Active faults and their implications for regional development at the southern part of West Java, Indonesia

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SUMMARY

Territory of the southern part of West Java has limited accessibility. Land forms with a steep slope and limited access roads make this area remains largely isolated. Various constraints occur this area so that their role in national development has not been optimal. Based on physiography, this area was included in the Southern Mountains Zone (Van Bemmelen, 1949). This area is known to be controlled by tectonic based on a review of the literature already available. Fault is one tectonic product, which phenomena are found in the southern part of West Java. Fault is defined as a fracture plane followed by the relative displacement of a block of rock against rock block other. Distance shift is a few millimeters to tens of kilometers, while the size of the fault plane from a few centimeters to tens of kilometers (Billing, 1959). Levels of the active fault needs to be known as a guide to develop the region. The method that can be used are morphotectonic and geospatial analysis. Various parameters are used to determine the level of the active fault, including the type of fault, age of fault, fault intensity, seismicity, rock, and morphotectonic. The data used came from the results of previous studies which are already available, satellite imagery and topographic maps. Geographic Information System (GIS) software used to facilitate the analysis process. Data analysis using quantitative and qualitative approaches. Morphotectonic analysis results support the interpretation that the units morphographic associated with tectonic referable early to determine the existence of a fault in the southern part of West Java. Empirical data related to the presence of active faults are found along the track landslides, especially in the southern Garut. Meanwhile, in the southern Cianjur and Sukabumi, potential landslides associated with the presence of the fault is still being studied further. The results showed that the activity of the fault in the southern part of West Java can be classified as inactive fault, potentially active fault, and active fault. Spatial distribution is also uneven, but forming zones in certain locations. Geological maps that exist need to be corrected to inform the public that many potentially active to active faults that have not been mapped in detail in the southern part of West Java.
