

Analysis of Teluk Dalam City Slums Area Handling in South Nias Regency

¹Yanlima Mendrofa, ²Sirojuzilam, ³Tarmizi

¹Department of Regional and Rural Development Planning,
University of Sumatera Utara,
North Sumatra, Indonesia

²Department of Regional and Rural Development Planning,
University of Sumatera Utara,
North Sumatra, Indonesia

³Department of Economy Development, Faculty of Economy and Business
University of Sumatera Utara,
North Sumatra, Indonesia

ABSTRACT

This study aims to find strategy for handling slums in Teluk Dalam City, South Nias Regency. This research was conducted in Teluk Dalam Market in Teluk Dalam City, South Nias Regency, precisely in Neighborhood II and Neighborhood VIII. Data collection research was carried out through library research, observation and interviews. Simultaneously the factors of land prices, distance to workplaces, income and education have a significant effect on community decisions to live in slums. Partially the factors of land prices, distance to workplaces, education and income negatively affect slums.

Keywords: Slums area, QSPM analysis, SWOT analysis

reclassification of rural areas to urban areas.

South Nias Regency as one of the districts in North Sumatra Province experienced population growth due to birth rates and urbanization. The construction of large-scale housing cannot be carried out simultaneously because it has to deal with land issues. The condition of settlements in the City of Teluk Dalam is still not organized and is not in accordance with the city spatial plan. There is no planned housing development, high demand for housing, and scarcity of land that forces maximum land use to violate the border line, creating a slum settlement environment without facilities and infrastructure.

Introduction

The city grows and develops as a place where the population is centered with all its activities where changes occur automatically and government policies through the city planning process. This process of change is strongly influenced by the rate of population growth, both due to natural growth (birth), urbanization (migration) and the occurrence of

According to Panudju in Ahmad (2004), to meet the needs of decent housing in a healthy environment and to create a harmonious and balanced housing and in accordance with the pattern of urban spatial planning, regional governance, and optimum land use, housing and residential areas need to be developed. the form of flats because the population in urban areas

is very dense while the available land is limited. Building vertical housing is one of the objective solutions to solve housing problems amid land scarcity in the city center. Research by Mulyo (2000) in the research on the Role and Performance of the Surakarta City Housing Office in the Rejuvenation of Slum Areas (Case Study: Rejuvenation of Slum Settlements in Mojosongo Surakarta Village) ". concluded that the role of the Surakarta Housing Office in each activity has supported its functions and duties in rejuvenating slums.

The role of each activity starting from the planning, implementation and evaluation stages is quite important, except for activities related to housing development based on community groups (P2BPK), the Housing Agency only provides technical assistance. This is in line with the aim of P2BPK to empower the community and make it a leading role in development, so that they do not care about existing government programs. Research Malau (2006) in a research study "Analysis of the Socio-Economic Life of Slum Regions in the District of Teluk Nibung, Tanjung Balai City". that the slum level of the Teluk Nibung area is viewed from a very high aspect of residential density, the quality of buildings is generally low, and environmental infrastructure is not good. The socio-economic life of the community seen from the aspect of income level is classified as low with the type of work as a laborer and elementary school education. Socio-economic factors (income, employment and education) have a significant effect on occupancy density and building quality in the Teluk Nibung region, whereas for basic environmental infrastructure, the variables that have a significant effect are income and education.

Statement of the problem

Based on the descriptions mentioned above, several research problems are as follows:

- a. What are the conditions of settlements in Teluk Dalam City, South Nias Regency?
- b. What is the socio-economic level of the people in Teluk Dalam City, South Nias Regency?
- c. What are the factors that influence the decisions of people living in slums in Teluk Dalam City, South Nias Regency?
- d. What is the strategy for handling slums in Teluk Dalam City, South Nias Regency?

