Analysis of the Impact of Slum Area Development in Tapak Kuda Village, Langkat Regency

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Abstract

This study aims to analyze the existing conditions, impacts, causal factors, and management strategies of slum areas in Tapak Kuda Village, Langkat Regency. The research employs a descriptive qualitative method, with data collected through field observations, in-depth interviews, and documentation. The results show that the residential area in Tapak Kuda Village is categorized as slum, indicated by limited access to clean water (55%), inadequate sanitation (48%), clogged drainage (60%), and uncontrolled waste management (70%). These conditions have negative impacts on the environmental, health, social, and economic aspects of the community. The factors contributing to the formation of slum areas include unplanned population growth, low economic capacity of residents, weak spatial planning supervision, and low awareness of clean living behavior. Efforts to address these issues have been undertaken by both the government and the community, but remain partial. Therefore, this study recommends a collaborative slum area management strategy through the improvement of basic infrastructure, strengthening of community institutions, and empowerment of the local economy to achieve livable and sustainable settlements.

Keywords: Slum Area, Settlement, Environmental Impact, Area Revitalization, Sustainable Development Strategy

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Introduction

Regional development is an essential part of efforts to improve community welfare [1]. However, not all development is carried out in a planned and sustainable manner. One of the recurring issues in the process of urbanization and settlement growth is the emergence of slum areas [2]. This phenomenon is also evident in Tapak Kuda Village, Langkat Regency, which in recent years has experienced an increase in densely populated and unplanned housing due to limited land availability, poor access to basic infrastructure, and weak spatial planning supervision. These conditions have led to various multidimensional problems that affect not only environmental quality but also social, economic, and public health aspects.

The characteristics of slum areas in Tapak Kuda Village include high building density, substandard building materials, poor sanitation systems, and limited access to clean water and drainage. As a result, residential environments are highly vulnerable to flooding, pollution, and the spread of environmentally related diseases. In addition, the poor quality of roads, lighting, and public facilities exacerbates social inequality and lowers residents' quality of life. These conditions indicate that unplanned development can actually create new vulnerabilities for the community.

Various government programs, such as KOTAKU (Cities Without Slums) and the Self-Help Housing Stimulant Assistance Program (BSPS), have been implemented to address slum settlement issues. However, their effectiveness in Tapak Kuda Village still needs to be evaluated. Without an in-depth analysis of the impacts of slum area development on community life and environmental conditions, interventions risk being ineffective or misdirected [3]. Therefore, a comprehensive study is needed to analyze the impacts of slum area development in Tapak Kuda Village covering environmental, social, and economic aspects as a basis for formulating more sustainable settlement revitalization strategies.

Table 1. Data on Settlement Conditions and Basic Infrastructure

Aspect	Condition
Area identified as slum	12.5 hectares (± 27% of residential area)
Building density	± 220 units/Ha (very dense category)
Access to clean water	55% use dug wells or surface water
Sanitation system	48% pit latrines discharge directly into drains/rivers
Drainage	60% open channels clogged with waste
Waste management	70% disposed into rivers or vacant land
Access to neighborhood roads	45% still unpaved or damaged

Based on data regarding housing conditions and basic infrastructure in Tapak Kuda Village, it is known that the area identified as slum covers approximately 12.5 hectares, equivalent to about 27% of the total residential area. This proportion indicates that nearly one-third of the settlement area is in uninhabitable condition. The building density reaches around 220 units per hectare, which falls into the very dense category. This condition not only limits residents' living space but also reduces the potential for environmental improvement due to the lack of open areas.

Access to clean water remains a fundamental issue, as about 55% of residents still rely on dug wells or surface water, the quality of which is often unsafe. This limited access to clean water is worsened by inadequate sanitation systems, with 48% of households still using pit latrines that discharge directly into ditches or rivers. Such sanitation practices can contaminate water sources and increase the risk of environmentally transmitted diseases, such as diarrhea and skin infections.

