Inequility of Space Reproduction Control and Urban Slum Area Management Sustainability (Case Study: Slum Area of Buloa Urban Village in Makassar City)

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Abstract: Urbanization in Makassar City development runs parallel to the increasing need for residential facilities in urban areas. This study aims to analyze the inequality of urban space reproduction control and the sustainability of slum area management in Buloa urban village. The research used a combination of qualitative-quantitative approach. The data were obtained through observation, survey and documentation. The results of this study found that inequality of space reproduction control, lack of access to economic, sociocultural resources, subsistence economic conditions and inadequate support of infrastructure services has caused slum areas to develop along the Tallo watershed in Makassar City. The sustainability of slum areas management at Buloa urban village is directed to community independence socially, economically and oriented towards community-based environment rescue.

Key words: Inequality, control of space reproduction, management of slum areas, development sustainability, community, environment rescue

INTRODUCTION

The development in Makassar City in the perspective of metropolitan city is characterized by the existence of economic growth centers oriented to the commercialization of urban areas. The functions of developing commercial space contribute positively to the increasing population and run parallel with urban urbanization (Surya, 2015a-d). The phenomenon of urbanization is characterized by inequality in the space reproduction control, the powerlessness of the people economically and evolves toward the segregation of shelter facilities ownership (Surya, 2016a, b; Farkas *et al.*, 2017). Changes in spatial use due to urbanization contribute positively to the ecosystem, economic condition and behavioral change of urban communities (Sadorsky, 2014, Surya, 2016a, b, Peng *et al.*, 2017; Wang *et al.*, 2017).

There are two symptoms that develop simultaneously due to urbanization and economic globalization in the dynamics of metropolitan city growth, namely, development of slum area and squatter areas and development of planned residential areas facilitated by the housing developers. Therefore, the ongoing urbanization runs parallel to the need for residential needs in a single settlement area. During the 10 years period, the population growth rate of Makassar City has increased by 1.39% or 1.469.601 people with the area of 175.77 km².

Furthermore, the current population Gini ratio is 0.43. This fact illustrates that income inequality is still quite high and runs parallel to the poverty of the people. The number of poor people recorded at this time is 66,780 people or 4.54% of the total population of Makassar City in 2017.

The challenges of Makassar City development as a metropolitan city in the future are urbanization, economic globalization, urban poverty and housing finance for low-income communities (Surya, 2015a-d; Boonyabancha and Kerr, 2018). Urbanization to the city often leads to excessive urbanization and raises many problems related to unemployment, social, economic dissatisfaction, inadequate residential housing and below standard livelihoods and limited availability of public spaces and their significant impact on environmental conditions (McGee, 1991; Uddin, 2018). Increased population due to urbanization which is not complemented with the provision of housing, differences in community adaptation, access to the land and powerlessness to economic resources causes growing slum areas (Panudju, 1999; Surya, 2010). Furthermore, the economic capability of low-income people, orientation of makeshift work and the selection of residential housing at the workplace location in the downtown area are factors behind the development of slum areas, dominated by the urban poor society (Morris and Coleman, 1990; Kusumaatmadja, 2006).

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Fig. 1: Research location in Buloa urban village, Makassar City (satellite imagery and observation results, 2017)

Slum areas located in the urban village of Buloa are categorized as moderate slums with the typology of over water slums. These indications are characterized by low access to health services, poor environment sanitation, flood prone, low human resource quality and dominated by low-income communities. Buloa urban village population is currently 6,691 people or 0.45% of the total population of Makassar City and occupies a land area of 65 ha. There are two factors that influence the existence of the growing slum: internal factors, related to cultural factors, place of work, length of stay, home investment and type of house building and external factors; related to land ownership and government policies. The role of government in the management of slums is directly related to the management of the environment that urban slums, however defined are complex systems with their own internal flows and processes that are connected in a myriad of ways to the larger urban system (Elgizawy *et al.*, 2016; Smit *et al.*, 2017).

Inequality in the control of urban space reproduction and urbanization occurring was the trigger factor for the development of slums in the urban village of Buloa in Makassar City. Therefore, the ontological assumptions constructed in this study are, namely. Domination in the control of urban space reproduction leads to differences in public adaptation on changes in environmental stimuli. Urban urbanization is characterized by differences in educational background and economic ability causing slums area to grow. The impact of economic globalization characterized by the existence of commercial economic functions shows the symptom of community segregation toward differences in space reproduction control, land access and urban infrastructure service gap becomes the determinant factor of slum development (Fig. 1).

