

Service Improvement at Container Port of Ahmad Yani Ternate North Maluku Province of Indonesia

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Abstract: The port of Ahmad Yani Ternate is the node local trade and an opening through trade channels of logistics and services between regional and national levels. Loading and unloading of containers through the Port of Ahmad Yani Ternate increased during the period from 2009 to 2013. Therefore, accompanied economic growth of Ternate city is significant. The tendency of loading and unloading activities at the Port of Ahmad Yani Ternate like container unloading more than loaded, so loading and unloading of general cargo and bag cargo decreased by overloading into the packaging of logistics in containers. This study aimed to evaluate the quality of services and efforts to increase container service at the Port Ahmad Yani Ternate. The analysis technique is used in this study by using Multi Criteria Analysis. Ahmad Yani Piers service facilities such as under deck, side deck and upper deck repairs damaged due to heavy and port facilities such as a field efforts to improve service quality container Port of Ahmad Yani Ternate on a scale first priority is the short-term reclamation of 3,000 m² with the performance appraisal scale is at a score of 8 to 10; The second priority, medium-term reclamation of 6,160 m² with the performance appraisal scale is at a score of 6 to 8 and the third priority, long-term reclamation of 49 424 m² with the performance appraisal scale is at a score of 4 to 6.

Keywords: Container Services, Unloading and Loading, Priority Scale.

I. INTRODUCTION

Ternate city is an archipelago as one of the cities in the eastern region of Indonesia is surrounded by ocean and an abundance of spices abundant and has a strategic geographical location is at the entrance of North Maluku and as a node local business which connects Ternate with some district/city as Halamahera West/Tobelo, Tidore, Sula/Sanan Islands, South Halmahera/Bacan, Halmahera Central, East Halmahera and Morotai

Local trade knot, also makes Ternate an opening through trade channels of logistic and services between regional and national levels. Ternate port position can be regarded as the port of transshipment for the five inhabited islands for consumption, logistics transported in containers through the transshipment port of Ternate which will be done stripping the logistics from containers to be transported by truck to the port of Bastiong are then transported by ship to the island- island in North Maluku. Commodities from islands around Ternate transported by ship to the port of Bastion and onward by truck to the port of Ahmad Yani Ternate then to be done stuffing logistics including Ternate city into containers to be transported out of the province of North Maluku.

This study aimed to evaluate the quality of service of containers at the port of Ahmad Yani Ternate and search efforts to increase container services at the port of Ahmad Yani Ternate. While the intent of research to identify the service conditions containers in port of Ahmad Yani Ternate in terms of the facilities available.

II. METHODOLOGY

In this study, to answer the problems of the Terminal of Ahmad Yani Ternate using Ports Performance Indicators approach, namely; a) Output indicators (performance of services and logistics ships, as well productivity B/M logistics), which is an indicator that is closely related to the information regarding the amount of freight traffic throughput (and power) through an equipment or port facilities within a specific time period, b) Indicators Service (Traffic Performance), essentially an indicator that is closely related with information regarding the length of time during the service of the ships in the port area work, and c) Utilization indicators (Utilization and Port Facility Production Tool) is used to measure the extent of the dock facility and supporting infrastructure used intensively.

The assessment of operational success mooring or operating performance is as follows:

- a. Berth Throughput (BTP) or power and then dock/mooring is the number Ton/m³ logistic in the period, which passes through each meter length of moorings available

- b. Ship Tons per Hour at Berth (TSB), or the average number of loading and unloading per ship per hour for the ship is at moorings.
- c. Berth Time (BT) or the retention time is the number of hours during the ship is in mooring. BT consists of:
 - Not Operation Time (NOT) or planned downtime as long as the ship is in mooring.
 - Effective Time (ET) or the effective time that the real number of hours used to perform loading and unloading activities in mooring/pier
 - Idle Time (IT) or time wasted is the number of hours of unused (wasted) during work time unloading at moorings, excluding breaks
 - Berth Working Time (BWT) is available during the working hours of the ship is moored, excluding breaks.
 - Berth Occupancy Ratio (BOR) or the consumption levels of the terminations is the ratio between the amount of usage time than the number of each mooring pier and the time available during a certain period expressed as percent

Stages of the mindset of the research include; a) Input namely the service conditions of containers at the port of Ahmad Yani Ternate today, b) The process includes the subject (person or institution), places (the increase in container services Ports), and the method of analysis approach, c) Instrumental Input and Input Environmental affecting the service process container at the port as legality, d) Output in the service improvement of containers at the port of Ahmad Yani Ternate, and d) Outcome shows the level of satisfaction of service users.

