



## Implementation of Spatial Planning Law in Addressing Environmental Problems in Urban Areas

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**Abstract:** A city is one of the areas heavily populated by people. In Indonesia, there are a total of 98 cities. A city is a complex area because it has various zones such as central zones, industrial zones, and suburban zones. Additionally, a city should also have green open spaces. Green open spaces can help minimize global warming and the greenhouse effect in urban areas. Moreover, cities often grapple with waste issues. Urban residents should develop good mental attitudes and habits, such as not littering. Cooperation between the government, which builds proper and appropriate urban planning by providing green areas, and the public's awareness to maintain city cleanliness by disposing of waste properly, is necessary.

**Keywords:** Regional Planning; Urban Planning; Green Areas; Waste

### 1. INTRODUCTION

Indonesia is one of the countries with a large population. According to data from the Central Bureau of Statistics or BPS, in 2024, Indonesia had a population of 281 million people. It is lined up with data from Worldometer, which states that Indonesia is the 4th most populous country after India, China, and the United States. Still, according to BPS, Indonesia also has 98 cities, making it one of the countries with many cities. With the dense population in Indonesia, appropriate spatial planning is needed for its residents. In a densely populated country like Indonesia, the need for urban planning is very important. Indonesia also has a fast population growth rate, as stated in BPS data, with a population growth of 1.11%. Moreover, uneven population distribution results in challenges such as traffic congestion, pollution, land shortages, and pressure on urban infrastructure. Effective urban planning is required to manage space usage efficiently, provide adequate housing, develop public transportation, and protect the environment. Without proper urban planning, the quality of life of the population can decline, and the potential for sustainable development becomes difficult to achieve.

Urban areas serve as centers for various social and economic activities, including government, industry, commerce, transportation, and education. The concentration of these activities leads to increased population density. Therefore, efforts are being made to enhance infrastructure facilities to improve the welfare of urban residents. Additionally, cities play a crucial role in promoting technological progress and innovation, which ultimately improves circumstance's general quality of life. Hence, city planning that includes space allocation, waste

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management, and the establishment of efficient transportation systems must be prioritized to ensure the comfort and well-being of city residents. Therefore, urban planning is a crucial aspect that the government must pay attention to, considering that cities are the centers of infrastructure development and economic activity, such as Jakarta, the capital city of Indonesia.

Given the importance of urban planning, some regulations address urban planning, which is part of spatial and regional planning, such as Law (UU) Number 26 of 2007 concerning Spatial Planning. It is further detailed in Government Regulation No. 15 of 2010 concerning the Implementation of Spatial Planning. These laws and regulations govern how spatial planning should ideally be carried out. As stated in Law Number 26 of 2007, "...considering the importance of spatial planning, it is necessary to organize spatial planning that is safe, comfortable, productive, and sustainable."

## **2. METHOD**

### **Method**

The study utilizes the normative juridical research method, conducting legal research and referencing relevant journals and secondary data. In its nature, this study is descriptive-analytical.

### **Approach**

The approach used in this research is legislative and conceptual. It involves utilizing legal foundations in the form of laws and the concepts embedded within them to find answers and solutions for this study. To elaborate, the legislative approach examines existing laws, regulations, and statutes relevant to the research topic to ensure that the analysis is grounded in the current legal framework. The theoretical approach, alternatively, includes delving into theoretical viewpoints and doctrines associated with the topic, granting a more profound comprehension of the legal ideas and principles in action. These approaches allow for a thorough analysis that considers both the practical application of laws and the underlying legal theories and concepts.

## **3. RESULT AND DISCUSSION**

### **Urban Structure**

A city is a hub where the wheels of the economy turn, with many residents inhabiting it. Within a city, there are several subdivisions. There are various theories that provide the foundation for the structure of urban space. Here are some theories regarding the central city zone or Central Business District (CBD):

a. Concentric Zone Theory (Burgess, 1925)

The Central Business District is a zone located at the heart of the city, typically serving as the center for economic, social, political, and cultural activities. The city center usually features important infrastructure such as commercial buildings and government offices.

b. Sector Theory (Hoyt, 1939)

This theory has similarities with the explanation from Burgess's Concentric Zone Theory, focusing on the development of urban areas in sectors radiating out from the city center.

c. Multiple Nuclei Theory (Harris and Ullman, 1945)

This theory explains that the city center is a zone relatively positioned at the middle of the city and acts as "Growing Points," indicating multiple centers of activity within the city.

The above three theories emphasize the importance of the city center as the core part of the city, usually serving as the main area for economic activities and urban infrastructure. The city center is considered the nucleus of the city because it is the site for development such as government buildings, markets, and other vital infrastructure. Thus, the city center can also be referred to as the economic heart of the city.

