

Port Infrastructure Development Strategy in Supporting Development Islands Areas

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Abstract- Ports as marine transport infrastructure in its activities have a very important role and strategic to the growth of industry and commerce as well as a business segment that can contribute to the national economy and development. Therefore, it needs development and port management effectively, efficiently, and professionally so that the service port becomes smooth, safe, and fast. Marine transportation was instrumental to distribute goods and services in Indonesia, especially the islands of the Eastern Indonesia. To support that role, required port infrastructure with adequate facilities. One of the ports in this region which has stategis good position to be developed based on the economic potential to improve the development of the region is the Port Molawe North Konawe.

This study aims to formulate a strategy of port development. The research location is situated in Port Molawe in North Konawe, Southeast Sulawesi Province. This is a descriptive study with qualitative and quantitative approach, which aims to systematically describe the needs of port services. Design study conducted using survey methods or directly to the site of research with the aim to obtain data and information accurately. Technical analysis used in this research is SWOT analysis.

Based on SWOT analysis result, can be done Molawe Port Development strategy by using the power and take advantage of opportunities is (1) Port Molawe need dock development and extend the trestle, to reach the ideal depths area, so it can improve the performance of loading and unloading, (2) addition of the amount of equipment and implement improved the facilities, (3) Improve the quality and quality of service to users port services, (4) Implement system control and strict supervision of all operational mainly Molawe Port.

Keywords: Port, Development, Services, Dock

I. INTRODUCTION

Development of port geared to bridge the gap between regions and encourage equitable development results. Transportation between regions will open opportunities for trading and reduce the price difference, improving the mobility of goods and services and manpower in order to reduce the concentration of expertise and skills in some areas, so as to encourage the creation of opportunities to implement development, open the isolation, the increased mobility of the population, increase activity and improve access across regions and support the economy to improve the community economy and increase local revenue.

Marine transportation plays an important role in the smooth trade because it has a high economic value such as high carrying capacity, and relatively low cost. To support trade and traffic of cargo, the port created as a node transfer the cargo which the vessel can be anchored, lean, perform stevedoring and forwarding to other areas [3]. Port is an important tool especially for sea transport, with the existence of this transport, mileage required will be noticeably faster, especially for economic development of a region where consumer goods production center can be marketed quickly and smoothly. In addition to the economic field, the port has a positive impact for the development of an area that is isolated mainly water areas where accessibility by road is hard to do well.

Infrastructure development can influence the improvement of people's access to resources that enhance access resource productivity, which in turn encourages the growth economy [5]. Infrastructure have a very strong relationship with the social welfare and environmental quality as well as to the economic growth of a region or region. It can be shown with an indication that the region has a complete infrastructure systems usually have better welfare level of social and environmental quality and economic growth in better [1]. Development of port infrastructure requires huge cost, the success or failure of the project will have long-term implications [4]. The existence of the port have an impact on economic development in the area around the port, so the success of the port not only provides benefits for its investors but also to the government through externalities spread on the region's economy [2].

Potential of natural resources on the island of Sulawesi is very large, especially in the mining, forestry, plantation, agriculture, fisheries, energy and tourism, but the great natural resources has not brought prosperity to the community. This is due to limited transport facilities and infrastructure has resulted in low accessibility of the region and the isolation and the impact on prices of goods and basic needs are more expensive compared with prices in other regions in Indonesia. Seeing the growing port activity, the important thing to do is to improve the management and performance of port services by setting up an adequate infrastructure to be able to support the smooth operation of services in the Port Molawe. The aim of this research was Formulating strategies port infrastructure development molawe in support of the movement of goods and passengers.

2. MATERIAL AND METHOD

This study uses SWOT Analysis which is a tool to determine port development policy strategy by going through the following stages:

1. The stage of data collection is the evaluation stage of internal and external data of north konawe district
This stage is used to determine the factors that the strengths, weaknesses, opportunities and threats. Internal and external data retrieval is done by interviews and quantitative data collection directly.
2. Phase analysis is the stage of making the internal external matrix and SWOT matrix.

