The Study of Regulation on Settlement Development in Medan Belawan District

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Abstract. The problem of settlements that occur in big cities is a problem that makes local governments confuse, not least in Medan. In the program from the Ministry of Pekerjaan Umum dan Perumahan Rakyat (PUPR) that Medan is one of thirty cities with the most slum areas. This research problem are the fact of slums, factors that influence the growth of settlements, the regulation of coastal settlement development, the implementation of settlement development regulations and appropriate regulatory context for settlement construction in Medan Belawan district. This research aims to map the slums, analyze the factors that affect the growth of settlements, examine regulation of settlement development, analyze application of regulations on coastal settlement and make appropriate regulatory context for settlement construction in Medan Belawan District. Researchers distributed questionnaires and field observations to collect data. The findings of this research were to find out the factor of slums and to appropriate regulatory context for settlement construction in Medan Belawan District. This research can help local governments to pay attention and to reorganize the developments located in Medan Belawan District. This research is expected to provide benefits to all local governments to pay attention and resolve the causes of slums in their area.

1. Introduction

According to Constitution of The Republic of Indonesia, Number 1 of 2011 Settlements are part of a residential environment consisting of more than one house that has facilities and infrastructure, public utilities and has support for other functional activities in urban and rural areas [5]. The process of forming settlements is inseparable from social factors because the formation of settlements occurs when humans occupy a new area with a specific purpose.

The problem of settlements that occur in big cities is a problem that makes local governments confuse, not least in Medan. The growth of urban population must be balanced with development in the region, with examples of residential areas in the suburbs. Dense and unregulated settlements will trigger the emergence of social problems, can restrict access to interactions and access to roads. Dense and unorganized settlements are also a threat to health problems that have caused the area to become a slum area.

In the program of Kota Tanpa Kumuh (KOTAKU) from the Ministry of Pekerjaan Umum dan Perumahan Rakyat (PUPR) claim that Medan is one of 30 cities with the most slum areas. Some of them are six urban villages located in Medan Belawan District. The six areas are based on the Mayor of Medan Decree Number: 640 / 039.K / I / 2015 included in the category of slums and very slum [4].
By remembering that Medan is the third largest city in Indonesia included in the list of 30 cities with the most slum areas, it is necessary to study the regulation of settlement development located in six urban villages in Medan Belawan District.

Based on these factors, the topic of the Settlement Development Study in Medan Belawan District must be studied to find out the factors that influence the growth of slums in Medan Belawan District and also to find out the appropriate regulatory context for settlement construction in Medan Belawan District. The limitation of the research is to discuss the regulation of settlement development in the coastal area of Medan, right on the northern side of Medan, Medan Belawan District. This study also discusses the relevance of the applicable regulations with the intensity of development towards the fact of the growth of coastal settlements in the Medan Belawan District.

2. Literature Review

The settlement is an area in natural disaster mitigation activities because it is a place of residence and gathering place for residents [2]. A settlements are a gathering place for residents in an area. At first, the residents built a place to live in an area to meet their physical needs, then their ownership of the residence developed as a psychological, aesthetic, marking social, economic, and so on. Then with a gathering of several residents, a settlement was formed.

According to Constitution of The Republic of Indonesia Number 1 of 2011 concerning Housing and Settlement Areas in Chapter 1 Article 1 paragraph 5 written Settlements are part of residential environments consist more than one house that has infrastructure, facilities, public utilities, and a support for other functional activities in urban or rural areas [5]. According to Constitution of The Republic of Indonesia Number 1 of 2011 Chapter 1 Article 1 paragraph 14 [5] and Government Regulation No.14 of 2016 Chapter 1 Article 1 paragraph 17 and 18 [6], the definition of slum is a house with decreased quality of function as shelters. Slums are uninhabitable settlements because of irregularities in buildings, high density of buildings and characteristic of building, conditions of facilities and infrastructure that do not fulfill the requirements.