Result

The condition of Teluk Dalam City Settlement experiences clean water problems in the Bay Dalam Slum Area of South Nias Regency such as: lack of clean water services and many houses that do not have direct connections to get clean water. On drainage problems in the Teluk Dalam slum area of South Nias Regency, they include: lack of drainage infrastructure and facilities, frequent flooding, and a lack of public awareness in maintaining drainage channels (resulting in poor functioning channels). While sanitation (Sewerage); sanitation / waste problems in the Teluk Dalam slum area of South Nias Regency due to the lack of infrastructure and facilities for household waste disposal, lack of land for the development of household waste (due to dense buildings), and a lack of public awareness in disposing of household waste. The problem of waste in the Teluk Dalam slum area of South Nias Regency is caused by the lack of garbage

infrastructure and facilities and a lack of public awareness in disposing of garbage.

Whereas road quality problems, such as roads in the Teluk Dalam slum area of South Nias Regency are caused by a lack of quality road environment (many roads in the absence of road surface pavement) and public awareness in maintaining poor roads (roads are damaged because the

drainage channel is damaged so when it rains then the water flooded into the road).

The socio-economic conditions of the respondents described in this study were age, sex, length of stay, number of family dependents, education, income, livelihoods of the respondents in the Teluk Dalam City of South Nias Regency.

Normality test

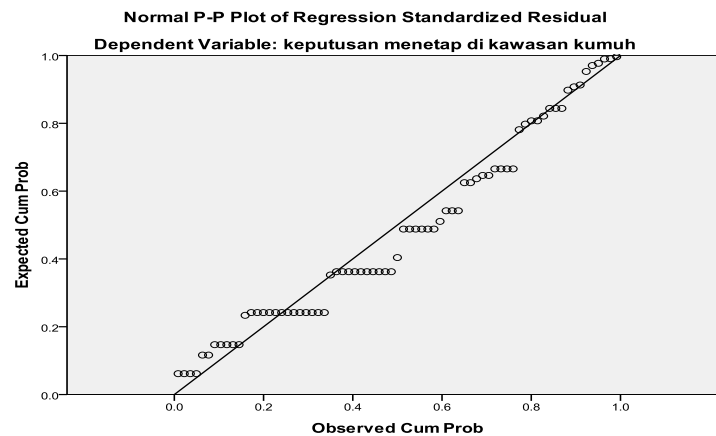


Figure 1. Normality Test Results Factors of People Living in Slum Areas

In Figure 1, it can be seen the results that all data are normally distributed and there are no deviations, so that the data collected can be processed with the following methods. This can be proven by considering the spread of data around the diagonal line in the "Normal P-Plot of Regression Standardized Residual" according to the picture above, so that it

can be said that the regression model in this study is normally distributed.

Multicollinearity Test

VIF values of less than 10 and tolerance of more than 0.10 indicate that there are no symptoms of multicollinearity. So it can be concluded that the regression model does not have multicollinearity problems.

Table 1. Results of Multicollinearity Assumption Test Analysis

Model	Collinearity Statistics	
	Tolerance	VIF
1		
(Constant)		
Land Price	.520	1.924
Distance to the workplace	.407	2.460
Income	.497	2.013
Education	.865	1.156

a Dependent Variable: Factors of People Living in Slum Areas

It can be concluded that the independent variable does not occur multicollinearity so that the model has fulfilled the classical assumption requirements in the regression analysis.

Heteroscedasticity Test

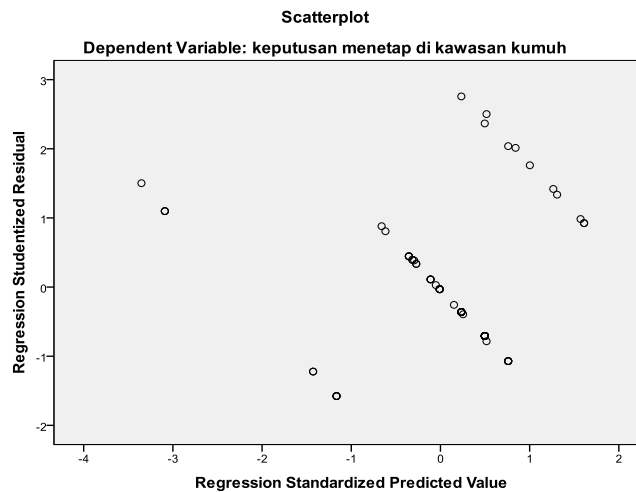


Figure 2. Heteroscedasticity Test of Factors of People Living in Slum Areas
Overall, the regression model meets the classical assumption test requirements.

