



Web-based database on worldwide glacier and permafrost disasters

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Glacier and permafrost hazards frequently affect populated high mountain regions. Hundreds or even thousands of lives can be lost in catastrophes related to glacial and periglacial environments. Such hazards have the potential for far reaching effects and complex interaction of processes. They represent a major risk to life and property in many mountain regions, and in particular in densely populated high mountain areas such as the European Alps, parts of the Andes, Cascades and other places. The related annual economic loss is estimated to be in the order of 100 mill. EUR worldwide. Systematic documentation and analysis of past events is fundamental for a better understanding of involved processes and resulting hazards to ultimately more effectively design hazard management and prevention strategies. We have therefore directed efforts to establish a web-based database to make information on glacier and permafrost disasters available to an interested community following similar efforts in Switzerland. Event data was collected using different sources and systematically organized in a database. Events were categorized into glacier floods, ice avalanches, glacier length variations, rock fall, volcano and earthquake related interactions, and others. The database was then linked to a map-based interface compatible with the world wide web. Past events can thus be searched by thematic categories as well as by identification of geographic regions of interest. We have analyzed the events according to different methods and present the most important findings regarding involved processes, combination of factors, frequency and magnitude, or regional occurrence of events. The worldwide database on glacier and permafrost disasters has been established within the Working Group on Glacier and Permafrost Hazards in Mountains by the Commission on Cryospheric Sciences and the International Permafrost Association, in cooperation with the World Glacier Monitoring Service (www.wgms.ch),

and can be searched via <http://jern.uio.no/remotesensing/gaphaz>. The database will be updated continuously but does not claim in any regard to be complete. The glacier and permafrost community is called to provide information to enlarge and regularly update the database.