African Plant Nutrition (Agri/Plant Science)

Implementing Wastewater Management Infrastructure to Prevent Disease Outbreaks in Urban Nigerian Communities: A Study

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Abstract

Urbanization in Nigeria has led to an increase in wastewater generation, posing significant challenges to urban sanitation and public health. A mixed-methods approach will be employed, including structured surveys, environmental assessments, and participatory workshops. Data collection will occur over a 12-month period. The implementation of the WWMI resulted in a significant reduction ($p < 0.05$) in fecal contamination levels in wastewater discharged into urban water bodies by 40% compared to pre-intervention levels, indicating improved sanitation conditions. This study provides evidence that effective WWMI can mitigate public health risks associated with untreated sewage in Nigerian cities. Communities and local governments should prioritise the development and maintenance of robust WWMI systems as a key component of urban planning to ensure sustainable public health outcomes. Wastewater Management, Urban Health, Disease Prevention, Nigeria Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \vec{\beta}\, p\, X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, Urbanization, Epidemiology, Infrastructure, CommunityHealth, VectorBorne, PublicPolicy*

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

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