Determination Coefficient Test Results (R²)

Table 2. Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.807 ^a	.651	.630	.32836

a. Predictors: (Constant), education, land prices, income, distance to the workplace

b. Dependent Variable: Factors of Living in Slum Areas

Source: Primary Data Processed, 2018

The result of calculating the R Square value is 0.651. This means that 65.1 percent of settling decisions in slums can be explained by the four independent variables above, while the remaining 34.9 percent are explained by other variables not included in this study.

Simultaneous Test Results (F Test)

Table 2. Simultaneous Test Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.655	4	3.414	31.662	.000 ^a
	Residual	7.332	68	.108		
	Total	20.986	72			

a. Predictors: (Constant), education, land prices, income, distance to the workplace

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.655	4	3.414	31.662	.000 ^a
	Residual	7.332	68	.108		
	Total	20.986	72			

a. Predictors: (Constant), education, land prices, income, distance to the workplace

b. Dependent Variable: Factors of People Living in Slum Areas

The four independent variables are significant in explaining the decision to settle in slums.

Table 3. T-Statistic Test Results

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	6.250	.265		23.557	.000
	Land Price	-.353	.091	-.386	-3.882	.000
	Distance to the workplace	-.265	.096	-.311	-2.766	.007
	Income	-.220	.081	-.276	-2.716	.008
	Education	-.114	.052	-.169	-2.196	.032

a. Dependent Variable: Factors of People Living in Slum Areas

In table 3, the partial test results are obtained, as follows:

1. Land price variables have a negative and significant effect on settling decisions in slums.
2. The variable distance to the workplace has a negative and significant effect on settling decisions in slums.
3. Income variables have a negative and significant effect on settling decisions in slums.
4. Educational variables have a negative and significant effect on settling decisions in slums.

Discussion

Condition of Teluk Dalam City Settlement

Housing conditions in Teluk Dalam City of South Nias Regency are mostly permanent buildings with a high density level. Housing issues in the Teluk Dalam Slum Area of South Nias Regency include: a) Number of people who do not have their own homes (renting a house or living with parents / siblings), b) Many houses that are less habitable, damaged or improper building structures, and c) High house density and building construction of wood that is prone to fire hazards. Overall factors that become strengths, weaknesses, opportunities and threats can be seen in table 4.

Table 4. SWOT Data on Regional Development in Handling Slum Areas in Teluk Dalam City, South Nias Regency

Strengths	Weaknesses
1. Near to the city center	1. Low income community

<ol style="list-style-type: none"> 2. Prices of land are affordable for people to buy or rent 3. The community is faster in carrying out activities both in work, education and health 4. People can easily socialize 	<ol style="list-style-type: none"> 2. Has no infrastructure for urban settlements 3. Semi-permanent buildings and located on the banks of the river 4. Land status and unclear land ownership
Opportunities	Threats
<ol style="list-style-type: none"> 1. The role of the government in managing urban infrastructure 2. The role of the government is to improve the condition of settlements and the environment to improve the social welfare of the community. 3. The role of government is to improve and reuse urban functions by prioritizing land use 4. The role of private developers 	<ol style="list-style-type: none"> 1. There are migrants living in settlements. 2. It is a green lane area that is not in accordance with the Spatial Planning Law 3. The danger of flooding 4. Fire hazard

Source: 2018 research, data processed

Furthermore, based on table 4, weighting, rating and scores are carried out for each of the internal factors in the development of the area handling the Teluk Dalam City South Nias slum area which can be seen in table 5.

