

DEMURRAGE HANDLING OF FERTILIZER UNLOADING PROCESS AT PT. ZONA MANDIRI INDOTRANS PALU

**Shendy Amelya Mattalitti
Sulaeman Miru
Asngadi
Saharuddin Kaseng
Syamsuddin**

Master of Management Study Program, Faculty of Economics and Business, Tadulako University

shendyamelyamattalitti@gmail.com sulaemanmiru@untad.ac.id

asngadyfeunt@gmail.com saharuddin.kfamily@yahoo.com

syam_singga@yahoo.co.id

Abstract

This study aims to determine and analyze the occurrence of *demurrage* at PT Zona Mandiri Indotrans, to determine and analyze the factors that cause *demurrage* at PT Zona Mandiri Indotrans and to determine and analyze the efforts made by PT Zona Mandiri Indotrans in overcoming *demurrage* due to delays in loading and unloading fertilizers. This research was conducted at one of the *freight forwarder* companies in Palu City, PT Zona Mandiri Indotrans regarding fertilizer unloading activities that cause *demurrage* with a total of three informants. The approach used in this research is a qualitative approach and uses the NVivo 12 Plus *software* analysis tool. The results showed that *demurrage* occurred at PT Zona Mandiri Indotrans due to delays in fertilizer unloading activities. The factors causing *demurrage* are lack of truck fleet, truck fleet damage, lack of unloading labor, scarcity of diesel fuel, unloading tools, unfavorable weather and late B/L (*Bill of Lading*) documents. Efforts made by PT Zona Mandiri Indotrans in handling *demurrage* that occurs due to delays in loading and unloading fertilizers, the company rents a warehouse to store fertilizers that have not been loaded so that the containers used can be immediately returned to the shipping party and the company supplies diesel fuel for each truck fleet before the goods arrive at the port.

Keywords: *Demurrage, Delay, Loading and Unloading.*

INTRODUCTION

The development of the business world that involves the port as a means of sea transportation, the port will be increasingly busy serving the loading and unloading activities of various goods owned by other companies. Unloading activities at the port often face various problems, including uncertain weather factors, ineffective transportation facilities such as fleet damage constraints, lack of loading and unloading labor and limited loading and unloading equipment. Not only that, there are also internal factors from within the freight transportation company that cause delays during the loading and unloading process at the port.

Pantoloan Port is the largest and busiest port in Central Sulawesi Province and also as a trade center to the eastern part of Indonesia. One of the companies operating at Pantoloan Port is PT Zona Mandiri Indotrans (ZMI) which was established 12 years ago, PT Zona Mandiri Indotrans carries out loading and unloading activities of various commodities such as food, electric poles, motorbikes, cement, ceramics and fertilizers.

Bongkar Muat is the transfer of cargo from and to the ship to be stockpiled into or directly transported to the place of the owner of the goods by going through the port dock using complementary loading and unloading equipment, both those on the dock and those on the ship itself (Sudjatmiko, 1993).

According to Suyono (2005), the implementation of loading and unloading activities is divided into 3 (three) activities, namely:

1. *Stevedoring*: The work of unloading goods from the ship to the dock/berge/truck or loading goods from the dock/berge/truck into the ship until it is arranged into the ship's hatch using a ship crane or land crane or other loading and unloading equipment.

2. *Cargodoring*: The work of releasing goods from ropes / roads at the dock and transporting from the dock to the warehouse / stacking field then further arranged in the warehouse / stacking field or vice versa.
3. *Receiving/Delivery*: The work of moving goods from the stacking place in the stacking warehouse and delivering until they are arranged on the vehicle at the warehouse door / stacking field or vice versa.

PT Zona Mandiri Indotrans' unloading activities experience several challenges which can hinder the unloading process at the port. One of them is due to the scarcity of diesel fuel which makes truck drivers have to queue for days to get diesel, this causes a waste of time so that fertilizers that must be loaded immediately become late to load and trigger *demurrage*.

