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GIS-based Decision Support System for Management of Landslide Hazard after Typhoon Event

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The paper presents a GIS-based decision support system (DSS) for landslide hazard emergency responses. This system links landslide interpolations and management strategy makings and combines three sub-models: (1) landslides interpolation model from satellite images, (2) landslide properties analysis model, and (3) management priority model that can analyze the risk of landslides. By combining geographical database in the mountainous region, this system can operate by inputting satellite images before and after typhoon event in the study area. We outline the application in Nanfong Village, where was damaged seriously by Typhoon-Sinlaku in 2008/9. First, the results show that 42 landslides that are larger than 1,500m^2 were interpolated with 77.2% of modified success rate by using landslide interpolation model. Second, the total volume of sediment triggered in this event is estimated about 3.02 million tons by landslide property analysis model. Third, 16 landslides that would cause damage to houses and roads were identified as first-priority by management priority model. The results of this system had also been examined by field survey. Recommendations of this system is fairly in accordance with the field survey data and treatment strategies.