Unplanned settlements called as villages, where villages formed without a plan that has no connection with the government's role in planning residential housing developments. Villages that grew on the coast of Indonesia were illegal settlements. As time goes on, the settlements growth increasingly occupies land [3].

With the theory above, it concluded that settlements are a collection of housing equipped with infrastructure, facilities, public utilities, and have other facilities to support the quality of these settlements. But with unplanned settlements in the coastal areas, quality housing facilities are still very rarely found so that settlements in coastal areas tend to be a slum. This sentence is supported by the theory of John Silas (2000) which states that slum settlement environment conditions can be characterized by an imbalance in the number of residents with the fulfillment of facilities and infrastructure related to this, Researchers understand that slums can be seen with the condition of facilities and infrastructure insufficient or forced existence. It can also be seen with coastal communities who are mostly still having difficulties in making bath wash toilet and septic tanks that make people drain dirty water directly into the sea, of course, this will pollute the environment and causes public health and the quality of settlements decreased.

In Government Regulation No.14 of 2016 Article 108 it is stated that the criteria for slum settlements can be characterized by (1) High Buildings, (2) Environmental Roads, (3) Environmental Drainage, (4) Waste Management, (5) Waste Water Management, (6) Drinking Water Supply Systems and (7) Fire Protection [5]. This is supported by Sinulingga's theory (2002) which states that slum settlements can be characterized by several things, namely very dense population, narrow road network that cannot be traversed by four-wheeled vehicles, inadequate drainage facilities, disposal of dirty water/stool is very lacking, drinking water supply facilities are very lacking, irregular building
arrangements, areas prone to contracting diseases and the land occupied is illegal land related to this. Researchers understand that slum settlements can easily be characterized by various aspects, one of which are facilities and infrastructure that are inadequate, namely by road networks that do not reach all housing, drainage facilities, and irregular building arrangements.

According to Government Regulation No. 14 of 2016 Article 103-105, prevent the quality of slum settlements divided into two types of prevention in the form of (1) Supervision and Control and (2) Community Empowerment [6]. In Government Regulation Number 14 of 2016 Article 102-121, quality improvement in slum settlements is divided into three types, namely in the form of (1) Location Determination, (2) Management Patterns and (3) Management. The management stage at the quality improvement stage aims to maintain or keep the quality of sustainable settlements [6].

According to the Directorate of Settlement Area Development, the Directorate General of Human Settlements and the Ministry of Public Works and Public Housing in the RP2KPKP document (Prevention Plan and Improvement of the Quality of Urban Slum Settlements), the strategic issue in the construction of urban settlements divided into four sectors: settlement development, building arrangement and environment, development of drink water as well as the development of environmental sanitation that consists of wastewater, solid waste, and drainage [1]. In the RP2KPKP document, it stated that there are no areas arranged in the concept of environmental building in Medan [1]. The area in Medan classified as an area that has not been arranged by the concept of environmental planning.

The policy of the Medan City Government in building urban settlements in Medan adjusts the mandate with Constitution of The Republic of Indonesia Number 1 of 2011 concerning the development of Settlement Areas as follows (1) Mandate Related to Handling of Housing and Slum Settlements is the implementation of urban residential development in article 59, including prevention of the growth of slums and prevent the growth and development of unplanned and irregular residential environments. Planning for urban residential environment development in Article 66 includes, among others, the preparation prevent the growth of slums as well as the preparation of plans to prevent the growth and development of unplanned and irregular residential environments [5]. Control of residential is the responsibility of the government and regional government. Control of residential areas is intended to prevent the growth and development of slums and prevent the growth and development of unplanned and irregular residential environments. (2) Prevention and Improvement of the quality of slums and slum settlements contained in article 94 to improve the quality of life and livelihoods of occupant communities, preventing the growth and development of slums and new slum settlements and maintaining also improving the quality the function of slums.

