



Susceptibility analysis for landslides in the Xiangxi catchment (Three Gorges Reservoir area / China)

J. Rohn (1), D. Ehret (1), and W. Xiang (2)

(1) University Erlangen-Nuremberg, Applied Geology, Erlangen, Germany (rohn@geol.uni-erlangen.de, +49 (0)9131 8529294), (2) China University of Geosciences, Department of Geotechnical Engineering and Engineering Geology, Wuhan, P. R. China

The Xiangxi River is a tributary of the Yangtze River. In 2009 the Three Gorges Reservoir will reach its final retention water elevation level (175 m asl). Parts of the Xiangxi valley will then be flooded. Especially Jurassic sedimentary layers are predestined for intense landslides in this area.

As a first step a landslide inventory map is produced. All slopes influenced directly by impoundment are mapped geotechnically in detail to assess the spatial distribution of the landslides and their shape. Furthermore, two sub-catchments in the wide-stretched catchment area of the Xiangxi River were chosen for intense investigation. All in all, about 200 km² will finally be mapped geotechnically in detail to provide data for continuative investigations. The investigation fields are divided into test and training areas for further analysis using the neural networks method. By this means the susceptibility for landslides in dependency of different features, like lithology, slope angle, exposition, distance to the river, etc will be analysed. In a second step the results of the neural network analysis will be the base of a more regional landslide susceptibility analysis for the whole catchment area of the Xiangxi River. The performance of the method will be tested by additional inspections in areas that have been found to have a high susceptibility for landslides. These works are part of the joint research project "Yangtze: land use change – erosion – landslides" financed by the German Federal Ministry of Education and Research (BMBF). Joint aim of this project is to produce a landslide and erosion risk map for the whole region and to analyse the land use change caused by the impoundment of the Three Gorges Dam in this area.