Sustainable Urban and Settlement Management in Dinar Indah Housing, Semarang City through Environmental Management

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ABSTRACT

The increase in population growth in Semarang City causes limited land needs so housing developers carry out development in the suburbs, one of which occurs in Dinar Indah Housing, Semarang City with the highest population growth rate of 7% years and an increase in space requirements in the East of Semarang City by 20-30% years. This housing is a government program in 2006 which is intended for low-income people according to the Regulation of the Minister of Public Housing of the Republic of Indonesia Number 10 of 2012 does not include the obligation to make environmental management documents and the location of housing which is right on the edge of Pengkol Sub-watershed (Babon sub-watershed) causing morphological housing to be on the contour of the basin land with a slope of 3-4% around Pengkol Sub-watershed area, so that in 2017, 2020, 2021, and 2023 there were floods due to overflowing water from the Pengkol Sub-watershed causing property damage and casualties. The absence of environmental management documents has a considerable impact such as a decrease in environmental quality and can threaten the sustainability of human life and other living things. This research aims at the importance of implementing environmental policies as environmental control. The results show that the implementation of policies by the Semarang City government by carrying out mandatory environmental management efforts following business licensing and flood control efforts can reduce environmental degradation that occurs in Dinar Indah Housing, Semarang City.

Keywords: *population growth, land use, water flood, environmental management, government policy*

INTRODUCTION

The population growth rate in the eastern region of Semarang City has increased from 2015 to 2022 by 20-30% years, causing an increase in the need for liveable housing. This is the case in Meteseh Village in Dinar Indah Housing, Semarang City with the highest population growth rate with an average of 7% years. (Badan Pusat Statistik Kota Semarang, 2023). Increased land needs lead to land conversion from agricultural / non-urban to urban land such as buildings (*education, trade, residential housing, and other commercial activities*) has a considerable impact on the environment this is because land use that exceeds the carrying capacity of land can cause land damage such as erosion and environmental degradation so as to reduce environmental quality or environmental degradation (Tristiani et al., 2021).

Dinar Indah housing development, are Healty Simple Housing program in 2006 based on "Presidential Decree of the Republic of Indonesia Number 22 of 2006 concerning Coordination Team for the Acceleration of Flat Development in Urban Areas related to the type of licensing facilities provided by the Regional Government to Rusuna

Developers" followed up with "Article 4 of the Regulation of the Minister of Home Affairs Number 74 of 2007 on Guidelines for Granting Ease of Licensing and Incentives in the Construction of Simple Flats in Urban Areas" and based on "Article 14 paragraph (3) of the Regulation of the Minister of Public Housing of the Republic of Indonesia Number 10 of 2012 concerning the Implementation of Housing and Settlement Areas and Settlement Areas with Balanced Occupancy related to the control of housing and settlement areas with balanced occupancy which in the development stage includes the obligation to make licensing, controlling, and structuring housing development intended for low-income people in urban areas where there is no obligation to make environmental management documents/ environmental licensing" (Peraturan Menteri Dalam Negeri Nomor 74 Tahun 2007 Tentang Pedoman Pemberian Kemudahan Perizinan Dan Insentif Dalam Pembangunan Rumah Susun Sederhana Di Kawasan Perkotaan, 2007). This leads to unpredictable and unavoidable future impacts on the environment such as flooding, reduced availability of clean water, landslides, river pollution, loss of vegetation and extinction of species in the area (Ekawati et al., 2018).

The impact of the development of Dinar Indah Housing, Semarang City occurs in 2017, 2020, 2021, and 2023, namely flooding and inundation during high rainfall. This is because drainage channels and artificial rainwater reservoirs are unable to accommodate the accumulation of rainwater so that it overflows. The location of Dinar Indah housing is right on the edge of the Pengkol Sub Watershed which is a tributary of the Babon Watershed with water flowing from Ungaran to Semarang City so that the impact caused is exacerbated by the morphological conditions of this housing on the contour of the basin land with a flood runoff plain area having a slope of 3-4% around the Pengkol Sub Watershed area and ecosystem damage to the Babon Watershed which is unable to accommodate the volume of rainwater. This flood caused many losses and damage to residents' property such as electronics, vehicles and clothes owned by residents and hampered the activities of the surrounding community. This made many residents eventually leave their homes and those who remained adapted to flood-prone conditions (Pratama, 2019).

