency of debris flows. This research aims to couple the hydraulic FLO-2D model with a sediment assessment model in order to identify endangered settlement areas situated on the torrential fans.

A hazard assessment for debris flows was conducted on seven torrential fans in the Langtauferer valley, South Tyrol, northern Italy. The debris flow process was simulated by the hydraulic FLO-2D computer model for return periods 30, 100 and 300 years. The main input parameters had to be determined previously: water runoff was calculated by a rainfall-runoff model and the amount of sediment entrainable by debris flows was estimated in the field. For validation the results were compared with historical debris flow data. A classification in high and very high debris flow hazard based on maximum flow depths showed that none of the settlement areas are affected by the highest hazard class. Comparing the results with historic events, the chosen model inputs water runoff and amount of sediment appear plausible and therefore applicable in planning strategies.