In loading and unloading activities, it is expected that these activities take place in an organized, systematic, fast, safe manner and the costs incurred are as small as possible. PT Zona Mandiri Indotrans as a *freight forwarder* company often experiences *demurrage* in the process of unloading fertilizer from year to year which can cause losses in the company, as in the following table:

Table 1. Demurrage Data of PT Zona Mandiri Indotrans Year 2022

Month	Case Demurrage	Cost Demurrage	Total Container
January	-	-	-
February	3	Rp. 4,680,000	9
March	11	Rp. 25,410,000	9
April	2	Rp. 5,340,000	3
May	-	-	-
June	-	-	-
July	-	-	-
August	11	IDR 33,090,000	14
September	14	Rp. 28,530,000	12
October	2	Rp. 5,100,000	5
November	-	-	-
December	-	-	-
Total		IDR 102,150,000	

Source: PT Zona Mandiri Indotrans (2022)

Demurrage can also be interpreted as a fine that will be imposed on the company if the unloading process time exceeds the agreement limit (Fajarrina, 2006). *Demurrage* has a function to compensate for losses or expenses due to *containers that have overstayed* or are idle beyond the specified time duration. *Demurrage* costs have a large enough amount to cause losses for the company.

There are several factors that cause *demurrage* to occur, these factors include:

1. *Delay* due to full dock (tight *schedule*)

The amount of uncertainty at the port in the form of ship arrival times and loading and unloading process times has led to queues, then *delays* because the dock is full not as scheduled. Not only that, there are other ships that suddenly have to unload because the ship has to unload at another port, or because the cargo is about to be damaged.
2. There is damage to loading and unloading equipment, during unloading or loading activities

Every loading and unloading activity encounters obstacles. In addition to the lack of supporting facilities, during the unloading process there is often damage to unloading equipment which causes the cessation of activities and the unloading process seems slow so that it takes up a lot of time which can cause *demurrage*.
3. Supporting documents for demolition are late

If the goods to be unloaded are imported goods, the unloading permit process will be more complicated. Must include original documents and accompanied by COO (*Certificate of Orogen*) to be examined by Customs in order to obtain permission to unload.
4. Weather that does not favor unloading or loading activities

During the unloading process activities are expected to be systematic, organized and fast. But

in reality, weather also greatly affects operational performance. If there is bad weather, such as rain or storms, loading and unloading activities will be stopped so that nothing dangerous or accidental happens.

In research on *demurrage* that has been done before by Layli (2020) who conducted research on *demurrage*, based on the results of this study that the factors causing delays in unloading raw materials at PT Krakatau Steel so as to cause *demurrage* are the full dock of Cigading port, *Letter of Credit* payment and late *Bill of Lading* documents.

Loading and unloading activities often experience various problems, such as limited facilities for loading and unloading, limited loading and unloading workers, the influence of weather and internal company factors greatly affect the smoothness of the loading and unloading process. Therefore, the company must pay attention and strive so that the factors that hinder the loading and unloading process can be resolved. So that loading and unloading activities run smoothly and minimize the incidence of *demurrage*.

Based on the description that has been stated previously, the framework of this research is as shown in Figure 1 below:

