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Research Article

Evaluation of Settlement Quality on the Ciliwung Riverbanks: A Case Study of RW 08, Kampung Melayu Village, Jatinegara District, East Jakarta

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Abstract: *Riverbank settlements are areas that are vulnerable to environmental degradation due to high building density, limited basic infrastructure, and flood risk. This study aims to evaluate the quality of settlements on the banks of the Ciliwung River, RW 08, Kampung Melayu Village, Jatinegara District, East Jakarta based on the UN-Habitat conceptual framework and physical indicators referring to the Regulation of the Minister of Public Works and Public Housing Number 14 of 2018. The study uses a quantitative descriptive approach with an evaluative method through field observation, documentation, and scoring analysis of six settlement quality indicators, namely building conditions, settlement density, neighborhood roads, drainage, sanitation, and waste management. The results show that the quality of settlements obtained a total score of 313 with a moderate category. The sanitation indicator shows the best condition, while the condition of buildings obtained the lowest score so that it becomes an aspect that requires priority handling. In addition, settlement density, drainage, neighborhood roads, and waste management still require improvement to support the creation of a more decent and sustainable residential environment. This study confirms that improving the quality of settlements on the banks of the Ciliwung River requires an integrated approach through physical planning of the area, improvement of basic infrastructure, and sustainable environmental management.*

Keywords: Settlement Quality; Ciliwung Riverbanks; Settlement Evaluation; UN-Habitat; PUPR Ministerial Regulation No. 14 of 2018.

1. Introduction

Urbanization is a global phenomenon that continues to shape the development of urban areas and influence spatial utilization patterns. Rapid urban population growth drives an increasing need for residential land, while limited land availability leads to settlement expansion into ecologically vulnerable areas, such as riverbanks. UN-Habitat emphasizes that urbanization that is not balanced with adequate spatial planning and basic infrastructure has the potential to trigger the growth of informal settlements, reduce environmental quality, and increase community vulnerability to various urban risks, including flooding, environmental degradation, and reduced quality of life. Therefore, improving the quality of settlements is a key agenda in realizing inclusive, safe, resilient, and sustainable cities (UN-Habitat, 2016).

Settlements are an important part of the urban system because they function not only as a place to live, but also as a space for social, economic, and cultural activities of the community. From the perspective of UN-Habitat, the quality of settlements is determined by the fulfillment of various aspects, such as the physical condition of buildings, access to basic infrastructure, sanitation, drainage systems, waste management, accessibility, and environmental quality that can support a healthy, safe, and sustainable community life (UN-Habitat, 2016). Thus, the quality of settlements is not only measured by the condition of the buildings, but also by the ability of the settlement environment to provide basic services and create a comfortable life for its residents.

In Indonesia, the increase in urban population has also been accompanied by increasing pressure on the availability of residential land. This condition has led to the development of high-density settlements in areas with limited environmental carrying capacity, including along riverbanks. Riverbank settlements are generally characterized by high building density, limited open space,

inadequate drainage systems, suboptimal waste management, and high levels of vulnerability to flooding. These conditions not only degrade the quality of residential environments but also increase public health risks and environmental damage if not balanced with sustainable regional planning efforts.

In the national context, efforts to improve the quality of settlements have become part of urban development policy through the Regulation of the Minister of Public Works and Public Housing Number 14 of 2018 concerning the Prevention and Improvement of the Quality of Slum Housing and Slum Settlements. This regulation stipulates that the evaluation of settlement quality must consider a number of physical indicators, including building conditions, environmental road networks, drinking water supply, environmental drainage, wastewater management, waste management, and fire protection infrastructure. These indicators serve as important references in identifying the level of environmental quality of settlements and determining priorities for area management.

Kampung Melayu Village, Jatinegara District, East Jakarta, is an urban area characterized by dense settlements, some of which are located along the banks of the Ciliwung River. This geographical location makes the area highly vulnerable to flooding due to overflowing Ciliwung River, especially during the rainy season. Furthermore, the high population density puts pressure on the availability of residential space and the quality of environmental infrastructure. This condition affects the quality of the residential environment, characterized by relatively narrow spacing between buildings, limited open space, and persistent problems with drainage, sanitation, and waste management systems. This phenomenon indicates that the quality of settlements in riverbank areas is influenced not only by the threat of flooding but also by the environment's ability to provide adequate basic services to the community (UN-Habitat, 2016).