The research is descriptive quantitative, to analyze the quality of service by using Multi Criteria Analysis (MCA). The variables used in the study include variables derived from services of containers in the port of Ahmad Yani Ternate. The adequacy of the total equipment is for unloading at the Port, namely; a) Quality Equipment for loading and unloading containers, b) Availability the CY at the Port, c) The CY quality at the Port, d) Adequacy of total equipment for loading and unloading at the Port Piers, e) Quality Equipment for loading and unloading at Port Piers, f) Adequacy Piers, g) Ease of logistics document handling procedures, h) Speed document handling procedures logistic, and i) Large document handling cost of logistics

III. RESULTS AND DISCUSSION

Overview Ports In North Maluku

Ternate as one of the cities in the eastern region of Indonesia has a wealth of spices are abundant. The condition of the area is surrounded by ocean with the relatively high tendency of air temperature. The sea transportation facilities that serve the islands of North Maluku consists of PELNI ships, Nusantara ships, Pioneers and Cruise Ship Citizenry (CSC), which is managed by the government, private companies, and individuals. By regular cruise on PELNI ships is served by the port of Ahmad Yani Ternate. The Port in North Maluku includes Ports Ocean Ahmad Yani, Folk port/between islands in Bastiong and Dufa-Dufa, Fery at Bastiong, Piers/fish landing sites in Bastiong, and special ports *Pertamina* at the Jambula Village.

National Ports in North Maluku province, there were two ports, namely port of Ternate and Mangole - Falabisahaya. For national ports are prepared to serve cruise lines out of the country, domestic shipping, seafaring folk and pioneer is the Port of Ternate consists of Mainland Bases General Ahmad Yani and Base Bastiong, Port of Ternate (Ahmad Yani) is Port Branch of Class II in the Work Area PT Pelindo IV. Bastiong port is a port transport people / logistics with the status of the regional port services between districts in the North Maluku province. Bastiong port is located at Market and the Passenger Terminal of Bastiong, shipping route is served from Ternate spread to ports in other districts, such as Sofifi, Jailolo, Tidore and Sanana and other districts/cities with relatively dense shipping frequency.

The working area of the Port of Ternate (Port Ahmad Yani and Bastiong) is determined based on the Ministry of Transportation No. KM.04 of 1999 on the boundaries of the Regional and Local Working Environment Interests Port of Ternate, as follows:

- a) Regional Working Environment (RWE) covering a land area of 60 850 m², consisting of:
 - Base Mainland of Ahmad Yani area of 57 490 m²
 - Base Bastion Mainland area of 3.360 m²
- b) Environment Regional Interest (ERI) port area of 3,803 hectares and the neighborhood area covering 6,696 hectares aquatic interests

Based on the location of the region, the Port of Ternate is in the shipping lanes domestic, national and international. Lane domestic shipping, the Port of Ternate is located between two districts/cities in North Maluku, namely the West Halmahera regency and Tidore Islands, while the path of national, Port of Ternate is strategic because it is located between the islands of Sulawesi and Papua, so that the activities of the movement of people and logistics from both the island will pass through the Port of Ternate. In terms of international lines,

the Port of Ternate is located at the intersection of Asia and Australia. Then the development of the Port of Ternate in the future in support of foreign trade and the surrounding hinterland, is expected to become the main gate or main port as a central collection and distribution of logistics in North Maluku

