



Multilayer exposure maps as a basis for a regional vulnerability assessment - applied in Waidhofen/Ybbs, Austria

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Changes in population and land use are often the main driver of global environmental change in mountainous areas and influence the spatial distribution of risk in various ways. They can influence the hazard itself by creating favorable conditions for its initiation and/or they can also influence the consequences of the hazard on the elements at risk. The consequences of natural hazards can be seen from a societal, administrative or economic perspective. Therefore, the aim of this study is to provide a multilayer exposure map which incorporates different aspects of possible consequences resulting from landslides. The map will include critical infrastructure like bridges or power supply and a social layer including information such as population distribution. Furthermore, valuable buildings like garages for agricultural equipment but also favourable agricultural areas is included. A catalogue of more than 5000 buildings including their properties (e.g. floors, condition), as well as a detailed land use map serve as a basis for the multilayer exposure map.

The case study area covers almost the entire district of Waidhofen/Ybbs (approx. 112km²) and is located in the alpine foreland in Lower Austria. The population density is approx. 90 inhabitants per km² and distributed mainly along the valleys. However, there are also dispersed small settlements and farms.

The outcome of this multilayer exposure map will be a first step for a regional vulnerability assessment and later on for a regional risk assessment for this study area which will contribute to the improvement of risk management and mitigation strategies and the development of new ones in the future.