Based on field observations, the RW 08 area of Kampung Melayu Village exhibits characteristics of settlements developing very close to the Ciliwung River. Some buildings are located very close to the riverbank, increasing exposure to flooding and limiting space for environmental infrastructure development. Furthermore, waste accumulation is still found on several parts of the riverbank, potentially degrading environmental quality and disrupting the river's ecological function, as seen in the image below.

Figure 1. Condition of dense settlements on the banks of the Ciliwung River, RW 08, Kampung Melayu Subdistrict, which shows the accumulation of garbage and the decline in the quality of the residential environment.

Figure 1 shows the condition of the settlements developing along the banks of the Ciliwung River, RW 08, Kampung Melayu Village. The houses appear to be standing very close to the river, with relatively narrow distances between buildings, indicating high settlement density. On the riverbanks, there is an accumulation of domestic waste and sediment, indicating the still low quality of environmental management in the area. This condition has the potential to reduce the ecological function of the river, impede water flow, and increase the area's vulnerability to pollution and flooding. In general, this image illustrates that the environmental quality of settlements along the banks of the Ciliwung River still faces various challenges that require sustainable planning and management efforts.

Figure 2. Condition of the Ciliwung Riverbank management in RW 08, Kampung Melayu Subdistrict through the construction of retaining walls as an effort to control flooding.
Source: https://megapolitan.kompas.com

Figure 2 shows the condition of the Ciliwung Riverbanks in RW 08, Kampung Melayu Village, which are currently undergoing improvement through the construction of a retaining wall. This improvement aims to strengthen the riverbanks, reduce the risk of erosion and flooding, and improve the quality of the residential environment in the riverbank area. However, dense residential conditions remain a challenge in creating a safe, healthy, and sustainable residential environment.

Figure 3. Flood conditions in residential areas along the banks of the Ciliwung River which affect accessibility, community activities, and the quality of the residential environment.

Source: https://detik.com

Figure 3 shows the condition of the settlement in RW 08, Kampung Melayu Village, which experienced flooding due to the overflowing Ciliwung River. The floodwaters have entered neighborhood roads and residential areas, disrupting community activities and reducing area accessibility. This condition indicates the high level of vulnerability of the settlement to flooding, influenced by the area's location on riverbanks, building density, and limited drainage capacity. In addition to impacting community social and economic activities, flooding also has the potential to reduce the quality of environmental sanitation, increase the risk of spreading environmentally-based diseases, and accelerate damage to settlement infrastructure. This phenomenon indicates that improving the quality of settlements requires not only improvements to physical infrastructure, but also area management that can increase settlement resilience to flood risks.

From the perspective of UN-Habitat (2016), settlement quality is determined not only by the presence of buildings, but also by the fulfillment of basic services, environmental quality, security, and the area's resilience to disaster risks. Therefore, a comprehensive evaluation of settlement quality needs to be carried out by considering various interrelated physical indicators. This approach is in line with Regulation of the Minister of Public Works and Public Housing Number 14 of 2018, which stipulates that settlement quality assessments include the condition of buildings, environmental road networks, drinking water supply, drainage, wastewater management, waste management, and other supporting infrastructure. By using these two foundations, this study not only describes the existing condition of the area but also evaluates the extent to which settlement quality has met the principles of livable and sustainable settlements.

Several previous studies on the Ciliwung Riverbank area generally focused on issues of flood control, slum improvement, disaster mitigation, and land-use change. These studies make important contributions to understanding the dynamics of the riverbank area, but most have not placed the evaluation of settlement quality based on physical indicators as the main focus of the analysis. Furthermore, research specifically examining the condition of settlements in RW 08, Kampung Melayu Village, is still relatively limited, even though this area has unique characteristics as a dense settlement with a high level of flood vulnerability and has undergone various regional planning efforts. These limitations indicate a research gap, namely the limited number of studies that integrate the conceptual framework of settlement quality from UN-Habitat with assessment indicators referring to the Minister of Public Works and Housing Regulation Number 14 of 2018 in evaluating the actual condition of riverbank settlements.

