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A Sustainable Housing Solution for Informal Settlers from the Eight Barangays of Tanauan City, Batangas

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Abstract

Informal settlements remain one of the most persistent urban development challenges in rapidly urbanizing cities in the Philippines. This study aimed to develop a sustainable housing solution for informal settlers in Tanauan City, Batangas through the formulation of a sustainable subdivision and vertical housing framework responsive to social, economic, environmental, and cultural realities. A participatory mixed-methods research design was employed integrating surveys, key personnel interviews, site observations, and secondary data analysis. Findings revealed that informal settler communities continue to experience housing insecurity, inadequate drainage systems, environmental degradation, limited green spaces, and insufficient disaster-resilient infrastructure despite relatively stable household incomes. The study proposed the Kanlungan Vertical Village, a sustainable housing framework integrating climate-responsive architecture, renewable energy systems, resilient infrastructure, livelihood integration, and community-centered planning. The proposed framework aligns with Sustainable Development Goals 9 and 11, RA 7279, DHSUD standards, and sustainable urban development principles. The study concludes that sustainable housing must extend beyond shelter provision and function as an integrated socio-economic and environmental intervention that promotes resilience, inclusivity, accessibility, and human dignity.

Keywords: Sustainable Housing, Informal Settlers, Urban Resilience, Social Poverty, Tanauan City, Sustainable Urban Development

1. Introduction

Rapid urbanization in developing countries has intensified the proliferation of informal settlements, particularly in urbanizing areas where housing demand exceeds supply. In Tanauan City, Batangas, informal settler communities continue to experience inadequate housing conditions, insecure tenure, environmental degradation, overcrowding, and insufficient access to utilities and public services. These conditions contribute to socio-spatial inequality and urban degradation. This study investigated the living conditions and housing needs of informal settlers from eight barangays of Tanauan City and proposed a sustainable housing framework responsive to environmental, social, and economic realities.

2. Methods

The study employed a participatory mixed-methods research design integrating quantitative and qualitative approaches. Data were gathered through household surveys, key personnel interviews, site

observations, and secondary data analysis. A total of 150 respondents from the eight barangays were selected using stratified random sampling based on Slovin's Formula. Descriptive statistics such as frequency distribution, percentage analysis, and weighted mean were used to analyze quantitative data, while qualitative findings were interpreted through thematic analysis. Spatial analysis was conducted using Google Maps, Google Earth, and site assessment techniques.

3. Results and Discussion

Findings revealed that the majority of respondents belonged to mature and long-established communities. Many households experienced overcrowding, inadequate drainage systems, environmental vulnerability, and insufficient green spaces despite relatively stable income sources. Transportation accessibility and community cohesion emerged as strengths within the informal settlements. The proposed Kanlungan Vertical Village integrates climate-responsive architecture, renewable energy systems, rooftop solar photovoltaic panels, sky gardens, water conservation systems, and resilient infrastructure planning. The framework supports social inclusivity, environmental sustainability, and long-term urban resilience while preserving accessibility to livelihood opportunities.

4. Conclusion

The study concludes that sustainable housing for informal settlers must function beyond physical shelter provision and serve as a comprehensive socio-economic and environmental intervention. The proposed housing framework demonstrates the potential of integrating resilience, accessibility, renewable energy, and community-centered planning into sustainable urban development. The findings may guide local government units, housing agencies, urban planners, and policymakers in developing inclusive and resilient housing programs for vulnerable urban communities.

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