MATERIALS AND METHODS

Approach to case study and research methodology: This research was conducted in Buloa urban village of Makassar City on February-August 2017. The reasons for choosing the research location were based on the consideration of; The degradation of the slum environment quality, the condition of the community residential buildings doesn't meet the technical standards and the availability of slum facilities and infrastructure doesn't meet the minimum service standards. Case studies were selected in this study according to the study focus, i.e., naturalistic, holistic, cultural and phenomenological. Therefore, the selected research approach was a combination of qualitative and quantitative research.
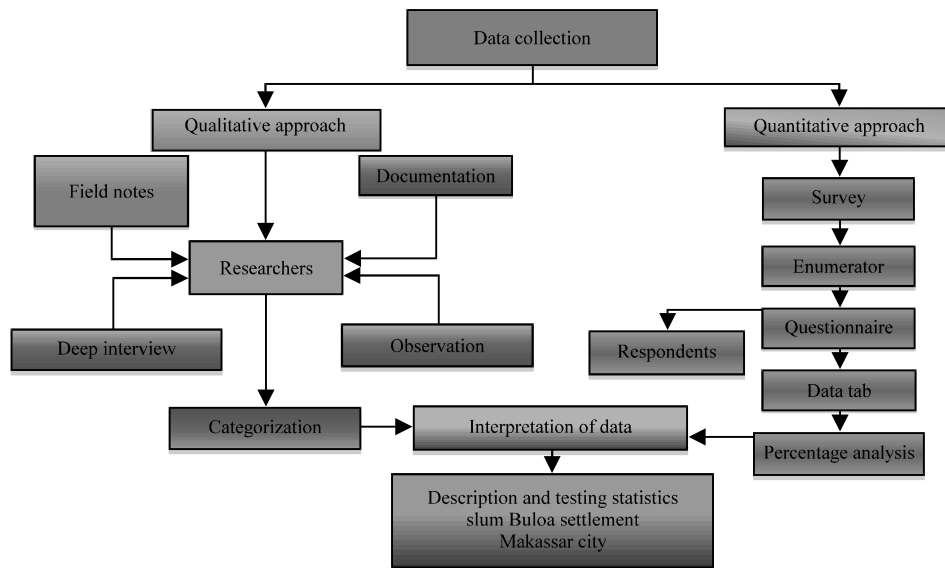
Fig. 2: Combination process of qualitative and quantitative approach (Adapted from (Saefullah, 1993) with mods)

The qualitative approach was used on the basis that the phenomena studied were complex, thereby requiring careful observation, based on field facts, properties of an individual or group and relationship between the phenomena investigated (Norman, 2009; Sugiyono, 2014; Creswell, 2016). The quantitative approach was used for statistical testing to the results of hypotheses constructed through qualitative approaches. Data collection was performed through observation by assessing the condition of the environment, condition of residential housing and availability of housing infrastructure. Surveys were used to assess socio-cultural, economic and hierarchy conditions of fulfillment based on people's perceptions. The data collection was through documentation from various sources, i.e., population data, population density, land tenure status and government policies related to slum areas management.

Data analysis stages, began with the formulation of basic concepts and data analysis and built a hypothesis to further tested statistically by using regression model. The first stage was performed by organizing the data. The data collected through field notes, survey results and observations were then tabulated and categorized. The second stage was to describe the data quantitatively according to survey and observation results for constructing the hypothesis purpose. The hypothesis results were then tested statistically against some parameters and variables that had been established in this study. The analysis was performed interactively and lasted continuously until the data was saturated.

Activities in data analysis were data reduction, display data and conclusion. The process of combining qualitative-quantitative approaches in this study is as in Fig. 2.

RESULTS AND DISCUSSION

The position of Makassar City as the core city and the center of national activities (PKN), illustrates that the orientation of urban development has a tendency toward economic growth. The process is characterized by the existence of functions of commercial economic activity, namely; Industry, commerce, services and tourism. The direct observable implication is that the existence of growth centers of urban areas in their dynamics runs parallel to the increase in population and the demand for the housing fulfillment and because the inability of the people to have proper housing facilities has caused slum areas development. Slum areas developed in the city of Makassar based on the data obtained are classified into 2 categories, namely; Slum areas with medium category of 22 ha and slum areas with light category of 703.04 ha. The existence of slum areas is spread over 103 locations and distributed in 15 districts.