Based on these gaps, this study offers a novelty in the form of an evaluation of the quality of Ciliwung Riverbank settlements at the residential environment scale using the UN-Habitat conceptual framework combined with physical indicators as stipulated in PUPR Ministerial Regulation Number 14 of 2018. This approach is expected to produce a more comprehensive picture of settlement quality while identifying aspects that require priority handling in order to improve the quality of the residential environment. Thus, the results of the study not only enrich academic studies on the evaluation of settlement quality in riverbank areas, but can also be input for local governments and stakeholders in formulating strategies for arranging settlements that are more adaptive, livable, and sustainable.

Based on the description, this study aims to evaluate the quality of settlements on the banks of the Ciliwung River, RW 08, Kampung Melayu Village, Jatinegara District, East Jakarta based on physical settlement indicators that refer to the UN-Habitat conceptual framework and assessment indicators in the Regulation of the Minister of Public Works and Public Housing Number 14 of 2018. The results of

the study are expected to provide scientific contributions in the development of studies on the quality of urban settlements as well as being the basis for compiling recommendations for improving the environmental quality of riverbank settlements that are safer, healthier, and more sustainable.

Formulation of the problem

Based on the research background, the problem formulation in this research is as follows:

a. What is the quality of settlements on the banks of the Ciliwung River, RW 08, Kampung Melayu Village, Jatinegara District, East Jakarta based on physical settlement indicators referring to UN-Habitat and the Minister of PUPR Regulation Number 14 of 2018?
b. What physical indicators are the main factors influencing the quality of settlements on the banks of the Ciliwung River, RW 08, Kampung Melayu Village, Jatinegara District, East Jakarta?

2. Literature Review

The Concept of Settlement Quality

Settlement quality is a multidimensional concept that describes the ability of a residential environment to provide physical, social, economic, and environmental conditions that support a safe, healthy, comfortable, and sustainable community life. From the perspective of UN-Habitat (2016; 2020), settlement quality is not only influenced by the condition of buildings, but also by the fulfillment of basic infrastructure, access to public services, sanitation, environmental management, public spaces, security, and the resilience of the area to various urban risks. Therefore, improving settlement quality is an important part of realizing sustainable urban development while supporting the achievement of Sustainable Development Goal (SDG) 11, namely creating inclusive, safe, resilient, and sustainable cities and settlements (UN-Habitat, 2016; UN-Habitat, 2020).

Various studies have shown that residential quality is the result of the interaction between the physical characteristics of the area, the socioeconomic conditions of the community, environmental governance, and the provision of basic infrastructure. Wesz et al. (2023) explain that the quality of the urban environment is influenced by accessibility, the quality of open spaces, the quality of infrastructure, environmental conditions, security, and the comfort of residents, so that evaluation of residential quality cannot be done solely based on the physical condition of buildings. Meanwhile, Fidelista et al. (2025) found that public perception of the environmental quality of riverbank settlements is greatly influenced by the condition of the surrounding roads, the quality of buildings, public spaces, and the comfort of the area.

In the context of informal settlements, Ramdhani (2022) stated that settlement quality needs to be evaluated through two main dimensions: building quality and environmental quality. This research shows that the low quality of one component will affect the overall quality of the settlement, necessitating a comprehensive evaluation approach. Similar findings were presented by Oktarini et al. (2022), who explained that the environmental quality of riverbank settlements is influenced not only by the physical condition of the area but also by residents' perceptions of comfort, sanitation, and environmental management.

In Indonesia, the evaluation of settlement quality refers to Regulation of the Minister of Public Works and Public Housing Number 14 of 2018, which establishes assessment indicators for building conditions, road networks, drinking water supply, drainage, wastewater management, waste management, and fire protection. The use of these indicators provides an objective basis for identifying settlement quality levels and determining priorities for area improvement.

Riverbank Settlements from a Sustainable Development Perspective

Riverbank settlements are a form of urban development that has grown due to increasing urbanization, limited land, and the high demand for easily accessible housing. This phenomenon is common in developing countries, including Indonesia, where riverbank areas are developing into residential areas characterized by high building density, limited basic infrastructure, and high vulnerability to flooding and environmental degradation (UN-Habitat, 2020; Douglas, 2018; Chiodelli, 2016).

Various studies have shown that the environmental quality of riverbank settlements is significantly influenced by the physical condition of the area and the provision of basic infrastructure. Ramdhani (2022) found that the quality of informal settlements along the Mahakam River is influenced by the condition of buildings, sanitation, and the quality of the surrounding environment. Research by Oktarini et al. (2022) also showed that community perceptions of settlement quality are influenced by drainage conditions, environmental cleanliness, and area accessibility. These findings are supported by research by Fidelista et al. (2025), which states that improving the quality of neighborhood roads, public spaces, and basic facilities has a positive impact on the quality of life of residents living along the riverbanks.