The carrying capacity of the Port of Ternate based on data from PT. Pelindo IV Branch of Ternate in 2011 can be described as follows:

a) Services Ship Berth

- Base of Ahmad Yani, has the form of concrete dock construction along the 248 x 12 meters.
- Base of Bastiong concrete construction along the 25 x 5 meters
- Iron/wood 50 meters
- Sheet Pile 150 meters
- The boat as much as 1 unit

b) Logistic Services

- Pier Goods Services Bases A. Yani area of 2,976 m²
- Bastion base dock 300 m²
- Dock Sheet Pile 900 m²
- 01/02 warehouse area of 432 m²
- Warehouse 04 900 m².
- 05 warehouse area of 1,000 m²
- Courses container measuring 5360 m²
- Non-container field covering an area of 520m²

c) Cultivation Tools

- Equipments, Forklift 3 ton capacity of as much as 1 unit
- Fire extinguishers as much as 1 unit

d) Environmental Building Land Concession

- Environmental Mainland area of 60.850 m²
- Water Environment area of 3.803 hectares
- The building area of 1,724 m²
- Absorb water capacity 375 tons
- Clean water supply capacity of 100 tons/hour

e) Over Exertion

- Passenger Terminal Base of Ahmad Yani 600 m²
- Bastion Base Passenger Terminal area of 98 m²

Recorded a total volume flow of containers Port of Ahmad Yani Ternate in 2013 as much as 39.938 teus or 502.152 tones, up 17,92% compared to the previous year of 33.150 teus or 425.833 tones, while the activity of the flow of logistic port of Ahmad Yani in 2013 also increased from 508.998 T/M3 at in 2012 rose to 565.543 T/M3 in 2013 or up as much as 11,11%. Flows ship visit in 2013 as many as 3,030 calls in 2013 increased by 23.77% from the previous year 2.448 calls in 2012.

Pier Condition At The Port Of Ahmad Yani Ternate

Under deck conditions, side deck and repair upper deck, second pier at the port of Ahmad Yani largely been broken, chipped concrete, so that the reinforcing steel was already evident and are already visible corrosion including clams, beams crosswise and lengthwise. It indicates the condition of the pier is already with age that is long enough. With such conditions, it can be ascertained that the carrying capacity of the pier construction has been reduced. Second pier in the port of Ahmad Yani Ternate is based on container ships and demolition using land crane that makes one cause of damage to the pier and if it is left in a damaged condition, there will be any further damage so that the cost required for repair becomes higher.

When under deck improvements have been made, side deck and upper deck, second pier would reduce the worry of things that are not desirable. Such as, the collapse of the pier causes complaints from service users. In order to meet the needs of service users needed for improved port facilities, one of which is to increase container stacking yard. Sheet pile condition at this time has been damaged due to age that is long enough, so prone to damage. Sheet pile that, when a closer look at the conditions under concrete plate was empty, so worrying if the operational activities are in the locations sheet pile.

With the improvement sheet pile and tie rod may reduce fears of things that can lead to complaints from service users. From a technical angle and tie rod, sheet pile improvements need to be done to improve the condition and quality of sheet pile, and reduce the accumulation of damage to the building in question.

Table 1. The Strategy of The Increased Activity and Port Management Efforts of Ahmad Yani Ternate

No	Management Work Program	Description	Identification	Probability	Value Impact	Management efforts
I 1	Building construction facility. Under deck, side deck and upper deck repair second piers of Ahmad Yani Ternate.	Keeping the technical age pier	There is damage at some point	The decline in the carrying capacity of the pier after checking only reach 30 tons/m ²	Can not be maximized when carrying out and unloading logistics	Achievement of the technical age pier to reach the carrying capacity of 70 tons/m ²
2	The construction of embankments, reclamation and field containers at the second poll at the port of Ahmad Yani in Ternate	Limited space at the port of Ternate	Throughout containers in the port of Ternate are increasing from 28.000 in 2013 to 32.000 in 2014	No development land side so that the required reclamation	Another form of the cruise PT. TEMAS and PT. MERATUS already planning to open a new route destination Ternate	Increased capacity volume storage container with the hope to increase the company's revenue
3	Repair sheetpile and tie rod at the port of Ahmad Yani Ternate	Improve and maintain the technical age sheetpile	Currently there are leaks on the plate so that the eroded soil embankment	Reduce damage to a larger sheet pile	Avoid more severe damage that can lead to high cost	Make improvements to the closing, leak back plate and the pavement surface
II	Installation of Port Facilities. Supply and installation of water pumps, including pumps, installations and apparatus in Port of Ahmad Yani Ternate	Needs (demand) increasing the need for fresh water ship	Existing condition pumps only reach 24 tons/hour	Less freshwater maximum services to the ship	An increase in water services to the ship to a minimum of 100 Tons/Hour	Fulfillment of fresh water on board the ever increasing which is certainly a positive impact on the port services and increase revenues
III	Tools. Supply and installation of fuel tanks including accessories in port of Ahmad Yani Ternate	The absence of adequate fuel storage	Storage is still using the gallon	Efficiency jobs	Facilitate the monitoring of procurement and use of fuel	Management of fuel usage is monitored and controlled