Buloa urban village is within the administrative area of Tallo District in Makassar city with an area of 0.65 km². Based on the location, it is illustrated that the slum areas are growing in direct contact with the Tallo River existence. The trend of slum areas develops when supported by the existence of natural
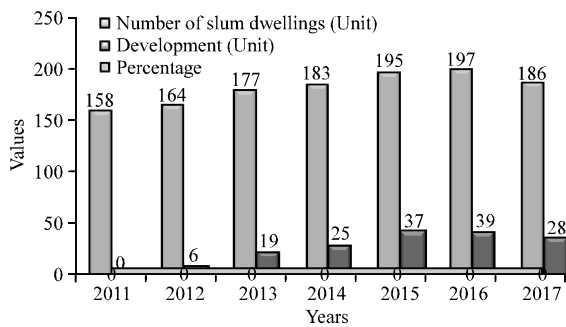
Fig. 3: Development of slums in Buloa sub-district of Makassar City

resources and proximity to the location of urban activities (Doxiadis, 1970; Surya, 2015a-d). It means that the Tallo River area as a resource utilized by the local community of which the dominant livelihood orientation is as a fisherman is positively associated with the existence of slum areas.

Over the 7 years period, it is showed that the number of slum areas in the Bolua urban village are increased by 18.2% and dominated by livelihoods as fishermen (Fig. 3). The choice of residential housing for the community at that location is strongly influenced by the proximity of the location to the work location and the Tallo River as a means to settle. Developing settlements are inseparable from; nature, human both personal and group, society, shells, networks and like other forms of capital such as human and financial capitals, social capital that have an important role in maintaining a person's wellbeing (Doxiadis, 1970; Yau, 2010). It means that the resource and accumulation factors of population, social capital and financial capital are the basic principles of developing settlements as an activity in space based on the level of prosperity of individuals and community groups (Surya, 2015a-d). Due to the inability of adaptation to reproduction of urban space, subsistence dominant economic system and weakness of spatial use control they are the driving factors for developing slum areas along the Tallo River of Buloa urban village in Makassar City.

Interpretation that can be asked related to the characteristics and typology of slum areas in Buloa urban village in Makassar City (Fig. 4) are condition of society residential building is dominated by semi-permanent with density between 0-1 m and developing along riverbanks and being on illegal land status. Meaning, the residential building density factor has potential vulnerability to the threat of urban fires, access to clean water services and environmental sanitation is very bad due to the inability of the community economically. It means that economic and community behavior factors lead to a degradation in

the quality of the settlement environment, average citizen's house has only a small shower room with a hole on the board and above the river while for the residential housing around the river, the disposal of the bathroom water uses a direct pipeline to the river. It means that the environmental sanitation of community settlements is very poor and positively associated with the water quality pollution of the Tallo River, waste service is very low, consequently the community tends to use river, drainage and environment around their settlement as waste disposal media. It means that people's behavior towards the environment is positively associated with environmental quality degradation, the condition of road network is dominated with paved material and parts of concrete with road width that does not meet service standard, the condition of drainage network of settlement environment has a high enough sedimentation as a waste disposal media. It means that drainage channel function is not optimal for rain water drains, causing the location of community settlement to be very susceptible to flooding and the availability of green open spaces is very limited due to the area of river benefits are used as a means of living. The seven factors above are the triggers of developing slum areas apart from the inability of the community to control the space reproduction and subsistence economic system characterized by patronage relationship. Therefore, it can be concluded that the existence of the community in the slum areas of Buloa urban village are in a marginal position, the urban poor and subordinated by the urban system of th Makassar City. Marginalization is the deprivation of natural resources and the ability of people or groups exploited by others because of economic shortages, social isolation, lack of political influence and spatial access ability, becoming the factors that cause poverty (Husmann, 2016; Kammerbauer and Wamsler, 2017; Zahra *et al.*, 2018).

