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Assessment for disaster resilience of communalities on hillslope in Taiwan

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Recently, debris-flows and landslides have led to serious damage in Taiwan. In order to mitigate the loss of the disaster, series control measures and soft measures were implemented in those communities threatened by natural hazards. However, the performance of these mitigation measures are rarely evaluated and reviewed carefully in Taiwan. This study presents an assessment method for evaluating a community both in exposure and preparedness to natural hazards. A set of questionnaire for experts was designed to determine the evaluating criteria and weighting factor of resilient capacity. 5 stages with 27 factors were considered in the risk assessment model for evaluating the resilience of a village. 102 villages that are threatened by debris flow were evaluated in this study. The preparedness for disaster of these villages was evaluated by phone survey and interview. The exposure to debris flow torrents and the landslide was determined by using GIS technology and logistic regression analysis. The results showed that those villages with high risk were coincided to the cases from 1996 to 2004. Furthermore, the result also illustrates that this assessment model is a feasible method for indicating the resilient condition of communalities on hillslope.