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Plans and strategies for handling slum areas in Parung Panjang District, Bogor Regency

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ABSTRACT

In Bogor Regency, there is one location with a fairly large area that has not been completed in terms of slum settlement management, namely Parung Panjang Village, Parung Panjang District with a slum area of 5.39 Ha. Therefore, it is necessary to conduct research to prepare a plan and strategy for handling slum settlement areas in Parung Panjang Village, Parung Panjang District, Bogor Regency. This study aims to analyze the typology of slum settlements, to analyze aspects of slums in slum settlements, and to prepare a plan and strategy for handling slum settlement areas in the area. This study uses a descriptive method using a qualitative approach. The sampling technique used is the proportional cluster random sampling method, while the determination of stakeholders (respondents) uses purposive sampling. In order to sharpen the analysis side, the interview method and direct field observation were used to determine the typology of areas and aspects of slums in slum settlements; as well as a combination of Analytical Hierarchy Process (AHP) and SWOT, and stakeholder review. The results show that the typology of slum areas contain including the typology of slum settlements in the lowlands 2 typologies, Aspects of slums in slum areas of typology 1 there are 5 aspects, namely the aspect of environmental roads, the aspect of drinking water supply, the aspect of drainage, the aspect of waste management, and the aspect of fire protection conditions. In slum areas of typology 2 there are 4 aspects, namely the aspect of environmental roads, the aspect of drainage, the aspect of waste management, and the aspect of fire protection conditions. A slum area management plan for slum areas of typology 1 namely the improvement of the waste transportation management system (integrated with the Market); procurement of 131 APAR units; optimization of the availability of drainage channels and improvement of the quality of drainage construction; PDAM piping; improvement of the quality of environmental road construction, while for slum areas typology 2, namely the construction of 1 temporary waste disposal site and the provision of 1 garbage cart/motorcycle; procurement of 129 APAR units; optimization of the availability of drainage channels and improvement of the quality of drainage construction; improving the quality of 1,470 meter environmental road construction. The most priority strategy in handling slums in the research location area, namely the government's commitment to providing decent settlement infrastructure that meets technical standards, working together with the private sector or investors (CSR) in providing funds for housing and settlement activities, and increasing community capacity in the Planning, Organizing, Activating, Controlling (POAC) flow to support the acceleration of slum handling in a comprehensive and sustainable manner.

Keywords: *Aspects of slums in slum settlements; A'WOT analysis; Slum management; Slum typology*

INTRODUCTION

In Bogor Regency, there is one location with a fairly large area that has not been completed in terms of slum settlements, namely Parung Panjang Village, Parung Panjang District with a slum area of 5.39 Ha with details in RT 01/ RW 01 covering an area of 3.05 Ha, and in RT 02/ RW 02 covering an area of 2.34 Ha (Bupati Bogor, 2021).

Therefore, it is necessary to conduct research to examine the plans and strategies for handling slum settlements in that location. The problem of urban slums is often one of the main issues that is quite complex, both in terms of physical / environmental, economic, social, and facilities and infrastructure (Elviyanti & Ariyanti, 2018).

In the process, it then has an impact on the condition of the urban area in general and is identified as requiring ongoing handling from time to time, including constraints of limitations in terms of budget plans, policy effects, and efficiency in almost all sectors. Therefore, a study is needed to provide an overview of the conditions of the slums area in order to outcome the slum areas. The objectives of the study are (1). to analyze the typology of slum areas, (2). to analyze aspects of slums in slums, (3). to prepare a plan for handling slum areas, and (4). to prepare a strategy for handling slum areas in Parung Panjang Village, Parung Panjang District, Bogor Regency.

METHODS

Research Location

The research was conducted in one of the 11 (eleven) villages in Parung Panjang District, namely Parung

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Panjang Village (Figure 1). Parung Panjang Village is located ± 70 km from the capital of Bogor Regency, has an area of ± 2.92 km2 with an altitude of ± 52.1 meters above sea level.