Inequality of urban spatial reproduction control: The acceleration of Makassar City development characterized by the disparity of urban intercultural services is positively associated with the inequality of space reproduction control. Such inequality is characterized by differences in people's ability to access land and economic resources. The facts found in the field show that the existence of slum areas developing in Buloa urban village, basically happens as a result of the community powerlessness in accessing economic resources and reproduction of developing space. The direct impact is on the conditions of residential housing developing along the banks of the Tallo River that does not really meet the technical and building safety

Fig. 4: Environmental characteristics and typology of slum areas Buloa urban village of Makassar City; Primary data, 2017)
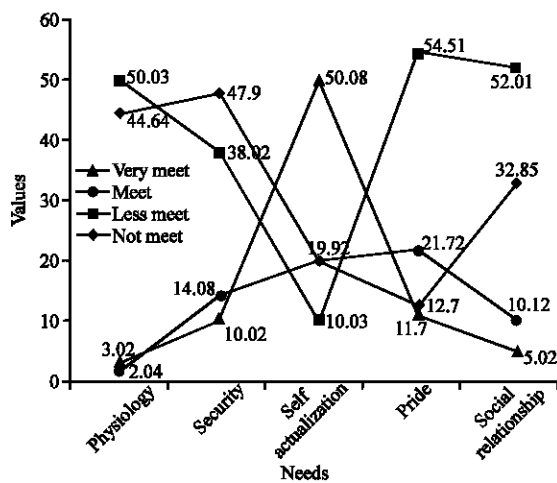

Fig. 5: Hierarchy of public needs fulfillment on slum areas of Buloa urban village in Makassar City (Analysis result)

eligibility standards. The lack of public access to the urban space reproduction, causing the fulfillment of community needs becomes less fulfilled. There are five hierarchies of human needs fulfillment, namely, physiology, security, social relations, self-esteem and self-actualization needs (Maslow, 1994).

Inequality of urban space reproduction is positively associated with the development of slum areas along the Tallo River in Buloa urban village in Makassar city (Fig. 5). Positive contributions on the hierarchy of community needs fulfillment only occur in social relationships where social relationships between individuals and community groups are developed, although they have different social, ethnic and ethnic backgrounds. The other four aspects tend to be weakened or their contribution has no direct effect on the fulfillment of the needs of society. The inability of the community to access spatial reproduction resources and

poverty factors has led to public breakthroughs on illegal land to build settlement along river banks that should be protected areas. The facts found show that the existence of communities that inhabit slum areas in Buloa urban village tend to survive and grow because they are influenced more by social capital factor as the basis of trust between citizens to live together and harmonization in their environment through the role of inter-community participation to live together. Social capital is regarded as an asset of trust, reciprocity and cooperation, to foster a participatory culture among the individual property owners and the fundamental determinants of social structures that degrade behavior, actions and civilization (Yau, 2010; Kristeva 2013; Schumpeter, 2013). Therefore, social capital is built on the basis of inter-individual relationships within the community groups based on the beliefs and patterns of established social relationships as a whole community (Fukuyama, 1995; Sanderson, 2003; James, 2011; Lee, 2018).

Degradation of quality in the slum areas: The main causes of growth and development of slum areas are influenced by several things, namely; urbanization and migration, difficulty to get job, difficulty in installments or renting houses, lack of strict implementation of legislation, environmental improvements only enjoyed by homeowners, low discipline implementation by the community and the narrowness of settlement land and the high price of land (Khomarudin, 1997). Therefore, it can be concluded that there is a positive influence between the existence of slum areas and the degradation of environmental quality. The level of settlement infrastructure service, socio-cultural conditions and economic conditions of society directly affect the slum level of slum areas. Field facts found give an illustration that the factors of residential housing condition, basic infrastructure service, socio-cultural condition and

Table 1: Regression test results

Model 1	Sum of squares	df	Mean square	F-value	Sig.
Regression	8.233	1	8.233	78.286	0.000[a]
Residual	1.367	13	0.105		
Total	9.600	14			

Table 2: Coefficients[a]

Model 1	Unstandardized coefficients (B)	Standardized coefficients (β)	SE	t-values	Sig.
(Constant)	-0.936		0.299	-3.134	0.008
X	0.028	0.926	0.003	8.848	0.000

[a]Dependent variable: Y

economic condition of the community have positive effects on the characteristics and typology of slum areas in the urban village of Buloa Makassar. The test results on variables that affect the slum areas development are illustrated in Table 1.

Table 1 and 2 illustrates that variable X (causal factors of slum development) studied shows that t count is 8.848 or t-count >t-table (8.848>3.1824). It means that statistically, the economic, socio-cultural and residential infrastructure facilities have a significant effect on slum areas development in Buloa urban village or H_0 is rejected and H_1 is accepted with the value of inter-variable influence by 0.858. The significance of the factors of slum areas development in the Buloa urban village in Makassar City is measured by parameters; Building density and distance between buildings, residential housing conditions, land status, availability of green open space, clean water service system, environmental sanitation system, solid waste management, environmental road network conditions, drainage network function, socio-cultural conditions and community economic conditions.