Environmental problems are also evident in the drainage system, where about 60% consists of open channels clogged with waste, causing frequent blockages. This leads to waterlogging during the rainy season, which negatively affects residents' health and mobility. Waste management is also suboptimal, with around 70% of residents reportedly disposing of garbage into rivers or vacant land. These conditions create a dirty and unhealthy environment and pollute surrounding ecosystems. In terms of accessibility, about 45% of local roads remain unpaved or are damaged, limiting community activities and slowing emergency responses such as health and fire services.

These various issues indicate that the development of residential areas in Tapak Kuda Village has not fully considered the principles of livability and sustainability. Therefore, the study on "Analysis of the Impact of Slum Area Development in Tapak Kuda Village, Langkat Regency" is crucial to comprehensively examine how poorly managed settlements affect the environmental, social, and economic aspects of the community. The results of this analysis are expected to serve as a foundation for formulating more targeted and sustainable slum area management strategies.

Identiffication of the Problem

Based on the background and existing conditions in Tapak Kuda Village, the identified problems are as follows:

1. A portion of the residential area in Tapak Kuda Village has developed into slum settlements covering approximately 12.5 hectares, or about 27% of the total residential area.
2. The high building density (±220 units/ha) has led to limited open spaces and deteriorating environmental quality.
3. Access to clean water remains low, with 55% of residents relying on unprotected water sources such as dug wells and surface water.
4. The sanitation system is inadequate, with 48% of households still using pit latrines that contaminate drainage channels and the surrounding environment.
5. The drainage system functions poorly, as most channels are open and clogged with solid waste.
6. Waste management is not handled systematically, with 70% of residents disposing of garbage into rivers or vacant land.
7. Access roads within the settlement are inadequate, with 45% still unpaved or damaged.
8. There has been no comprehensive evaluation of the social, economic, and environmental impacts resulting from the development of these slum areas.

Formulation of the problem

Based on the problem identification above, the research questions of this study are as follows:

1. What is the existing condition of the settlements and basic infrastructure in the slum area of Tapak Kuda Village, Langkat Regency?
2. What are the impacts of slum area development on the environmental, health, social, and economic conditions of the local community?
3. What factors contribute to the formation of slum areas in Tapak Kuda Village?
4. What efforts or interventions have been undertaken by the government and the community to address the slum settlement problems?
5. What are the appropriate strategies for the redevelopment and improvement of the slum area in Tapak Kuda Village to make it more livable and sustainable?

Literature Review

2.1 Definition of Slum Areas and Assessment Indicators

Slum areas (informal settlements) are generally defined as clusters of housing in urban areas that lack one or more basic characteristics: security of land tenure, access to safe drinking water, adequate sanitation, durable housing structures resistant to extreme weather, and sufficient living space (no more than three persons per room) [4]. This operational definition and its indicators are essential as the basis for measuring the extent and severity of slum conditions in the study area, as well as for evaluating post-development improvements [5].

2.2 Causes of Slum Formation

Contemporary studies indicate that the formation of slum areas results from the interaction of structural and local factors, including rapid urbanization without adequate affordable housing supply, urban poverty, insecure land tenure, failures in spatial planning, and disruption of basic services (water, sanitation, drainage) [6]. These factors collectively create conditions that trigger high-density settlements, non-permanent housing structures, and limited infrastructure all of which are relevant in analyzing the case of Tapak Kuda Village.

2.3 Environmental and Health Impacts of Slum Settlements

Numerous systematic studies have shown that infrastructure interventions in slum settlements (e.g., improving sanitation, water supply, and drainage) can significantly reduce the incidence of environment-related diseases, particularly diarrhea and waterborne illnesses [7]. However, evidence regarding economic effects or long-term benefits is mixed and often depends on program design, community participation, and risk relocation (e.g., displacement). Therefore, impact analysis should differentiate between immediate/short-term effects (such as health and hygiene improvements) and medium–long-term effects (such as income growth, social resilience, and land tenure regularization).

