



Simple applicable methods for assessing natural hazards caused by landslides and erosion processes in torrent catchments

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The present study for the “Bucklige Welt- Wechselland” area, a mountainous region of about 1300 km² in the eastern part of Austria, was conducted under the authority of the Austrian Service for Torrent and Avalanche Control (WLV). The ultimate ambition of this study was directed towards the improvement of regional expertise by developing susceptibility maps at catchment scale, which display the disposition towards the occurrence of the mentioned processes and their bed-load-potentials. These results about hazard potential should form the basis for further planning decisions (more detailed investigations, hazard zoning) of governmental authorities responsible for the study region.

Past events within the study area have shown, that besides floods, also landslides and fluvial erosion have a significant hazardous potential through their contribution to enormous bed loads and debris flows. As the interaction of dispositional and triggering factors are expected to be very complex, this regional study was carried out within a close interdisciplinary collaboration of three project partners, focusing on the main project modules “Hydrology and Climatic Impacts” (Vienna University of Technology), “Land Use and Pedology” (The Research and Training Centre for Forests, Natural Hazards and Landscape in Innsbruck) and “Geology and Geomorphology” (Geological Survey of Austria).

The work was conducted using generally available data (DEM, Geology, Land Use) and field data to a minor extent. The quality and scale of these available data sources restricted the development of methods to simple approaches, which could easily be applied in the future within other areas by regional experts.

The developed methodology and outcomes of the module “geology and geomorphology” are introduced on the basis of the derived susceptibility maps showing “dominant processes” and “relative bed- load- potentials”.