**Assessment of the optimized sanitary landfill sites in Muscat, Oman**

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In a global context, solid waste disposal by landfilling is the most suitable method utilized in developing countries. Siting the candidate location for landfills represents one of the successful applications of the Geographic Information Systems (GIS). The present study aimed to pinpoint the suitable locations for landfills in Muscat Governorate, Oman. The study region is witnessing fast population growth associated with accelerated solid waste production. Due to the topographic nature of the region, suitable landfill locations are limited. Twelve input parameters were processed in GIS environment using the weighted overlay analysis approach to select the most appropriate sites. These parameters included demographic, land use, topographic and hydrologic aspects. Results showed that the most suitable locations total only 2% of the region’s area. Suitable locations occur at As Seeb, Al Amrat and Qurayyat regions with a priority given to Al Amrat site. Field verification reveals a high confidence of the analysis. GIS proved sufficient as a tool for the assessment of landfill site selection.