



Home Based Land Use for Sustainable Income Generation: A Microeconomic Perspective

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Abstract. This study explores the impact of home-based land use on sustainable income generation among households in Paroki Onekore, Ende Tengah District, Indonesia. As urban areas grapple with rapid population growth, resource scarcity, and limited environmental awareness, optimizing the use of residential yard spaces becomes essential. Using a descriptive quantitative research approach, data were collected from 95 households selected through purposive sampling and analyzed through simple linear regression using SPSS software. The results reveal a significant positive relationship between yard utilization and household income, with a coefficient of determination (R^2) of 0.604, indicating that 60.4% of income variation can be explained by yard use practices. The findings highlight the importance of community empowerment programs, local knowledge, and resource access in promoting home-based agriculture. By transforming underutilized land into productive assets, families can strengthen food security, reduce expenses, and generate supplemental income. The study recommends increased support for training, resource provision, and integration into community development strategies to foster sustainable urban livelihoods.

Keywords: household income, urban agriculture, sustainable livelihoods, community empowerment.

1 Introduction

Urban areas are increasingly facing socio-environmental challenges in the era of globalization, including population growth, lifestyle shifts, and limited public awareness regarding the sustainable use of home yard spaces. In regions such as St. Yosef Onekore Parish in Ende Tengah Subdistrict, Ende Regency, the lack of knowledge in utilizing residential land effectively has contributed to environmental degradation and inefficient use of natural resources. These challenges highlight the need for targeted community empowerment programs aimed at enhancing people's livelihoods through capacity building and resource optimization (Solihah, 2020).

Community empowerment plays a crucial role in improving household welfare by developing local potential and strengthening self-reliance. In the context of home yard utilization, empowerment includes providing communities with skills, knowledge, and access to sustainable farming practices. Productive use of yard land can support food security, improve family income, and contribute to environmental sustainability. When implemented using participatory approaches, such initiatives also promote ownership, raise awareness, and strengthen social cohesion (Luta, Fariz, & Warisman, 2022; Madyowati & Oetam, 2017).

Although the Onekore Parish area has considerable potential in terms of available yard land, much of it remains underutilized due to limited literacy and training. Statistical data from the parish office show that among the 2,082 households across 20 community clusters (KUB), a total yard area of 1,524.97 m² is available. However, most residents do not yet treat these spaces as productive resources. Therefore, an integrated empowerment program focused on sustainable yard use—such as home gardening—could serve as a practical solution to improve local income and alleviate food insecurity in this urban community (Arifin, 2018; Parish Office Data, 2023).

2 Literature Review

Home yard land, defined as the area surrounding a household residence, has great potential to support food production, enhance nutrition, and increase household income. According to Eka-wati and Hery (2020), residential yards can be used for a variety of productive purposes, including agriculture, fisheries, and animal husbandry. The theoretical basis of home yard utilization includes the concept of land productivity, sustainability, community participation, and household nutrition. Productive use depends on selecting appropriate crops, adequate fertilization, pest management, and environmentally friendly technologies (Fausi & Argo, 2019; Setiawan & Wijayanti, 2020).

Several factors influence how residents utilize their yard space, including land availability, location, soil condition, climate, labor, time, and household needs. Fertile land and favorable climates enhance the potential for varied plant cultivation, while urban limitations often reduce available yard space (Pertiwi, 2020). These variables significantly affect whether home yard land can be transformed into a reliable source of income or food. The level of awareness and knowledge about sustainable agriculture also influences utilization outcomes.

The yard serves multiple economic and social functions, as noted by Solihah (2020). These include serving as a "living granary" for food security, a "living pharmacy" for medicinal plants, and a "living shop" for income generation. Socially, it supports community interaction, seed and seedling exchange, and green aesthetics. Households with well-managed yards can cultivate fruits, vegetables, herbs, or livestock, making their yards vital for subsistence and income, particularly in urban fringe areas like Paroki Onekore.

The benefits of yard utilization extend beyond economic value. They promote food sovereignty by reducing dependence on external food sources, support environmental preservation through urban greening, and serve as platforms for entrepreneurial initiatives. Home gardens have been acknowledged as entry points for household-scale agroecological practices that build resilience in vulnerable communities (Madyowati & Oetam, 2017; Arifin, 2018). They also offer educational opportunities for youth to learn about sustainable agriculture.

Community empowerment programs that promote the use of residential yards—such as urban farming in Bandung, family gardens in Pugeran, or fish pond integration in Pulo Asahan—show that local initiatives supported by training, resource distribution, and community collaboration can increase household welfare (Megawati, Asmirelda, & Octaviani, 2020). These programs enhance income through diversified livelihoods while promoting environmental and food security goals.

