

Comparison of Waterfront City Concept Implementation Strategies in Ambon City and Kupang City

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Abstrack. The concept of waterfront city is a development concept that can be applied by areas located in coastal areas. Ambon City and Kupang City as areas in the coastal area also developed the concept of waterfront city. The strategies used in implementing the concept of waterfront city in Ambon City and Kupang City have similarities and differences, because they must be adjusted to the conditions of the area and the purpose and function of its designation. Ambon City develops the concept of waterfront city by dividing the Ambon City area into 4 Development Area Units (SWP) while still considering the needs of the community, while Kupang City develops the concept of waterfront city by considering aspects of community economic activity, environmental sustainability and provision of public facilities. The similarity between Ambon City and Kupang City is that as a national activity center (SPN) area, it still accommodates the interests of the community.

Keywords: Ambon, Kupang, waterfront city, RTRW .

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INTRODUCTION

Talking about waterfront city means that you will imagine a city or vertical development that is established on the shoreline (Rahmat et al., 2016). Waterfront city is actually a concept of urban development that faces or borders water, be it sea, river, lake or reservoir (Andrasmo, 2018). In a more familiar sense, waterfront city is a coastal city that makes waterfront development a different form of urban development (Davidson, 2020). This concept was born based on the idea that cities on the coast are under heavy pressure, making them vulnerable to pollution, slums and chaos. Waterfront city is not only the concept of coastal city development or cities bordering the water, but more than that it is

the concept of city development that not only faces the land but also faces the sea (Da & Xu, 2016).

According to Ragheb & EL-Ashmawy, (2020), waterfront city is the cradle of culture and economy which began with the development of settlements and villages by the water, which developed into trade routes. A waterfront city is an area or area located near the border with the water area where there are activities and activities in the form of economic and social in the meeting area. Waterfront city development is a management process that can accommodate economic, social and environmental fiscal activities in the waterfront area where the form of development of the city's face is oriented towards the water (Montoya-Rojas et al., 2020). During the process of developing a waterfront city, the local government needs to take a leading role in planning and administration. A comprehensive plan usually consists of development activities, each of which may have its own development and planning methods. Thus, four stages of development are required, namely, planning, construction, management, and realization (Day et al., 2021).

Ambon City as one of the areas located in the coastal area, also has the potential to develop the concept of waterfront city (Rakuasa et al., 2022). The application of waterfront city can be done in Ambon City by referring to the pattern of population growth that crowds the coastal area (Latue, 2022). However, on another aspect, the application of waterfront city in Ambon City can create a variety of problems (Salakory & Rakuasa, 2022). Because the community will be in direct contact with the coastal and marine ecosystems. Therefore, if no structured planning is made, the area will grow uncontrollably (Somae et al., 2023). This issue then became the starting point for the Ambon City government in planning the Ambon waterfront city, which was contained in the Ambon waterfront city planning masterplan in 2009.

The results of research Notanubun & Mussadun, (2017), explain that the condition of Ambon City as the capital city of Maluku Province as well as the center of national activities (PKN) in Eastern Indonesia certainly has a major effect on the rate of development growth and population density. Population density can be caused by population urbanization which has an impact on environmental changes (Rakuasa et al., 2023; Pertuack et al., 2023). Therefore, to support and regulate these conditions, the spatial planning of Ambon City needs to be done properly. In addition to Ambon City, which is located in the coastal area and is a national activity center in Maluku Province, there is also Kupang City as the capital of East Nusa Tenggara (NTT) Province and at the same time as a national activity center (PKN). As a PKN center, Kupang will naturally become a destination area for economic activity that is open to all the people of NTT Province (Siubelan et al., 2015). Population density will occur due to urbanization in Kupang City (Plaituka et al., 2022).

Ambon City and Kupang City as PKN areas have implemented the concept of waterfront city. The application of waterfront city is one of the ways that can be done to organize the coastal area of the city to be structured and in accordance with the existing regional spatial plan. Based on the above background, the research question is formulated, namely: "How is the implementation strategy of waterfront city in Ambon City and Kupang City?". This study was conducted with the aim of comparing the implementation strategy of the waterfront city concept in Ambon City and Kupang City

LITERATURE REVIEW

Waterfront City is a concept of developing a city or urban area that is located near the coastline or water's edge such as a river, lake, or sea (Rahmat et al., 2016). This concept aims to utilize and enhance the potential of water as a major asset in the planning and development of the area. Waterfront City is usually designed with an emphasis on utilizing aesthetic quality and environmental sustainability. It can provide attractive public open spaces, such as parks, walkways and recreational areas located along the water's edge (Harisun, 2020). This concept creates an attractive environment for residents and visitors, and encourages economic growth and tourism.

