The Disaster Management of Large Scale Landslide: a Case Study of Debris Flow Early Responding Systems

Tien-Yin Chou, Chen-Yang Lee, Hsiao-Yuan Yin, Yi-Chia Lin and Mei-Ling Yeh (Chinese Taipei)

Key words: Geoinformation/GI; Remote sensing; Large scale landslide early responding systems; debris flow; large scale landslide

SUMMARY

This paper studies the mechanisms of large-scale landslide management. It established early responding feedback mechanisms for the application in different scenarios. The paper started with the site descriptions of debris flow and large-scale landslides. It stated the fundamental differences between two types of disaster and followed by discussions of the uniqueness and necessity of large-scale landslide early responding mechanism establishment. With the current debris flow early responding systems as the evidence, this study clarified various important aspects in the early responding system. It includes the parameters of alerting area, monitoring equipment, data values, procedures of disaster prevention and evacuation. The clarifications can further shapes the workflows of large-scale landslide early responding system. Meanwhile, this paper studies references for the large-scale landslide responding parameters of specified monitoring rain gauge and on-site monitoring devices. A series of simulations have been carried out to discover the disaster factors and its data collection methods. Knowledge obtained was then contributed to the real-time data analysis development. Subsequently, disaster discussion-making center can generate alerting parameters, calculation formulas and associated responding signals (red or amber) according to its associated environmental factors. At the end of the study, the mechanisms of issuing and disarming alert system, as well as the principles of issuing alert system have been discussed.