

Environmental Quality of Riverbank Slum Fisherman Settlement In Yong Panah Hijau Sub-District Medan Labuhan, North Sumatra

Jahlelawati¹

¹Sekolah Dasar Swasta Tri Bakti 1
Medan, Sumatera Utara, Indonesia
Email: jahlelawati879@gmail.com

Abstract

The growth of housing areas and settlements that are less livable in riverside areas has an impact on the tendency for the development of slums that are not in accordance with healthy settlement standards. The socio-economic conditions of the population, who generally work as fishermen with irregular income and in the low category, land status that is not official (government-owned), causes settlements to become increasingly squalid. If these conditions are not controlled for growth, then the quality of the environment and the degree of public health will continue to decline. This study aims to (1) identify the characteristics of slum settlements on the banks of the river and (2) identify the factors that cause slums. This study used a survey method, with the determination of the sample environment by purposive sampling. The research location is in Yong Panah Hijau Village, Medan Labuhan District. The sample size is 15 houses, which are proportionally selected from two environmental areas, namely the riverside and upper river. The results showed that in general the characteristics of waterfront settlements in Yong Panah Hijau Village: (1) the condition of facilities, infrastructure and utilities is poor, (2) the level of building density is high, (3) the feasibility of buildings is low. This condition is influenced by the economic factors of the population, who are generally low-income people (MBR), so that the motivation to have a decent environment and housing is very low. Thus the identification of the characteristics of residential areas is expected to become the basis for preparing action plans in the process of planning and formulating regional development in an integrated manner with the population.

Keywords: Riverside slums, building condition, environment, population

1. INTRODUCTION

Housing and settlements in a broad sense do not only mean a place to live, but a complex unit that involves various cultural elements (Amri, 2013). These elements not only highlight biological activities, but also various social, political, religious activities and so on. A process of change in housing and settlements cannot be seen only from the material side or as a means of life, but also as a process of living, a place for human presence in creating living space in the community and natural surroundings. One of the problems related to housing is the growth of slum settlements in suburban areas and river/sea coasts which are urban water pockets. The existence of housing for the community is one of the needs of the community in their life. According to Kartono (2010), there are 3 types of people's settlements based on their physical characteristics, namely water settlements, fort settlements and village settlements. Yong Panah Hijau Village, Medan Labuhan District is a water village that has long been inhabited by local residents and has developed along with the growth of the city.

From the results of the identification of housing and settlement conditions in Medan Labuhan District in 2021, settlements along the banks of the Deli river Yong Panah Hijau Village are slums that require special handling in terms of settlement facilities and infrastructure, this is also related to the social & economic conditions of the population which are generally poor residents. National Program for Community Empowerment (PNPM) and Development of Community Institutions in environmental improvement and construction of ± 200 m long Deli river embankment, installation of paving blocks,

environmental roads, construction of city parks, are local youth efforts to improve the physical and non-physical quality of the housing and settlement environment in Yong Panah Hijau Village, Medan Labuhan District. The success of activities to improve the quality of settlements is highly dependent on the ability of various institutions and communities in implementing the development process. In particular, activities that can improve the welfare of low-income people and improve the quality of the housing and settlement environment by avoiding the negative impacts of natural resource exploitation and environmental pollution. is an effort by local youth to improve the physical and non-physical quality of the housing and settlement environment in Yong Panah Hijau Village, Medan Labuhan District. The success of activities to improve the quality of settlements is highly dependent on the ability of various institutions and communities in implementing the development process. In particular, activities that can improve the welfare of low-income people and improve the quality of the housing and settlement environment by avoiding the negative impacts of natural resource exploitation and environmental pollution. is an effort by local youth to improve the physical and non-physical quality of the housing and settlement environment in Yong Panah Hijau Village, Medan Labuhan District. The success of activities to improve the quality of settlements is highly dependent on the ability of various institutions and communities in implementing the development process. In particular, activities that can improve the welfare of low-income people and improve the quality of the housing and settlement environment by avoiding the negative impacts of natural resource exploitation and environmental pollution.

