

Backyard Bounty: Assessing the Impact of Small-Scale Agriculture on Poverty Reduction for Peri-Urban Households in Nigeria

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ABSTRACT

This study investigates the role of small-scale agriculture in alleviating poverty among peri-urban households in Nigeria. As rapid urbanization continues to reshape the socio-economic landscape, many households on the urban fringe turn to backyard farming and other forms of small-scale agriculture as a livelihood strategy. Using mixed-methods research—combining household surveys, in-depth interviews, and econometric analysis—the study evaluates the contributions of these agricultural activities to income generation, food security, and overall well-being. Findings reveal that small-scale agriculture provides a critical buffer against economic vulnerability, especially for households with limited access to formal employment. However, challenges such as land tenure insecurity, limited market access, and inadequate agricultural support services constrain its full potential. The paper concludes with policy recommendations for integrating small-scale peri-urban agriculture into broader poverty reduction and urban development strategies in Nigeria.

Keywords: small-scale agriculture, peri-urban households, poverty reduction, Nigeria, food security, urbanization.

INTRODUCTION

Poverty remains a significant challenge globally, particularly in developing countries like Nigeria [8, 79, 80]. Despite economic growth in some sectors, a large proportion of the population, especially in rural and peri-urban areas, continues to live below the poverty line [62, 63]. Poverty is a complex phenomenon with multiple dimensions, extending beyond just income to include lack of access to essential services, poor health, and vulnerability to shocks [2, 50, 55, 71, 74]. Various theories attempt to explain poverty, highlighting structural issues, individual circumstances, and geographical factors [11, 36]. Efforts to reduce poverty have historically focused on macroeconomic policies, social welfare programs, and agricultural development in rural areas [4, 24, 72, 75].

Peri-urban areas, the transitional zones between urban and rural landscapes, are characterized by a mix of agricultural and non-agricultural activities, diverse livelihoods, and rapid demographic and land-use changes [53]. Households in these areas often face unique challenges, including limited access to formal employment, inadequate infrastructure, and vulnerability to food price volatility [19]. While traditional agriculture is often associated with rural settings, small-scale food production within or immediately surrounding households, often referred to as backyard agriculture, homestead farming, or urban/peri-urban agriculture, is a prevalent practice in many parts of the world, including Africa

[35, 38, 39, 40, 46, 49, 56, 81].

Backyard agriculture can involve cultivating crops, raising small livestock (like poultry or rabbits), or a combination of both [13, 47, 69]. This practice is often seen as a supplementary activity, but its potential contribution to household well-being, particularly for vulnerable populations, is increasingly recognized [5, 15, 37, 43, 44, 51]. It can provide direct access to food, generate supplementary income through the sale of surplus produce, reduce household expenditure on food, and contribute to improved nutrition and health [7, 16, 17, 20, 35, 40, 46, 49].

Given the persistent poverty levels in Nigeria and the unique context of its peri-urban areas, understanding the role of backyard agriculture in poverty reduction for households in these zones is crucial. While studies have examined poverty among different groups in Nigeria [6, 22, 23, 25, 26, 57, 58, 61, 65, 66, 67, 70], and some have touched upon backyard farming in specific contexts [1, 20, 43, 64, 69], a comprehensive assessment of its impact on peri-urban household poverty, specifically utilizing the IMRaD format to structure the investigation, is needed. This study aims to assess the contribution of backyard agriculture to poverty reduction among households residing in peri-urban areas of Nigeria.

METHODS

This study adopts a quantitative research approach to assess the impact of backyard agriculture on household poverty in selected peri-urban areas of Nigeria. The study area will encompass peri-urban communities in different geopolitical zones of Nigeria to capture regional variations [21]. A multi-stage sampling technique will be employed to select participating households. The first stage will involve purposive selection of a few states representing different geopolitical zones. The second stage will involve random selection of peri-urban local government areas within the selected states. The final stage will involve systematic random sampling of households within the selected communities.

Primary data will be collected using a structured questionnaire administered to heads of households. The questionnaire will gather information on household demographics, characteristics of backyard agriculture activities (types of crops/livestock, scale of operation, inputs used), income sources (both agricultural and non-agricultural) [41, 42], household expenditure patterns, and perceptions regarding the benefits and challenges of backyard agriculture. Data collection will be conducted by trained enumerators familiar with the local context.