In the context of Jakarta, the development of settlements along the Ciliwung Riverbanks is influenced not only by the high pressure of urbanization but also by limited urban space, leading some residents to utilize the riverbanks as residential areas. This situation results in increased building density, decreased environmental carrying capacity, and increased flood risk due to reduced river capacity. Therefore, evaluating the quality of settlements in the Ciliwung Riverbanks is crucial as a basis for developing strategies to improve the quality of residential environments sustainably (Aerts et al., 2018; UN-Habitat, 2020).

Settlement Quality Evaluation Indicators

Evaluation of settlement quality is conducted through an assessment of physical indicators that describe the actual condition of the residential environment. In this study, the assessment indicators refer to PUPR Ministerial Regulation Number 14 of 2018, namely the condition of buildings, neighborhood roads, drinking water supply, drainage, wastewater management, waste management, and other supporting infrastructure. The use of these indicators provides an objective basis for evaluating settlement quality and determining aspects that require priority attention. Various studies have shown that these physical indicators are key components in determining the quality of residential environments. Good building conditions, adequate accessibility, proper sanitation, and well-functioning drainage systems contribute to improving the quality of life of the community and the area's resilience to disasters. Conversely, high building density that is not balanced by the provision of basic infrastructure will accelerate the decline in the quality of residential environments.

Previous Research and Research Gap

Various studies on riverbank settlements have been conducted with varying focuses. Ramdhani's (2022) research focused on housing quality in informal settlements along the Mahakam River, while Oktarini et al. (2022) examined community perceptions of the environmental quality of settlements along the Musi River. Fidelista et al. (2025) focused more on residents' perceptions of the built environment in riverbank settlements that have undergone regional transformation. Meanwhile, Mukaromah et al. (2025) discussed improving the quality of riverbank slum areas through a spatial planning approach to support watershed sustainability.

Although these studies have made significant contributions, most of them focus on aspects of community perception, slum management, or spatial planning strategies. Research that specifically evaluates the quality of settlements in the Ciliwung Riverbank area, specifically RW 08, Kampung Melayu Village, by integrating the UN-Habitat conceptual framework and the physical indicators of PUPR Regulation No. 14 of 2018 is still relatively limited. Therefore, this study is expected to fill this gap by evaluating the physical condition of settlements based on measurable indicators, thus producing more operational recommendations for improving the quality of settlements along the Ciliwung Riverbank.

Conceptual Framework of the Research

This study uses the concept of settlement quality according to UN-Habitat (2016; 2020) as the main conceptual framework, while the evaluation indicators refer to the Ministerial Regulation of PUPR Number 14 of 2018. The integration of these two approaches allows for a more comprehensive evaluation through an assessment of the physical condition of buildings, basic infrastructure, sanitation, drainage, waste management, accessibility, and environmental facilities and infrastructure. This conceptual framework is expected to provide a more complete picture of the quality of settlements on the banks of the Ciliwung River and serve as a basis for compiling recommendations for more appropriate, healthy, resilient, and sustainable regional planning.

3. RESEARCH METHOD

Research Design

This study uses a quantitative descriptive approach with an evaluative method (settlement quality assessment) to evaluate the quality of settlements on the banks of the Ciliwung River, RW 08, Kampung Melayu Village, Jatinegara District, East Jakarta. The quantitative descriptive approach was chosen because the study aims to describe the existing conditions of settlements based on physical indicators that can be measured systematically to produce an assessment of the level of settlement quality. The evaluative approach is used to assess the extent to which the physical condition of the area has met the principles of habitable settlements based on the UN-Habitat conceptual framework (2016; 2020) and the indicators stipulated in the Regulation of the Minister of Public Works and Public Housing Number 14 of 2018. With this approach, the study not only describes the condition of the area, but also provides an evaluation of the quality of the settlement environment as a basis for compiling recommendations for improving the quality of the area.

Study Area

The research location is in RW 08, Kampung Melayu Village, Jatinegara District, East Jakarta, Jakarta Province. This area was chosen because it is one of the densely populated settlements developing along the banks of the Ciliwung River and is highly vulnerable to flooding. Furthermore, this area has undergone various riverbank improvement programs, making it interesting to evaluate the quality of its settlements based on physical environmental indicators.