As water-centered cities develop, proper planning and management must be implemented to mitigate negative impacts such as coastal erosion, flooding and water contamination. The use of green technology, sustainable development, and planning that focuses on environmental sustainability are important factors in ensuring the success and sustainability of the Waterfront City. Waterfront City is an example of an urbanization concept that seeks to combine aspects of sustainable urban living with natural beauty and high environmental quality, while providing economic and social opportunities for the community (Rahmat et al., 2016).

METHOD

The approach used in this research is a literature study approach sourced from scientific articles and other references related to the title of this research. This research is focused on two areas, namely Ambon City and Kupang City. The selection of these two cities is done with the consideration that these two cities are coastal areas and have the potential to implement the concept of waterfront city. The implementation strategies of the waterfront city concept carried out in these two locations will then be compared to see the differences and similarities. Data collection is done through scientific articles, books and other references that have a relationship with this writing. Furthermore, data analysis uses content analysis, which is to examine or examine more deeply, critically the data obtained. After passing through the data analysis stage, the data is then described.

RESULTS AND DISCUSSION

1. General Conditions of Ambon City and Kupang City

a. General Condition of Ambon City

Geographically, Ambon City is located at a position of 30 34'4.80" - 30 47'38,4" South latitude and 1280 1'33.6" - 1280 18'7.20" East Longitude, where overall Ambon City is bordered by Central Maluku Regency . Ambon City, as one of the administrative regions in Maluku Province, which is located in the coastal area, has an area of 359.45 km² with a built-up area of 32.4 km² or 8.6% (Based on the Allotment and Land Use Inventory Book II BPN Maluku Province, 1996). However, most of the area of Ambon City cannot be utilized for development, due to the existing topography. Based on the Ambon City Spatial Plan, the policy of physical expansion of urban activities is directed at undeveloped areas. This is done with the aim of equalizing development in Ambon City (Rakuasa & Somae, 2022)

Ambon City has physical characteristics that can be seen from the existing topography. The topography of Ambon City can be grouped into four sections, namely:

Relatively flat topography, found in areas along the inner bay coast with a radius of up to 500 m and a coastline with varying heights and 0-20 m and sea level and a slope of 0-10% (Muin & Rakuasa, 2023). Sloping to sloping topography, found in the area further up with an altitude between 20-30 m and sea level, most of which have a slope of 10-20% (Rakuasa et al., 2022). Undulating/steep hilly topography, found in areas with altitudes between 20-50 m and sea level with slopes of 20-30% (Rakuasa & Rifai, 2021). Mountainous topography (very steep), found in mountainous areas with altitudes > 50 m and sea level with slopes > 30% (Rakuasa & Somae, 2022).

The climate in Ambon City is a tropical maritime climate and a monsoon climate, because the location of Ambon Island is surrounded by the sea. Therefore, the climate here is strongly influenced by the ocean and takes place simultaneously with the seasonal climate, namely the West or North season and the East or Southeast season. The change of seasons is always punctuated by the Pancaroba season, which is a transition between the two seasons. The Western season generally lasts from December to March, while April is a transition period to the Eastern Season which lasts from May to October followed by a transition period in November which is a transition to the Western season (BPS, 2021).

Based on the existing description, the topography of Ambon City is more dominant in hilly areas and mountain slopes. The coastal area, which is a very narrow plain area, has been converted into an urban area. This is because the area directly adjacent to Ambon City is a steep mountainous area, making the coastal area the main target for development (Rakuasa & Somae, 2022). In other aspects, population growth is also a factor in the addition of settlements that require development areas (Latue et al., 2023).

The rapid development experienced by the city of Ambon has resulted in the density of development both in terms of land use can no longer be held. Limitations have also resulted in population density and tremendous congestion in the Sirimau sub-district area because development only focuses on the Sirimau sub-district area and the coastal areas of the city (Sugandhi et al., 2022). The future development of Ambon City requires areas that still have space capacity to support the pace of development, but each sub-district area has its own function in the Ambon City RTRW.

b. General Conditions of Kupang City

Kupang City is the center of government in NTT Province, located in the southeastern part of the province. Astronomically, Kupang City is located between 10° 36' 14" - 10° 39' 58" South latitude and 123° 32' 23" - 123° 37' 01" East longitude (BPS, 2020). Topographically, Kupang City is mostly located at an altitude of 10-50 m above sea level, while its northern part (which includes most of Alak and Kelapa Lima sub-districts) ranges from 0-10 m above sea level. There are also areas in Kupang City that have an elevation of >50 m above sea level, namely in the southern part of Maulafa, Oebobo, and parts of Kelapa Lima sub-districts, including Kolhua, Sikumana, Penfui, and Fatubesi villages. The surface consists of rocks and uneven and red and white soil (Setiadi, 2018)