2.4 Approaches to Slum Management and the Effects of Upgrading (Recent Empirical Studies)

Recent literature on slum-upgrading programs shows that in-situ interventions (improving facilities without large-scale relocation), community participation, and local institutional strengthening tend to produce more sustainable benefits such as improved access to public services, reduced water costs, and better sanitation conditions [8]. However, outcomes

remain context-dependent; success relies on multi-agency coordination, sustainable financing, and sensitivity to local socio-economic dynamics. Evaluations of national programs such as KOTAKU (Cities Without Slums) demonstrate varying levels of success across regions, highlighting the need for case-specific evaluations like that of Tapak Kuda Village to assess local implementation and identify factors of success or failure.

1. Proposed Analytical Framework for This Study
2. Based on theoretical reviews and empirical findings, this research adopts a multi-dimensional analytical framework integrating the following aspects:
3. Physical-Environmental Aspect Indicators: extent of slum areas, building density, drainage condition, road access, water quality.
4. Health and Sanitation Aspect Indicators: incidence of environment-related diseases, access to proper toilets, sources of drinking water.
5. Socio-Economic Aspect Indicators: livelihood sources, income level, access to public services, perception of safety and well-being.

Institutional/Implementation Aspect Indicators: type of development intervention (in-situ vs. relocation), community participation, and policy/program support (e.g., KOTAKU, BSPS). This framework enables both quantitative impact measurement and qualitative process understanding, thereby capturing the direct effects of physical development and its broader socio-economic consequences in Tapak Kuda. It also guides the collection of relevant field variables for comparative analysis between pre- and post-intervention conditions.

Research Methodology

3.1 Research Approach

This study employs a qualitative approach using a case study design, aiming to explore in depth the experiences, perceptions, and socio-environmental consequences of slum development and upgrading [9] in Tapak Kuda Village. The qualitative approach is chosen because the research focuses on understanding meaning, processes, and local contexts rather than merely measuring numerical variables thus allowing for an examination of social dynamics, actor interactions, and context-specific, multi-dimensional impacts [10]. Contemporary qualitative design principles emphasize openness to data, contextual sensitivity, and researcher reflexivity throughout the research process [11].

3.2 Research Location and Subjects

The research is conducted in Tapak Kuda Village, Langkat Regency, particularly in areas identified as slum zones. The research subjects consist of several groups of stakeholders:

1. Residents of the slum area (including male/female representatives, household heads, and youth),
2. Village and sub-district officials involved in settlement planning and management,
3. Program implementers or NGOs engaged in related projects (e.g., KOTAKU or BSPS, if applicable), and
4. Community leaders and local economic actors.

These subjects are selected to obtain a holistic perspective on the development impacts from multiple actors' viewpoints.

3.3 Sampling Technique

The study applies purposive sampling with criterion-based and maximum variation strategies to ensure the inclusion of informants who have relevant experience or knowledge of the phenomenon [12] (e.g., households receiving interventions, residents affected by flooding, and program implementers). When necessary, the snowball sampling technique will be used to identify key informants who are difficult to reach.

This purposive approach aligns with modern qualitative research practice, which emphasizes the relevance of informants to the research objectives rather than statistical representativeness. The number of informants will be determined based on the principle of data saturation that is, when emerging themes become repetitive and no new information adds substantive understanding.

3.4 Data Collection Techniques

Primary data are collected through data triangulation techniques to enhance the depth and validity of findings:

1. Semi-Structured Interviews: Conducted with residents, village officials, and program implementers. The interview guide covers topics such as changes in settlement conditions, impacts on health and livelihoods, community participation in planning, and future expectations. Interviews are recorded (with consent) and fully transcribed for analysis.
2. Focus Group Discussions (FGDs): Used to explore collective perceptions regarding the effectiveness of interventions, conflicts of interest, and community adaptation strategies. FGDs help capture social dynamics and the consensus or contradictions among different resident groups.
3. Participatory and Non-Participatory Observation: Observation of physical conditions (e.g., building density, sanitation, drainage, road access) is conducted to validate qualitative data from interviews and to document physical changes following interventions. Field notes are recorded systematically for analysis.

Results

4.1 What is the existing condition of settlements and basic infrastructure in the slum area of Tapak Kuda Village, Langkat Regency?