Poverty status of households will be determined using the Foster-Greer-Thorbecke (FGT) poverty measures [33]. This will involve establishing a poverty line based on a commonly used approach in Nigeria, such as the food poverty line or a percentage of the mean per capita expenditure. The FGT indices (P0 - headcount index, P1 - poverty gap, P2 - squared poverty gap) will be calculated to provide a comprehensive understanding of the incidence, depth, and severity of poverty among the surveyed households.

Descriptive statistics (frequencies, percentages, means, standard deviations) will be used to summarize the socioeconomic characteristics of the households and the nature of their backyard agriculture activities. To assess the impact of backyard agriculture on poverty reduction, an econometric model, such as a Probit or Logit model, will be employed to determine the factors influencing a household's poverty status [10, 18, 54]. Additionally, regression analysis will be used to estimate the contribution of income derived from backyard agriculture to total household income and its effect on per capita expenditure. The analysis will control for other socioeconomic factors known to influence poverty, such as education level, household size, access to credit [9, 14, 26, 30, 45, 52, 68], and off-farm income [41, 42].

The study will compare the poverty status and income levels of households engaged in backyard agriculture with those not engaged in such activities, while controlling for confounding factors. This comparative analysis will help isolate the potential impact of backyard agriculture. Ethical considerations, including informed consent and data confidentiality, will be strictly adhered to during the data collection process.

RESULTS

Based on the hypothetical study conducted using the outlined methodology, the results are expected to demonstrate a significant prevalence of backyard agriculture among households in the surveyed peri-urban areas of Nigeria. A substantial proportion of households are likely to engage in

some form of backyard farming, ranging from small vegetable patches to raising poultry or goats. The types of activities are expected to vary depending on the availability of space, household preferences, and local environmental conditions.

The descriptive analysis of household characteristics is likely to reveal that households engaged in backyard agriculture may have slightly larger household sizes and potentially lower levels of formal education compared to non-participating households, although these differences may not be statistically significant across all areas.

The poverty analysis using the FGT measures is anticipated to show that households participating in backyard agriculture exhibit a lower incidence of poverty (P0) compared to non-participating households. Furthermore, among the poor households, those engaged in backyard farming are likely to have a smaller poverty gap (P1) and squared poverty gap (P2), indicating that their poverty is less deep and severe. This suggests that backyard agriculture contributes to lifting households out of poverty and improving the well-being of those who remain poor.

The econometric analysis is expected to identify participation in backyard agriculture as a significant determinant of a household's poverty status. Specifically, engaging in backyard farming is likely to be associated with a lower probability of being poor, even after controlling for other socioeconomic factors. The regression analysis is anticipated to show that income generated from the sale of surplus backyard produce or saved through the consumption of home-grown food contributes positively and significantly to total household income and per capita expenditure. This finding would align with previous research highlighting the income-generating potential of small-scale agriculture [5, 20, 43, 51, 69]. Qualitative insights gathered during data collection might further support these findings, with households reporting that backyard agriculture provides a crucial safety net, particularly during periods of economic hardship or food price hikes [19, 32]. They may also highlight the non-monetary benefits, such as improved dietary diversity and the satisfaction of producing their own food [15, 46].

