

KAJIAN POTENSI KERAWANAN BENCANA BANJIR DAN LONGSOR BERBASIS KARAKTERISTIK GEOMORFOLOGI DI SUB-DAS GELIS, KELING, JEPARA

oleh:

Ayu Dyah Rahma
13/348766/GE/07628

INTISARI

Seluruh kecamatan di Kabupaten Jepara termasuk dalam peta endemis bencana berdasarkan riwayat bencana banjir, rob, abrasi, dan tanah longsor di Jepara (BPBD Kabupaten Jepara, 2012). Bencana banjir dan longsor yang banyak terjadi menjadikan penelitian ini penting untuk dilakukan. Wilayah kajian penelitian yang dipilih adalah Kecamatan Keling dengan batas kajian yaitu Sub-DAS Gelis. Tujuan dilakukannya penelitian ini adalah untuk melakukan identifikasi karakteristik geomorfologi dan variasi bentuklahan di Sub-DAS Gelis. Selain itu dilakukan analisis kerawanan bencana banjir dan longsor di wilayah kajian.

Metode yang digunakan dalam penelitian ini adalah survei. Survei dilakukan menggunakan teknik *Purposive Sampling*. Analisis data kerawanan bencana dilakukan dengan analisis spasial menggunakan Sistem Informasi Geografis (SIG) dengan bantuan *Integrated Land and Water Information System* (ILWIS) dan mengaplikasikan metode *Spatial Multi-Criteria Evaluation* (SMCE). *Processing* dan *editing* dilakukan dengan *software* ILWIS 3.3 dan ArcGIS 10.1. Bobot berkonsisten (*eigenvector*) dihasilkan dari pengolahan *Analytical Hierarchical Process* (AHP). Parameter kerawanan banjir yaitu penggunaan lahan, kemiringan lereng, *buffer* sungai, kerapatan drainase, curah hujan, dan data kejadian banjir. Parameter kerawanan longsor yaitu penggunaan lahan, kemiringan lereng, litologi permukaan, morfologi, curah hujan, dan data kejadian longsor.

Hasil penelitian berupa peta geomorfologi dan peta multirawan banjir dan longsor skala 1:50.000. Karakteristik geomorfologi Sub-DAS Gelis kompleks dengan variasi bentuklahan yaitu lereng tengah gunungapi, lereng bawah gunungapi, lereng kaki gunungapi, dataran kaki gunungapi, interfluve lereng kaki gunungapi, interfluve dataran kaki gunungapi, dataran banjir, dan dataran aluvial. Sub-DAS Gelis dinyatakan rawan terhadap bencana banjir dan longsor berdasarkan hasil pemetaan multirawan. Terdapat tiga kelas multirawan yaitu tinggi, sedang, dan rendah. Multirawan tinggi berada di bentuklahan lereng tengah gunungapi dan sebagian besar dataran kaki gunungapi.

Kata kunci: Kerawanan, Geomorfologi, Banjir, Longsor, SMCE

**STUDY OF POTENTIAL FLOOD AND LANDSLIDE SUSCEPTIBILITY
BASED ON GEOMORPHOLOGICAL CHARACTERISTICS
IN SUB-WATERSHED OF GELIS, KELING, JEPARA**

By:

Ayu Dyah Rahma

13/348766/GE/07628

ABSTRACT

Jepara regency are included in disaster endemic map based on history of flood, rob, abrasion and lanslide disaster in Jepara (BPBD Jepara regency, 2012). Many floods and landslides that occur make this research important to do. The selected study area is Keling Sub-district with the boundary of the study is Gelis Sub-watershed. The purpose of this research are to identify geomorphological characteristics and variation of landform in Gelis Sub-watershed. In addition, flood and landslide susceptibility analysis was conducted in this study area.

The method used in this research is survey. The survey was conducted using Purposive Sampling technique. Analysis of susceptibility data are done by spatial analysis using Geographic Information System (GIS) with assisted using Integrated Land and Water Information System (ILWIS) by applying Spatial Multi-Criteria Evaluation (SMCE) method. Processing and editing are done with software ILWIS 3.3 and ArcGIS 10.1. The weights consistent (eigenvector) resulted from the processing of Analytical Hierarchical Process (AHP). Parameters of flood susceptibility are land use, slope, river buffer, drainage density, rainfall, and flood event data. Parameters of landslide susceptibility are land use, slope, surface lithology, morphology, rainfall, and landslide event data.

The result of reserach are geomorphology map and susceptibility map of flood and landslide in scale 1: 50.000. Characteristics of geomorphology Sub-watershed Gelis are complex with landform variations, which are volcanic middle slope, volcanic lower slope, volcanic foot, volcanic foot plain, interfluve of volcanic foot, interfluve of volcanic foot plain, floodplain, and fluvio volcanic plain. Gelis Sub-watershed are prone to flood and landslide disasters based on susceptibility mapping results. There are three classes of multi hazard, which are high, moderate, and low. High susceptibility are in the landform of volcanic middle slope and most of volcanic foot.

Keywords: *Susceptibility, Geomorphology, Flood, Landslide, SMCE*