Landslide Local Data Collecting System Integrated spatial information technology

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Abstract

In recent year, landslides have occurs frequently in Taiwan, which pose a threat to people's life and property; the severe disaster also affects the whole economic development and transportation. In addition, the frequency of landslide occurrence has peaked after the Chi-chi Earthquake in 1999. This phenomenon shows Taiwan is going through the phase of terrain evolution; once hazardous domains extend increasingly, the development of slope lands in mountain areas and ecological balance must be influenced. Therefore, it is necessary that the authorities integrate spatial information together with communication technique and advance landslide data collection, research, and disaster prevention. Building monitoring system is also a priority to control, trace, and respond the occurrence of landslides as well as mitigate the effects. The monitoring system utilizes advanced surveying instruments, such as rain gauge, rope steel sensor, geophones, low-light IR sensitive color camera (CCD), and high-effect transmission equipment built on dangerous streams, to collect and record the landslide's movement, deposit and variation. This study is not only a mechanism for disaster response, but also a reference of polity-making. As a result of applying satellite and the technology of spatial information to transmit the locale monitoring data to emergency center, the system will not be affected by the terrain or climate. Also, local images or spatial information system after analysis and quantification by integrating system can prompt deliver to the authorities to take effective response measures. All the front-end hardware and software of landslide monitoring instruments are extensible; for that matter, it is in favor of function enhancement, research and development. The public back-end interface also uses open interface Internet Explorer, so users can learn various integrated landslide information timely by Web browser.

Key words: GIS, landslide, monitoring instruments, warning system