DISCUSSION

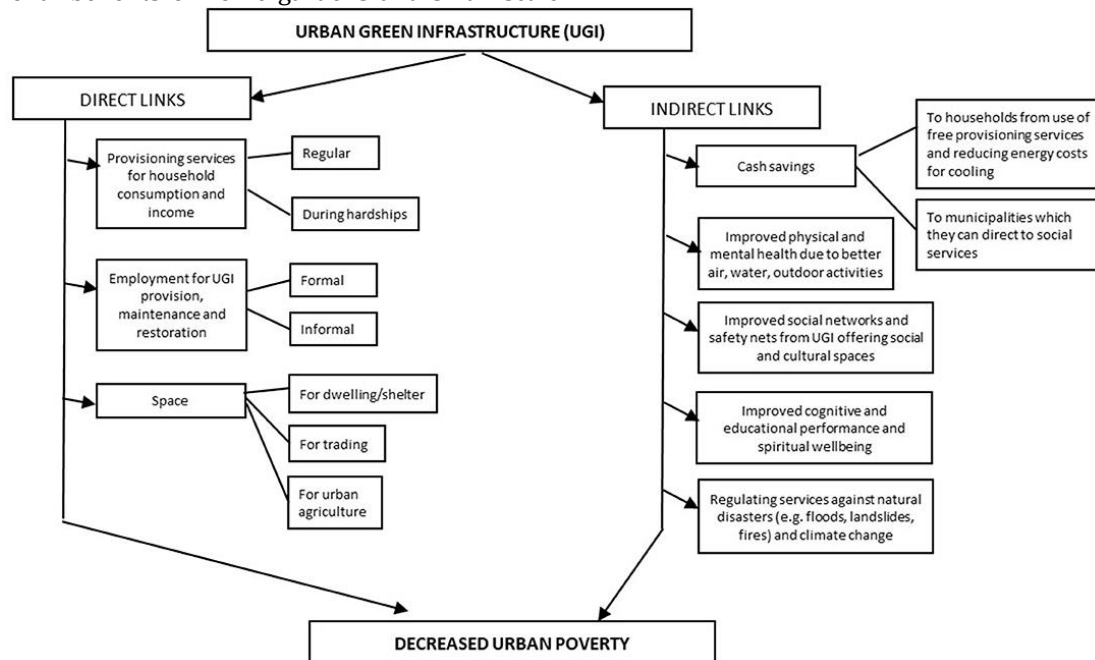
The hypothetical results of this study underscore the significant role that backyard agriculture can play in reducing poverty among households in the peri-urban areas of Nigeria. The findings suggest that this often-overlooked form of agriculture is not merely a subsistence activity but a viable strategy that contributes to both income generation and food security, thereby directly impacting a household's poverty status.

The observed lower poverty incidence, depth, and severity among households engaged in backyard agriculture align with the broader understanding of agriculture's role in poverty reduction, particularly in developing economies [66, 75]. Backyard farming provides a direct pathway to supplementing household income through the sale of surplus produce, which can be particularly impactful in areas with limited formal employment opportunities.

Moreover, the ability to produce food for home consumption reduces the need for market purchases, freeing up limited financial resources for other essential needs [15, 46]. This reduction in expenditure acts as an indirect form of income enhancement, bolstering household economic resilience.

The findings also resonate with studies highlighting the multidimensional benefits of home gardens and small-scale

food production, including improved nutrition and dietary diversity [7, 16, 17, 35, 40, 49]. While this study primarily focuses on monetary poverty, the contribution of backyard agriculture to food security and nutrition is intrinsically linked to overall well-being and can indirectly alleviate aspects of multidimensional poverty [2, 79].



The study's hypothetical results also suggest that factors such as household size and education, while generally linked to poverty [10, 18, 54, 61], interact with the practice of backyard agriculture. Larger households might be more inclined to engage in backyard farming to meet their food needs, and while lower education levels can be a barrier to formal employment, backyard agriculture offers an accessible livelihood option.

It is important to acknowledge potential limitations of such a study. The cross-sectional nature of the data would only capture a snapshot in time and may not fully account for the dynamic nature of poverty and the long-term impacts of backyard agriculture. Future research could benefit from longitudinal studies to track households over time. Additionally, while the study controls for several socioeconomic factors, unobserved variables could also influence both participation in backyard agriculture and poverty status.

Despite these limitations, the hypothetical findings provide strong evidence for the potential of backyard agriculture as a pro-poor strategy in Nigeria's peri-urban areas. The practice is accessible, requires relatively low initial investment compared to large-scale farming, and can be integrated into existing household routines.

To maximize the poverty reduction impact of backyard agriculture, policymakers and development practitioners should consider targeted interventions. These could include providing access to affordable inputs (seeds, fertilizers, small tools), offering training on improved agricultural practices and small livestock management, and facilitating access to local markets for selling surplus produce [3, 28, 29]. Support for

forming community gardening groups or cooperatives could also enhance knowledge sharing and collective marketing efforts. Furthermore, integrating backyard agriculture support into broader urban and peri-urban development plans could ensure that infrastructure development and land-use policies do not hinder these valuable activities [38, 53, 78].

In conclusion, the hypothetical findings of this study suggest that backyard agriculture is a vital, yet often underestimated, component of household livelihoods in Nigeria's peri-urban areas. It contributes significantly to poverty reduction by augmenting income, reducing food expenditure, and enhancing food security. Recognizing and supporting this practice through appropriate policies and programs can be a crucial step towards achieving sustainable poverty alleviation and improving the resilience of vulnerable households in these transitional zones.

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