Flooding in Dinar Indah Housing, Semarang City is an indirect impact due to the absence of environmental management documents and defaults committed by business actors related to compliance in infrastructure development and environmental management efforts as a good housing developer business actor causing the function of the housing area to be disrupted or the land function does not run well enough (Anggraini Fopy, 2020). This research is based on a case study that occurs with the aim of the importance of implementing environmental policies as environmental control and flood prevention that occurs in Dinar Indah Housing, Semarang City.

RESEARCH METHOD

Research on Sustainable Urban and Settlement Management in Dinar Indah Housing, Semarang City Through Environmental Management is located in Meteseh Village, Tembalang District, Semarang City. Location of Dinar Indah housing is right on the edge of Pengkol Sub Watershed which is a Babon Watershed with water flowing from Ungaran to Semarang City at coordinates -7.057056182233652, 110.46615715032183 and the morphological condition of this housing has a basin

contour with a flood runoff plain area with a slope of 3-4% around Pengkol Sub Watershed area (Dananjaya, 2009).

The method used in this research is descriptive qualitative, with primary and secondary data collection. Primary data is obtained by conducting field observations based on case studies and secondary data by reviewing regulations. The data obtained is then analyzed to determine the level of compliance with laws and regulations on environmental management. The observation method is carried out by observing, evaluating, drawing conclusions on case studies that occur in the field. Observation must be carried out systematically, purposefully, and on a scientific basis (Rijal Fadli, 2021).

Figure 1. Map of Dinar Indah Housing Area, Semarang City

RESULT AND DISCUSSION

A. Legal Basis for Environmental Management through Environmental Documents

Environmental documents in the form of environmental approvals and/or Environmental Feasibility Decrees (SKKL) are mandatory requirements that must be owned by business actors in carrying out environmental management. Before submitting an environmental document, it is required that the land use is adjusted to the spatial utilization, namely the Semarang City Spatial Plan based on Semarang City Regional Regulation Number 5 of 2021 concerning Amendments to Regional Regulation Number 14 of 2011 concerning the Semarang City Spatial Plan 2011 - 2031 (Adimagistra & Pigawati, 2016), can be seen according to the spatial pattern map in **Figure 2**.

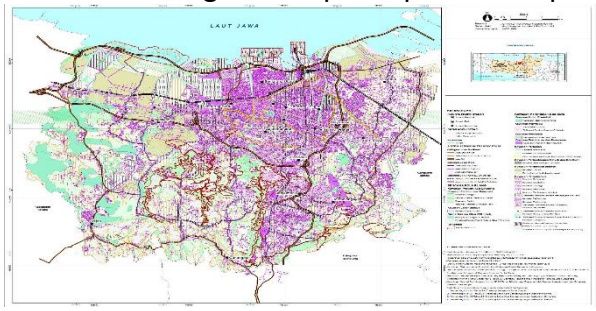


Figure 2. Semarang City Spatial Plan Map

The regulation of environmental approval provisions is through Law Number 11 of 2020 concerning Job Creation which is derived from Government Regulation Number 22 of 2021 concerning the Implementation of Environmental Protection and Management and Government Regulation Number 5 of 2021 concerning the Implementation of Risk-Based Licensing. Environmental protection and management is carried out as a systematic and integrated effort to preserve environmental functions

and prevent environmental pollution and/or damage by planning, utilization, control, maintenance, supervision, and law enforcement (Peraturan Pemerintah Nomor 22 Tahun 2021 Tentang Pedoman Perlindungan dan Pengelolaan Lingkungan Hidup, 2021), implementation of these efforts as follows: 1) planning efforts, carried out by determining the scope of activities, determining the policy and policy authority to be applied, making commitments and responsible for environmental management, detailing the structure of environmental control, and determining the mechanism for making environmental documents according to business licensing; 2) control efforts, carried out by creating control mechanisms at the operational and post-operational stages based on environmental quality standards instruments and Environmental Damage Standard Criteria and harmonizing the formulation of business licensing arrangements with arrangements for controlling impacts on the environment; 3) Supervision Efforts, carried out as a control of environmental damage and ensuring that the provisions stipulated in the planning stage and control stage are carried out properly; 4) law enforcement efforts, carried out with the ultimatum remidium principle as a preventive effort if there are deviations in the implementation of activities and the absence of environmental documents will be subject to Administrative Sanctions.

The application of these efforts is based on the risk basis of the activities carried out by business actors by determining the Indonesian Standard Business Field Classification (KBLI) through the grouping of business activities into standard business codes in accordance with Government Regulation Number 5 of 2021 concerning the Implementation of Risk-Based Licensing, if the KBLI grouping has been determined, the business actor can determine the authority to examine environmental management documents (Peraturan Pemerintah Nomor 5 Tahun 2021 Tentang Penyelenggaraan Perizinan Berusaha Berbasis Resiko, 2021) and make environmental documents based on the criteria of important and not important impacts in accordance with Government Regulation Number 22 of 2021 concerning the Implementation of Environmental Protection and Management.