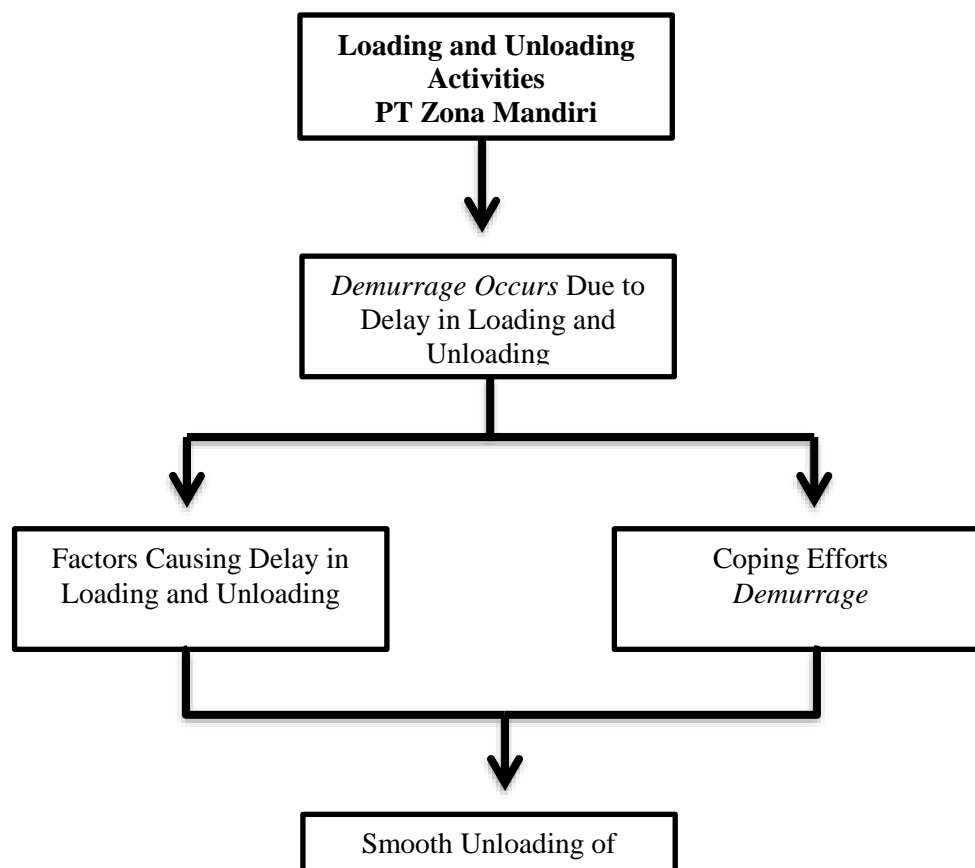


Figure 1. Framework of Thought

Based on the explanation above, the purpose of this research is to find out and analyze the occurrence of *demurrage* at PT Zona Mandiri Indotrans, to find out and analyze the factors that cause *demurrage* at PT Zona Mandiri Indotrans and to find out and analyze the efforts made by PT Zona Mandiri Indotrans in overcoming *demurrage* due to delays in loading and unloading fertilizers.

RESEARCH METHODS

This research uses a qualitative approach conducted at PT Zona Mandiri Indotrans. The technique used in selecting informants is purposive. *Purposive sampling* is a technique for determining

informants who are selected based on certain criteria made by the researcher based on the research objectives. The determination of informants in this study is based on several criteria, namely the company owner who bears the impact of *demurrage*, staff who are directly involved with the loading and unloading activities of PT Zona Mandiri Indotrans, and staff who organize the documents needed by PT Zona Mandiri Indotrans when carrying out loading and unloading activities.

Data analysis in this study used the interactive analysis method as stated (Sutopo, 2002), namely:

1. Data Processing

Data processing is an activity carried out for data processing into an informative form or data conversion using a predetermined sequence of operations either manually or automatically. In this study, the information obtained or the results of interviews from informants were processed using the NVivo 12 Plus *software* tool.

2. Data Reduction

Data reduction is the main element contained in analyzing data, namely the process of selecting, focusing, simplifying and summarizing data from field notes. As data collection progresses, data reduction is carried out by making a summary of the data notes obtained in the field.

3. Data Presentation

Presentation of data is an assembly of information organization, description in the form of a narrative that allows research conclusions to be made. This presentation is an assembly of sentences arranged logically and systematically, so that when read it will be easily understood.

4. Inference

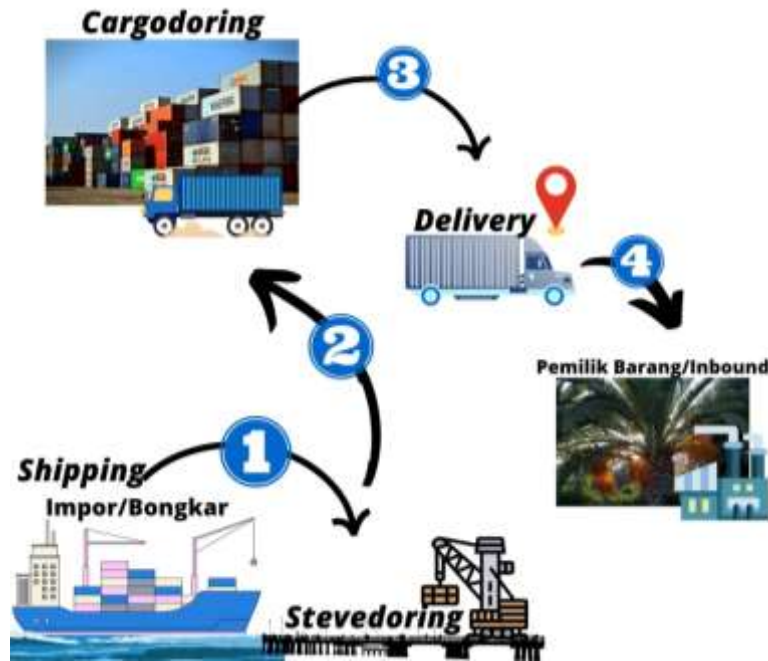
Conclusions need to be diversified in order to be stable enough and truly accountable. Therefore, repetition activities can be carried out for stabilization purposes, tracing data back quickly, perhaps as a second thought that crosses the researcher when writing data presentation by looking back briefly at field notes.