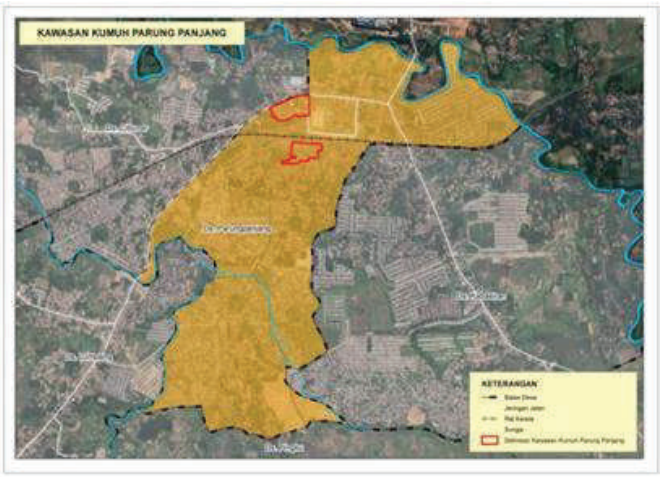


Figure 1. Research location in Parung Panjang District, Bogor Regency.

Materials and Tools

The materials used include profile data from Parungpanjang Village, Parungpanjang District, Decree of the Regent of Bogor concerning Determination of Housing and Slum Settlements Locations in 2021, RTRW and RP2KPKP Documents. The tools used in data collection and data analysis include laptops, cameras and Microsoft software.

Types of Data and Data Collection Techniques

The types of data consist of primary data and secondary data. Secondary data are in the form of profile data from Parung Panjang Village, Parung Panjang District, Bogor Regent's Decree concerning Determination of Housing and Slum Settlements Locations in 2021, RP2KPKP Documents of Bogor Regency from the Housing, Settlement and Land Agency of Bogor Regency and RTRW from Bappedalitbang of Bogor Regency. Primary data comprise slum aspects were obtained by distributing questionnaires to 25 respondents in Parung Panjang Village and A'WOT questionnaires to 10 people. Types of data and data collection techniques are presented in Table 1.

Table 1. Data types and data collection techniques.

	Objective	Data Types	Data Collection Techniques
1.	Analyzing the typology of existing slum settlements in Parung Panjang Village, Parung Panjang District, Bogor Regency	-Existing slum data -Slum location map	-Secondary Survey -Primary Survey (Observation, Interview, Documentation)
2.	Analyzing the aspect of slum areas in Parung Panjang Village, Parung Panjang District, Bogor Regency	Primary: -Aspect of slum area Secondary -Village profile -Population data -Livelihood slum	-Matching slum data with existing field conditions -Primary survey (obsevation, interview, documentation)
3.	Preparing a plan for handling slum areas in Parung Panjang Village, Parung Panjang District, Bogor Regency	-Baseline slum management data in Bogor Regency -Result of objectives 1 and 2	Primary survey (observation, interview, documentation)
4.	Developing a strategy for handling slum areas in Parung Panjang Village, Parung Panjang District, Bogor Regency	-Strategic issues of slum management -Government policies -Goal 3 result	Primary survey (observation, interview, documentation)

Data Analysis Techniques

The data analysis techniques used are:

- Analysis of slum typology using qualitative descriptive methods, namely conducting synthesis of several government regulations on the existing conditions of slums, from baseline-R0 data, as well as field observations and direct interviews;
- Qualitative descriptive analysis, namely conducting a synthesis of several government regulations, then comparing them with the results of field observations and questionnaire results on aspects of slums in slum settlements;
- Quantitative descriptive analysis, in order to prepare a plan for handling slum areas based on findings of slum problems (7 aspects/criteria) in the field, then processed using data tabulation;
- A'WOT analysis is a combination of AHP and SWOT. AHP (Analytical Hierarchy Process) analysis using Microsoft Excel Worksheet combined with SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis to formulate strategies by considering internal - external factors in order to produce strategies in an effort to improve the quality of slums effectively and efficiently.

RESULTS AND DISCUSSION

Typology of Slums

The typology of slum areas in the research area was analyzed based on the Regulation of the Minister of Public Works and Public Housing of the Republic of Indonesia Number 14/PRT/M/2018 concerning Prevention and Improvement of the Quality of Slum Housing and Slum Settlements with the following results:

a. Typology 1

Typology 1 slum settlements in Parung Panjang Village, Parung Panjang District are located in RT. 01/ RW. 01 is included in the typology of slum settlements in the lowlands (Pemerintah RI, 2011) with regional characteristics, namely the typology of slum areas that are close to market activities/trade centers (Figure 2.).