The climate in Kupang City is similar to the climate in other areas within the Kupang Regency, namely a dry climate with a short rainy season. Around November to March, with temperatures ranging from 20.0 °C- 31.0 °C, and the dry season around April to October with temperatures ranging from 29.10°C-33.40 °C (BPS, 2020). Settlement patterns in Kupang City are generally formed due to the pull of activities that emerge to support urban functions

such as government, trade, hospitality and other tourism activities (BAPEDA Kota Kupang, 2011). This can be seen from the fact that many settlements have developed following the city's activity centers and are located on the city's main network structure (Sandy Liwan & Philia Christi Latue, 2023). The distribution of settlements is quite dense around the city center. The density of settlements in the city center has caused settlement development to also start taking up space along the coast that follows the main route to Kupang Regency and continues to grow from year to year without stopping (Liem & Mahagarmitha, 2019)

2. Waterfront City Implementation Strategy in Ambon City.

In implementing the concept of waterfront city, strategic steps are needed, so that the implementation of the concept is right on target and does not have an impact on other aspects. The results of the analysis and study of regional development in Ambon City as a Beach City conducted by Berhиту and Matakupan (2010), show that the development of a waterfront city can be carried out, if it can maintain other protected function areas. The aspects contained in the protected function areas are: not disturbing strategic installation areas, utilizing the potential for diversity to support coastal development as a service and trade area, residential area, tourism area, residential area, education area, port and sea transportation area, service and accessibility area, balancing the development of modern-traditional sectors by preserving local culture, utilizing environmentally friendly technology in the completion of physical development, prepare evacuation routes in the event of natural disasters (Berhиту & Matakupan, 2010). Furthermore, Berhиту & Matakupan (2010) explained that the planning study of the development of the coastal area of Ambon City as a waterfront city is divided based on its development zoning in accordance with the carrying capacity of its coastal spaces.

The spatial structure plan for Ambon City outlined in the 2012 Regional Spatial Plan (RTRW) is a concretisation of the city's Strategic Plan (Renstra). In this plan, the area of Ambon City is divided into four Development Units (SWPs) that have their respective roles and development focus. First, SWP 1 includes the city centre and refinery sub-areas with a service centre in the city centre. Second, SWP 2 involves the Passo and Hutumuri sub-areas with a service centre in Passo. Third, SWP 3 involves the Rumah Tiga and Laha sub-areas with the service centre in Rumah Tiga. Finally, SWP 4 refers to the Latuhalat and surrounding areas with a service centre in Amahusu. The establishment of this structure provides direction for the development and management of each area in a more focused manner, in accordance with the role and potential of each Development Area Unit.

The division of Ambon City in the form of SWP 1-4 also facilitates the community in economic activities. The strategy used by the Ambon City government in developing the city has also helped the community. Development that is now oriented towards the development of a waterfront city (beach reclamation) for the construction of public open spaces is now massively carried out, such as at Wainitu Beach, Amahusu and Poka.

3. Waterfront City Implementation Strategy in Kupang City

The development and implementation of Kupang's spatial concept based on the waterfront city is oriented towards optimizing the potential of the coast and sea, which is

the front yard of Kupang. It aims to benefit economic, socio-cultural and environmental development while maintaining its sustainability aspects. The development refers to the direction of national policy that establishes Kupang as one of the National Activity Centers (PKN) (BAPEDA Kota Kupang, 2011). According to Setiadi, (2018), the Implementation Strategy for the implementation of waterfront city in Kupang City consists of two aspects, namely: (1) Improving the service system of city activities that are evenly distributed and hierarchical; (2) Improving the quality and range of services for transportation facilities and infrastructure, telecommunications, energy, water resources, and urban infrastructure in an integrated and equitable manner.

Measures to improve the city's hierarchical and equitable service delivery system and form a waterfront city concept involve several important aspects. First, efforts are made to enhance the role of existing service centres by providing facilities and infrastructure according to the scale of services provided. This includes facilities such as health services, education, places of worship, parks, sports facilities, and various other facilities.

Secondly, there is a strategy of building and developing new service centres in the northern part of the city that support the waterfront city concept, with an emphasis on environmental balance and sustainability. This refers to an approach that focuses on utilising the water's edge as a central element in urban planning and development, with the aim of creating areas that are not only functional, but also environmentally friendly.