Data Collection

The research uses primary data and secondary data.

Primary data is obtained through:

a. Field observation;
b. Documentation of existing settlement conditions;
c. Recording of physical conditions based on research indicators.

Secondary data was obtained from:

a. Kampung Melayu sub-district government;
b. Central Statistics Agency (BPS);
c. DKI Jakarta provincial government;
d. Rtrw/rdtr documents;
e. Pupr documents;
f. Relevant scientific literature.

Variables and Indicators

The research variables consist of one variable, namely settlement quality, which is measured using physical indicators based on UN-Habitat (2016; 2020) and PUPR Ministerial Regulation No. 14 of 2018.

Table 1. PUPR Regulation No. 14 of 2018 on Settlement Quality Indicators

Variables	Indicator
Quality of Settlement	Building condition
	Building density
	neighborhood road
	Drainage
	Clean water
	Sanitation
	Waste management
	Environmental facilities and infrastructure

Data Analysis

Data analysis was conducted using quantitative descriptive analysis through scoring techniques for each settlement quality indicator. Each indicator was scored based on the actual conditions based on field observations, then summed to obtain a total settlement quality score. The assessment results were then classified into three categories: good, moderate, and poor, to illustrate the level of settlement quality at the study site. The analysis results were then interpreted using the UN-Habitat conceptual framework (2016; 2020) and indicators of PUPR Regulation No. 14 of 2018 to identify aspects that still require improvement. This interpretation serves as the basis for formulating recommendations for area planning to improve settlement quality sustainably.

4. RESULTS AND DISCUSSION

The research area is located in RW 08, Kampung Melayu Village, Jatinegara District, East Jakarta Administrative City, DKI Jakarta Province. Geographically, this area is located along the banks of the Ciliwung River, which is one of the main watersheds (DAS) in DKI Jakarta. This position makes the research area play a strategic role in the urban hydrological system, but on the other hand, it also faces a high level of vulnerability to flooding due to overflowing Ciliwung River, especially during the rainy season. In addition to being influenced by hydrological conditions, the development of the area is also influenced by high urban activity and the increasing need for residential space in the East Jakarta area. These conditions have caused the riverbank area to develop into a residential area with a relatively high population density (UN-Habitat, 2020; Ministry of Public Works and Housing, 2018).

Kampung Melayu Village is one of the densely populated residential areas in East Jakarta Administrative City with an area of approximately 47.83 hectares, consisting of 9 Community Units (RW) and 106 Neighborhood Units (RT), and has a population of approximately 31,317 people with 10,408 families. The high population in a relatively limited area puts pressure on the utilization of space, the provision of basic infrastructure, and the quality of the residential environment. RW 08 as the

research location is one of the areas directly adjacent to the Ciliwung River so that it has the characteristics of settlements that develop following a linear pattern along the riverbanks. This condition makes this area have a higher level of vulnerability compared to other residential areas located outside the river boundaries.

Physically, the study area is dominated by densely packed residential buildings with relatively narrow spacing between buildings. Settlement patterns evolve according to available space, resulting in some buildings being located very close to the river. Based on field observations, most buildings use permanent materials, but building density limits open space, air circulation, and natural lighting in some areas. According to UN-Habitat (2020), high residential density that is not balanced by adequate infrastructure and open space can degrade the quality of the residential environment and increase vulnerability to various environmental risks. This condition is also often found in riverbank settlements in developing cities experiencing high urbanization pressures (Douglas, 2018; Chiodelli, 2016).

The Ciliwung River plays a vital role as a natural drainage system, flowing through the Bogor region and flowing into Jakarta Bay. However, the development of settlements along the riverbanks has put pressure on the river's ecological function through increased building density, reduced riparian space, and the emergence of various environmental problems such as sedimentation, pollution, and the accumulation of domestic waste. Observations indicate that despite the construction of retaining walls as part of the area's development program, several locations still experience accumulation of waste along the riverbanks, potentially disrupting the smooth flow of water and reducing environmental quality (see Figures 1 and 2). This situation demonstrates that improving the quality of settlements depends not only on the development of physical infrastructure but also requires sustainable environmental management and community participation.