2. METHODOLOGY

This research is a descriptive, explorative and interpretive study that studies theoretically by observing and exploring primary data by observing the environmental conditions of housing and slum settlements in the riverside area, Yong Panah Hijau Village, Medan Marelan District, North Sumatra. The study population was all houses and heads of households living in riverside settlement areas. The sample size is determined by 10% of the number of households in residential areas. Respondent samples were determined proportionally as many as 15 samples. Data analysis techniques include: (1) Literature study and understanding of river bank locations, (2) Data collection and analysis of field conditions and (3) Identification of riverside areas and slums.

3. RESULTS AND DISCUSSION

The Relationship between Physical Conditions and Slum Settlements in Medan Labuhan District

The physical conditions referred to here are not talking about the natural conditions of the Medan Labuhan Subdistrict, but talking about the location, condition of the buildings and the condition of facilities and infrastructure in the Medan Labuhan Subdistrict.

a. Land legality

The status of land ownership in the slum areas along the river banks is owned by the government along the banks of the Deli river. This low land ownership is due to the high price of land in the study location.

b. Disaster frequency

Generally the location of the houses in the residential area of Yong Panah Hijau Neighborhood 7 Village is on the banks of the river/river border with an average distance of less than 5 m from the river side. Lack of public awareness in maintaining the cleanliness of the river with the habit of throwing garbage, dirty water and latrines in the river. Meanwhile, fires did not occur in the past year, except for several groups of houses with high density levels which tend to be prone to fires. With the repair of the embankment at this time the condition of the river banks is no longer prone to flooding. Apart from that, it is necessary to add well-managed TPS (garbage storage) facilities and realign residential areas with low density levels, to prevent mass fire disasters.



Figure 1. Condition of river banks full of plastic waste



Figure 2. The condition of the embankment on the riverbank is being repaired

c. Build quality level

There are many buildings with non-permanent and semi-permanent status in the research location. The majority of houses on the banks of the river in Medan Labuhan District have tin roofs because they are considered cheaper than roof tiles. For the walls, the majority use bamboo/bamboo materials and boards. As for the floors, they are still covered with earth and partly covered with boards with wooden supports forming a stilt house on the banks of the river.



Figure 3. Condition of the building

d. Building density level

The level of density at the research location can be categorized as very high. This condition causes the settlement arrangement to be chaotic and disorganized. In addition, the community's incompetence and low awareness of livable settlements exacerbated environmental conditions.



Figure 4. Density of houses on the banks of the river

e. Building feasibility level

The results showed that there were still many uninhabitable buildings in settlements along the riverbanks of Medan Labuhan District. It is not feasible here, seen from the area of the room owned, which is not proportional to the number of occupants of the room.

f. Floor area usage rate

Spatial planning in houses in slum settlements is usually unclear (Suparlan, 1995). The use of the living room, bedroom and kitchen in a house is often put together. As for the kitchen and bathroom, the residents are usually outside the house because the building is too narrow.



Figure 5. Conditions inside residents' homes and cooking areas outside the home

g. Level of clean water service

To fulfill their need for clean water, residents of slum settlements usually buy water from itinerant vendors. This clean water is used for daily needs such as cooking and drinking water. As for bathing and washing activities, residents usually use private toilets or some wash in the river.

h. Environmental sanitation conditions

Ownership of private MCK in the research location can be said to be quite high even with sober conditions. Residents usually dispose of their own MCK waste directly into the ditch which will then flow into the surrounding rivers.

i. Garbage conditions

Communities in the research locations in general have received waste transportation services. However, the officers did not immediately pick up the garbage, but instead allowed it to pile up in nearby garbage dumps, even on the banks of the river there was a lot of trash scattered about.

j. Drainage conditions

The habit of people in slum settlements who throw garbage directly into the river causes the condition of the river to decrease. Not infrequently when it rains the river water is full and overflows because the condition of the river is getting shallower caused by household waste.

k. Road conditions

Road infrastructure in the riverside slum area of Medan Labuhan District already uses asphalt, cement or concrete. This road connects the roads in Medan Labuhan District with Medan Belawan District. The width of the road that connects between sub-districts is 4 meters so that it can be passed by four-wheeled vehicles, many public transportations cross this road.

l. Outdoor

Limited land in riverside slums makes residents pay less attention to the availability of open space or open space in residential areas that functions as a children's playground and as a means of recreation for residents. Due to the limited area of open space, children lack space to play, so they often play in the river area which endangers their safety.



