Typology of Slum Management in Coastal Settlement as a Reference of Neighborhood Planning in Konawe

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Abstract. Handling slum area actually needs to be done not only in slum areas that are part of a metropolitan city or a large town, but it also need to be conducted in the slum areas in the middle city, small town, and coastal areas. A slum generally includes physical condition, socio-economic conditions of cultural communities who live in the settlements, and the impact of both of these conditions. Environmental coastal settlements in Konawe located in the riverside that lead to loss of quality due to environmental stress of the condition of settlement that are not habitable, can be seen from the problems that exist, namely the existence of housing that goes into river body which causes malfunction of watershed river (DAS), and that is prone to flooding. The purpose of this study is to identify slums in coastal settlements in an effort to improve the quality of structured settlements to obtain a picture of the slum in Konawe, to know the problems regarding the existence of slums and future recommendation of the slum settlement in Konawe. Normative analysis was carried out in this research together with quantitative and qualitative description, as well as methods of spatial analysis (spatial). Identification of slum areas was analyzed based on indicators and parameters issued by the Directorate General of Human Settlements. Problems in some districts in Konawe located in the coastal rivers and coastal areas, consist of drainage, disposal of waste water, waste, and the settlement which is not in accordance with the Spatial Konawe. Among those, there are settlements categorized as slums and some are recommended for refurbishment.

1. Introduction

   Handling slum area actually needs to be done not only in slum areas that are part of a metropolitan city or a large town, but it also needs to be done in areas existing slums in medium and small cities. Handling of slum areas in cities large, medium and small cities become a strategic region when it has a direct connection with parts of the metropolitan city such as downtown metropolitan area, metropolitan area growth centers, as well as other regions e.g. industrial zones, trade, warehousing, and offices.
   Slum is a problem faced by almost all major cities in Indonesia even big cities in other developing countries. Study of slums generally includes three terms, the first physical condition, and both socio-economic conditions of cultural communities who live in the settlements and the third by the impact of both conditions.

The physical condition, among others, appeared on the condition of the building is very dense with low-quality construction, the road network is not patterned and hardened, general sanitation and drainage are not functioning as well as the trash is not managed properly.

Konawe which is one of the districts located in Southeast Sulawesi continues to grow in terms of both development (infrastructure) and the total population. Based on population data Konawe in 2011, the population of Konawe many as 246 798 inhabitants with 679 245 ha area. [2]

The formation of slums, often seen as a potential cause many problems, because it is the source of the emergence of a variety of deviant behavior, such as crime and other social ills sources. There is some identification problems in slum areas Konawe which is located on the outskirts of the river and seafront which resulted in a loss of quality due to environmental stress of the condition of settlement that are not habitable, can be seen from the problems that exist, namely the existence of housing coming into river body that cause the failure of the watershed (DAS), prone to flooding, irregular houses in the coastal ocean.

Another problem is the settlement of the city government's lack of concern about the standardization of housing. The standardization among others for bathing, washing and toilet (MCK), the availability of clean water, availability of air vents, as well as minimum standards for each individual room. The provision of housing for the people by the government less qualified ideal housing and lack of fulfillment of the settlement amount to the community. So that these communities individually or in groups to provide their own settlement.

2. Material and Method

2.1 Basic Theory

Slum settlements are uninhabitable because of the irregularity of the building, high building density levels, and the quality of the buildings and facilities are not eligible. Slum housing is housing that has decreased the quality function as a shelter.

According to Law No. 4 Article 22 of 1992 on housing and settlement, where the slum is a settlement that is unfit for habitation among other things because it is on land that is not in accordance with the designation or zoning, building density is very high in the area are very limited, vulnerable to social ills and diseases environment, general quality of low buildings, underserved adequate environmental infrastructure, endanger the continuity of life and its inhabitants.

In its development, the growth of slums can be caused by several factors. According Constantinos A.Doxiadis (1968), stated that the growth of slums is influenced by several factors:

- Growth of density

    With the population growth that is from birth and for the growing number of families, it will bring new problems. Humanly they want to occupy their own homes. There by increasing the amount of housing in the settlement area this led to the growth of residential housing.

- Urbanization

    Given the attractiveness of the city center, it will cause the flow of rural-urban migration and from outside the city into the city center. The urbanization works in the city center or community who opened the business in the downtown, of course, have to live in settlements around the city center. It will also lead to the growth of residential housing in the downtown area.