Slum areas conditions are reviewed based on physical, economic, social conditions and the legal aspect. Furthermore, the cause of slum areas development is influenced by factors: socio-economic conditions of the community, number of houses that are very dense and being in sub-standard size, infrastructure does not meet technical and health requirements, residential housing built on state-owned or other land, the environment and settlement arrangements are irregular without planning, non-permanent livelihoods and non-formal economic enterprises, low community education, narrow streets not accessible by four-wheeled vehicles, drainage network that is very inadequate and sewerage/stool disposal facility is very minimum (Alit, 2005; Sinulingga, 2005; Surya, 2015a-d). Therefore, it can be concluded that slum areas in the Buloa urban village in Makassar City will need comprehensive and sustainable management.

Some of the things that can be explained (Fig. 6) are namely; First, strategic decision making from Makassar
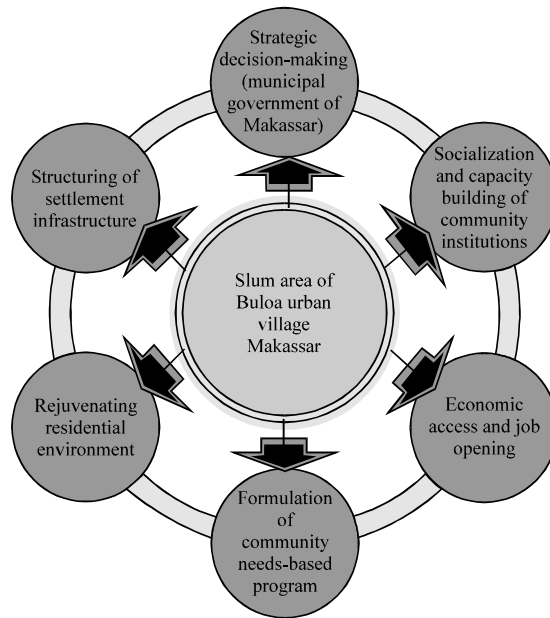

Fig. 6: Management model of slum area of Buloa urban village in Makassar City

City government. This decision-making is oriented towards the alignment of the urban poor in terms of growing trust and legal certainty in living. This means that pro-poor policies will encourage public trust in the rights and responsibilities of the environment in which they live. Policies cannot be built easily from top to bottom, instead must be built with social capital (Fukuyama, 1995; Quigley 1996). Second, strengthening the institutional capacity of community through the socialization process. This process is oriented to changes in the behavior of urban communities for their rights and obligations to maintain the sustainability of the living environment. This effort is made through the active involvement of community institutions at RT (neighborhood) and RW (community association) levels. The institutional role is a container that will be used by the community to manage the environment in which they live together. Strengthening social institutions is absolutely necessary in the environment management, so that, people can compete in carrying out business activities for the purpose of improving welfare. Third is economic access and creating jobs for the community. These processes are oriented to the provision of economic access through business capital assistance to productive economic enterprises of the community that has grown and followed the guidance and protection of the market to support the improvement of sustainable societal welfare. Economic empowerment of the community aims to improve the welfare of the

community through the development of entrepreneurial culture, strengthening Micro Finance Institutions (MFIs), mobilizing community participation, productive economic activities based on local resources (Chambers and Conway, 1992). Fourth, the formulation of programs is based on community needs. This process is oriented to a shared learning mechanism through mapping the potential and problems related to the basic needs of the community in its environment. Priority program agreement process is implemented through participatory discussions. Community empowerment in improving the slum areas quality is absolutely necessary. Its implementaion involves various components of society to realize physical and non-physical constructive constructs (Alit, 2005; Eka, 2016). Fifth, the rejuvenation of the settlement environment is oriented towards the fulfillment of the urban services standard in a sustainable manner. Improved settlement environmental services, infrastructure development should consider new development areas based on the principle of balance in spatial planning and ensure community welfare (Wang *et al.*, 2017a, b). Sixth is the rejuvenation of the settlement environment through the arrangement of infrastructure. This process is carried out with the community for the ease purpose in carrying out socio-economic activities in a sustainable manner. Infrastructure refers to the physical system to provide transportation infrastructure, drainage, buildings and public facilities to meet basic social and economic human needs (Kodoatie, 2005).