Table 5. Internal Factor Analysis of Handling Slum Areas

Strategic Internal Factors	Weight	Rating	Score
Strengths			
1. Near to the city center	0,12	4	0,48
2. Prices of land are affordable for people to buy or rent			
3. The community is faster in carrying out activities both in work, education and health	0,12	3	0,36
4. People can easily socialize			
	0,10	2	0,20
Weaknesses			
1. Low income community	0,10	1	0,10
2. Has no infrastructure for urban settlements			
3. Semi-permanent buildings and located on the banks of the river	0,10	1	0,10
4. Land status and unclear land ownership			
	0,12	3	0,36
	0,12	2	0,24
	0,12	4	0,48
Total	1,00		2,28

Source: 2018 research, data processed

The results of the analysis above show that the dominant internal factors are: near to the city center, land status and unclear land ownership, prices of land are affordable for people to buy or rent, there is no infrastructure for urban settlements, semi-

permanent buildings and located on the banks of the river, the community is faster in carrying out activities both in work, education and health, people can easily socialize and low income community.

Table 6 Analysis of External Management of Slum Areas

Strategic External Factors	Weight	Rating	Score
Opportunities			
1. The role of the government in managing urban infrastructure	0,12	4	0,48
2. The role of the government is to improve the condition of settlements and the environment to improve the social welfare of the community.	0,10	2	0,20
3. The role of government is to improve and reuse urban functions by prioritizing land use			
4. The role of private developers	0,12	3	0,36
Threats			
1. There are migrants living in settlements.	0,10	1	0,10
2. It is a green lane area that is not in accordance with the Spatial Planning Law	0,12	4	0,48
3. The danger of flooding	0,10	3	0,36
4. Fire hazard	0,12	2	0,24
	0,12	1	0,12
Total	1,00		2,34

Source: 2018 research, data processed

The results of the analysis above show that the dominant external factors are: the role of the government in managing urban infrastructure, there are migrants living in settlements, the role of government is to improve and reuse urban functions by prioritizing land use, there is a green lane

area that is not in accordance with the Spatial Planning Law, the danger of flooding, the role of the government is to improve the condition of settlements and the environment to improve the social welfare of the community, fire hazard, and the role of private developers.

Table 7 SWOT Matrix

Internal Factors	Strengths	Weaknesses
External Factors	<ol style="list-style-type: none"> 1. Near to the city center 2. Prices of land are affordable for people to buy or rent 3. The community is faster in carrying out activities both in work, education and health 4. People can easily socialize 	<ol style="list-style-type: none"> 1. Low income community 2. Has no infrastructure for urban settlements 3. Semi-permanent buildings and located on the banks of the river 4. Land status and unclear land ownership
Opportunities	SO-Strategy	WO-Strategy
<ol style="list-style-type: none"> 1. The role of the government in managing urban infrastructure 2. The role of the government is to improve the condition of settlements and the environment to improve the social welfare of the community. 3. The role of government is to improve and reuse urban functions by prioritizing land use 4. The role of private developers 	<ol style="list-style-type: none"> 1. Encouraging the government to buy community land (S2, O1, O2, O3) 2. Improve community access in carrying out activities (S1, S3, O1, O2, O3)) 3. Encouraging private developers to play a role in building settlement that is cheap and feasible for the community (S2, O2) 	<ol style="list-style-type: none"> 1. Record land status and ownership (W4, O1, O2, O3) 2. Rehabilitating infrastructure in settlements (W2, O1, O2.O3) 3. Increasing the government's role in the quality of the settlement environment (W2, W3, O1, O2, O3) 4. Increasing access of the poor and low income to the mortgage loan scheme (W1, O4)
Threats	ST-Strategy	WT Strategy
<ol style="list-style-type: none"> 1. There are migrants living in settlements. 2. It is a green lane area that is not in accordance with the Spatial Planning Law 3. The danger of flooding 4. Fire hazard 	<ol style="list-style-type: none"> 1. Minimizing people who want to live in slums (S1, S2, S3, S4, T1) 2. Socialize to the public about flood hazards, fire hazards and green lane areas that are not in accordance with the Spatial Planning Law (S4, T2, T3, T4) 	<ol style="list-style-type: none"> 1. Relocating people living near river banks (W3, T2, T3) 2. Creating and encouraging the realization of healthy and non-slum settlements (W2, W3, T1, T2, T3, T4) 3. Evaluating housing development policies for the community (W1, W3, W4, T1, T2, T3, T4)