    Slum characteristics according Silas (1996) is as follows:

a. The state of the house in a slum forced below the standard, an average of 6 m² / person. While the urban facilities directly unserved because it is not available. However, because of its location close to existing settlements, the environmental facilities are not difficult to find.

b. The neighborhood was physically provide basic benefits, which is close to workplaces (opportunity value) and home prices are also cheap (the principle of affordability) either buy or rent.

c. The settlement benefits in addition to considerations of employment and low price is an opportunity to get or high accessibility.

According to Law No. 4/1992 Housing and Settlement, improving the quality of housing can be activities, repair or restoration, rejuvenation and management / maintenance of sustainable. The program to improve the quality of housing and settlement which has been the government's attention is the area of housing and settlements category slum areas, which is characterized among other things by the condition of infrastructure and facilities are inadequate both in quality and quantity, socio-economic conditions of society is low, social conditions cultural, and environmental conditions are prone to disasters, diseases and security [3]

Forms of environmental improvements settlement based PU. Cipta Karya, there are several forms of business implementation of slum upgrading, as follows:

a. The restoration of the house, mean reversion physical state as before,

b. Kampung Improvement Program (KIP); KIP is a program that aims to improve the quality of life and the greening of society by improving the physical environment. Its main purpose is to improve the environmental health of the village. Basic components are the improvement of regional infrastructure such as road vehicles, footpaths, drainage channels, toilets and so on,

c. Environmental improvement market area (MIP); environmental improvement market area is the improvement of settlements around the market, made as a result of the additional burden of the community received about the market because it has no means of support such as drainage channels, parking lot, trash, stalls irregular and ineligible / less function , Markets and market society is an integral and interdependent both positive and negative,

d. Housing construction; is or forms of urban renewal by building housing through the arrangement of slum physically in order to accommodate more occupants or others in need. Advantage of this program is relatively fast and immediately visible result,

e. Land consolidation; an integrated activity to restructure the ownership patterns of land in an area that is lacking / irregular,

f. Controlled land development; an arrangement further efforts in the framework of spatial development of the city, especially the area of the city in a more implementable, if necessary through the transfer / development of the suburbs. In general, uncontrolled land development aims to encourage participatory climate in development by involving potential and wishes of the people, especially the private sector, small businesses and consumers,

g. Construction of flats; build residential environment as a whole with the aim to restructure an area of the city, both physically and functional and economic advantages.

2.2 Methodology

Data collection is an important first step, because of the completeness and quality of data and information will determine the sharpness of analysis and ultimately determine the quality of the plan is also to be prepared. The scope of activities includes:

a. Secondary Data Collection
These activities include the collection of secondary data including document development policy and spatial policy, basic and thematic maps, aerial photos, satellite imagery, a study/research related to themes and research area.

b. Pre-Field Preparation (instruments of design)
Several survey instruments include a checklist, a questionnaire about the data to be collected, the questionnaire contains a list of topical questions, interviews, unstructured interviews, and a field measurement sheets.

c. Field survey activities include:
1) A review of the study area (site-visit), to get a directly visual experience above the location of the study;
2) The on-site introduction of neighbourhood conditions;
3) Documentation of the an area condition in the form of photographs, slides, and sketches;
4) Measurements of the field;
5) Interviews and questionnaires (indicators and parameters issued by the Directorate General of Human Settlements);
6) Community participation through discussions.

Research conducted in the coastal areas and coastal rivers Konawe. Primary sampling units (Primary Sampling) is 4 district, Sampara District and Bondoala District as the coastal areas of the river, and the Lalonggasumeeto District, Soropia District as marine coastal areas. Sampling has been proportionately and randomly based on the total RT in all RW in the village / village that has been determined to be the survey area. This stage produces an activity profile based verification slum area that has been done through the stages of survey and inventory based on indicators and parameters of the Department of Public Works for Human Settlements. The data obtained will be carried out the analysis stage to get a level of untidiness typology (determination of variables) which will produce a recommendation and priority handling of slums.