The steps to create external internal matrix as follows:

- a. Make a table containing internal and external factors which consists of 4 columns.
 - b. In column 1 the preparation of all the factors that have North Konawe Regency by dividing into two parts, namely internal and external factors.
 - c. Assigning weights to each factor in column 2, ranging from 1 (very important) to 0 (not important).
 - d. In the third column filled calculation rating against these factors is based on the impact on urban conditions. The rating value range of 1 means very little influence to 4 meaning very influential.
 - e. Column 4 is filled by multiplying in column 2 with a rating in column 3.
 - f. The sum total score for each internal factors (strengths-weaknesses) and external (opportunities-threats). This value is placed in the quadrant corresponding to later be making SWOT matrix that will explain the use of alternative strategies.
3. In the decision-making stage, the SWOT matrix is necessary to refer back the external and internal matrix that generates Urban position so it can find of the most appropriate strategy. Based on the results of SWOT analysis, further formulated development strategy. Development strategy formulated by linking between internal factors with the external factors, thus covering four types of development strategies.

1. S-O strategy (Strength-Opportunity), which means that using the strategy that tapped strength that take advantage of opportunities.
2. S-T strategy (Strength-Threat), it means a strategy that uses the power to ward off threats / obstacles).
3. W-O strategy (Weaknes - Oppurtunity), meaning that strategies to reduce weakness to seize the opportunity.
4. W-T strategy (Weakness-Threat), meaning strategies that minimize weaknesses and counteract threats / obstacles).

Fourth development strategy above, the strategy of SO, ST, WO, and WT called TOWS strategy. His analysis is SWOT analysis. In planning the development of transport infrastructure should be done by applying the SWOT analysis and TOWS strategy, in order to really basing the existing condition of the internal factors (strengths and weaknesses) and external factors (opportunities and threats

/ constraints) as well as pay attention to trends and changes environment of the future (medium-termplanning)

3. RESULTS AND DISCUSSION

Port Molawe located in the Village Molawe, Molawe District of North Konawe as shown in Figure 4.1. Based on the results of investigation, on the location of the planned Molawe port have existing buildings such as ports, trestle, dock, harbor master offices, warehouses, terminals, parking lots, yard, guardhouse and access roads in the area and others. The area of Port Molawe on land that is +23349.93 m2, as shown in Figure 4.1.



Location Port Molawe is in Lasolo bay located at coordinates 03° 36 '6.76 "south latitude and 122° 12' 1.20" East **Longitude**. The coordinate system used is the UTM coordinate system, with ellipsoid WGS 51. Port Molawe including Regional Ports, where the Regional Ports is a Port Feeder functioning Primary activities and transfer of national sea transport cargo in relatively small quantities and feeder from the main port. Activities that served the general port for unloading either cruise people, domestic and foreign, are goods / animal and passengers.

Molawe Port development strategy is an integral part of development in North Konawe overall, the implementation complies with the conditions and the potential of the regions. The strategy used in the development of the Port Molawe done using analysis approach of SWOT (Strength, Weakness, Opportunity, and Threat).

SWOT analysis aims to identify the key internal and external factors. Internal factors include the strengths and weaknesses while the external factors include opportunities and threats.

The data collection stage is used to determine the factors that the strengths, weaknesses, opportunities and threats carried out by interviews with experts, or quantitative analysis. SWOT Matrix illustrates clearly how the opportunities and threats can be tailored to the strengths and weaknesses, so that it can be formulated the strategic steps.

A. Internal factors

Internal factors are factors such as attractiveness that includes strengths and weaknesses in attracting excellence Molawe port. Analysis of internal factors include the strengths and weaknesses conducted to determine the condition of the area.

1. Strength

The strength factor of Molawe Port which can be identified as follows:

1. Performance of port facilities is a utility dock (BOR) providing service level overview of the utilization of the facilities available in the service vessel
2. Excellent service is services demand in the era of management modern today, for the improvement of service vessels, port management should be concern to the passanger luggage.
3. capacity production equipment plays an important role in faithful port because it can be variable on the level of service at the port. Production equipment to serve the ship docked using port facilities
4. quality of human resources is a major asset of the company, the human resources quality can be seen from the level of education, work experience, education, engineering, skill breathing followed. The quality of human resources will give the image of the good or bad of a ministry.