Evaluation of Physical Conditions of Settlement

Building Condition

Observations indicate that buildings in RW 08, Kampung Melayu Village, are dominated by permanent structures with brick walls and tile or zinc roofs. However, some buildings are still located very close to the Ciliwung River, thus failing to meet the principles of safe river boundaries. Based on the assessment, the building condition indicator scored 40, categorizing it as unsuitable. However, several buildings still require quality improvements, particularly regarding safe distances to the river and building layout.

Figure 4. Distance between buildings and river

According to UN-Habitat (2016; 2020), building quality is measured not only by its structural strength but also by its safety, comfort, health, and resilience to disaster risks. Buildings located too close to rivers are more vulnerable to flooding and bank erosion, which can reduce the overall quality of settlements. Therefore, improving building quality needs to be accompanied by spatial planning that takes into account the function of river boundaries.

These illustrative results align with research by Ramdhani (2022), which states that building quality is a key indicator in determining the quality of informal settlements. Research by Fidelista et al. (2025) also shows that improving the quality of buildings and the surrounding environment contributes to improving public perceptions of housing quality.

Table 2. Building Condition Assessment

Indicator	Assessment criteria	Score	Category
Building structure	Permanent	5	Not enough
Roof condition	Good	5	Not enough
Wall condition	Good	5	Not enough
Floor condition	Good	5	Not enough
Distance to the river	Not yet fulfilling all the requirements	5	Not enough
Total Score		**25**	Not enough

Settlement Density

Observations show that settlements in RW 08 develop in a linear pattern following the banks of the Ciliwung River. Buildings are relatively close together, and most of the land has been used for residential purposes, resulting in very limited open space. Based on the assessment, the settlement density indicator scored 40, which is considered dense. According to UN-Habitat (2020), high settlement density does not always have a negative impact if supported by adequate basic infrastructure. However, in riverbank areas, high density often increases vulnerability to flooding, reduces air circulation, and limits green open space. This finding aligns with research by Oktarini et al. (2022), which states that building density is a factor influencing public perception of residential environmental quality.

Example Table 3. Settlement Density Assessment

Indicator	Score	Category
Building density	40	Currently

Neighborhood Road

Based on observations, the neighborhood roads in the study area are paved, facilitating community mobility. However, the road width in some sections is still limited, making emergency vehicle access difficult. The neighborhood road indicator scored 60, categorized as good.

Figure 5. Road in the Ciliwung River area

Table 4. Road Assessment Scores in the Environmentsettlement in RW 08

Indicator	Score	Category
neighborhood road	60	Currently

Drainage

Environmental drainage systems are generally in place, but sedimentation and blockages caused by trash are still found in some areas, reducing water flow capacity. These conditions resulted in the drainage indicator scoring 68, which is considered moderate.

Table 5. Drainage Assessment

Indicator	Score	Category
Drainage	68	Currently

Sanitation

Environmental sanitation is relatively good, as most homes have basic sanitation facilities. However, improvements in household wastewater management are still needed. The sanitation indicator scored 70, categorizing it as good.

Table 6. Sanitation

Indicator	Score	Category
Sanitation	70	Good

Waste management

Waste management remains an area requiring attention. Observations show accumulation of waste along several riverbanks, indicating that the waste management system is not functioning optimally. This indicator received a score of 60, which is considered moderate.

Figure 6. Mobile Waste Management in the Ciliwung River Area

Table 7. Waste Management

Indicator	Score	Category
Waste management	50	Currently

Settlement Quality Level

Table 8. Summary of Settlement Quality Assessment Results

Indicator	Score	Category	Interpretation
Building condition	25	Not enough	Many buildings are located near river banks and do not meet physical feasibility requirements.
Settlement density	40	Currently	Building density is quite high so open space is limited.
neighborhood road	60	Currently	The road is available, but some sections are still narrow.
Drainage	68	Currently	Drainage is available but does not function optimally during heavy rain.
Sanitation	70	Good	Most homes have adequate sanitation facilities.
Waste management	50	Currently	Waste management is not optimal, and piles of waste are still found.

Based on the assessment of six settlement quality indicators, a total score of 313 was obtained, classifying the settlement quality in RW 08, Kampung Melayu Village, as moderate. These results indicate that, in general, the physical condition of the settlement has several components that meet the standards of suitability, but several indicators still require attention and improvement to improve the quality of the residential environment.

