# Evaluating the Relationship Between Solid-Food Waste, Environment and Economic Security among Malnutrition in Nigeria



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## **Introduction and Objective**

Solid-food waste generation is estimated at 126.2million tonnes and 239.8 million tonnes of carbon -dioxide equal by 2020 ending. This huge solid -waste costs Nigeria \$750billion annually while millions of Nigerians are hungry and poor. Nigeria also ranks very-low in nutrition with the highest number of malnourished children under 5 years in sub-Saharan-Africa. 37%-of-Nigeria-children are stunted, 18%-wasting and 20% underweight - these stunning figures rank Nigeria as the second highest globally. While developed countries have been able to manage waste properly for increased environment-and-economic-security, this is farfetched in Nigeria. Since solid-food waste can cause health, environment and socioeconomic problems,

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there is need to investigate the relationship between solid-food waste, environment and economic security. The main objective of this study therefore was to evaluate the relationship

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Figure 1: Map of Nigeria (Amusan, 2016)

between solid-food-waste, environment and economic security among malnutrition in Nigeria.



Figures 2 & 3: Some Waste Sites (Amusan et.al 2018)

## Results



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Figures 5 - 11 Survey Pictures (Source: Fieldworks)

### **Results Summarized**

- Pollution/Health-risks (69.1%), limited-resources/funding (44.8%), lack-of-technical-skill (23.8%) and inadequate-management-skill (18.1%) are some identified challenges.
- 94.3% and 96.2% supported polluters'-pay-principle and dissemination of publicinformation on food-packaging as-well-as waste-reduction-reuse-recycling as part of waste-management practices respectively.
  - 97.1% of annually-generated-waste are solid-waste, which confirms the Waste-Habitof-Nigerians as 57%-organic/food-waste, 27%-plastics, 5%-glass, 5%-metal and 4%others.
  - 126.2 million tonnes food-waste equaling 239.8 million tonnes of carbon-dioxide and \$750 billion is generated yearly in Nigeria.
  - 95% are willing-to-pay for waste-management. Hypothesis-test yields a significant result at p-value<0.05 which shows that waste-management-challenges has effect on health issues/pollution in Nigeria.
  - ARDL-model F-statistics of 30.7805 confirms the long-term-relationship between measured variables related to solid-food-waste generation, environment and economic security. ARDL-model also confirms the inverted-correlation between economic-growth and environmental-degradation of Environmental-Kuznet-Curve's hypothesis.

# **Materials and Methods**

## Qualitative & Quantitative Analyses – "Mixed Methods"

- // Data on waste-management-practices were obtained through structuredquestionnaires randomly administered on 210 households in Nigeria.
- Æxperts'-workshops-and-interviews were organised for key-officials within relevant-industries to elicit technical-and-economic information.
- // The relationship between: waste, environment and economic security in Nigeria was examined for years 1981-to-2017.
- While waste-management-practices were evaluated using descriptive-and-inferential-statistics, Autoregressive-distributive-lag-(ARDL) was used to determine the relationship between solid-food-waste, environment and economic security.
  Figure 18: Map of Southwestern Nigeria (Amusan, 2016)

At 0.0048 p-value, the estimates enjoy the support of statistical-significance at-5%.

## Conclusions

- Undertaking established waste-management significantly limits the impacts on healthenvironment-socioeconomic-wellbeing.
- The research shows that improved-funding and dissemination of public-information on foodpackaging, as-well-as waste-reduction-reuserecycling enhance social-acceptability of wastemanagement-practices.
- This research also shows that solid-food-waste has significant impact on environment-and-economic security.

