



Improvement in the localisation and identification of floods and debris flows by combining different geodatabases

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Coping with natural hazards and risks requires the acknowledgement and the analysis of all existing data. For taking risk prevention measures, knowledge about the hazardous processes and the potential consequences are necessary. Data for the assessment of hazards can both be acquired and gathered by backward directed indication (analysis of historical events and terrain analysis) or by forward directed identification (modelling of processes). In the case of an emergency or disaster, information about the location of persons and infrastructures is needed for reducing the potential consequences. In the past years, the Autonomous Province of Bolzano South Tyrol, Italy implemented different databases and geodatabases for the use in disaster prevention and mitigation. For the documentation of historical and recent flood and debris flow events, a database was created on the basis of the DOMODIS and IFFI guidelines. In this database, over 2000 hydro geological events since the first documented catastrophes in the year 590 are described. Another database was implemented for the administration of protective structures against hydro geological hazards. For obtaining a regional overview of potential floods and debris flows, a hazard index map was computed using GIS-based models. Thus, the most necessary information for any risk management process could be made easily accessible in a standardised method. In this work, the structure of and the interfaces between these databases are described. Furthermore it is shown, how the logical combination of backward directed indications, the actual state of the torrent systems and forward directed indications results to additional spatial information for risk management and to advanced verification possibilities for each dataset.