Source: 2018 research, data processed

Recommendations for Handling Slum Areas

Development Strategies for the Handling of Slum Areas of Teluk Dalam City in South Nias Regency can be done through several alternative strategies, with the following sequence of strategies:

Table 8. Sequence of alternative strategies according to the results of the QSPM analysis

No	Strategy	Score
1	Record land status and ownership	131
2	Rehabilitating urban settlement infrastructure	122
3	Increasing the government's role in the quality of the settlement environment	121
4	Relocating people living near the riverbank	112
5	Creating and encouraging the realization of healthy and non-slum settlements	101
6	Minimizing people who wants to live in Setia village	104
7	Evaluating housing development policies for the community	103
8	Encouraging the government to buy community land	102
9	Improve community access in carrying out activities	101
10	Socialize to the public about flood hazards, fire hazards and green lane areas that are not in accordance with the Spatial Planning Law	99
11	Encouraging private developers to play a role in building settlement that is cheap and feasible for the community	90
12	Increasing access of the poor and low income to the mortgage loan scheme	88

Source: 2018 research, data processed

The difference in the score shows the sequence of strategies that have been formulated. Each strategy can be realized by carrying out activities that are technical in the field. The formulated activities are the elaboration of each strategy which includes the steps of the Action Program

Some steps of the action program that can be done to handle residential areas are: 1. Record land status and ownership, 2. Rehabilitating urban settlement infrastructure, includes livable housing and Increasing the capacity and service of clean water, 3. Increased drainage service capacity 4. Handling flood problems, in the form of: Construction of river embankments to prevent flooding along the river in Teluk Dalam City of South Nias Regency and socialization to community organizations on the maintenance of environmental drainage channels, 5. Handling sanitation/ waste disposal problems in the form of developing communal waste disposal systems. Household waste and increasing

community awareness and participation in processing and managing household waste.6 Increasing public awareness and participation in waste management, 7. Increase community awareness and empowerment in managing environmental roads.

Increasing the government's role in the quality of residential environments includes; development of settlement management institutional structures, information system development, development of potential funding. and increasing the application of the entrepreneurial concept in managing settlements.

In addition, action programs in general can be done by: realizing housing areas that are in accordance with Spatial Planning, realizing safe and livable housing, realizing integration of regional infrastructure and facilities, realizing harmony of area and residential environment in residential areas.

Conclusions

The condition of settlements in Teluk Dalam City of Nias Selatan Regency shows that there are many people who inhabit less-decent homes, the socio-economic level of the people in Teluk Dalam City, South Nias Regency is included in the pre-prosperous family. Along with the factor of land prices, the distance to workplaces, income and education has a significant influence on community decisions to live in slums. Partially the factors of land prices, distance to workplaces, education and income negatively affect slums. The strategy for dealing with Teluk Dalam city in South Nias Regency is based on the Quantitative Strategic Planning Matrix (QSPM) method, as follows: design to determine relative attractiveness.) from alternative strategic actions that can be carried out can be done through several alternative strategies, in the following sequence of strategies: a) Record of land status and ownership; b) Rehabilitating residential infrastructure; c) Increasing the role of the government in the quality of the settlement environment; d) Relocating people living near the river banks; e) Creating and encouraging the realization of healthy and non-slum settlements; f) Minimizing people who want to stay in Setia Village; g) Evaluating housing development policies by the community; h) Encouraging the government to buy community land; i) Increase public access to activities; j) Socialize to the public about flood hazards, fire hazards and green areas that are not in accordance with the Spatial Planning Law; k) Encouraging private developers to play a role in building cheap and decent housing for the community; and l) Increasing access of the poor and low-income to mortgage loan schemes..