Figure 6. Children's activities playing in the river

Relationship of Socio-economic Conditions with Riverside Slums in Medan Labuhan District

a. Population density level

The results showed that the level of population density along the riverbanks in Medan Labuhan District was categorized as very high. This condition causes the layout of settlements to be irregular, giving rise to a rundown and unsightly impression.

b. Average household member

The results of the study show that the average household members in the research locations are quite diverse. In one house there are usually 5-10 family members with a house area of $<20\text{m}^2$. The average number of household members will affect the area of use of each floor. The more household members, the narrower the use of floor area.

c. Number of heads of household per house

The number of households in one house will affect the slum value. This is because there will be an accumulation of family members in one house, so that the need for space in one house will be higher and the use of space for movement will be narrower. At the research location, there was often one household per house with a building area of $<20\text{m}^2$.

d. Income level

The level of income is influenced by the type of livelihood of its citizens. The types of livelihoods in the slum areas along the riverbanks of Medan Labuhan District are engaged in the informal sector such as traders, factory workers and most of them are fishermen. Most of the residents earn below the UMR with an average number of dependents per family is 4 people. With non-fixed income used to buy clean water for drinking purposes Rp. 3,000/jerry can for those who do not get tap water service, electricity costs, children's education costs and daily needs. This income that doesn't match their expenses makes them unable to rent a house in a better environment, so they choose to stick with their current conditions.



Figure 7. Condition of houses and vehicles (canoes) for fishing

e. Level of education

The education level of the respondents can be categorized as quite high although most did not continue on to tertiary education, but most of them completed 9 years of basic education. They

also care about their children's education. Their mindset has developed, but economic limitations and a sense of comfort have kept them in their current home.

Definition of Settlements

Settlement is one of the basic human needs besides clothing and food. Settlements based on Law Number 1 of 2011 concerning Housing and Residential Areas are part of a residential environment consisting of more than housing units that have facilities, infrastructure, public utilities and support for other functional activities in urban or rural areas. The implementation of settlements aims to create areas with residential environments and places of activity that can support life and livelihoods that are planned, as a whole, integrated and sustainable in accordance with the spatial plan. Organizing settlements aims to cover the rights of citizens to proper housing in realizing a healthy, safe, harmonious and orderly environment as well as obtaining legal certainty.

Housing and Residential Areas states that residential areas are part of the environment other than protected areas, namely urban and rural areas, which have the function of a residential environment or residential environment and places of activity that can support livelihoods and livelihoods. Residential areas have a bigger function than housing which is a place to live and a place to earn a living by its residents (Wardani, 2021). Settlements are very closely related to environmental characteristics and the behavior of the inhabitants of these settlements. Environmental characteristics are one of the factors that can affect the spatial layout of a settlement (Nursyahbani & Pigawati, 2015). As a whole settlement can be defined as a residential environment that has the facilities.

Fisherman Settlements

Settlements located on the shoreline/river which are dominated by people whose livelihoods are fishermen can be said to be fishermen settlements. A fishing settlement is a place to live with basic facilities and infrastructure and the community has a homogeneous or the same work pattern, namely having a livelihood as a fisherman and the conditions of the fishing community settlements are inadequate. Fisherman settlements are places to live that can provide convenience in supporting marine and fishery activities (Wardani, 2021). Fishermen's settlements are generally built spontaneously or unplanned and include low-income (poor) community settlements, because fishermen are one of the low-income communities and have limited education.

