Urban Waste Water Management in Lagos: Development and Implementation of Advanced Treatment Technologies in Nigeria

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Abstract

Urban waste water management in Lagos, Nigeria is a critical challenge due to rapid urbanization and inadequate infrastructure. The methodology involved the selection of appropriate treatment technologies based on environmental impact assessments and stakeholder consultations. A mixed-method approach was used, including pilot studies and community engagement activities to ensure technology suitability and acceptance. A significant reduction in pollutant levels (up to 80%) was observed post-implementation of advanced treatment technologies, demonstrating the effectiveness of the implemented solutions. The implementation of advanced waste water management technologies has led to improved environmental conditions in Lagos, with notable reductions in pollutants and enhanced public health outcomes. Further research is recommended to explore long-term sustainability and cost-effectiveness of these technologies. Community education programmes should also be developed to ensure technology acceptance and maintenance. Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \beta^{-}\,p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Urbanization, Lagos, Nigeria, Advanced Treatment Technologies, Bioremediation, Environmental Engineering, Wastewater Management Systems*

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