

Keiler, M., Zischg, A., Fuchs, S., Hama, M. & Stötter, J. (2005): Avalanche Related Damage Potential - Changes of Persons and Mobile Values since the Mid-Twentieth Century, Case Study Galtür. *Natural Hazards and Earth System Sciences*, 5, 49-58.

Abstract

When determining risk related to natural hazard processes, many studies neglect the investigations of the damage potential or are limited to the assessment of immobile values like buildings. However, persons as well as mobile values form an essential part of the damage potential. Knowledge of the maximum number of exposed persons in an endangered area is of great importance for elaborating evacuation plans and immediate measures in case of catastrophes. In addition, motor vehicles can also be highly damaged, as was shown by the analysis of avalanche events. With the removal of mobile values in time as a preventive measure this kind of damage can be minimised.

This study presents a method for recording the maximum number of exposed persons and monetarily assessing motor vehicles in the municipality of Galtür (Tyrol, Austria). Moreover, general developments of the damage potential due to significant socio-economic changes since the mid-twentieth century are pointed out in the study area. The present situation of the maximum number of persons and mobile values in the official avalanche hazard zones of the municipality is described in detail. Information on the number of persons is derived of census data, tourism and employment statistics. During the winter months, a significant increase overlaid by strong short-term fluctuation in the number of persons can be noted. These changes result from a higher demand of tourism related manpower as well as from varying occupancy rates. The number of motor vehicles in endangered areas is closely associated to the number of exposed persons. The potential number of motor vehicles is investigated by means of mapping, statistics on the stock of motor vehicles and the density distribution. Diurnal and seasonal fluctuations of the investigated damage potential are pointed out. The recording of the number of persons and mobile values in endangered areas is vital for any disaster management.