

Analysis of Landfill Site Suitability in Greater Accra Metropolitan Area

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ABSTRACT

Disposal of waste in landfill is one of the waste disposal methods. It is also the simplest way of disposing waste. An inappropriate landfill site imposes negative impact on the environment, earth of the residents and the economy of the community. It is therefore crucial that all guidelines and regulations are duly followed when siting a landfill. The Environmental Protection Agency (EPA) has formulated guidelines for the selection of landfill site, albeit, it is hardly followed. Significant numbers of existing landfill sites in Greater Accra Metropolitan Area (GAMA) have received negative criticism in the media for inappropriate siting. This study sought to use the EPA regulations to identify suitable landfill site in GAMA. In the process, it looked at why the existing landfills hardly follow standard norms for siting landfill, spatial distribution and state of existing landfills and examines the perceived health impact of existing landfill sites on residents in close proximity. It further analyzes the willingness of residents to allow the location of a new landfill within their vicinity. The findings showed that, most landfill sites are located in Ga South District and none conform to EP A guidelines. Laboratory analysis of samples of leachate collected from the study localities showed the presence of total bacteria and fecal coliforms in quantities that are above acceptable standards. On the willingness to allow siting of a landfill within residents' locality, the study showed that residents will be willing to accept a landfill site in their locality when assured of prompt payment of compensation. Finally, using Geographic Information System (GIS) and Multi-Criteria Evaluation (MCE) methods, the study identified two potential landfill sites which are far from settlement. The acquisition of the landfills is subject to the engagement of local communities and payment of appropriate communities which may be affected.

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