The regional government policies in dealing with settlement development are adjusted to the mandate of the Constitution of The Republic of Indonesia Number 1 of 2011 by Indonesian Government policies [5] so that the policies of the Regional Government and the Government of Indonesia are the same in dealing with the construction of settlements.

The policies for handling slum areas in Medan City, according to the Regional Government written in the RP2KPKP document are as follows (1) Increasing and developing residential areas for slum handling. (2) Control of settlement construction are not by their designation. (3) Improvement of slum settlement facilities and infrastructure supported by disaster mitigation efforts in disaster-prone areas. (4) Exploring and developing funding sources in handling slums. (5) Capacity building and institutional cooperation in handling slum settlements [1].

3. Methodology
This study uses a mixed method, where researchers collect data by observing and distributing questionnaires. In determining the location of the study, researchers chose locations with the following criteria: (1) Settlements formed were not planned. (2) Slums that grow in coastal areas of Indonesia.
(3) Slum settlements built do not fulfill the Medan City Government Regulation. (4) Settlements with inadequate facilities and infrastructure. Medan Belawan District is the only district located in the coastal area of Medan City where settlements in the Medan Belawan District include unplanned slums that are formed with facilities and infrastructure that do not fulfill the Medan City Government Regulation.

In the process of determining the variables obtained from the interpretation of the literature review. The variables obtained are as follows: (1) List of slum areas in Medan Belawan District. (2) Conditions for the quality of facilities, infrastructure, and supporting facilities in Medan Belawan District. (3) The role of the Government in regulating the level of orderliness, density, and quality of decent buildings. (4) The role of the Government in improving the quality of slums and preventing the formation of new settlements. (5) Inadequate supporting facilities, infrastructure, and supporting facilities. The researcher distributed questionnaires to obtain conditions for the quality of facilities, infrastructure, and supporting facilities according to respondents, where respondents were people who lived in slums in Medan Belawan District.

4. Results and Discussions

4.1. Study of Slum Facts
Medan Belawan District still has many areas that lack facilities and infrastructure. This problem happened due to the many new settlements that formed so that many new areas were not reached by the Government to facilitate facilities and infrastructure in the new settlements. According to John Silas (2000), slum settlement environment conditions can be characterized by an imbalance in the number of residents with the fulfillment of facilities and infrastructure. This problem can be seen in the slums in Medan Belawan District where there are still many shortcomings in facilities and infrastructure that do not meet the entire population in the settlement. The following is the fact of the slum in Medan Belawan District which studied into several sections based on the area where there was six areas in the Medan Belawan District.

Medan Belawan District is the only coastal area in Medan City, where Medan Belawan District consists of 6 sub-districts namely Area Belawan I (Figure 1), Area Belawan II (Figure 2), Area Belawan Sicanang (Figure 3), Area Belawan Bahari (Figure 4), Area Belawan Bahagia (Figure 5) and Area Bagan Deli (Figure 6). The researcher will divide Medan Belawan District into six segments based on the Area.
Figure 1. Slums Settlements at Belawan I Area.

Figure 2. Slums Settlements at Belawan II Area.
Figure 3. Slums Settlements at Belawan Sicanang Area.

Figure 4. Slums Settlements at Belawan Bahari Area.
4.2. The Factors Affecting Slum Settlements in Medan Belawan District

According to Katayama (2000), Settlements are the most important area in natural disaster mitigation activities, because it is a place of residence and gathering place for residents [2]. Unplanned settlements are usually formed due to the gathering of several buildings that form a group of residents who occupy the area. A group of residents who occupy the area chooses reasons close to their livelihood. Most of the residents who occupy the area get their homes by buying, but there are also those who get land just by building their dwellings without buying the land. The reason people choose the location is because that it is close to their families, there are also those who get the land empty and
there are also those who choose the residence because the construction of residential buildings has begun around the site. Slums began with some people starting to build residential buildings, then followed by several communities to form a slum settlement without planning (Figure 7).

