

Solid Waste Management Methods and Land Degradation in Lira City West Division

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Abstract

This study examined the relationship between solid waste management practices and land degradation in Lira City West Division, where open dumping, unregulated land filling, and informal burning have led to severe environmental consequences, including soil contamination, vegetation loss, clogged drainage, flooding, and public health hazards. The research pursued three objectives: to assess the contribution of open dumping to land degradation, evaluate the impact of landfilling, and analyze the role of composting in mitigating degradation. Using a cross-sectional mixed methods design, data were gathered from 156 residents and municipal stakeholders through questionnaires and interviews. Quantitative data were analyzed via descriptive statistics and regression models, while qualitative responses were thematically coded. Findings reveal that open dumping is widespread and strongly associated with visible environmental harm, yet public awareness of its long-term degradation effects remain low. Mismanaged landfilling was similarly detrimental: In contrast, composting was acknowledged for enhancing soil quality but remained underutilized-85% reported rarely using it, and only 09% practiced it. Regression analysis confirmed that open dumping significantly exacerbates land degradation, whereas properly managed landfilling and composting substantially reduce it, with the model explaining 61% of the variance. The study concludes that while effective waste management solutions exist, their implementation is hindered by weak institutions, insufficient funding, and limited public awareness. It recommends strengthening regulatory enforcement, increasing investment in waste infrastructure, scaling community-based education to promote composting, and fostering multi-sectoral collaboration to support decentralized, context-appropriate innovations essential for reversing land degradation and advancing sustainable urban development in the division.

Keywords: Solid Waste, Management Methods, Land Degradation, Lira City West.

