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1 HAK CIPTA: PETA ERODIBILITAS TANAH (K-faktor USLE) DAS Pasaman Berbentuk 3D Dimensi Aflizar\* \*Politeknik Pertanian Negeri Payakumbuh Jl. Raya Negara Tanjung Pati, KM 7 Kabupaten Limapuluh Kota, Sumbar 26271 Soil Erodibility faktor of USLE (K-factor) in performance 3 Dimention Map Ringkasan Peta erodibilitas Tanah DAS Pasaman belum ada sama sekalai dalam bentuk digital 3 dimensi dan berhasil dibuat dalam penelitian ini.

Fakta ini berguna untuk kepentingan pembangunan pertanian berkelanjutan dan upaya mitigasi degradasi DAS dan adaptasi terhadap bahaya pemanasan global. The Pasaman watershed is located in the North of west sumatra Province and East of North Sumatra Province Indonesia .It includes the West Pasaman district, East Pasaman District, Agam District and Madina District (Sumatra (WGS 84, UTM 47M, x=503935, y=76509 WGS 84, UTM 47N, x=617409, y=9991536), approximately 200 km west of Padang City in West Sumatra, Indonesia . The watershed occupyes an area of 577452.26 ha, and elevation ranges from 0 m to 3000 m above sea level (asl). Indonesia Ocean is the outlet of the watershed.

Average annual precipitation ranges from 2000 to 3500 mm and climate is classed as humid tropical. The Pasaman watershed has a variety of land uses, including primary forest, mixed gardens, Palm oil Plantation, sawah or paddy field, abandoned agricultural fields, and settlements. Lowland areas of the Pasaman watershed are both Agroindustry of palm oil and Fisherman village.

Water from the upland rivers and tributaries accumulate in Indonesia ocean, and this carry municipal wastes and chemicals from Agroindustry and domestic. Flatlands in the lowlands are used commonly for Palm oil plantation, and the uplands for mixed garden

cultivation and forest. The Pasaman watershed contains a range of land crops, primarily trees such as coconuts, palm oil plantation cloves, coffee, avocados, melinjo (Gnetumgnemon), rubber, Chillies (*Capsicum annum L.*), corn (*Zea mays L.*), sawah and cinnamon are planted in a combination with annual crops.

2 The Pasaman watershed contains six sub-watersheds, including Tabuyung, Natal, Malintang, Pasaman, Kinali and Bonjol. Soil group distribution in the Pasaman watershed consists of eight groups i.e. Tropaquepts, Tropopsamment, Troposaprist, Hapludults, Kandiuudalfs, Humitropepts, Kandiuudults and Hydrandepts.

The geology of the Pasaman watershed area consists of: (a) the Sediment and metasediment (young Alluvium which are mantled by the quaternary holocene (0.01 million years BP). (b) Volcanic rock which are mantled Pliocene to Jurassic (5.3-151 million years BP) that consist of andesitic to basaltic, breccia, lava from Mount Pasaman, Mount Talamau and Mount Malintang, group Kampar consist of formation petani and Telisa, Air Bangis volcanic formation, undifferentiated volcanic formation and group Tapanuli Kuantan batugamping formation.

(c) Intrusive rock which are mantled the era Paleozoic in period Carboniferous and Permian (299 million years BP) which consist of Batolite Panyabungan. (d) Serpentinite which are mantled by Carboniferous (251 million years BP) which consist of complex ultramafic Pasaman, intrusi Rao-rao and batolite Panyabungan Menurut Russ (2009) bumi terbentuk 4,5 miliar tahun lalu. Zaman es terjadi 18000 tahun lalu.

Dalam bukunya Michele (2007) menuliskan bahwa nenek moyang manusia modern mulai hidup di bumi 130000 tahun lalu. Manusia pertama mencapai Afrika selatan 100000 tahun lalu. Karena saat itu permukaan laut lebih rendah, lebih mudah manusia pertama bergerak ke teluk Arab hingga ke Pulau Jawa (Indonesia) menuju Australia sekitar 40000 tahun lalu dan kemudian menuju Amerika sekitar 12000 – 60000 tahun lalu.

Jadi DAS Pasaman berada di Pulau Sumatra berdekatan dengan Pulau Jawa Indonesia, kami perkirakan Manusia mulai tinggal di DAS Pasaman 40000 tahun lalu. Namun studi kami ini tidak memiliki data fosil. 3D map of K faktor USLE showing soil group feature and sampling location in watershed was generated by digitation from both soil and geology map using Surfer from Golden Software.

Kata Kunci: K-faktor, USLE, 3D, DAS Pasaman

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