



Landslide Hazard Prewarning System at Li-Shan Area in central Taiwan

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In April 1990, an intense and spectacular landslide hazard occurred at Li-Shan area in central Taiwan triggered by a prolonged torrential rain. The catastrophe leads to destroying of many public facilities in surrounding area. A contingent project for renovating the landslide was conducted from 1991 to 1993. After that, remediation works were performed starting from 1995 and finished the project at the end of 2002. Surface and underground drainage system were employed to be the major means in regard to slope instability.

According to the report "Performance Evaluation on Renovation Work in Landslide Area of Li-Shan (2003)," there are still some areas with potential landslide needed to be inspected and observed in the future. Monitoring systems set in renovation period are planned to transform into a landslide hazard prewarning system in order to avoid possible outrageous condition to happen in the future.

An internet oriented real-time monitoring system is always on line to monitor field conditions including rainfall intensity, groundwater level change and ground deformations. Criteria for degree of risk relate to slope stability were established in advance based on monitored data and modeling work. It can automatically transfer field data to GIS data base system in real-time. The core of the system is built with an intelligent decision making procedure. The procedure embedded are reduced from slope stability analysis work using field monitored data to calculate factor of safety so as to announce future action automatically in regards to the change of field condition.