Analisis spatial dalam penentuan lokasi tempat pembuangan akhir sampah kotamadya Bandung

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Abstrak

The area of Bandung municipality was 16,180.65 hectares with a population of 1,806,409 persons; so that it categorized as area with high population density that was 112 persons per hectares noted in 1998. It was implied that the high density of population by land use in 1997, which was more than 70% of this area occupied for settlement and industrial regions. With such populated area, one could expect a huge amount of waste accumulated. Municipal solid waste generated approximately 8,000 m3 per day that was disposed to three disposal sites. These were located at TPA (Tempat[Pembuangan Akhir) Sampah Leuwigajah, Jelekong and Pasir Impun. These areas operate until the year 2002. Therefore, Bandung municipality should seek a new location for disposal site.

To find new disposal site based on scientific considerations, geographical information system and approach were employed. The methods used were overlaying techniques with scoring method. The scoring method consisted of physical and social parameters. To determine the most suitable location, technical measurement was also considered. Solid waste disposed to TPA will be decomposed that create odor, gas and liquid that impact on the environment. Gas, especially methane would be flammable. While, the liquid might produce leachate that will be absorbed by the soil surface. In consequence, it would contaminate the ground water. Therefore, in determining most suitable disposal site one must discern physical and social conditions.

According to SK SNI T-11-1991-03 regarding TPA Sampah (Waste Disposal Site) Selection Procedures, physical condition parameters must be considered, e.g. altitude, slope, geological risk, soil type, and water table. While social condition parameters consist of population density, land use, and distance from waste source. Each parameter was scored according to the condition. Then, each thematic map was overlaid one to the other to have strata of the most suitable, suitable and not suitable areas for disposal site based on physical and social parameters.

There are 37 most suitable locations that must be analyzed to obtain selected location. Then, technical consideration was applied to determine the selected location. The technical consideration parameters contained location area, water discharge and recharge system, accessibility, and distance from the river, distance from the airport, traffic condition, and windrow. The most important parameter was location area. The measurement for location area with assumption for 15 years of operation period, and eight kecamatan would dispose its waste to the selected location. The eight kecarnatan were Margahayu, Margaasih, Katapang, Dayeuhkolot, Soreang, Cimahi Selatan, Cimahi Tengah and Cimahi Utara. These were highly dense population, so that it would not have its own disposal site. The disposal site area required would be around 212.12 hectares. In conclusion, the proposed, most suitable location for Bandung Municipal Solid Waste disposal site would be the area of 357.49 hectares, which was located in the border of Kecamatan

Soreang and Katapang.