2. The weakness

weakness Port Molawe The factors that can be identified as follows:

1. Cost of production is high. this is realized that the inefficiency factor in managing the finances of the organization still felt the impact. Swelling budget on each unit of activity occurs in each unit of work, especially with a company benefit instead of the lower percentages between benefit and cost is getting lower.
2. standard of service is a service activity in port should have service standards as a reference for service users, so that the service users is not always in receive care condition.
3. source of investment funds. Construction of port, would not be separated from the fund or major investment depends on the type of infrastructure to be developed, funds from internal and government capital through state funds, loan funds
4. management company is organizational capacity factor of bureaucratic influence the management of the company, the hierarchy in the organization have an impact on the decision-making
5. culture and work ethic are the conditions and the work ethic is quite influential in improving productivity, work ethic does not recognize the level of education, but how big a task or work that is the responsibility of

B. External Factors

External factors are factors such as the attractiveness of including opportunities and threats carried out to determine the position of the region in dealing with the external environment.

1. Opportunity

Opportunity is the major situation of benefit in the environment of an area, Factor opportunities can be identified as follows:

1. accessibility to the area behind the port adequate either through a network of roads, rivers, lakes and bridge for reach the centers of production, assuming there is no some anchorage point on the same area that led to crossing some point the port to serve the port as a port of regional and national, and if this does not happen the accumulated production of the area behind the port is not likely.
2. Policy of economic development zones integrated (KAPET) in the area hinterland port which is expected to lead the growth of regional economic
3. international accessibility through the port it is possible to perform direct services to various ports of foreign countries.
4. Hierarchy and function of the port for 24-hour service for service users at the center node port to load and unload.

2. Threats

Threats are main situations that unfavorable to the environment of a company, threats factors can be identified as follows:

1. Supporting facilities, in pengoperasional or port services performed by operators in some technical areas that working together with port management. If the partners are not providing the best service to the port will give a bad judgment or poor operator, service facilities boats, water services.
2. Policy of economic development zones integrated (KAPET) in the port hinterland area which is expected to increase the growth of regional economies
3. Technologies of port. in anticipation of a free trade area, there is no reason not to apply technology as a trigger to improve port services ranging from unloading technology and ship services. Professional application will result in an efficient and effective products, if the application was unable to be implemented, it is difficult to compete in international services.
4. Economic conditions and political stability of the region. An area that does not have a conducive condition, investors are reluctant to invest their investment.

C. Weighting Elements SWOT

By looking at the elements held in a SWOT analysis, then performed calculation of the elements that have been identified earlier, so that can know the position of the conditions at Port Molawe and what strategies suitable for resolving the problems

Calculation of internal and external factor by giving value to the strengths, opportunities, weaknesses and threats, scoring on each through the considered opinion of the stakeholders that understand the issue in question. The values given each stakeholder through the statement is as follows:

1. driving factors (strengths and opportunities)
 - a. Value 1 is not strong
 - b. value 2 is less powerful
 - c. Value 3 is Strong
 - d. Value 4 is very strong
2. factor constraints (weaknesses and threats)
 - a. value1 is not good
 - b. value 2 is less good
 - c. value 3 is good
 - d. value 4 is excellent

$$= 1.953 - 1.334$$

$$= 0.581$$

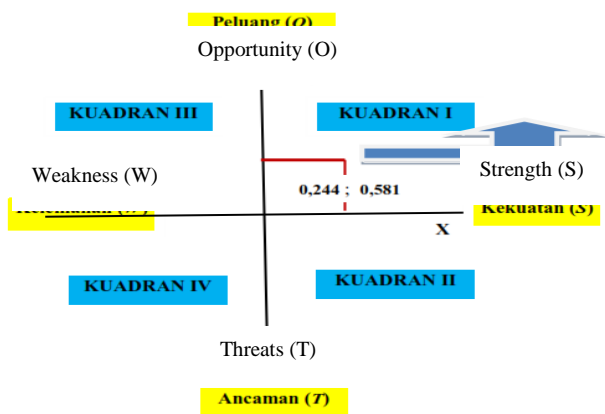
While the rating value is obtained by giving value on internal and external factors with the scale of ratings ranging from 4 till 1 based on the influence of these factors to the study site. Positive factor (all factors are categorized strength) rated from 1 to 4. Scoring rating for the power factor is positive (greater power was given a rating of 4, but if a little strength Unrated 1). Scoring rating of weakness is the opposite. For example, if the value is very big, the rating 1. If the weakness is littele, the value of the rating is 4.