The residential area in Tapak Kuda Village exhibits quite clear slum characteristics, both in terms of physical appearance and basic services. The area indicated as slum covers approximately 12.5 hectares, or approximately 27% of the total village residential area. This proportion indicates that nearly one-third of the residential environment is in a condition that does not meet housing standards, directly impacting the quality of life and the community's capacity to adapt to environmental conditions and climate change. Physically, the building density in this slum area is very high, reaching approximately 220 units per hectare. This density results in almost no functional open space space for drainage, public areas, or social facilities thus impairing air circulation, light, and accessibility. The lack of adequate space between buildings also complicates in-situ infrastructure improvements due to limited workspace and construction routes.

Access to clean water remains a fundamental issue. As many as 55% of the region's population still relies on dug wells and surface water sources that are vulnerable to

contamination. This reliance on unprotected sources increases the risk of exposure to contaminated water especially if the environmental sanitation system is inadequate and has resulted in an increase in cases of waterborne diseases. Limited access to water also impacts household hygiene practices and residents' ability to maintain environmental sanitation. The condition of the sanitation system in this region exacerbates public health vulnerabilities: approximately 48% of households use pit latrines or waste facilities that empty directly into ditches or rivers. These sanitation practices create a direct pathway for contamination to surrounding water bodies and soil, degrade groundwater quality, and serve as a major source of disease transmission, such as diarrhea and skin infections. The impacts of poor sanitation are not only medical but also psychosocial reducing the sense of security and well-being of residents, particularly women and children.

The area's drainage system is predominantly open channels that are frequently clogged with garbage; an estimated 60% of drainage systems are in this condition. Malfunctioning drainage causes prolonged flooding during the rainy season, increasing the risk of local flooding, damage to house floors, and disrupting economic activity. Stagnant water also serves as a breeding ground for disease vectors such as mosquitoes, increasing the risk of dengue fever and other vector-borne diseases. Waste management exhibits irregular disposal patterns: as much as 70% of domestic waste is reportedly dumped into rivers or vacant lots. This practice accelerates environmental degradation, clogs drains, and contributes to odors and poor environmental aesthetics. The accumulation of waste in water bodies also impacts local ecosystems and reduces water quality, which is a source of livelihood and economic activities for residents (e.g., small-scale fishing).

Accessibility within the area is also limited: 45% of neighborhood roads are still dirt or severely damaged, making it difficult for pedestrians, motorcycles, emergency services, and logistics. Poor roads slow down public services, hinder economic activities such as local commerce, and increase transportation costs for residents. Overall, the combination of very high building density, low access to clean water, inadequate sanitation, poor drainage and waste management, and inadequate road conditions places the Tapak Kuda Village slum area at a multidimensional vulnerability. These conditions not only directly impact public health e.g., The high incidence of environmentally-related diseases but also impacts long-term well-being aspects such as family economic productivity, social resilience, and community capacity to adapt to extreme events (floods, epidemics).

From a policy and intervention perspective, these existing conditions demonstrate the need for holistic interventions: improving basic infrastructure (clean water, proper sanitation, closed drainage), structured waste management, improving road access, and community empowerment programs to improve hygiene behavior and participation in facility maintenance. In-situ upgrading involving the community and inter-institutional coordination (village, sub-district, relevant agencies, and national programs such as BSPS/KOTAKU where relevant) is a more likely sustainable approach than mass relocation without livelihood security.

4.2 What are the impacts of slum development on the environment, health, social, and economic well-being of the local community?

The development of slums in Tapak Kuda Village not only presents physical problems in the form of uninhabitable housing or a lack of basic infrastructure, but also triggers a domino

effect that extends to various aspects of community life. These impacts can be seen comprehensively across four main dimensions: environment, health, social, and economic.

1. Impact on the Environment

Slum development directly contributes to the decline in the quality of the physical environment. High building density without clear spatial planning results in the loss of water catchment areas and the blocking of natural channels. The disposal of waste into rivers and drainage channels by most residents due to the lack of an official waste management system results in water pollution, unpleasant odors, and channel sedimentation. As a result, local flooding becomes a regular occurrence during heavy rains, even at moderate rainfall intensity. Furthermore, domestic waste in the form of washing water, oil, and feces that is directly disposed of into the soil or water bodies causes eutrophication and accelerates the decline in the quality of aquatic ecosystems.