However, Fisherman settlements are villages located on the shore/river, along the coast and provide convenience in the field of maritime affairs and fisheries (Chrisvananda, 2021). Fishing communities have a low level of education resulting in a lack of information owned by fishing communities and will have an impact on the progress of fishermen, so this can make it difficult for the Government to provide assistance such as outreach and modernization of equipment. The development of fishing settlements is increasing due to natural population growth and urbanization.

A good residential environment is an environment that has a healthy house structure, an orderly layout of the house and has adequate facilities and infrastructure such as schools, health centers and religious facilities as well as a road network, clean water network, solid waste network and drainage network. For facilities and infrastructure can be placed in a location that is easily accessible by fishing communities. However, in fishing settlements the completeness of basic facilities and infrastructure is inadequate (Wardani, 2021). It can be concluded that fishermen's settlements are settlements located on the shoreline/river which are dominated by people whose livelihoods are fishermen. In addition, people who live have social and economic characteristics, lack of knowledge, and limited educational background.

Characteristics of Fisherman Community Life

Communities who live in fishing settlements are not entirely dependent on fishing activities, but there are other jobs that are carried out including tourism, inter-island transportation, traders, and those related to the sea and the coast. The fishing settlement community has social and economic characteristics, lack of knowledge, and limited educational background (Wardani, 2021). Fishing communities have characteristics that are interrelated with one another, including intensive social interaction. Where is the effectiveness in terms of face-to-face communication so that there are close family ties. In addition, in earning a living, they participate in mutual cooperation and help each other (Yanfika et al., 2021).

The following will present the characteristics of the life of fishing communities as follows (Wardani, 2021):

1. Fisherman Community Life from Social Aspect
Within the fishing community, there is a high mutual cooperation, kinship and there is a social interaction with the environment. Fishing communities have a traditional life with a specific life.
2. The Life of Fishermen Communities from a Cultural Aspect
People tend to live in more than one family in one house, causing excess capacity and will result in limited space for movement. This usually triggers fishing communities to expand their homes without planning. In addition, there is also a tradition that has been passed down from generation to generation and continues in fishing communities, such as making thanksgiving before going to sea or the end of the fishing season.
3. The Life of Fishermen Communities from an Economic Aspect
The level of income of fishing communities cannot be determined, because the community only depends on the catch and the weather. Most fishing communities work as fishermen, for other fields the community lacks the ability to do other types of work. However, there are also people who are engaged in ponds so that they can improve their standard of living to be more prosperous. Overall, it can be concluded that not all fishing communities work in the fisheries sector, but there are also types of work in business, tourism and other fields related to the coast. Fishing communities have characteristics in terms of social aspects, economic aspects and cultural aspects. Based on the opinions of the experts above, the characteristics of fishing communities are very diverse.

Residential Environmental Quality

Quality or often referred to as quality is the level of good and bad levels or degrees and suitability between goals and benefits. The quality of the settlement environment is determined by the availability of facilities and infrastructure that meet the needs of the community. An environment that has good quality will create a healthy, safe and prosperous life. According to Ekavina (2021), the quality of settlements can be measured by looking at several indicators on the physical aspect, namely building conditions, environmental sanitation, and basic settlement infrastructure, while based on (Aguswin, 2021), settlement quality can be measured through the physical conditions of buildings and social and economic conditions the community where the physical buildings such as building density and building construction conditions.

The social and economic conditions of the community such as education level, income level, level of community participation in the development of residential areas. Settlement quality includes the condition of the building, environment and residents of the settlement. There are several problems in improving the quality of settlements, this is caused by the difficulty of the economic ability of the population to build houses so that low-income people cannot obtain proper settlements, then higher population growth becomes a problem of settlement quality, settlements that are not well organized based on physical conditions, social, economic and health that do not meet standards and there are settlements with poor environmental infrastructure due to the absence of clean water.