![Figure 7. Slum Residential Buildings in Medan Belawan District.](image)

Community knowledge of the Laws and Government Regulations governing slum areas is very lacking where none of the 120 respondents from the community were aware of any Laws or Government Regulations governing slums. That is due to a lack of public awareness in building shelter and socialization from the government regarding this matter. As result of the government's lack role in disseminating matters related to slums, one of the factors causes settlements to become more slum due to a lack of public knowledge about the Law and the Government Regulation regulating it.

Sinulingga’s theory (2002) states that slum settlements can characterize by a number of things, namely a very dense population, a narrow road network that cannot be passed through by four-wheeled vehicles, inadequate drainage facilities, deficient sewage disposal, provision facilities drinking water is very deficient, irregular building arrangements, areas prone to contracting diseases and land occupied is illegal land. Slum settlements in Medan Belawan District have begun to develop through government programs in improving the quality of slum settlements in the Medan Belawan District, but are still not maximal in various ways as well as in the condition of community buildings that are still relatively dirty. The buildings where the people live are mostly made of wood; the building has begun to dull or only uses bricks exposed because of the lack of economic conditions in the community to build a place to live. The same is true of the condition of the road in the location of the slums in Medan Belawan District. The main road conditions have been cast but are uneven, causing road conditions to feel very rough. The road that the government is paying attention to is only the main road, the main road is cast so that the road height is higher than that of the local community so that the small roads and houses of the people are subject to flooding when there are heavy rain and high tide.

The condition of the facilities at the location of the slums in Medan Belawan District is quite bad where there are still many road conditions that experience muddy or bloody. The condition of muddy or flooded also causes garbage to scatter as a result of people who dispose of littering even though in slum areas already have waste management. Slum areas often contract diseases due to littering.

The utility of clean water in the Medan Belawan District had spread throughout the settlements, but there are still some housing that does not get clean water utilities, where the housing is formed not too long (new settlements). Although all settlements already have clean water utilities, there are still many
settlements that are difficult to get clean water without the help of machines. The state of utilities in Medan Belawan District is still inadequate because there are still many areas that are difficult to get clean water for bath wash toilet.

Supporting facilities in Medan Belawan District have been classified as good because supporting facilities for habitable settlements are adequate, where for educational facilities and worship facilities all respondents agree that these facilities are available in their settlements. But for health facilities and shopping facilities, not all respondents agreed that the facilities exist in their settlements. Only 69.2% of the population agreed with the existence of health facilities, and 82.5% of the population agreed with the existence of shopping facilities. This is because health facilities and shopping are far enough to be reached from residents’ dwellings. The supporting facilities according to 84.2% of the population are easily reached from their residential buildings, and 15.8% consider that it is not easy to reach these supporting facilities, because these facilities are considered to be non-existent or too far to reach from their residence.

4.3. The Study of Regulations on Coastal Settlements in Indonesia

The construction of settlements in Indonesia is still uneven; this can be seen in a large number of slum settlements found on the Indonesian coast where these slums are usually illegal settlements formed without the Government's role (Figure 8). The illegal settlements that were formed did not have the facilities and infrastructure so that the settlements would become more slum if there were no Government intervention in improving facilities in the illegal settlements.

The irregularity of buildings, building density, and quality of buildings in Medan Belawan Subdistrict exposed at RP2KPKP [1]. Where the level of regularity of buildings is very low, it only ranges from 33% to 66% in each area. The level of building density is low with inappropriate levels of building quality ranging from 10% to 33% (Table 1).

![Figure 8. One of Slum Housing In Medan Belawan District.](image)

| Area            | Regularity | Density  | Quality of Buildings |
|-----------------|------------|----------|---------------------|
| Belawan I       | 66%        | 22 unit/Ha | 26%                 |
| Belawan II      | 49%        | 104 unit/Ha | 10%                |
| Belawan Sicanang| 51%        | 8 unit/Ha  | 28%                 |
| Belawan Bahari  | 46%        | 35 unit/Ha  | 16%                |
| Belawan Bahagia | 33%        | 105 unit/Ha | 19%               |
| Bagan Deli      | 63%        | 24 unit/Ha  | 33%                |
The condition of facilities and infrastructure in Medan Belawan District is quite bad where there are still many facilities and infrastructure that do not have proper facilities to use or the need to improve the quality of facilities and infrastructure in Medan Belawan District (Figure 9).