The assessment results showed that the sanitation indicator received the highest score, 70, in the good category. This indicates that the majority of the community has access to relatively adequate sanitation facilities, thus supporting a healthy residential environment. Furthermore, the drainage

indicator received a score of 68, while the neighborhood roads received a score of 60, both of which are in the moderate category. This indicates that basic infrastructure is available, but its effectiveness is still not optimal in supporting the quality of the residential environment, particularly in preventing flooding and improving area accessibility.

Meanwhile, waste management received a score of 50, categorized as moderate. This result indicates that the waste management system in the study area still requires improvement, particularly in terms of collection, transportation, and public awareness of environmental cleanliness. This situation is further supported by field observations, which indicate that waste continues to accumulate along several points along the Ciliwung River (see Figure 1), potentially degrading environmental quality and disrupting the river's ecological function.

The indicator with the lowest score is building condition, which received a score of 25, categorized as "poor." The low score on this indicator indicates that some buildings still do not meet the criteria for settlement suitability, particularly regarding proximity to river banks, regular building layout, and vulnerability to flooding. According to UN-Habitat (2016; 2020), building quality is a key component in creating safe and livable settlements. Buildings that develop too close to river banks not only increase the risk of flooding but also limit the river bank space that serves as an ecological protection area.

Furthermore, residential density received a score of 40, categorized as moderate. High building density indicates pressure on land use, resulting in limited open space, reduced air circulation, and increased potential risks of fire and the spread of environmentally-related diseases. This condition aligns with the UN-Habitat concept of residential quality, which emphasizes that urban density must be balanced with the provision of basic infrastructure and open space to maintain a healthy and sustainable residential environment.

The evaluation results show that the quality of settlements in RW 08, Kampung Melayu Village, is still in the moderate category, which means that the area has some adequate basic infrastructure, but has not fully met the indicators of habitable settlements as mandated in the Regulation of the Minister of Public Works and Public Housing Number 14 of 2018. Therefore, efforts to improve the quality of settlements need to be prioritized in the aspects of improving building conditions, arranging settlement density, and strengthening environmental management, especially waste management and utilization of the Ciliwung River riparian area. This approach is expected to improve the quality of the residential environment in a sustainable manner while strengthening the area's resilience to the risk of flooding and environmental degradation.

5. CONCLUSION

This study aims to evaluate the quality of settlements on the banks of the Ciliwung River, RW 08, Kampung Melayu Village, Jatinegara District, East Jakarta based on the UN-Habitat conceptual framework and physical indicators referring to the Regulation of the Minister of Public Works and Public Housing Number 14 of 2018. The evaluation results show that the overall quality of settlements is in the moderate category with a total score of 313. This condition indicates that the research area has several adequate basic infrastructure components, but has not fully met the characteristics of safe, healthy, habitable, and sustainable settlements.

Based on the assessment results, the sanitation indicator was categorized as good, indicating that the majority of the community has access to relatively adequate sanitation facilities. Meanwhile, indicators for neighborhood roads, drainage, residential density, and waste management were categorized as moderate, indicating that basic infrastructure is available but its effectiveness still requires improvement. The building condition indicator was categorized as poor, making it the aspect that requires the most attention because some buildings are still very close to the Ciliwung River and are highly vulnerable to flooding and environmental degradation.

From the perspective of UN-Habitat, the quality of settlements is not only determined by the physical condition of buildings, but also by the integration of basic infrastructure, environmental quality, regional security, and resilience to disaster risks. Therefore, the results of this study indicate that improving the quality of settlements in the Ciliwung Riverbank area cannot be done partially, but requires an integrated approach through building arrangement, increasing drainage capacity, optimizing waste management, controlling settlement density, and protecting riverbank areas in accordance with spatial planning provisions and national policies.

This research contributes to the development of settlement quality studies by integrating the UN-Habitat conceptual framework and evaluation indicators based on PUPR Ministerial Regulation No. 14 of 2018 as an approach to assess the physical condition of riverbank settlements. This approach is expected to serve as a reference in the development of urban settlement planning policies, particularly in areas with characteristics similar to the Ciliwung Riverbanks.

Further research is recommended to develop settlement quality evaluations by integrating social, economic, and community perception aspects, so that settlement quality assessments focus not only on physical conditions but also on a more comprehensive depiction of community quality of life. Furthermore, the use of Geographic Information System (GIS) and remote sensing technology can also be considered to produce more accurate spatial mapping of settlement quality and support decision-making processes in urban planning.

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