Apart from these three theories, there is another detailed theory discussing the division of urban areas, known as the Dual Nuclei Theory, which elaborates on the division of urban zones:

a. Central Business District (CBD)

The city center is the hub of trade and financial activities, filled with corporate offices, banks, financial institutions, shops, shopping centers, hotels, government buildings, and various other structures.

b. Light Industry Zone

This area hosts non-polluting industries, typically in factories producing items such as food, beverages, spare parts, and more.

c. Lower-Class Residential Zone

This residential zone is usually unsuitable for living due to substandard conditions and is often adjacent to other zones such as railway tracks. It is frequently exposed to air and noise pollution.

d. Middle-Class Residential Zone

This zone is typically inhabited by residents with middle incomes. It is usually located near the city center, shopping areas, and close to public facilities such as terminals, schools, and more.

e. Upper-Class Residential Zone

The zone is typically inhabited by high-income residents and is far from the CBD. It features comprehensive amenities such as parks, healthcare facilities, good roads, and tight security, making it highly livable.

f. Heavy Industry Zone

This zone is usually found on the outskirts of the city. It contains factories that require significant resources and are generally polluting, hence their location on the city outskirts to avoid air and noise pollution for residents. This industrial zone typically produces steel, cement, and other products with chemical components that are hazardous to health.

g. Peripheral Industry Zone

Located on the city outskirts and extending towards rural areas, this zone is used for industrial development. Land prices here are low, making it suitable for industry, although it lacks transportation facilities, which need attention.

h. Peripheral Residential Zone

This zone surrounds the city, is not densely populated, and is close to public facilities. It is an open area suitable for residential purposes.

Given the extensive division of urban zones, laws and regulations are necessary to govern these areas, considering that urban populations include densely populated zones filled with industries and other zones. Urban planning becomes crucial to creating a comfortable and pollution-friendly urban environment for residents. Poor urban planning can lead to discomfort for people living and working in the city. Therefore, effective urban planning is fundamental for organizing space and regions within cities.

### **Spatial Planning of Regions**

According to Law No. 26 of 2007, urban areas are regions typically used for housing, government distribution, social services, and economic activities. Spatial planning in Indonesia is a crucial component in the planning and development of a region, especially cities. Spatial planning in Indonesia aims to create community welfare through thorough and sustainable planning. In this context, regional spatial planning must consider the dynamics of ongoing development, including the challenges of globalization, regional

autonomy and aspirations, the balance of development between western and eastern Indonesia, the physical conditions of the Republic of Indonesia, which are prone to disasters, the impact of global warming, the development of marine and coastal potentials, space utilization, handling of national border areas, and the role of technology in utilizing space. Thus, spatial planning that integrates different zones and effective planning strategies can help improve community welfare and ensure a better quality of life in cities.

In urban spaces, proper planning is necessary given that cities have various zones, including residential and industrial areas, making urban areas complex. Urban spatial planning is a vital aspect of creating sustainable urban development, as stated in Law No. 26 of 2007, Point d. Additionally, according to Government Regulation No. 15 of 2010, Article 1, Paragraph (6), spatial planning is a system of spatial planning processes, space utilization, and control of space utilization. It is also hoped that urban spatial planning can improve the quality of life of the community. Good spatial planning can address social environment issues such as poverty and crime by providing comfortable and safe housing, as well as complete public facilities. Moreover, spatial planning enhances community comfort by separating industrial zones from residential zones, thereby reducing air and noise pollution generated by industries. Consequently, the quality of life for the community can be significantly improved. Effective spatial planning can also develop the city's economy by providing strategic industrial and modern business zones, thus boosting economic activity and creating broader job opportunities. Therefore, urban spatial planning is crucial to addressing social issues, enhancing comfort, developing the economy, and improving the overall quality of life for the community.

Well-executed regional spatial planning is undoubtedly beneficial for the community, as it not only facilitates the construction of national infrastructure but also realizes urban areas with rapid and interconnected economic turnover between cities. These cities form a complex social environment not only inhabited by residents but also serve as a place for work, business, and other activities. It significantly supports the needs of the urban population to collaborate in building a developed, orderly, and comfortable urban area. Moreover, proper urban spatial planning can add value for residents and businesses operating in the city.

In urban regional spatial planning design, Government Regulation No. 15 of 2010, Paragraph 5, Article 35, which is currently being modernized by Government Regulation No. 21 of 2021 concerning the Implementation of Spatial Planning, also applies. An example is the green space planning in urban areas. Urban green space is a crucial element

in creating a balanced and sustainable environment. These green areas function as recreational spaces, and air pollution absorbers, and maintain the quality of life for the community. Thus, urban green spaces must be maintained and sustainably developed to enhance community quality of life and environmental sustainability.

The division of urban green spaces is explained in Government Regulation No. 15 of 2010, Article 36, Paragraphs 1-4, which outlines the division of green zones in cities as follows:

- a. Provision and utilization of public green open spaces in urban areas should be at least 20% of the urban area.
- b. Provision and utilization of private green open spaces in urban areas should be at least 10% of the urban area.
- c. If the area specified in paragraphs (1) and (2) exceeds 30%, that area must be maintained.
- d. If the area specified in paragraph (1) is not achieved, there will be sanctions under applicable laws and regulations.