Suggestions

1. The South Nias Regency Government must be able to collect data on land status and ownership and make arrangements for Teluk Dalam city settlement infrastructure by rehabilitating clean water, drainage, sanitation, solid waste and roads
2. The South Nias Regency Government needs to increase the income of the community through funding programs to the community so that the community has the ability to open a business and have income above the per capita income which consequently can live in a residential location that is decent and livable.
3. The South Nias Regency Government needs to budget free education and education scholarships to increase education levels in Teluk Dalam City.
4. The South Nias Regency Government needs to control slum areas in accordance with the conditions of the Regional Budget and spatial planning, and collaborate with private developers in the construction of Flats.

REFERENCE

- [1] Ahmad, H. 2004. Peremajaan Pemukiman RW 05 Kelurahan Karet Tengin Jakarta Pusat Menjadi Rumah Susun. *Tugas Akhir* Jurusan Arsitektur Fakultas Teknik Universitas Diponegoro. Semarang. Tidak Dipublikasikan.
- [2] Bangun, D. 2005. Permukiman Kumuh dan Permasalahannya Serta Pengaruhnya Terhadap Pengembangan Wilayah Kota Medan. *Tesis Sekolah Pascasarjana* Universitas Sumatera Utara. Medan. Tidak Dipublikasikan.
- [3] Lubis, L.J. 2004. Identifikasi Permasalahan dan Alternatif Penanganan Kawasan Permukiman Kumuh Perkotaan Studi Kasus Lingkungan IX Kelurahan Tanjung Rejo Kecamatan Medan Sunggal Kota Medan. *Tugas Akhir* Jurusan Teknik

Planologi, Fakultas Teknik Sipil dan Perencanaan Institut Teknologi Medan. Tidak Dipublikasikan.

[4] Malau, Y.N. 2006. Analisis Kehidupan Sosial Ekonomi Masyarakat Kawasan Kumuh di Kecamatan Teluk Nibung Kota Tanjung Balai. *Wahana Hijau*. Jurnal Perencanaan dan Pengembangan Wilayah. Volume 2 Nomor 1 Agustus 2006.

[5] Mulyo, S. 2000. Peranan dan Kinerja Dinas Perumahan Kota Surakarta Dalam Peremajaan Kawasan Kumuh (Studi Kasus: Peremajaan Permukiman Kumuh di Kelurahan Mojosongo Surakarta). *Tesis* Program Pascasarjana Universitas Diponegoro. Semarang. Tidak Dipublikasikan.

[6] Miraza, B.H. 2005. Peran Kebijakan Publik Dalam Perencanaan Wilayah. *Wahana Hijau*. Jurnal Perencanaan dan Pengembangan Wilayah. Vol.1 Nomor 2 Desember 2005.

[7] Nugroho, I dan R. Dahuri. 2004. *Pembangunan Wilayah Perspektif Ekonomi, Sosial dan Lingkungan*. LP3ES. Jakarta.

[8] Undang-Undang No. 5 Tahun 1960 tentang Peraturan Daerah Pokok-Pokok Agraria (UUPA)

[9] Undang-Undang No. 1 Tahun 2011 tentang Perumahan dan Kawasan Pemukiman

[10] Undang-Undang No. 26 Tahun 2007 tentang Penataan Ruang.

[11] Zulkarnaen, W. 2004. Permukiman Kumuh Sebagai Dampak Dari Urbanisasi Di Kota Medan (Studi Kasus Di Kelurahan Kampung Baru Kecamatan Medan Maimun Kota Medan). *Tesis* Sekolah Pascasarjana Universitas Sumatera Utara. Medan. Tidak Dipublikasikan.