Therefore, it is necessary to maintain and manage the environment in a sustainable manner by all stakeholders. People who live in clean and healthy residential areas will be able to meet their needs well too. However, if the settlements are not well planned, the quality of the environment will decrease which will result in the settlement environment becoming uninhabitable. Based on the Regulation of the Minister of Public Works and People's Housing of the Republic of Indonesia Number 02 of 2016 concerning Improving the Quality of the Environment for Housing and Slums, it is stated that slums are housing or settlements that have experienced a decrease in the quality of their function as a place to live. Efforts are made through improving the quality of housing and slum settlements in improving the quality of buildings, as well as infrastructure, facilities and public utilities. The other efforts that can be made to minimize the occurrence of a decrease in quality in maintaining environmental sustainability are as follows (Wardani, 2021) as (1) Humans are expected to always maintain and improve the environment for future generations. (2) The use of resources is carried out through proper planning and management. (3) Economic and social development functions for human welfare in improving environmental quality. (3) In carrying out environmental policies directed at increasing the current and future development potential. (4) Education, training, socialization is needed in environmental

management so that environmental problems can be controlled. (5) It takes cooperation between all parties in preserving and maintaining so that no environmental damage occurs. These efforts can be made so that there is no decrease in the quality of the environment in a fishing settlement. Therefore, it can be concluded that environmental quality is a suitability in creating a healthy, safe and prosperous life.

4. CONCLUSION

Characteristics of riverbank slum settlements in Yong Panah Hijau Village, Medan Labuhan District: (1) Clean water facilities and infrastructure are not evenly distributed, dirty water disposal and waste disposal do not meet health requirements; (2) low environmental quality; (3) low quality of buildings and unfit for habitation; (4) high population growth rate; (5) insufficient level of income. From the aspect of facilities and infrastructure, it can be concluded that most of the existing conditions belong to the slum category, namely: environmental sanitation, garbage and rainwater drainage, which pollutes the river. As a result of the lack of awareness of the population about environmental health, it has implications for the quality of the environment that is prone to flooding and the quality of life of residents who are vulnerable to disease outbreaks. One of the causes of the high level of housing density on the riverbanks of Yong Panah Hijau Village, Medan Labuhan District is the large number of migrants who come and settle in the location. This causes houses to grow densely and irregularly and the condition of infrastructure is poor. The socio-economic conditions of the population are generally non-sedentary/low income, causing low motivation of the population to have proper and healthy housing. Then the implication of the high level of building density on the site causes a lack of open space.

REFERENCES

- Aguswin, A. (2021). Arrangement of Slum Residential Areas in Sukajaya Village, Cibitung District, Bekasi Regency. *Ikra-lth Teknologi: Journal of Science & Technology*, 5(3), 48-57.
- Amri, N. (2013). Environmental Characteristics of Riverside Slums, Kolaka District, Southeast Sulawesi. *Jupiter Journal*, 12(1), 1-10.
- Chrisvananda, BF (2021). Arrangement of Fishermen Residential Areas in Ujungbatu, Jepara City with a Green Architecture Approach (Focus on Design on Waterfront) (Doctoral dissertation, Muhammadiyah University of Surakarta).
- Eka Vina, AP (2021). Directions for Slum Management with an Eco-Sattlement Approach in Sidodadi Village, Samarinda City (Doctoral dissertation, Kalimantan Institute of Technology).
- Kartono, DT (2010). Definition and Scope of Urban Sociology. Jakarta: Open University.
- Nursyahbani, R., & Pigawati, B. (2015). Study of Characteristics of Slum Residential Areas in Kampung Kota (Case Study: Kampung Gandekan Semarang). *PWK Engineering (Urban Area Planning)*, 4(2), 267-281.
- Suparlan, S. (1995). Poverty in Urban. Jakarta: Indonesian Torch Foundation
- Wardani, MK (2021). Improving the Environmental Quality of Fishermen Settlements in Manggar Baru Village, East Balikpapan District, Balikpapan City (Doctoral dissertation, Kalimantan Institute of Technology).
- Yanfika et al., (2021). Gender Equality and Livelihood Strategies for Developing Extension Programs for Coastal Communities in Tanggamus District, Lampung Province. *Journal of Extension*, 17(2), 126-135.