

EGU21-10769

<https://doi.org/10.5194/egusphere-egu21-10769>

EGU General Assembly 2021

© Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.



Geographic information system and multi-criteria decision analysis as an assessment method for landfill site selection

Chelsea Langa, Jiajie Wang, Kengo Nakamura, Noriaki Watanabe, and Komai Takeshi

Tohoku, Graduate School of Environmental Studies, Sendai, Japan (langa.chelsea.adelina.p4@dc.tohoku.ac.jp)

Municipal solid waste (MSM) has been increasingly difficult to deal with, especially for cities of developing countries. In these cities, the increase in waste generation leads to open dumping and the development of landfills without the consideration of environmental assessment and monitoring, which may result in environmental disturbance and risk to human health. Therefore, the main goal of this study was to assess the adequacy of the placement of new landfills for Maputo city, Mozambique. The study used the geographic information system (GIS) based on a multi-criteria decision approach that combined environmental, social, and technical variables to aid in the assessment of potential landfill sites. Results indicate that approximately 50% of the area is suitable for landfill placement. A further on-site evaluation is important to validate the obtained results, nonetheless, this preliminary site selection can be integrated into the MSW landfill selection to optimize waste management.