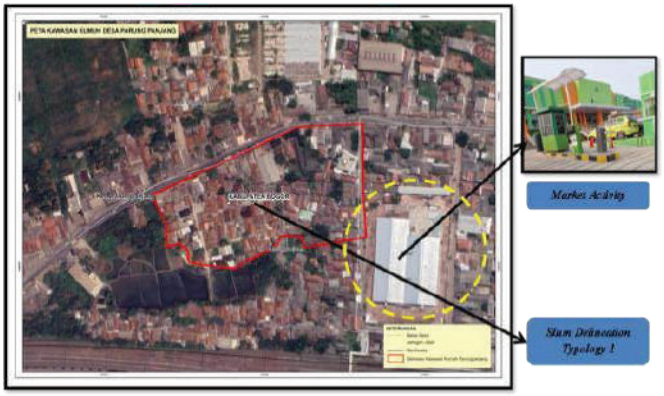


Figure 2. Typology 1 slum settlement in Parung Panjang Village, Parung Panjang District.

b. Typology 2

Typology 2 slum settlements in Parung Panjang Village, Parung Panjang District are located in RT 02/ RW 02 is included in the typology of slum settlements in the lowlands (Pemerintah RI, 2011) with regional characteristics, namely the typology of slum areas that are close to the activities of the Commuter Line Train Station (Figure 3.).

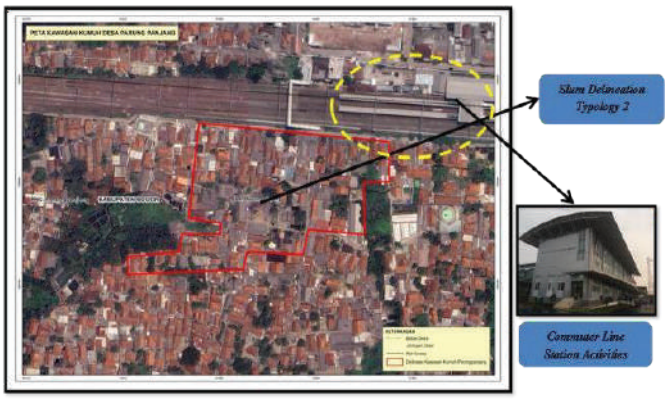


Figure 3. Typology 2 of slum settlements in Parung Panjang Village, Parung Panjang District.

Aspects of Slums in Slums Area

The results of the analysis of the aspects of slums in the research location based on slum data (Baseline-R0) compared with existing conditions in the field, the results are as follows:

a. In Typology 1

Aspects of slums in slums in typology 1 are (1) the aspect of environmental roads with criteria of environmental road surface quality of 1,000 meters, slum percentage of 16.12%, slum value of 1; (2) the aspect of drinking water provision with criteria of the availability of safe access to drinking water of 53 families has not been met, slum percentage of 20.23%, slum value of 1; (3) the aspect of drainage with criteria of unavailability of drainage along 1,000 meters, slum percentage of 33.33%, slum value of 5; (4) waste management aspects with criteria of infrastructure and facilities and waste management systems not in accordance with technical requirements as many as 131 families, slum percentage 63.74%, slum value 5 (infrastructure and facilities criteria) and 1 (management system); (5) fire protection condition aspects with criteria of unavailability of fire protection facilities as many as 131 families, slum percentage 100%, slum value 5.

b. In Typology 2

Aspects of slums in slum settlements of typology 2 are (1) environmental road aspect with environmental road surface quality criteria of 1,470 meters, slum percentage of 39.30%, slum value of 5; (2) drainage aspect with criteria of unavailability of drainage along 875 meters and inadequate drainage construction quality along 400 meters, slum percentage of 33.33%, slum value of 3 (drainage unavailability criteria) and 1 (criteria of inadequate construction quality); (3) waste management aspect with a slum percentage of 80.62%, waste infrastructure criteria do not meet technical requirements, slum value 3, as many as 79 families and waste management system criteria do not meet technical requirements as many as 129 families; slum value 5; (4) fire protection condition aspect with a slum percentage of 30.62%, criteria for unavailability of fire protection facilities as many as 79 units/family, slum value 3.

Slum Area Management Plan

The slum area management plan is prepared based on 7 aspects of slums (Kementerian Pekerjaan Umum dan Perumahan Rakyat Republik Indonesia, 2018), with the following results:

a. Slum Area Typology 1 (Lowland, close to Market activities). The slum area management plan based on the aspects of slums in slum settlements typology 1 are (1) Waste aspect, the handling plan is through improving the waste transportation management system (integrated with the Market) targeting 131 families; (2) Fire protection aspect, the handling plan is through the procurement of 131 APAR units targeting 131 families; (3) Environmental drainage aspect, the handling plan is through optimizing the availability of drainage channels as supporting environmental roads (as needed) along 1000 meters, improving the quality of existing drainage/water channel construction along 1000 meters; (4) Drinking water provision aspect, the handling plan is through PDAM piping for 131 families; (5) Environmental road aspect, the handling plan is through improving the quality of environmental road construction along 1000 meters in order to support community economic activities.