3. Results and Discussion
3.1 Sampara District

1) Geographical
    Sampara sub-district is one of the Districts directly adjacent to the city of Kendari. Geographically villages/ wards in the district Sampara relatively flat terrain with up to mountainous topography. Sampara subdistrict boundaries in the north bordering the District Bondoala, east with the city of Kendari, the southern border with South Konawe. The west is bordered by Besulutu District.
    The total area of the Sampara District 60.01 km^2 or 6,001 hectares, or 2.89 percent of the total Konawe. Access from the city of Kendari (Southeast Sulawesi provincial capital) to the villages / wards in the District of Sampara relatively easy, because almost all the villages can be bypassed by four-wheeled vehicles and motorcycles. Except Puusangi village, Tabanggele, Bondoala and villages Puuloro, due to damaged roads.
2) Population
    Based on the results of the 2010 Population Census Sampara number of District residents in 2010 was 11 709 inhabitants. In general, the population density of 195.1 inhabitants for each kilometer Sampara District of square which means that every square kilometers inhabited by an average of 195 inhabitants. While the number of households reached 2,432 households with an average of 4.8 people per household.
3) Physical condition
    In general, the buildings in Sampara district 35-65% of the buildings has a regularity to the level of building density <80 units / ha. The physical condition of buildings> 60% is semi-permanent environmental conditions of the road surface is> 60% bad and <30% of the area include the channel.
    In Sub Sampara> 60% of the area to obtain fresh water from wells. Household waste management is not served by municipal waste management so that people tend to burn household waste produced. At this area not served hydrant firefighters.
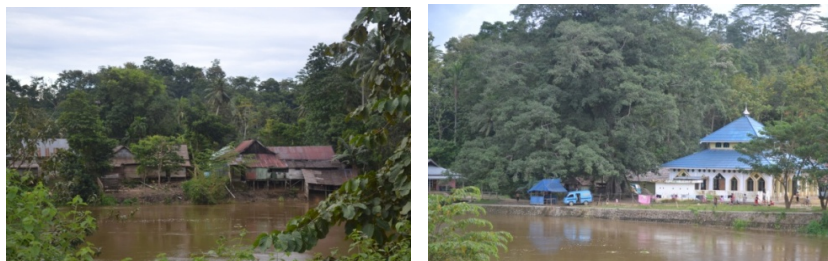

Figure 1 Settlement area in Sampara District
Source: Field Survey, 2014

4) Non Physical
    In general, ownership and use of residential space / house in District Sampara belongs to the people. Population density in the Sampara District i.e. <400 inhabitants / ha with the livelihoods of> 60% work the informal sector. With the livelihoods of the average household income is below the UMR District. Distribution of settlement areas in the district Sampara largely in accordance with the Spatial generally are slum/illegal located along the river, among others: the settlement area around times Pohara, residential area around the small river. In general, settlements existing in the surrounding area less attention to the aspects of safety, sanitation and river border line rules so that communities living can create the danger of flooding and river pollution. This area generally has a legal as community land.

3.2 Bondoala District

1) Geographical
    Bondoala sub-district is one of the Districts directly adjacent to the city of Kendari. Geographically the whole village in Bondoala district relatively flat-lying topography limits the District of Bondoala in the north bordering the District of Sawa, the east with Kapoiala and Kendari District, the southern border with Sampara District, and the west is bordered by Besulutu District. The total area of 133.35 km^2 Bondoala sub district or 2.00 percent of total Konawe area. Access from Kendari city (Southeast Sulawesi provincial capital) to some villages in Bondoala sub district relatively easy, but there are

some other villages that are not accessible by four-wheel vehicles, can only are passed with a two-wheeled vehicle or boat / Pincara.

2) Population

Bondoala number of District residents in 2010 reached 8.199 inhabitants or an increase of 2.8 percent from the year 2009 of 223 inhabitants. In general, the population density increased from 59.81 inhabitants for each kilometer square in 2009 to 61.48 inhabitants for each kilometer square in 2010. The number of households in 2010 reached 1,890 households or decreased 6.9 percent when compared with the number of households in 2009 that of 2,020 households with an average of 4 person household members of each household. The decrease in the number of households in addition to the change in the marital status of the population is also caused by the presence of inter-regional migration.

3) Physical condition

In general, the buildings in the district Bondoala 35-65% of the buildings has a regularity to the level of building density <80 units / ha. The physical condition of buildings> 60% is semi-permanent environmental conditions of the road surface is> 60% bad and <30% of the area include the channel.

in sub Bondoala> 60% of the area to obtain fresh water from wells and mountain water. The management of household waste only most underserved so people tend to burn household waste produced. At this area not served hydrant firefighters.

