INTISARI

Sifat tanah merupakan salah satu aspek pengontrol yang penting terhadap kejadian longsor. Longsor yang terjadi kawasan DAS berpengaruh terhadap keberlangsungan sistem sungai, maupun aktifitas masyarakat seperti budidaya pertanian di lahan miring. DAS Loano memiliki kerawanan tinggi terhadap degradasi lahan disertai dengan 60% - 80% luas wilayahnya memiliki kerawanan tertinggi terhadap longsor. Pendekatan geomorfologi melalui bentuklahan digunakan sebagai kerangka acuan dalam.melihat pengaruh pola sebaran longsor di daerah kajian. Sifat Tanah dan Analisis Tetangga Pola Sebaran Tanah Longsor di Daerah Aliran Sungai Loano, Kabupaten Purworejo, Jawa Tengah bertujuan untuk mengkarakterisasi faktor yang berpengaruh terhadap longsor, mengidentifikasi pola sebaran longsor, menganalisis secara spasial sebaran longsor, dan mengkaji pola sebaran longsor dengan kaitanya terhadap sifat fisika tanah yang berada dilokasi penelitian. Metode penelitian dilakukan secara sensus terhadap seluruh titik longsor yang ada di DAS Loano. Penentuan sampel tanah dilakukan berdasarkan metode *purposive sampling* berdasarkan pola sebaran longsor yang berbeda pada setiap satuan bentuklahan. Analisis data dilakukan secara statistik untuk memperoleh data rerata, nilai minimum, nilai maksimum, dan standard deviasi untuk mengamati keberagaman data sifat tanah yang diperoleh serta menggunakan analisis tetangga terdekat dalam melakukan analisis spasial untuk memperoleh pola sebaran longsor. Hasil penelitian menunjukan bahwa karakterisasi faktor yang berpengaruh terhadap longsor di DAS Loano yaitu yaitu proses geomorfologi vulknaik, topografi perbukitan dengan kemiringan lereng terjal, formasi geologi andesite, tingkat pengikisan batuan yang kuat serta sifat tanah seperti tekstur didominasi fraksi lempung, nilai atterberg tinggi – terlampau tinggi, indeks plastisitas tinggi, indeks *COLE* tinggi, stabilitas agregat kurang mantap. Pola sebaran longsor yang paling dominan di DAS Loano yaitu pola longsor berkelompok. Dilihat dari zonasi DAS, pola berkelompok mendominasi dibagian tengah DAS, pola tersebar tidak merata mendominasi di bagian hulu dan hilir DAS, pola tersebar merata mendominasi di bagian hulu hingga tengan DAS. Keragaman karakterisasi tanah menunjukkan pola longsor berkelompok paling mempengaruhi sifat berat jenis, permeabilitas, indeks plastisitas, dan stabilitas agregat. Keragaman karakterisasi tanah menunjukkan pola longsor tersebar tidak merata paling mempengaruhi sifat tekstur tanah, batas lekat, kandungan C-Organik. Keragaman karakterisasi tanah menunjukkan pola longsor tersebar merata paling mempengaruhi sifat berat volume, batas cair, batas gulung, indeks *COLE*.

Kata Kunci : sifat tanah, pola sebaran longsor, geomorfologi, daerah aliran sungai

ABSTRACT

Soil properties is one of the important controlling aspects of landslide. Landslides that occur in the watershed (DAS) affect the sustainability of the river system, as well as human activites such as agricultural cultivation on sloping land. The Loano Watershed has a high susceptibility to land degradation, with 60% - 80% of its area having the highest susceptibility to landslides. Geomorphological approach through landforms is used as a frame of reference to see the effect of the landslide distribution pattern in the study area. Soil Propeties and Neighbour Analysis of Landslide Distribution Patterns in Loano Watershed, Purworejo Regency, Central Java aimed to characterize the factors that influenced landslides, to identify landslide distribution patterns, to analyze spatially the distribution of landslides, and to study the pattern of landslide distribution in relation to physical properties of the soil in the research area. The research method was carried out by census of all landslide points in the Loano watershed. Determination of soil samples was carried out based on the purposive sampling method based on different landslide distribution patterns in each landform unit. Data analysis was carried out statically to obtain mean, minimum, maximum, and standard deviation to observe the diversity of soil properties data obtained and used nearest neighbor analysis to obtain landslide distribution patterns. The result showed that the characterization of factors that influenced landslides in the Loano watershed were volcanic geomorphological processes, hilly topography with steep slopes, andesite geological formations, strong rock erosion and soil characteristics such as texture dominated by clay fractions, too high atterberg values, high plasticity index, high COLE index, less stable aggregate stability. The most dominant pattern in the Loano watershed was the clustered landslide pattern. Judging from the watershed, clustered patterns dominate in the middle of the watershed, unevenly distributed patterns dominated in the upstream and downstream parts of the watershed, evenly, distributed patterns dominated in the upstream to middle watershed. The diversity of soil characterization shows that clustered landslide patterns most influence the properties of specific gravity, permeability, plasticity index, and aggregate stability. The diversity of soil characterization shows that the landslide pattern is spread unevenly and most affects the nature of soil texture, sticky limit, and C-Organic content. The diversity of soil characterization shows that the landslide pattern is evenly distributed and most influences the properties of bulk density, liquid limit, rolling limit, and COLE index.

Keywords: soil properties, landslide distribution pattern, geomorphology, watershed.