Figure 9. One of the Residential Buildings Without Decent Means.

In the Constitution of Republic Indonesia Number 1 of 2011 Chapter 1 Article 1 paragraph 14 [5] and also Government Regulation Number 14 of 2016 Chapter 1 Article 1 paragraph 17 and paragraph 18 [6], definition of slum housing is housing that has a decline in the quality of functions as shelters and slums are uninhabitable settlements because of irregularities in buildings, high density of buildings and quality of buildings, conditions of facilities and infrastructure that do not meet the requirements. That confirmed that there are still many slum settlements in the Medan Belawan District which can be characterized by a lack of regularity in building construction that occurs due to the construction of unplanned wild residential buildings built by local communities without regard to the quality of life or environmental quality of the settlements. So that other communities helped build residential buildings without governing government regulations. But in terms of building density, it cannot be the thing that confirms that Medan Belawan District is a slum area because in Medan Belawan District is not dense.

The condition of facilities and infrastructure in Medan Belawan District can be the main reason why Medan Belawan District classified as slum area. The facilities and infrastructure in Medan Belawan District is still lacking in quality, where the condition of the facilities is still large and does not reach all settlements so that there are still many slum settlements in the Medan Belawan District.

Marpaung et al. (2016) stated that settlements formed unplanned are usually referred to as villages, where villages are usually formed without a plan that has no connection with the government's role in planning residential housing development [3]. Villages that grew on the coast of Indonesia were originally illegal settlements. As time goes on, the growth of illegal settlements increasingly occupies the land. Unplanned settlements are usually slums because without the government's role in improving the quality of these settlements. At Medan Belawan District there are still many unreached slum areas by the government in improving the quality of residential buildings.

4.4. The Study of Application of Settlement Regulations in Medan Belawan District

According to Government Regulation of Republic Indonesia Number 14 of 2016 the problem of settlements is resolved in 2 ways, namely by improving the quality of the slums that have been formed and preventing the formation of new slums, but in terms of improving the quality of building dwellings in slums, it is still very lacking [6]. The community still feels dissatisfied with the government's role in helping improve slum settlements in the Medan Belawan District. The government's role in improving road quality is still not optimal. Some people still feel the condition of the road is classified as damaged or broke, improving the quality of road conditions is not evenly
distributed throughout the settlement. The condition of the road is still relatively poor because it often occurs muddy and floods when the weather is raining (Figure 10).

Figure 10. Road Conditions at Slum Settlements in Medan Belawan District.

The government's attention is still lacking in the conditions of slums in the Medan Belawan District, where there are still many new slum settlements being formed. The government should provide knowledge of the people who live in slums about the Law and also the Government Regulations that governing slums and the causes of slums in settlements. This resulted in the easy formation of slums in Medan Belawan District because of a lack of knowledge and understanding of the government's role in creating habitable settlements. With this knowledge, it will become the main capital in creating habitable settlements for people who live in Medan Belawan District.

4.5. The Right Regulatory Context for Development of Settlements in Medan Belawan District

The construction of settlements in Medan Belawan district rarely found so that settlements in Medan Belawan District are decreasing quality becoming slums. According to Constitution of The Republic of Indonesia Number 1 of 2011 Chapter 1 Article 1 paragraph 14 [5] as well as Government Regulation No.14 of 2016 Chapter 1 Article 1 paragraph 17 and 18 [6], Definition of slum housing is housing that has decreased quality of function as shelters and slums are uninhabitable settlements because of irregularities in buildings, high density of buildings and quality of buildings, conditions of facilities and infrastructure that do not meet the requirements. Things that must be considered to build decent living settlements in Medan Belawan District are the condition of building quality, building density, quality of facilities and infrastructure, quality of clean water, management of dirty water, garbage and fire fighters lines and supporting facilities in slums in Medan Belawan District.