Figure 2 Settlement area in Bondoala District
Source: Field Survey, 2014

Figure 3 Condition of roads in Bondoala District
Source: Field Survey, 2014

4) Non Physical

In general, ownership and use of residential space / house in Bondoala District belongs to the people. Population density in Bondoala District i.e. <400 inhabitants / ha with the livelihoods of> 60% work the informal sector. With the livelihoods of the average household income is below the UMR District. Distribution of settlement areas in Bondoala district largely in accordance with the Spatial generally are slum / illegal located along the river, among others: the settlement area around times Pohara, residential area around the small river. In general, settlements existing in the surrounding area less attention to the aspects of safety, sanitation and river border line rules so that communities living can create the danger of flooding and river pollution. This area generally has a legal as community land.

3.3 Lalonggasumeeto District

1) Geographical

Lalonggasumeeto District geographically a coastal area with a flat and hilly topography so the potential for the development of the fisheries sector. Lalonggasumeeto subdistrict boundaries in the north bordering the Banda Sea, the east with District of Soropia, the south area bordered by the city of Kendari and the west by Kapoiala district and Bondoala District.

Total area of Lalonggasumeeto District 4,157 hectares or 0.62 percent of Konawe land area. The village with the largest area is the village Lalombonda with an area 686 hectares or 16.50 percent of the area of Lalonggasumeeto District, while Puuwonua village is the village with the smallest area that is 137 hectares or 3.30 percent of the total area. Access from the capital district to all villages in the sub district of Lalonggasumeeto relatively easy, while access from the city of Kendari (Southeast Sulawesi provincial capital) throughout the village in the sub district very close. Because all the villages can be bypassed by four wheel drive and two-wheel throughout the year.

2) Population

In 2010 based on the results of the Population Census the population of Lalonggasumeeto District many as 4,608 people with an average population density of 110 inhabitants for each square kilometer.

The village with the densest population density is Puuwonua village of 349 inhabitants per square kilometer while Wawobungi village is the village with the smallest population density is 69 people per square kilometer. The number of households in 2010 reached 1,036 households with an average household of 4.45 members. The increase in the number of households in the side by a change in the marital status of the population is also caused by the additional population through migration between regions.

3) Physical condition

In general, the buildings in the Lalonggasumeeto district 35-65% of the buildings has a regularity to the level of building density <80 units / ha. The physical condition of buildings> 60% is semi-permanent environmental conditions of the road surface is> 60% good and <30% of the area include the channel in Sub Lalonggasumeeto> 60% of the area to obtain fresh water from wells and mountain water. The management of household waste only most underserved so people tend to burn household waste produced. At this area not served hydrant firefighters.

Figure 4 Settlement area in Lalonggasumeeto District
Source: Field Survey, 2014

Figure 5 Condition of roads in Lalonggasumeeto District
Source: Field Survey, 2014

4) Non Physical

In general, ownership and use of residential space / house in Lalonggasumeeto District belongs to the people. Population density in the Lalonggasumeeto District i.e. <400 inhabitants / ha with the livelihoods of> 60% work the informal sector. The average family income is below the UMR District. Distribution of settlement areas in Lalonggasumeeto district largely in accordance with the Spatial generally are slum / illegal located along the river, among others: the residential area around the coast, the residential area around the small river. In general, existing settlements in the surrounding area less attention to the aspects of safety, sanitation and coastal border line rules so that communities living can create the danger of flooding and river pollution. This region has largely legality as state land as being the seashores.