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b. Slum Area Typology 2 (Lowland, close to the Commuter Line Train Station activity). The slum settlement area management plan in slum settlement typology 2 are (Guntoro, 2021; Irfan & Rahim, 2021; Marni et al, 2020; Marwah & Suhaeb, 2024), (1) Waste aspect, the management plan is through the construction of 1 Waste Disposal Site with a size of 2 x 3 meters and or provision of 1 waste management facility (trash cart/motorcycle) targeting 129 families; (2) Fire protection aspect, the management plan is through the procurement of 129 APAR units targeting 129 families; (3) Environmental drainage aspect, the management plan is through optimizing the availability of drainage channels as supporting environmental roads along 875 meters, and improving the quality of existing drainage/water channel construction along 400 meters; (4) Environmental road aspect, the management plan through improving the quality of environmental road construction along 1,470 meters in order to support community economic activities.

Slum Area Handling Strategy

Determination of slum area handling strategy is done by using A'WOT, which is a combination of two analyses, SWOT to determine the proposed strategy to be developed and AHP (Analytical Hierarchy Process) analysis to determine priority strategies.

a. SWOT Analysis

The results of internal and external factor scoring are presented in Table 2 and the SWOT diagram in Figure 4.

Table 2. The results of internal and external factor scoring.

Criteria	Coordinate	Information
Internal Factors		
1. Strength	-0.50	X-axis
2. Weakness		
External Factors		
3. Opportunity	1.03	Y-axis
4. Threats		

Description:
Internal Environment: Strengths are greater than Weaknes -0.50; External Environment: Opportunities are greater than Threats 1.03.

Based on the calculation results using the IFAS and EFAS matrices and entering the values into the SWOT diagram, the strategy for handling slum areas in the research location can be determined, namely the strategy included in Quadrant II (Irawan, 2023).

The next step is to determine the strategy in each quadrant to optimize existing strengths and potentials, and minimize possible challenges. The results of the IFAS-EFAS SWOT matrix are presented in Table 3.

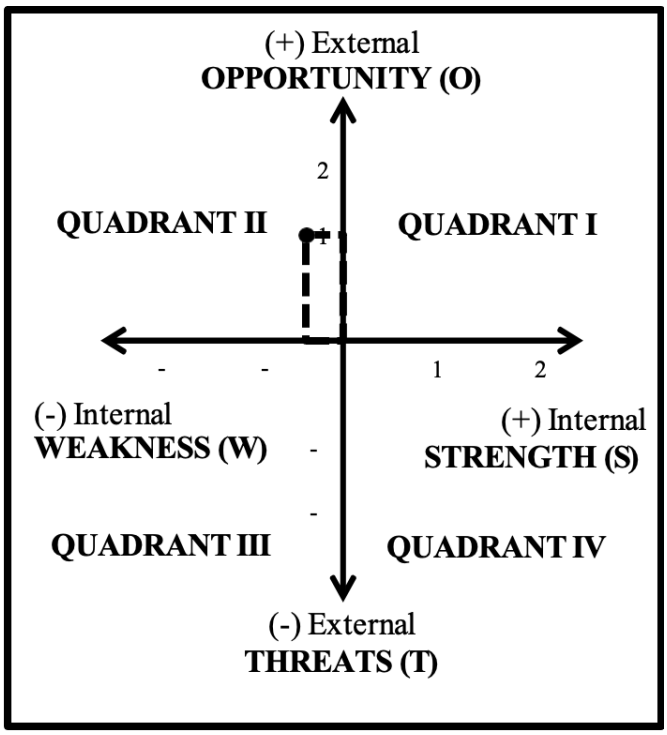


Figure 4. Matrix space.

Table 3. IFAS - EFAS SWOT interaction matrix.

