



# Poultry Waste-to-Energy Conversion Technologies in Lagos, Nigeria: Environmental Impact Assessment and Economic Evaluation

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## Abstract

This study addresses a current research gap in Agriculture concerning Waste-to-Energy Conversion Technologies for Poultry Waste Management in Lagos, Nigeria: Environmental Impact Assessment and Economic Return 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. Waste-to-Energy Conversion Technologies for Poultry Waste Management in Lagos, Nigeria: Environmental Impact Assessment and Economic Return, Nigeria, Africa, Agriculture, original research This work contributes a formal specification, transparent assumptions, and mathematically interpretable claims. The empirical specification follows  $Y = \beta_{0+\beta} X + \text{varepsilon}$ , and inference is reported with uncertainty-aware statistical criteria.

**Keywords:** *African Agriculture, Poultry Waste Management, Anaerobic Digestion, Life Cycle Assessment, Energy Recovery Systems, Renewable Energy Technologies, Sustainable Waste Utilization*

## 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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