Source: The results of the analysis

Plan program as in the above table can be done with multi-criteria analysis to determine priorities of development, to improve the service of loading and unloading of containers at the port of Ahmad Yani Ternate proposed priorities according to the assessment of performance is as follows

1. The first priority, repair pier I (under deck) upper deck and side deck, as well short-term reclamation of 3,000 m² with the performance appraisal scale is at a score of 8 to 10
2. The second priority, repair sheet pile and tyrod, as well medium-term reclamation of 6,160 m² with the performance appraisal scale is at a score of 6 to 8
3. The third priority, procurement and installation of water pumps as well long-term reclamation of 49 424 m² with the performance appraisal scale is at a score of 4 to 6

While the program supply and installation of fuel oil tanks including accessories that are in a score of 0 to 3. Development priorities for improving the quality of services in the future container at the Port of Ahmad Yani Ternate can be seen in the picture below.

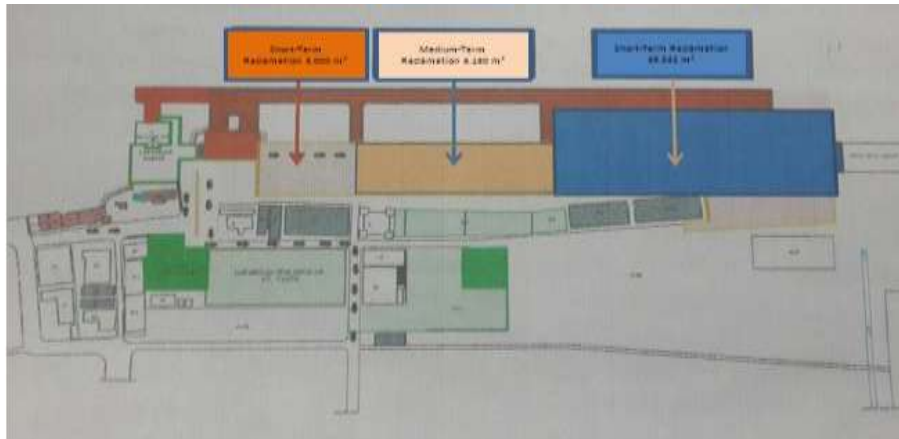


Figure 1. Proposed work plan ports of Ahmad Yani Ternate

Container stacking yard provided covering 16 631 m² consists of:

1. The results of the internal investigation of 1,900 m² used for the loading and unloading of containers PT. Salam Pacific Indonesia Lines (PT. SPIL)
2. Cooperation with the government of Ternate city covering an area of 3,460 m² used for the loading and unloading of containers PT. Intimate Tanto Lines
3. The results of an internal investigation in 2008 were covering an area of 4,752 m² used for the loading and unloading of containers PT. Tanto Intim.
4. The results of an internal investigation in 2010 were covering an area of 1,520 m² used for the loading and unloading of containers PT. Tanto Intim and PT. SPIL
5. The results of an internal investigation in 2012 were covering an area of 1,428 m² used for the loading and unloading of containers PT. SPIL
6. The results of an internal investigation in 2012 were covering an area of 1,428 m² used for the loading and unloading of containers PT. SPIL
7. The results of an internal investigation in 2013 were covering an area 3,000 m² which is used for the loading and unloading of containers.