2. Impact on Health

A polluted environment directly increases the risk of environmentally-related diseases. Limited access to clean water forces people to use unprotected water sources, making them vulnerable to bacterial and parasitic infections. Inadequate sanitation systems, such as pit latrines, contribute to the spread of diarrhea, worms, and skin infections. Stagnant water that never recedes becomes a primary breeding ground for the Aedes aegypti mosquito, increasing the incidence of Dengue Fever (DHF) and malaria. Stuffy, poorly ventilated housing conditions also reduce indoor air quality and increase the risk of respiratory diseases such as acute respiratory infections (ARI) in children and the elderly.

3. Impact on Social Aspects

The development of slum areas often creates social segregation. Residents in these areas tend to be stigmatized as poor and neglected, thus limiting their access to public services, education, and participation opportunities. Dense and unorganized settlements also have the potential to trigger inter-resident conflict, particularly over land use, water drainage, or environmental hygiene issues. The lack of open spaces and communal facilities reduces opportunities for healthy social interaction and limits children's play and optimal growth. This has an impact on the quality of social cohesion and a sense of belonging.

4. Economic Impact

Economically, slums create a cycle of structural poverty. Poor road infrastructure hinders residents' mobility to work or trade, increasing transportation costs and reducing economic opportunities. Frequently flooded housing requires residents to continually incur costs for minor repairs and replacement of damaged items, which cumulatively erodes household income. Illnesses arising from an unhealthy environment also increase the burden of medical costs and loss of work productivity, especially for daily laborers or informal workers without health insurance. Ultimately, slums become spaces that "lock" residents into economic limitations due to a lack of access to capital, facilities, and a decent living environment.

The development of slums in Tapak Kuda Village is not simply a physical issue, but a multidimensional phenomenon that seriously impacts environmental quality, public health, social resilience, and economic well-being. Therefore, slum management should not focus solely on physical development but must be integrated with approaches to environmental health, social empowerment, and sustainable community economic development.

4.3 What factors contributed to the formation of slums in Tapak Kuda Village?

The formation of slums in Tapak Kuda Village was not a sudden process, but rather the result of the accumulation of various interrelated structural, social, economic, and institutional factors. The following are some of the main factors behind the development of slums in the area:

1. Population Growth and Unplanned Urbanization

One of the dominant factors is the increasing population, both due to natural growth and migration from other villages, particularly those seeking employment in the plantation, fisheries, or informal industrial sectors in the surrounding area. Due to the limited availability of officially planned residential land, residents tend to build their own homes without following technical and spatial planning standards, resulting in sporadic and dense settlement growth.

2. Economic Limitations and Access to Adequate Housing

Most residents in Tapak Kuda Village work in the informal sector with low and irregular incomes, thus lacking access to adequate housing or formal housing financing programs. As a result, they choose to build makeshift homes on cheap or uncertified land, such as on riverbanks or vacant state-owned land, ultimately forming pockets of slums.

3. Lack of Infrastructure and Basic Government Services

The lack of clean water, sanitation systems, drainage, and waste management since the beginning of settlement growth accelerates environmental degradation. When adequate infrastructure is not provided, communities tend to develop their own substandard systems, such as constructing shallow wells, pit latrines, or emergency drains, which worsen environmental conditions.

4. Indecisive Spatial Planning Policy and Land Supervision

Weak supervision of land use and minimal enforcement of building regulations allow residents to freely build without permits. Some areas that should be open spaces, green belts, or river banks are instead converted into residential areas. This demonstrates weak long-term planning and coordination between relevant agencies at the village and district levels.

5. Low Environmental Awareness and Clean Living Culture

In addition to structural factors, behavioral factors also contribute significantly. Some residents lack proper waste management practices, often dumping waste directly into rivers or vacant lots. Low awareness of sanitation and environmental health reinforces the cycle of slum development, as dirty environments are considered normal and socially acceptable.

6. Lack of Community Participation and Empowerment in Environmental Management

Environmental management has been largely top-down, leaving residents with no sense of collective responsibility for environmental care. The absence of community forums or cleanliness groups has resulted in sporadic and unsustainable area management.