INTERNAL FACTORS / EXTERNAL FACTORS	**Strength (S):** • Commitment of the Regional Head in handling slum settlements through a regional head decree on the determination of slum locations and the formation of the PKP Working Group • The research location has socio-economic potential, especially industry and trade • Building density at the location falls into the low building density category • The coverage of environmental road access is adequate • The condition of drinking water provision has met safe access to drinking water and the fulfillment of drinking water needs • The condition of wastewater management is in accordance with technical standards	**Weakness (W):** • The quality of the road surface in the environment does not meet technical standards • The unavailability of drainage and the quality of drainage construction does not meet technical requirements • Waste infrastructure and facilities do not meet technical requirements • The waste management system does not meet technical requirements • The unavailability of fire protection facilities • Cross-sectoral collaboration in the PKP Working Group in handling slums has not been maximized
Opportunity (O): • The research location is located in the western WP as an urban area development • Many investors are interested in urban area development • Availability of government budget for improving slum areas • Suitability of spatial planning, namely the location of residential designation	**S - O** a) Government commitment to provide decent housing infrastructure that meets technical standards b) Building regularity supports the implementation of housing planning according to spatial planning	**W - O** a) Developing policies that support slum management such as regulations on slum management, waste management, spatial planning, drainage masterplans, and licensing b) Increasing community capacity in the Planning, Organizing, Activating, Controlling (POAC) process to support the acceleration of slum management in a comprehensive and sustainable manner c) Cooperating with the private sector or investors (CSR) in providing funds for housing and settlement activities
Threats (T): • Fire disasters in locations with high population density • Lack of public awareness about environmental cleanliness	**S - T** a) Low building density can prevent fire disasters from occurring b) Improving the quality of settlements in terms of facilities and infrastructure to create settlements that are suitable and comfortable to live in	**W - T** a) Providing facilities according to technical standards as fire protection in slums to protect against fire risks b) Optimizing and constructing facilities and infrastructure in slums on road networks, environmental drainage, waste management c) Making strict regulations regarding the prohibition of littering

b. Analytical Hierarchy Process (AHP)

Next, the priority determination of the slum area handling strategy in the research location area is carried out . The scale determination is carried out by sorting the alternative strategies, then selected based on the most priority selection ratio (Ilmy, 2017). The results of the AHP analysis show that the pairwise comparisons answered by expert respondents are acceptable, because the random consistency index value is 0.06. The results are presented in Table 4.

Table 4. Slum management strategies and priorities at research locations.

Priority	Strategy	Score
1	Cooperating with the private sector or investors (CSR) in providing funds for housing and settlement activities	0.50072
2	Cooperating with the private sector or investors (CSR) in providing funds for housing and settlement activities	0.31025
3	Increasing community capacity in the Planning, Organizing, Activiting, Controlling (POAC) process to support the acceleration of slum management in a comprehensive and sustainable manner	0.18903

CONCLUSION

The study identified two distinct typologies of slum settlements in the research area of Parung Panjang District, Bogor Regency. Slum Area Typology 1 is characterized by a lowland location adjacent to market activities and is situated in RT 01/RW 01, Parung Panjang Village. Meanwhile, Slum Area Typology 2 is characterized by a lowland location influenced by activities surrounding the Commuter Line railway station and is situated in RT 02/RW 02, Parung Panjang Village. Both typologies exhibit different characteristics in terms of settlement conditions and infrastructure deficiencies, reflecting the influence of their respective surrounding activities.

In Typology 1, five aspects contribute to the classification of the area as a lightly slum-affected settlement, namely environmental road conditions, drinking water provision, drainage systems, solid waste management, and fire protection. In comparison, Typology 2 is characterized by four deficient aspects: environmental road conditions, drainage systems, solid waste management, and fire protection. Both settlement typologies fall within the category of light slum settlements, although the specific infrastructure and service deficiencies differ between them.

The proposed intervention plans are tailored to the characteristics and infrastructure deficiencies of each settlement typology. For Typology 1, the proposed interventions include improving the solid waste collection and transportation system through integration with the existing market waste management system; providing portable fire extinguishers (APAR); optimizing the availability and functionality of drainage channels, particularly those supporting environmental roads, and improving drainage construction quality; expanding access to piped drinking water through the Regional Drinking Water Utility (PDAM); and upgrading environmental road infrastructure to better support local economic activities and community mobility. For Typology 2, the proposed interventions include providing adequate waste disposal facilities and supporting waste collection equipment, such as garbage carts or motorized waste collection vehicles; procuring portable fire extinguishers (APAR); optimizing drainage channel availability and functionality, accompanied by improvements in drainage construction quality; and upgrading environmental road infrastructure to improve accessibility and support community economic activities. These interventions are expected to address the specific infrastructure deficiencies identified in each typology while improving the overall quality and sustainability of the settlements.