B. Flood Control in Dinar Indah Housing, Semarang City

Based on the research results, the location of Dinar Indah housing is right on the edge of the Pengkol Sub Watershed which is a tributary of the Babon Watershed and the morphological condition of this housing has a basin contour with a slope of 3-4% around the Pengkol Sub Watershed area, can be seen in **Figure 3**.

3 (a)

3 (b)

Figure 3. (a) The condition of Dinar Indah Housing Area on the Contour of Basin Land, (b) Pengkol watershed adjacent to Dinar Indah housing estate

The condition of Dinar Indah Housing is classified as a flood-prone area, this is due to the condition of the land contour in the form of a basin and adjacent to the Pengkol watershed. The impact of the flood disaster in Dinar Indah Housing which reached ± 3 meters was that 60 houses were submerged and the number of residents affected was 37 households or ± 147 people, 12 flood victims were treated and 1 person died.

In areas that have flood vulnerability, there is a need for a different paradigm in flood disaster management, because it must be reviewed from various sectors, both social and economic. The paradigm used must already be towards the development paradigm and the mitigation paradigm or preventive efforts. The need for development engineering carried out to carry out flood management, it should be directly proportional to natural conservation by restoring the function of natural areas slowly without causing a reduction in the ability of quality and quantity in the current utilization.

Flood alleviation efforts recommended and carried out by the Semarang City Government in Dinar Indah Housing, Semarang City is:

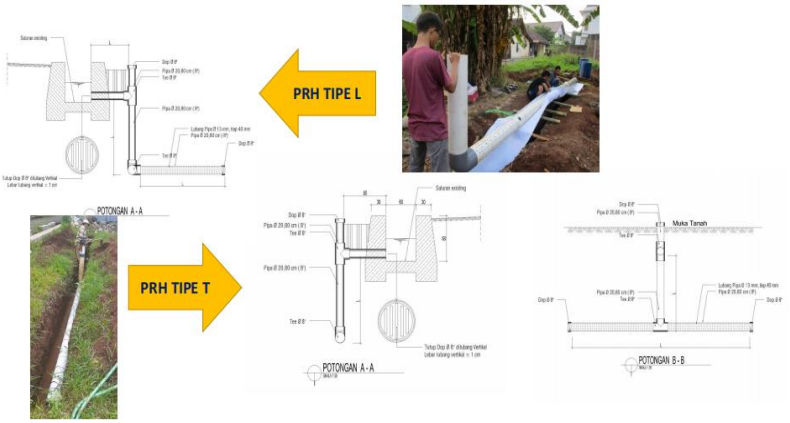
1. Embung construction based on the city plan information recommended by the Semarang City Spatial Planning Office, can be seen in **Figure 4**.

Source : (Department of Spatial Planning in Semarang City, 2021)

Figure 4. Embankment Construction Plan based on City Plan Description

Construction of 1,845 m2 embung based on KRK Number 591/1185B/DISTARU/IV/2021 issued on February 8, 2021 by the Semarang City Spatial Planning Office in accordance with Semarang City Regional Regulation Number 14 of 2011 concerning the Semarang City Regional Spatial Plan 2011 - 2031.

2. Installation of Horizontal Infiltration Pipe (PRH) by Semarang City Spatial Planning Agency and Semarang City Housing and Settlement Agency, based on **Figure 5**.



Source : (Department of Housing and Settlement Area Agency in Semarang City, 2022)

Figure 5. Design and Installation of PRH with L and T Types

The installation of PRH was carried out by conducting a land use change study, a land cover change study, a flood and tidal flood risk map study, a drainage system study of Semarang City, applying the "Zero Delta Q" rule based on Semarang City Regional Regulation No. 7/2014 on Semarang City Drainage Master Plan 2011-2031, and a landslide-prone area study.

CONCLUSION

The business actors of Dinar Indah Housing, Semarang City have defaulted by not implementing environmental protection and management in accordance with business licensing regulations due to the absence of environmental management documents. This is characterized by the occurrence of environmental degradation and flooding in Dinar Indah Housing, Semarang City which has a significant impact on the community. The need for the implementation of policies and environmental management efforts as an effort to overcome flooding in Dinar Indah Housing, Semarang City by the Semarang City government can control existing environmental problems.

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