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Reinvestigation and analysis a landslide dam event in 2012 using UAV

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Geological condition of Taiwan is fracture with locating on Pacific Rim seismic area. Typhoons usually attack during summer and steep mountains are highly weathered, which induces landslide in mountain area. The situation happens more frequently recent years due to weather change effect. Most landslides are very far away from residence area. Field investigation is time consuming, high budget, limited data collected and dangerous. Investigation with satellite images has disadvantages such as less of the actual situation and poor resolution. Thus the possibility for slope investigation with UAV will be proposed and discussed in this research. Hazard investigation and monitoring is adopted UAV in recent years. UAV has advantages such as light weight, small volume, high mobility, safe, easy maintenance and low cost. Investigation can be executed in high risk area. Use the mature aero photogrammetry , combines aero photos with control point. Digital surface model (DSM) and Ortho photos can be produced with control points aligned. The resolution can be less than 5cm thus can be used as temporal creeping monitoring before landslide happens. A large landslide site at 75k of road No. 14 was investigated in this research. Landslide happened in June, 2012 with heavy rainfall and landslide dam was formed quickly after that. Analysis of this landslide failure and mechanism were discussed in this research using DEMs produced prior this event with aero photos and after this event with UAV. Residual slope stability analysis is thus carried out after strength parameters obtain from analysis described above. Thus advice for following potential landslide conditions can be provided.