SOLID WASTE LANDFILL SITE SELECTION FOR GREATER VISAKHAPATNAM MUNICIPAL CORPORATION USING REMOTE SENSING AND GIS

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ABSTRACT

Municipal solid waste generation is among the most significant sources which threaten the global environmental health. Site selection is an important and necessary issue for waste management in fast-growing countries like India. Because of the complexity of waste management systems, the selection of the appropriate solid waste landfill site requires consideration of multiple alternative solutions. Remote sensing data have been used to present conditions of the land use/land cover and geomorphology of the study area. All factors affecting the site environment were considered as per the guidelines of waste management and handling rules (2008) that include physical environment, man made network facilities. A Geographic Information System (GIS) was used for selection of landfill sites. Suitability maps were graded from 0 (lowest suitability) to 10 (highest suitability) using spatial information technologies. Suitable landfill areas represent optimal sites. The selected sites are Kottatalarivanipalem (1.81 km^2), Denduru (1.56 km^2), Yeduruvanipalem (1.07 km^2), Pydivada Agraham (1.03 km^2), Mantripalem (0.97 km^2), Mindivanipalem (0.91km^2) and Ramayogi Agraharam (0.89 km^2). The landfill site which covers large area may last longer period. My work can offer a sitting methodology and provides essential support for decision-makers in the assessment of waste management problems in the area and other rapidly developing cities in India. The results shows the Greater Visakhapatnam Municipal Corporation (GVMC) dumping site should follow the guidelines and recommendations given by the researcher for further managing and eradicate environmental issues in the environ of GVMC.

KEYWORDS: Solid Waste, Landfills, GIS and Remote Sensing