



Tropentag, September 11-13, 2024, hybrid conference

“Exploring opportunities ...
for managing natural resources and a better life for all”

Evaluation of build food environments mapping approaches for policy decision making: Perspective from Kenya, Benin, Uganda and Ivory Coast

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Abstract

Mapping the build food environment is important for understanding availability, accessibility, and its impact on public health for policy and intervention planning. The Alliance of Bioversity and CIAT conducted food environment mapping, using three different mapping approaches – administrative and community approach in Kenya, and centered approach in Benin, Uganda and Ivory Coast. This study critically evaluates these approaches to determine their efficacy and limitations, while focusing on which method best integrates with geographical and public health data for enhanced policy decision-making.

The administrative approach employs predefined geographical national administrative boundaries like districts. The community approach focuses on smaller, specifically selected community areas within a larger region, attempting to capture localised food environment details. In contrast, the centered approach identifies a central point, e.g. school, hospital or shopping centre and encompasses a designated radius around it (e.g. 1 km).

The administrative approach provides a robust dataset that aligns well with national data systems, that easily synchronises with existing demographic and health data, ideal for comprehensive spatial integration and analysis, making it highly suitable for policymaking. However, in large administrative areas, it can be time intensive. The community approach, although rich in local insights, lacks accessible geographical and population data, necessitating local engagements for data acquisition, which often leads to estimation bias. The centered approach, the least costly, offers rapid data collection but may misrepresent the actual distribution of food vendors within the administrative area, affecting the reliability of derived indicators like vendor density per population or per square kilometer, that potentially leads to spatial estimation bias. Each method exhibits inherent trade-offs between accuracy, cost, and operational feasibility.

The study reveals that while each approach has its merits, the administrative method provides the most reliable framework for integrating spatial and health data, facilitating accurate policy analysis and decision-making. Future efforts should aim to leverage the strengths of each method to utilise the approach or develop a hybrid approach that maximises accuracy and efficiency, particularly in linking food environment characteristics with health outcomes to better inform public health strategies.

Keywords: Approach, framework, health outcomes, policy, retail, spatial