Urban green areas are crucial for environmental balance as they function as recreational spaces and air pollution absorbers. These green areas help mitigate the negative effects of industrial and transportation activities in the city, improving air quality and the surrounding environment. Additionally, green spots play a role in carbon dioxide absorption and oxygen production, significant to maintaining ecosystem balance. The importance of green areas in urban settings is also evident in public health aspects. With green spaces, residents can enjoy a cool and fresh natural environment, which helps reduce stress and improve mental and physical health. Furthermore, green areas serve as venues for research and scientific development, such as biology and ecology, which are vital for understanding and preserving natural balance.

In urban planning, green areas must be maintained and developed sustainably. This can be achieved by separating industrial zones from residential zones and ensuring that green areas remain protected from damage. Additionally, the government and the community must collaborate to maintain the cleanliness and preservation of green spaces, such as by conducting regular clean-ups and avoiding activities that harm the environment. Therefore, the importance of green areas in urban settings is clear in terms of environmental balance, public health, and sustainable urban planning. Serious efforts are needed to preserve and develop urban green areas so they continue to function as essential elements in maintaining environmental balance and enhancing residents' quality of life.

In addition to green spaces, urban residents should also understand the importance of public awareness in maintaining urban planning. The role of public awareness in spatial planning cannot be overlooked. The community plays a central role in maintaining and developing a sustainable city. With high awareness, residents can understand and support the spatial plans made by the government, thereby improving their implementation effectiveness. The community can also act as overseers and critics, ensuring that spatial plans are implemented correctly and preventing misuse. Public awareness is also crucial in addressing social and environmental issues in the city. By understanding spatial plans, residents can identify and address emerging issues such as air pollution, noise, and poverty. They can participate in various programs and activities aimed at improving the quality of life and the surrounding environment. Moreover, public awareness can enhance community involvement in planning and development, making spatial plans more accurate and effective.

In urban planning, public awareness can also increase community involvement in planning and development. Consequently, spatial plans are better because they consider the needs and aspirations of the community. Aware residents can participate in various activities, such as community meetings, surveys, and discussions, to provide valuable input to the government. This enables the government to make wiser and more effective decisions in developing the city. Therefore, the importance of public awareness in urban spatial planning is evident in addressing social and environmental issues, enhancing community involvement in the planning process, and ensuring the effective implementation of spatial plans. Serious efforts are needed to raise public awareness of the importance of spatial planning in urban areas to ensure it continues to function as a vital element in maintaining environmental balance and improving residents' quality of life.

Environmental balance in urban areas requires equilibrium between green spaces and internal urban issues such as waste management. In large cities, waste becomes a significant problem due to the common habit of improper disposal. Public awareness of the importance of waste management in urban areas is crucial for maintaining the quality of life and the surrounding environment. Improperly managed waste can lead to air, water, and soil pollution, as well as pose health risks to the community. Therefore, residents must have a high level of awareness about the importance of reducing, processing, and recycling waste. This allows the community to actively participate in reducing the amount of waste generated and improving waste management efficiency in the city. Public awareness of waste management also enhances community involvement in the waste management

process. Informed residents can participate in activities such as waste collection, processing, and recycling. This helps reduce the burden on the government in managing waste and improves the effectiveness of waste management programs. Moreover, raising awareness among the public can enhance children's and young people's comprehension of the significance of protecting the environment, equipping them to become future leaders with a sustainable mindset.

Public awareness of the importance of waste management can also improve residents' quality of life. Consequently, more accurate and effective urban spatial plans can be developed, taking into account the needs and aspirations of the community. Aware residents can provide valuable feedback to the government on enhancing the city's waste management system, thereby improving overall quality of life. Therefore, serious efforts are needed to raise public awareness about the importance of waste management in urban areas to ensure it continues to function as a crucial element in maintaining environmental balance and improving residents' quality of life.

#### **4. CONCLUSION**

Urban areas encompass various zones such as business centers, industrial areas, residential zones, and green spaces. Urban planning is crucial for addressing social and environmental issues, enhancing community involvement in the planning process, and ensuring the effective implementation of spatial plans. As discussed above, a well-planned city should balance existing infrastructure with nature. An imbalance between urban planning and the natural environment can lead to various environmental and public health problems.

In urban areas, numerous industries, ranging from light to heavy, without adequate green spaces can contribute to global warming. This increases greenhouse gas emissions and exacerbates global warming. Cities not in harmony with nature frequently suffer from high levels of air pollution caused by unregulated motor vehicles and industrial activities. This air pollution can lead to respiratory and other health issues. Therefore, cities need spatial planning that harmonizes with nature to mitigate these negative impacts and enhance residents' quality of life.

In addition to the government's role in creating comfortable urban environments, urban residents must also be aware of the waste issues within the city. Waste management is a significant problem in urban areas. Improper waste disposal can clog rivers, causing floods and blocking drainage systems. Promoting public awareness about proper waste disposal is essential to ensure that all urban areas in Indonesia can become safe, comfortable, and ready for future sustainable development. Collaboration between the government, which is



responsible for urban planning, and the community, which supports cleanliness and environmental awareness, will create urban spaces that are pleasant to live in, free from diseases and disasters. Let us work together to maintain urban environments effectively and responsibly.

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