Sustainability of slum resource management: The strategic steps needed to support the sustainability of slum areas management in urban village of Buloa in Makassar are oriented towards approaches that involve the role of each actor in a system. Such sustainability includes; Governance, community economic empowerment, community mental and social development, improving the quality of infrastructure and community participation in development. Therefore, the sustainability of development is a proposed solution in the managing of slums.

Several things can be explained related to the sustainability of slum areas management in Buloa urban village (Fig. 7). First, green environments are needed in the framework of supporting the sustainability of the settlement environment. The process is carried out through the preparation of green open space, rescue of surface water quality pollution, waste management of household waste and waste
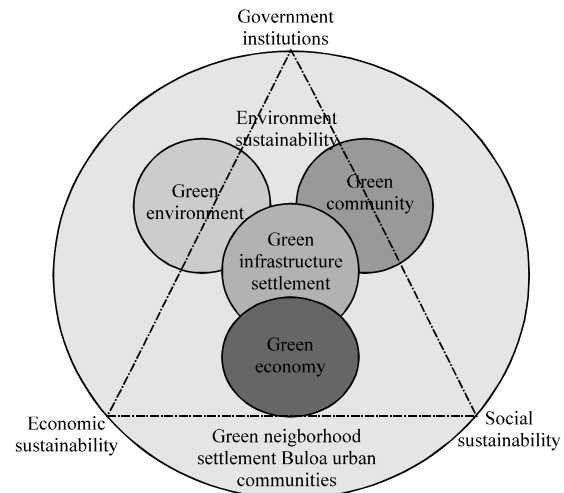

Fig. 7: Sustainability of slum resettlement of Buloa urban village of Makassar City

management. Urban green environments through green open spaces, urban forests and urban parks can enhance positive mood, psychological stress recovery, urban noise and physiological benefits (Bowler *et al.*, 2010; Tyrvainen *et al.*, 2014; Lankia *et al.*, 2017; Gozalo *et al.*, 2018). Second, green communities are needed in terms of increasing community participation by building awareness of the rights and responsibilities of communities towards the environment and promoting access to education and health services. It means, the quality of the environment will be maintained through the community's role towards sustainable social cohesion. Green communities serve as guidelines for communities in environmental management through collaborative planning, public participation implemented through community decisions independently (Mcalpine and Birnie, 2005; Portney, 2005; Boland and Zhu, 2012). Third, green economy is needed to encourage the improvement of productive economic enterprises based on local economy. The process is directed to strengthening and fostering Joint economic enterprises. Green economic can protect the adverse effects of capitalism such as the systemic effects of injustice and environmental problems (Morrissey, 2012). Fourth, green infrastructure settlements. This process is realized through the integration of the system and integration in its implementation by actively involving the community in addition to encouraging the fulfillment of the service standards of integrated settlement infrastructure with the preparation of green open space as a medium that will be used by the community to interact and as the means to build social relations to be more productive and

sustainable. Green infrastructure emphasizes the critical role of communities in the maintenance of environmental assets and urban ecosystems (Ambrey *et al.*, 2017; Chenoweth *et al.*, 2018). The four ideas are developed towards the implementation of new urbanism area by building community and socio-economic independence towards the slum green environment of Buloa urban village in Makassar City.

CONCLUSION

Urbanization as the driving force of urban development toward growth poles oriented to commercial activities causes inequality in the control of space reproduction, land access and the powerlessness of society to economic resources leads to marginalization and poverty. The inability of the community to adapt to changes in environmental stimulus, subsistence-economic conditions that are dominated by fishing communities and subordinated by the urban system and the weak control of spatial use have led to community breakthroughs in watersheds to be used as a means of settling and evolving towards slums.

The gap in basic infrastructure services in settlements, socio-cultural, economic conditions, building density, distance between buildings, residential housing conditions, land status, limited availability of green open spaces have a significant effect on the degradation of the quality of slum neighborhoods. Development policies that are less pro-poor have an impact on the weak function and role of the community over their rights and responsibilities to the environment in which they live.

The management of slum areas oriented towards green environments is needed in the framework of supporting the sustainability of the slum areas environment. Green communities are needed in terms of increasing community participation by building awareness collectively about their rights and responsibilities to the environment and promoting access to health and education services. Green economic is needed to encourage improvement productive economic enterprises based on local economy, green infrastructure implemented through system integration and fulfillment of service standards of slum areas infrastructure. These four ideas are developed towards the implementation of new urbanism areas by building social, economic and environmental self-reliance towards the sustainability of urban slum development.

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