Based on the above description, it can be concluded that the formation of slums in Tapak Kuda Village is not solely due to the community's economic limitations, but also to failed spatial planning, weak provision of basic infrastructure, and low public awareness and participation. Therefore, slum management must be multidimensional, encompassing not only physical development but also strengthening the social, institutional, and behavioral aspects of the community.

4.4 What interventions have been implemented by the government and community to address the slum problem?

Slum management in Tapak Kuda Village has received attention from both the local government and the community, although implementation is still gradual and not evenly distributed across all affected areas. These efforts can be divided into two main areas: government intervention through formal programs and independent community initiatives.

1. Government Efforts

The Langkat Regency Government, together with the Tapak Kuda Village Government, have taken several steps, including:

a. Environmental Infrastructure Quality Improvement Program
   The village government, along with relevant agencies, has begun constructing and repairing neighborhood roads with concrete or paving blocks at several priority locations to improve accessibility for residents.
b. Drainage Construction and Improvement
   Normalization efforts and the construction of new drainage systems have been undertaken to reduce localized flooding and puddles, which are a regular problem during the rainy season. However, their effectiveness is still hampered by residents' habit of throwing garbage into the drains.
c. Sanitation and Healthy Toilet Program
   Through collaboration with Community Health Centers (Puskesmas) and the Community-Based Total Sanitation (STBM) program, the government has begun encouraging residents to abandon the use of pit latrines. Several households have received assistance in building communal septic tanks or bio-septic tanks.
d. Promotion of Clean Living and Waste Management
   In addition to physical development, the village government also conducts education through integrated health posts (Posyandu), religious studies, and neighborhood association (RT) meetings to raise awareness of the importance of maintaining environmental cleanliness.

2. Independent Efforts and Community Participation

In addition to government intervention, communities have also begun demonstrating local initiatives in improving the environment through:

a. Routine Mutual Cooperation Activities
   Several community groups independently clean drainage systems, repair dirt roads, and paint houses to create a cleaner and more attractive environment.
b. Formation of Community Self-Help Groups (KSM)
   Some residents have formed small groups to manage collective savings for home renovations or the installation of sanitation facilities.
c. Utilizing Used Goods for Environmental Improvement
   Some residents also utilize used drums or tires as pots for simple greenery, providing a touch of natural beauty amidst the densely populated area.

Although various interventions have been implemented, the management of slum areas in Tapak Kuda Village remains partial and fails to address all aspects of the problem. Several government programs are hampered by budget constraints and low community participation, while community efforts are often unsustainable due to a lack of technical assistance. Therefore, a more integrated management model is needed, one that focuses not only on physical development but also addresses behavioral change, strengthening local institutions, and increasing the economic capacity of residents.

4.5 What is the right strategy for developing and restructuring slum areas in Tapak Kuda Village to make them more livable and sustainable?

To ensure that slum management in Tapak Kuda Village is not merely temporary but can create more livable and sustainable settlements, a comprehensive, collaborative, and community-empowerment-based strategy is needed. This strategy can be structured around three main pillars: physical environmental planning, strengthening socio-cultural aspects, and community economic development.

1. Physical Planning and Environmental Infrastructure Strategy

The first step that must be taken is to ensure that the residential environment meets basic health and comfort standards. Technical strategies that can be implemented include:

a. Improving the quality of housing and basic infrastructure through a house renovation program, the construction of healthy latrines, communal septic tanks, and providing access to clean water through a piped network.
b. Comprehensive drainage improvements using a network system approach (not point-by-point) to ensure smoother water flow and prevent flooding.
c. Development of a community-based integrated waste management system, such as a waste bank or 3R (Reduce, Reuse, Recycle) TPS (TPS), to eliminate the habit of littering.
d. Development of green open spaces and pedestrian paths to improve the visual quality of the area while encouraging social interaction among residents.