Table 1 Typology, Recommendations and Priorities Management

No.	Regions Slum (Districts)	Compliance with the City Spatial Plan	Value Strategic Location	Economic Activity In the Region	Slums Level	Typology	Handling recommendations slum area	
							Recommendation	Event Handling
1	**Bondoala District**							
	Diolo Village	appropriate	medium	housing	medium slum	IV	**RESTORATION**	Improved regional infrastructure Improved housing conditions
	Tanggobu Village	appropriate	medium	housing	medium slum	IV	**RESTORATION**	Improved regional infrastructure Improved housing conditions
	Lalonggaluku Village	appropriate	medium	housing	weight slum	III	**RENOVATION**	Improved regional infrastructure Improved housing conditions
	Pebunooha Dalam Village	appropriate	medium	housing	weight slum	III	**RENOVATION**	Improved regional infrastructure Improved housing conditions
	Tondowatu Village	appropriate	medium	housing	weight slum	III	**RENOVATION**	Improved regional infrastructure Improved housing conditions
	Laosu Village	appropriate	medium	housing	weight slum	III	**RENOVATION**	Improved regional infrastructure Improved housing conditions
2	**Sampara District**							
	Pohara village	appropriate	High	housing	medium slum	IV	**RESTORATION**	Improved regional infrastructure Improved housing conditions
3	**Lalonggasumeeto District**							
	Wawobungi Village	appropriate	Low	housing	medium slum	VII	**RESTORATION**	The function remains Improved settlement areas with a focus on environmental infrastructure improvement and housing conditions
	Watunggarandu Village	appropriate	Low	housing	medium slum	VII	**RESTORATION**	The function remains Improved settlement areas with a focus on environmental infrastructure improvement and housing conditions
	Nii Tanasa Village	appropriate	Low	housing	medium slum	VII	**RESTORATION**	The function remains Improved settlement areas with a focus on environmental infrastructure improvement and housing conditions
	Lalombonda Village	appropriate	Low	housing	medium slum	VII	**RESTORATION**	The function remains Improved settlement

No.	Regions Slum (Districts)	Compliance with the City Spatial Plan	Value Strategic Location	Economic Activity In the Region	Slums Level	Typology	Handling recommendations slum area	
							Recommendation	Event Handling
								areas with a focus on environmental infrastructure improvement and housing conditions
	Tolo-Toli Village	appropriate	Low	housing	weight slum	VI	**RENOVATION**	Improved regional infrastructure Improved housing conditions
	Rapambinopaka Village	appropriate	Low	housing	weight slum	VI	**RENOVATION**	Improved regional infrastructure Improved housing conditions
	Puuwonua Village	appropriate	Low	housing	weight slum	VI	**RESTORATION**	Improved regional infrastructure Improved housing conditions
					weight slum	I	**RELOCATION**	Returns to the function of non woke region (coastal) Acquisition of land with buildings thereon compensation
					weight slum	I	**RELOCATION**	Returns to the function of non woke region (coastal) Acquisition of land with buildings thereon compensation
					weight slum	I	**RELOCATION**	Returns to the function of non woke region (coastal) Acquisition of land with buildings thereon compensation
					weight slum	I	**RELOCATION**	Returns to the function of non woke region (coastal) Acquisition of land with buildings thereon compensation
					medium slum	VII	**RESTORATION**	Improved regional infrastructure Improved housing conditions
					medium slum	VII	**RESTORATION**	Improved regional infrastructure Improved housing conditions
					medium slum	VII	**RESTORATION**	Improved regional infrastructure Improved housing conditions
					medium slum	VII	**RESTORATION**	Improved regional infrastructure Improved housing conditions

4. Conclusion

The conclusion of this study is in Sampara and Bondoala District as the coastal areas of the river with a designation as residential areas in accordance with the Spatial Plan of the City Konawe with an average value of strategic cities are moderate, levels of untidiness is a rundown medium (typology IV) with a recommendation handling area i.e. slum in the coastal restoration and renovation. For coastal areas sea

which is in Lalonggasumeeto District and Soropia District designation as a residential area in Lalonggasumeeto district accordance with the Spatial Plan of the Konawe City, whereas in Soropia District precisely in Bajo Indah village, Mekar Jaya village, Bajoe Village, and Leppe Village not in accordance with the city Spatial Plan Konawe, with an average value of strategic cities is low, the level of untidiness is a rundown weight (typology I) with treatment recommendations in the coastal slum is the relocation.

Acknowledgments

References

1. _____ , Undang-Undang Republik Indonesia Nomor 4 Tahun 1992 Tentang Perumahan Dan Permukiman
2. BPS Kabupaten Konawe, Konawe Dalam Angka 2012,
3. Departemen PU. Dirjen Cipta Karya (1999). *Petunjuk Teknis Pembangunan Perumahan Nelayan*. Dep. PU. Jakarta.
4. Doxiadis, Constantinos, A, (1968), *Ekistic, An Introduction to the Science of Human Settlements*, Hutchinson and Co, Ltd, London
5. Silas, Johan, (1996), *Kampung Surabaya menuju Metropolitan*, Yayasan keluarga Bhakti, Surabaya