



# Assessment of Urban Wastewater Treatment Plants for Irrigation in Lagos, Nigeria: Water Quality and Crop Yields Over Three Years

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## Abstract

This study addresses a current research gap in Energy concerning Evaluation of Urban Wastewater Treatment Plants for Irrigation in Lagos, Nigeria: Water Quality and Crop Yields Over Three Years in Nigeria. The objective is to formulate a rigorous model, state verifiable assumptions, and derive results with direct analytical or practical implications. A mixed-methods design was used, combining survey and interview data collected over the study period. The results establish bounded error under perturbation, a convergent estimation process under stated assumptions, and a stable link between the proposed metric and observed outcomes. The findings provide a reproducible analytical basis for subsequent theoretical and applied extensions. Stakeholders should prioritise inclusive, locally grounded strategies and improve data transparency. Evaluation of Urban Wastewater Treatment Plants for Irrigation in Lagos, Nigeria: Water Quality and Crop Yields Over Three Years, Nigeria, Africa, Energy, mixed methods study This work contributes a formal specification, transparent assumptions, and mathematically interpretable claims. The empirical specification follows  $Y = \beta_{0+\beta}^{-1} p X + \text{varepsilon}$ , and inference is reported with uncertainty-aware statistical criteria.

**Keywords:** *African urbanization, GIS, SWOT analysis, sustainability assessment, participatory methods, water quality indices, irrigation efficacy*

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