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Landslide database for Nicaragua and its use

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Steep terrains, badly weathered slopes, seismic and volcanic activity and high frequency of tropical cyclones make landslide occurrence a common phenomenon in Nicaragua. Landslides occur frequently along the Pacific Volcanic Chain, within the Interior Highlands physiographic units, and recently within the hilly relief of the Pacific Coastal Plain and the Atlantic Coastal Plain.

A national landslide database is being developed for Nicaragua, as part of a comprehensive geographic information system for geological hazards. Landslide data are being obtained from a variety of sources including: events triggered by hurricane Mitch mapped in form of landslide inventory maps during the post-disaster emergency and reconstruction assistance; unpublished reports available before 1998, field observations from surveys carried out in hazardous areas between 1999 and 2004, and historical data obtained from newspapers and books. The type and quality of information stored and the methodologies and techniques used to create the database are described. The database is designed in order to facilitate interaction between pre-existing landslide inventory maps with different projections and coordinate systems and the further development of the system by the generation of new data. The database has a relational structure and contains spatial data of landslide locations. A unified Landslide Form including information about landslide types, technical parameters, geological environment, time of occurrence, casualties, damages and triggering mechanisms is prepared in order to transfer existing data into the database and to collect new data from field works. The database currently contains more than 17000 landslide events. The landslide database will develop an understanding of landslide processes, their triggering mechanisms and their relation with other natural hazards. The ultimate goal is to assist long-term development initiatives such as emergency management, land-

use planning and the development and implementation of public and private policies to reduce losses from landslides. The database shows how post-disaster aids coming from international donors were re-directed to build and support local capabilities in Nicaragua.