3 Research Methodology

This study uses a descriptive quantitative research design to analyze the relationship between home yard utilization and household income in the area of Paroki Onekore, Ende Tengah District, Indonesia. The quantitative approach, rooted in positivist philosophy, aims to examine variables through statistical analysis and hypothesis testing (Sugiyono, 2018). The independent variable (X) is *home yard utilization*, operationally defined by activities such as home gardening, live-stock raising, and small-scale agricultural production. The dependent variable (Y) is *household income*, which includes income generated from food production, animal husbandry, and any economic activities derived from yard use. Primary data were collected through observations, structured interviews, questionnaires, and document analysis, while secondary data were obtained from parish records and demographic statistics.

The population of the study consists of 2,082 households in the Paroki Onekore area. The sample size was determined using the Slovin formula, which is suitable when the population is known and a margin of error is acceptable. The formula used is:

$$n = \frac{N}{1 + N(e)^2} \quad n = \frac{1 + N(e)^2}{2N}$$

Where:

- nn = required sample size
- NN = total population (2,082)
- ee = margin of error (10% or 0.10)

$$n = \frac{2082}{1 + 2082(0.10)^2} = \frac{2082}{1 + 2082 \cdot 0.10} = \frac{2082}{208.2} \approx 9.95 \approx 10$$

Thus, a sample of 95 households was selected using purposive sampling, which allows researchers to choose respondents who are directly involved in home yard utilization. This method is suitable for non-probability sampling in quantitative research where generalization is not the primary goal (Sugiyono, 2018:85; Ridwan & Desi, 2021).

3.1 Data Analysis Technique

The data analysis in this study involves several stages to ensure validity, reliability, and the appropriateness of the regression model used. Validity testing was conducted to assess whether the questionnaire items accurately reflect the variables being measured, using correlation coefficients where an item is valid if the calculated r-value exceeds the r-table value (Ghozali, 2018). Reliability was tested using Cronbach's Alpha, where a coefficient of ≥ 0.60 indicates consistent and reliable results. Classical assumption tests were also applied, including normality (via Kolmogorov–Smirnov test), linearity (Test for Linearity), multicollinearity (using Tolerance and VIF), and heteroscedasticity to check the residual distribution pattern. To determine the effect of home yard utilization (independent variable, X) on household income (dependent variable, Y), simple

linear regression analysis was applied with the following model: $Y = a + bX + e$, where a is the intercept, b is the regression coefficient, and e is the error term. Hypothesis testing included the t -test for partial significance, and the coefficient of determination (R^2) to assess how much variation in household income can be explained by yard utilization. The entire analysis was carried out using SPSS software at a significance level of 5%.

4 Results and Discussion

The results of the simple linear regression analysis indicate that home yard utilization has a significant positive effect on household income in the Paroki Onekore area. From the statistical output using SPSS, the regression equation is obtained as:

$$Y = a + bX + e \Rightarrow \text{Household Income} = 2.114 + 0.637 \times \text{Yard Utilization}$$

The t -test result shows a significance level (p -value) of 0.000, which is lower than the 0.05 threshold, indicating that the independent variable (yard utilization) has a statistically significant impact on the dependent variable (household income). The coefficient of determination (R^2) was found to be 0.604, meaning 60.4% of the variation in household income can be explained by how effectively households utilize their yard areas.

These findings suggest that small-scale agricultural activities, such as growing vegetables, keeping livestock, or cultivating herbal plants within household yards, contribute meaningfully to family income. Households that optimized the use of their land were observed to have lower food expenses and, in many cases, generated additional income through the sale of produce. The data also highlight that awareness, training, and access to resources significantly enhance the economic benefits of yard utilization. These findings are consistent with previous studies (Solihah, 2020; Syamsu et al., 2023), which confirmed the role of productive home yard use in increasing resilience and income in urban or semi-urban communities.

5 Conclusion and Recommendation

5.1 Conclusion

This study concludes that **home yard utilization has a statistically significant and positive influence on household income** in Paroki Onekore, Ende Tengah District. The more actively and productively a household uses its yard space, the higher its potential income. This result reinforces the notion that household-scale agricultural practices, even in urban or peri-urban areas, can contribute to both food security and economic well-being. Moreover, the use of simple regression analysis confirmed the strength of this relationship, with over 60% of income variation explained by yard utilization practices.

5.2 Recommendation

Based on the findings, the following recommendations are proposed:

1. **Community Training Programs:** Local authorities and parish-based organizations should organize regular training on home-based agriculture and sustainable yard use.
2. **Provision of Agricultural Inputs:** Support such as seeds, organic fertilizers, and basic tools should be made accessible to households, particularly those with untapped yard potential.
3. **Integration into Parish Development Plans:** The church-based community (KUB and Lingkungan) should include yard optimization as part of their social empowerment initiatives.
4. **Market Linkage and Entrepreneurship Support:** Encourage the formation of cooperatives or community markets where surplus produce can be sold, thereby promoting micro-entrepreneurship.
5. **Further Research:** Future studies could explore broader socio-cultural factors that affect yard utilization behavior and expand to comparative locations for generalization.

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