PT. Salam Pacific Indonesia Lines (PT. SPIL) and PT. Tanto Intimate Lines was still a lack of facilities stacking container, so that the shipping company's operations are not optimal

In order to meet the demand for service users who require land for container stacking, it is proposed that a second port basin, which is not working/not effectively to be reclaimed container yard.

To encourage the improvement of container loading and unloading services by utilizing the existing land, it is necessary to the construction of embankments, reclamation and container stacking yard Swimming Area II in the port of Ahmad Yani.

IV. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

From the analysis and evaluation of several things we can conclude as follows;

1. Conditions underdeck, side deck and upper deck repair dock Both Ahmad Yani port has largely been broken, chipped concrete, so that the reinforcing steel is already visible and corrosive including columns, beams crosswise and lengthwise. It indicates the condition of the pier is already with age that is long enough. With such conditions, it can be ascertained that the carrying capacity of the pier construction has been reduced. Sheet pile condition at this time has been damaged due to age that is long enough, so prone to damage. Sheet pile that, when a closer look at the conditions under concrete plate was empty, so worrying if the operational activities are in the locations sheet pile.
2. Container service facilities currently in Port of Ahmad Yani Ternate contained container yard area of 16 631 m², with respect to them the PT. Salam Pacific Indonesia Lines (PT. SPIL) and PT. Tanto Intimate Lines was still a lack of facilities stacking container, so that the shipping company's operations are not optimal.
3. Efforts to improve the quality of services in the future container at the Port of Ahmad Yani Ternate is to do some planning programs with priority according to the assessment of performance is as follows: the first priority, short-term reclamation of 3,000 m² with the performance appraisal scale is at a score of 8 to 10; The second priority, medium-term reclamation of 6,160 m² with the performance appraisal scale is at a score of 6 to 8 and the third priority, long-term reclamation of 49 424 m² with the performance appraisal scale is at a score of 4 to 6.

Recommendations

The suggestions that need to be done in connection with the service container in the port of Ahmad Yani Ternate are as follows:

1. In order to meet the needs of service users needed improvement of port facilities, one of which is the increase in the container yard.
2. In order to meet the demand for service users who require land for stacking container it is proposed that the second port that is not working/not effectively to be reclaimed container yard.
3. To encourage the improvement of container loading and unloading services by utilizing the existing land, it is necessary to the construction of embankments, reclamation and container stacking yard pool Second Location at Ahmad Yani port.

REFERENCES

- [1]. Government Regulation No. 61 of 2009 concerning Port.
- [2]. Supranto, J., 1997. *The Measuring of Customer Satisfaction*, Second Edition, Jakarta, PT Rineka Reserved
- [3]. *Research Methodology-Quantitative Analysis*, Institute for Doctoral Education, University of Gadjah Mada, Yogyakarta-Indonesia, 1984
- [4]. Walpole, Ronald E., translation Sumantri, Bambang, 1995, *Introduction to Statistics*, 3rd Edition, Jakarta, PT. Gramedia Pustaka Utama
- [5]. Loudon, DL., Bitta AJD., 1993. *Consumer Behavior*, Fourth Edition, Singapore, Mc Graw Hill Companies Inc.;
- [6]. Mowen, Jhon, C., 1998. Minor, Michael, *Consumer Behavior*, Fourth Edition, New Jersey, Prentice Hall Inc., Eaglewood Cliff;
- [7]. Muthis, Thoby, and Gaspersz, 1994. Vincent, Nuance *Towards Quality and Productivity Improvement*, Jakarta, Publisher Universitas Trisakti
- [8]. Oliver, Richard, L., 1997. *Satisfaction A Behavioral Perspective on the Customer*, International Edition, Singapore, Mcgraw Hill Companies Inc
- [9]. Parasuraman, A., Zeithaml, Valarie A., Berry, Leonard, 1989. *Delivering Quality Service: Balancing Customer Perceptions and Expectations*, New York, The Free Press
- [10]. Supranto, J., 1992. *The Measuring Customer Satisfaction*, Second Edition, Jakarta, PT Rineka Cipta.