Settlements in the Medan Belawan District are still relatively slum, where there are still many Government tasks that have not been carried out maximally to create habitable settlements for the community. Especially in terms of the quality of buildings, facilities and infrastructure, clean water and dirty water. This is an important task for the Government to improve the quality of slums in the Medan Belawan District.

5. Findings

Based on the discussion above, the researcher found that the Medan Belawan District still had many areas that did not have proper facilities and infrastructure. According to Jhon Silas (2000), slum
settlement environment conditions can be characterized by an imbalance in the population with the fulfillment of facilities and infrastructure. This confirms that the number of slum settlements found in Medan Belawan District is due to the condition of facilities and infrastructure that do not meet the standards of feasibility. The main factor of the community is choosing to live in slums in Medan Belawan Subdistrict because it is close to a place to earn a living either by trading or working.

Settlements in Medan Belawan District still have many slums that are not reached by the Government. Where slums are usually built without the role of the government in residential development planning [3]. Even with the help of the Government, the community still feels dissatisfied. The government's attention is still lacking in the conditions of slums in the Medan Belawan District, where there are still many new slum settlements being formed. The government should provide knowledge about the people who live in slums about the Law and also the Government Regulations governing slums and the factors that cause slums in settlements, so that the community can participate in improving the quality of settlements. It also makes it easier for the Government to prevent the formation of new slum settlements.

Many settlements in Medan Belawan District are slum settlements, where there are still many Government tasks that have not been carried out maximally to create habitable settlements for the people in Medan Belawan District. Especially in terms of the quality of buildings, facilities, and infrastructure, clean water and dirty water. That is a key for the Government to improve the quality of slums in the Medan Belawan District.

6. Conclusion
The construction of settlements in Medan Belawan District is not evenly distributed; there are still many unreached settlements from the Government's role in the construction of settlements so that there are still many slums in the Medan Belawan District. The construction of facilities or improving the quality of facilities and infrastructure in the Medan Belawan District, is still lacking. In terms of the quality of residential buildings in the Medan Belawan District it is still relatively poor, there are still many illegal residential buildings that do not tread the land that built without permission or the role of the Government. Improving the quality of the road network is not evenly distributed to all settlements. There are still many settlements that do not have decent roads and often experience muddy or flooded roads. The number of inadequate road networks for fire truck lines, where when it fires, firemen are very difficult to reach all settlements.

Regulations on the construction of coastal settlements in Indonesia still do not reach all settlements; there are still many settlements that do not get these facilities so that the settlements become more slum. The government launched RP2KPKP, which regulates the regularity of buildings, building density, and building quality in settlements in Indonesia [1]. But in settlements in the Medan Belawan District, there is still little attention. The building's regularity and building quality are not optimal. This is due to the lack of government socialization to the community so that the community is less knowledgeable about slums.

Slum settlements in Medan Belawan District must be addressed again. The government must pay more attention to the quality of existing settlements and prevent the formation of new slums. The government must carry out socialization to prevent the formation of new slums and for the slums that have been formed. The government must further improve the quality of existing facilities and infrastructure.

Acknowledges
During the research process, the author acknowledged the support of residents of slum settlements in six area in Medan Belawan District specifically in obtaining the required data. The researcher also thanked several stakeholders who helped in the process of obtaining secondary data to supplement the
primary data needed. The cost source of this research is Directorate of Research and Community Service; The Directorate General of Strengthening Research and Development at the Ministry of Research, Technology and High Education is following the Agreement for the Implementation of Research for the Budget Year 2019 Number 11/E1/KP.PTNBH/2019, 29 March 2019

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