Furthermore, the study identifies three strategic priorities for accelerating slum settlement improvement in the research area. First, strengthening the policy and regulatory framework is essential, particularly through the formulation and implementation of regulations concerning slum settlement management, solid waste management, spatial planning, drainage master plans, and development licensing. Second, establishing partnerships with the private sector and potential investors, including through Corporate Social Responsibility (CSR) programs, is necessary to mobilize additional financial resources for housing and settlement improvement initiatives. Third, enhancing community capacity and participation in the planning, organizing, actuating, and controlling (POAC) processes is crucial to ensuring effective implementation, local ownership, and continuity of slum improvement programs. Overall, an integrated approach involving government institutions, the private sector, and local communities is required to ensure that slum settlement management in Parung Panjang District is implemented comprehensively and sustainably.

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REFERENCES

Bupati Bogor. (2021). *Keputusan Bupati Bogor Nomor 663/485/Kpts/Per-UU/2021 tentang Perubahan Kedua atas Lampiran Keputusan Bupati Nomor 663/141/Kpts/Per-UU/2019 tentang Penetapan Lokasi Peningkatan Kualitas Perumahan Kumuh dan Kawasan Permukiman Kumuh di Kabupaten Bogor*. JDIH Kabupaten Bogor. https://jdih.bogorkab.go.id/

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Elviyanti, D. A., & Aryanti, D. (2018). Penanganan lingkungan perumahan & permukiman kumuh di Kabupaten Sijunjung, Sumatera Barat. *Jurnal UMJ, 1–12*. https://jurnal.umj.ac.id/index.php/semnastek/article/view/3460

Guntoro. (2021). Strategi penanganan kawasan permukiman kumuh di sempadan rel kereta api Kelurahan Ciptomulyo, Kota Malang. *Perencanaan Wilayah dan Kota, Fakultas Teknik Sipil dan Perencanaan ITN Malang, 1–15*. https://ejournal.itn.ac.id/index.php/semsina/article/download/8115/4371/

Ilmy, F. H., & Budisusanto, Y. (2017). Identifikasi penentuan prioritas kriteria kawasan permukiman kumuh perkotaan menggunakan metode AHP (Analytical Hierarchy Process). *Jurnal Teknik ITS, 6(1), 19–21*. https://www.neliti.com/id/publications/212744/identifikasi-penentuan-prioritas-kriteria-kawasan-permukiman-kumuh-perkotaan-men

Irawan, A., Bimasri, J., & Wartono. (2023). Analisis strategi penanganan permukiman kumuh di Kecamatan Tugumulyo, Kabupaten Musi Rawas. *Journal of Extension & Development, 5(2), 94–102*. https://jsp.fp.unila.ac.id/index.php/jsp/article/view/217

Irfan, H., Baruwadi, M., & Rahim, S. (2021). Strategi pengelolaan kawasan permukiman kumuh di Kota Gorontalo. *LOSARI: Jurnal Arsitektur Kota dan Pemukiman, 6(2), 89–101*. https://jurnalftlama.umi.ac.id/index.php/losari/article/download/310/189

Marni, D., Siregar, S. H., & Suprayogi, I. (2020). Strategi penanganan kawasan pemukiman kumuh di Kelurahan Tanah Datar, Kecamatan Pekanbaru Kota, Kota Pekanbaru. *Jurnal Ilmu Lingkungan, 14(1), 8–17*. https://www.researchgate.net/publication/355678108_STRATEGI_PENANGANAN_KAWASAN_PEMUKIMAN_KUMUH_DI_KELURAHAN_TANAH_DATAR_KECAMATAN_PEKANBARU_KOTA_KOTA_PEKANBARU

Marwah, R. L., & Suhaeb, M. I. S. (2024). Penanganan kawasan permukiman kumuh di Kelurahan Sumpang Binangae, Kecamatan Barru, Kabupaten Barru. *Urban & Regional Studies Journal, 6(2), 199–208*. https://journal.unibos.ac.id/ursj/article/view/4491

Kementerian Pekerjaan Umum dan Perumahan Rakyat Republik Indonesia. (2018). *Peraturan Menteri Pekerjaan Umum dan Perumahan Rakyat Nomor 14/PRT/M/2018 tentang Pencegahan dan Peningkatan Kualitas terhadap Perumahan Kumuh dan Permukiman Kumuh*. Database Peraturan BPK. https://peraturan.bpk.go.id/Details/104649/permen-pupr-no-14prtm2018-tahun-2018

Pemerintah Republik Indonesia. (2011). *Undang-Undang Nomor 1 Tahun 2011 tentang Perumahan dan Kawasan Permukiman*. Database Peraturan BPK. https://peraturan.bpk.go.id/Details/39128/uu-no-1-tahun-2011