The rating above is based on the results of data collection in the form of literature, questionnaire, field observation and interviews. The value of internal and external rating are as follows:

- a. value of 1 is very less influence
- b. value of 2 is less influence
- c. value of 3 is big influence
- d. value of 4 is very big influence

Calculation of internal factors (strengths and weaknesses) were identified as many as 9, consists of four strengths and five weaknesses.

SWOT calculating matrix can be seen that the internal and external position Molawe Port is located in quadrant **first** with coordinates (0.126; 0.833) in the SO strategy. can be seen in Figure 1.



Based on the analysis diagram SWOT Figure 1. shows that the source value of each quadrant is Based on the weighting matrix can be known position X axis with the formula as follows:

$$X = \text{Total of Strength} - \text{Total of weaknesses}$$

$$= 1.702 - 1.459$$

$$= 0.244$$

Based on the matrix calculation tables above can be seen the position of the Y axis with the following formula:

$$Y = \text{Total of opportunity} - \text{Total of threats}$$

Thus it can be seen that in Quadrant I with axes (X, Y) = 0.126; 0,833. This is showed that the development of the Port Molawe have strengths and opportunities with SO strategy (Strength - Opportunity). As for determining an alternative strategy can be described as follows

1. Quadrant **I**: Has the internal strength with appeal areas of activity are good enough and big enough opportunity, the strategy should be applied in Molawe Port development.
2. Quadrant **II**: Has a good enough internal strength, but yet the appeal of weak activity areas as well as opportunities are relatively small, the strategy should be implemented is to use strength to take advantage of long-term opportunities.
3. Quadrant **III**: Has a fairly serious internal weakness despite the appeal is good and substantial opportunities.
4. Quadrant **IV**: Has a fairly serious internal weakness, the appeal is weak and opportunity is relatively small.

4.4. Analysis Stage

The next stage is the SWOT matrix model. This matrix can clearly describe how the opportunities and threats (external) against Molawe Port development strategy, which is tailored to the strengths and weaknesses (internal). The matrix produced four strategic alternatives

Based on the results of SWOT analysis matrix, the development of the Port Molawe by using SO strategy (using power and take advantage of opportunities) become the strategy resulting from the SWOT matrix. There are four strategies, as for four of these strategies is based upon the relationship between strengths and opportunities, can be seen in the description below:

1. **Strength (S)**,namely: Performance of port facilities is a utility dock (BOR) providing service level overview of the utilization of the facilities available in the service vessel **Opportunities (O)** accessibility to the area behind the port adequate either through a network of roads, rivers, lakes and bridge to reach the centers of production, assuming there is no some anchorage point on the same area that led to crossing some point the port to serve the port as a port of regional and national, and if this does not happen the accumulated production of the area behind the port is not likely. so that it can be deduced that: This includes the optimization of the capacity of the Port of molawe
2. **Strength (S)**,namely: Excellent service is services demand in the era of management modern today, for the improvement of service vessels, port management should be concern to the passanger luggage **Opportunities (O)**,namely: Policy of economic development zones integrated (KAPET) in the area hinterland port which is expected to lead the growth of regional economic. So based on the relationship of Strength and opportunities above can be deduced as follows: Availability of good infrastructure that will provide smooth operation in the development of Economic.

3. **Strength (S)**, namely: capacity production equipment plays an important role in faithful port because it can be variable on the level of service at the port. Production equipment to serve the ship docked using port facilities. His relationship with **Opportunity (O)** international accessibility through the port it is possible to perform direct services to various ports of foreign countries. So based on the above relationship Strength and opportunity so that it can be deduced that: maintaining improving the quality and service
4. **Strength (S)**, namely: quality of human resources is a major asset of the company, the human resources quality can be seen from the level of education, work experience, education, engineering, skill breathing followed. The quality of human resources will give the image of the good or bad of a ministry. **opportunities (O)**, namely: Hierarchy and function of the port for 24-hour service for service users at the center node port to load and unload. So based on the relationship of forces and opportunities above can be deduced that: Increase cooperation with various parties, both domestically and abroad.

IV. CONCLUSIONS

From the analysis and discussion it can be concluded as follows:

1. Port Molawe necessary to develop the dock and extend trestle, to reach the ideal depth of the sea area, so it can improve the performance of loading and unloading
2. addition of equipment and repair facilities
3. Improve the service of quality to service users,
4. Implement control system and strict supervision of all operational mainly Molawe harbor.

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