Third, encouragement is given to urban service centres to become more competitive and effective in developing the city and its surrounding areas. This encourages innovation and improvement in the quality of services provided, so that their contribution to regional development is stronger and more positive.

Finally, to keep the development of the area in line with its function and development boundaries, strict controls need to be put in place. This aims to ensure that the development of the area goes according to plan and does not deviate from the set objectives. Thus, these measures form the basis for planning and developing an equitable, structured and sustainable city.

In an effort to improve the quality and service coverage of integrated city facilities and infrastructure, as well as support the waterfront city concept, a number of strategic measures were formulated. Firstly, there are plans to improve the quality of the road network and achieve harmonious integration of land, sea and air transport, thus better supporting the development of the waterfront city concept.

Secondly, efforts were made to develop a public transport system that includes intra-city, inter-city and inter-district transport services, in order to efficiently support population mobility. Third, initiatives are given to expand the coverage of telecommunications infrastructure, especially in underserved areas and in new development areas, to ensure equitable connectivity. Fourth, there is a need to improve the energy network by utilising renewable and non-renewable energy sources and developing appropriate technology. Fifth, there is a push to develop the water resources service system by considering soil and water conservation, and improving access to clean water services to all areas of the city. Sixth, efforts were made to develop an integrated wastewater management system with a focus on environmental health aspects. Seventh, measures were taken to improve the waste management system, from source reduction to landfill, with

special attention to environmental sustainability. Eighth, the construction of an effective drainage system was pursued to avoid waterlogging in the city area. Ninth, attention is given to improving pedestrian facilities in various areas, such as roadsides, waterfronts, commercial areas, offices, and green open spaces. Finally, efforts are made to provide evacuation routes and shelters at the city, regional and neighbourhood scales as disaster response measures. All of these measures are designed to produce an integrated, sustainable and supportive city, in accordance with the principles of the waterfront city concept.

The implementation strategy of the waterfront city concept in Kupang City shows that there are various aspects that need to be considered for implementation. This is done in order to avoid an imbalance between the implemented concept and the needs of the community. Thus, the implementation of the waterfront city concept in Kupang City must be able to answer the needs of the community.

4. Comparison of Waterfront City Implementation Strategies in Ambon City and Kupang City

The implementation strategies of the waterfront city concept in Ambon City and Kupang City have similarities and differences that are driven by the context and objectives of each region. There are several similarities in the implementation strategy of this concept in both cities. One of them is the focus on preserving protected areas by paying attention to environmental aspects and the ecosystems that exist in them. Maintaining the function and designation of protected areas is an important point of commonality. In addition, the provision of public facilities and infrastructure, including health, education, transport and communication facilities, is also a common agenda in realising a functional and affordable city.

The application of environmentally friendly technologies is also a similar value in the waterfront city strategies of both cities, along with the effort to create a sustainable environment. The preparation of evacuation routes to deal with natural disasters is also a component that is considered important in both cities.

However, there are differences in the implementation strategies in Ambon City and Kupang City. These differences lie mainly in the division of locations and allocation of areas. Ambon City specifically divides its territory into four Development Areas (SWPs) with different development focuses. Whereas in Kupang, the improvement of the city service system and the network of facilities and infrastructure is the central point in the application of the waterfront city concept. The indicators used in implementing the concept in Kupang are more focused on the economic activities of the community, the sustainability of the environmental ecosystem, and the provision of public facilities.

Nonetheless, these differences do not eliminate the similarity of strategies for implementing the waterfront city concept in both cities. However, the unique context of each region leads to adequate customisation in the application of the concept.

The strategy developed in Kupang City is related to improving the service system of city activities and improving the quality and range of service networks of facilities and infrastructure (Setiadi, 2018). There are certain indicators that form the basis for

implementing the waterfront city concept. The indicators are generally related to (1) the economic activities of the community, (2) the sustainability of the environmental ecosystem and (3) the provision of facilities and infrastructure in the form of public facilities. From the explanation above, it can be stated that the implementation strategy of the waterfront city concept in Ambon City and Kupang City is not too significant. However, there are still differences, such as the size of the area and its designation.

CONCLUSION

The implementation strategies of the waterfront city concept in Ambon City and Kupang City have similarities and differences. This is in accordance with the conditions of each region. In other aspects, the objectives of waterfront city development in the two cities are also different. However, the basic principles of the implementation of the waterfront city concept are related to the geographical and topographical conditions of each region. Because Ambon City and Kupang City both include coastal areas and also include national activity centers (PKN).

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