2. Social and Institutional Strategies Based on Community Participation

Regional development will not be successful if it relies solely on physical development without behavioral change. Therefore, strategies are needed that encourage awareness, ownership, and shared responsibility.

a. Establishment of Environmental Management Groups (KPL) or Citizens' Forums tasked with monitoring cleanliness, drainage, and public facilities.
b. Educational programs through schools, integrated health posts (Posyandu), and religious activities to instill the values of clean and healthy living (PHBS).
c. Involvement of community leaders, youth, and women from the Family Welfare Movement (PKK) as drivers of change to increase community acceptance of the program.

3. Strategy for Strengthening the Economy and Community Independence

Poverty is one of the roots of slum settlements. Therefore, regional development must be accompanied by economic empowerment of residents so they can independently maintain the environment.

a. Developing environmentally-based micro-enterprises, such as processing waste into crafts, cultivating fish in buckets (budikdamber), or simple urban farming.
b. Providing access to job skills training and micro-capital assistance, in collaboration with social services, MSMEs, or zakat institutions.
c. Creating collaborative economic models, such as community cooperatives, paid waste banks, or community markets, that enable local economic circulation.

If these strategies are implemented gradually but consistently, through a collaborative pattern between the village government, community, private sector, and social institutions, the slums of Tapak Kuda Village can not only be physically reorganized but also transformed into

productive, healthy, and dignified environments. Thus, slum management will no longer be seen as a cleanup project, but rather as a process of social transformation toward inclusive and sustainable settlements.

Conclusion

Based on the analysis of the existing conditions, impacts, causal factors, and efforts to address slum areas in Tapak Kuda Village, Langkat Regency, it can be concluded that:

1. The settlement conditions in Tapak Kuda Village are classified as slums physically, environmentally, and socially, characterized by building densities reaching approximately 220 units per hectare, access to clean water still dependent on unprotected sources, inadequate sanitation, clogged drainage, and an inadequate waste management system.
2. The development of slum areas has significant negative impacts on the environment, health, social, and economic well-being of the community. The environment is polluted, sanitation-related diseases increase, social cohesion decreases, and communities are trapped in a cycle of ecological poverty.
3. The main factors contributing to the formation of slum areas include unplanned population growth, limited economic resources, weak spatial planning oversight, lack of basic infrastructure, and low environmental awareness.
4. Efforts to address these issues have been undertaken by the government and community, such as building neighborhood roads, normalizing drainage, promoting sanitation, and engaging in community-based community activities. However, implementation remains partial and has not yet comprehensively addressed all aspects of environmental management.
5. The appropriate slum development strategy is an integrated, collaboration-based approach, encompassing physical infrastructure development, strengthening community institutions, and empowering the local economy to ensure sustainable transformation.

References

[1] Braun, V. (2024). A critical review of the reporting of reflexive thematic analysis. PMC

[2] Braun, V., & Clarke, V. (2023). Toward good practice in thematic analysis. Taylor & Francis Online

[3] Byrne, D. (2022). A worked example of Braun and Clarke's approach to reflexive thematic analysis. SpringerLink.

[4] Cities Alliance (tanpa tahun). Slums and Slum Upgrading. citiesalliance.org.

[5] Flick, U. (Ed.) (2022). The SAGE Handbook of Qualitative Research Design. SAGE Knowledge.

[6] Hambrecht, E. (2022). Climate change and health in informal settlements narrative review. Environment & Urbanization / SAGE Journals.

[7] Harari, M., & Wong, S. (2021). Slum Upgrading and Long-run Urban Development. Wharton / real-faculty.wharton.upenn.edu.

[8] Pangondo, E. H., Putra, M. J., dkk. (2023). Collaboration Strategy By Design To Achieve Slum Area Handling: Implementation of KOTAKU in Kepulauan Riau. ictmt.stiepari.org.

[9] Stahl, N. A. (2020). Understanding and Using Trustworthiness in Qualitative Research. ERIC.
[10] UN-Habitat (tanpa tahun). Housing, Slums and Informal Settlements. data.unhabitat.org.
[11] United Nations Statistical Division (2021). SDG Metadata Indicator 11.1.1: Proportion of urban population living in slums, informal settlements or inadequate housing. UNSD.
[12] Zubaidah, S. (2023). Policy Network on the KOTAKU Program in the Global South. MDPI / Sustainability