RESULTS AND DISCUSSION

Research Results

1. Unloading

Unloading is an activity that carries out the process of unloading goods by moving cargo from ships to land or from land to ships and from docks to trucks that will be carried or transported to their destination safely carried out in accordance with procedures at the port, this activity is also carried out using loading and unloading equipment and labor. The loading and unloading activities carried out by PT Zona Mandiri Indotrans are unloading fertilizer loads that will be delivered to oil palm plantations in Morowali, Central Sulawesi. From the results of the research, it was found that the loading and unloading of fertilizers carried out by PT Zona Mandiri Indotrans starting from the *shipper* to the consumer or owner of the goods / *inbound*, namely:



PT Zona Mandiri Indotrans Loading and Unloading Line

Source: Data Reprocessed, (2023)

Based on Figure 2. explains the loading and unloading path from the *shipper* as a fertilizer *supplier* to the consumer or can also be referred to as the owner of the goods / *inbound*. The following is a description of each stage of loading and unloading:

1. *Shipping* (Import/Unload) is the delivery of goods/fertilizers from Surabaya to Palu by ship and ready for unloading.
2. *Stevedoring* is the activity of unloading goods from the ship to the dock by using a ship crane or land crane. At this stage, PT Pelindo IV (Persero) Pantoloan is doing the unloading process.
3. *Cargodoring* is an activity of moving goods from the port dock to the goods piling field. In this activity PT Zona Mandiri Indotrans moves the goods / fertilizers from the *container yard* of PT Pelindo IV (Persero) Pantoloan to the PT Toloan goods piling field. Before moving the goods / fertilizers, PT Zona Mandiri Indotrans must pay THC to PT Pelindo so that the goods are stored in the field of PT Toloan. to PT Pelindo so that the goods can be moved to PT Toloan.
4. *Delivery* is the activity of unloading goods from the stacking field until they are arranged on the truck and then will be sent to their destination. At this stage PT Zona Mandiri Indotrans must pay DO (*Delivery Order*) and LoLo (*Lift on Lift off*) to the shipping company before unloading the goods from the container.
5. *Goods Owner/inbound* is the destination where the goods are delivered. In this case, the *inbound* is an oil palm plantation in Morowali, Central Sulawesi.

2. Demurrage

Demurrage is a fine that must be paid by the consignee or shipper company for exceeding the time limit for using the container at the port. The fee must be paid to the shipping company which is quite large. *Demurrage* causes losses to the insurer due to delays in returning empty containers to the shipping company. Therefore, the company must pay attention to the factors that cause *demurrage* and the efforts that must be made to overcome the *demurrage* so that the unloading activities can run smoothly and can reduce losses.

Based on the results of research on *demurrage*, two keywords were obtained consisting of factors causing *demurrage* and efforts to overcome *demurrage* which were *coded* using NVivo 12 Plus software. Fertilizer unloading activities carried out by PT Zona Mandiri Indotrans often experience delays, causing *demurrage* that must be paid by PT Zona Mandiri Indotrans. Delays in the implementation of unloading are caused by 7 factors, namely lack of truck fleet, lack of labor, scarcity

of diesel fuel, truck fleet damage, limited unloading tools, document delays and weather.

Discussion

1. Loading and Unloading

Based on the results of research on fertilizer loading and unloading, 5 keywords were obtained consisting of documents, transportation, loading and unloading equipment, labor and *demurrage* which were *coded* using NVivo 12 Plus *software*. The loading and unloading activities carried out by PT Zona Mandiri Indotrans are currently not running smoothly because there are several obstacles that hinder the loading and unloading activities. PT Zona Mandiri Indotrans carries out unloading activities for fertilizers sent from Surabaya and will later be delivered to Morowali, Central Sulawesi. The fertilizer was sent using the shipping service of PT Salam Pacific Indonesia Lines (SPIL). So, if the fertilizer has arrived at Pantoloan Port, PT Zona Mandiri Indotrans must immediately carry out loading and unloading activities. The shipping company provides a time limit for the use of *containers* for 7 days for 5-10 *containers* and 14 days for unloading 20 *containers*.

This research found several problems in the loading and unloading of fertilizers carried out by PT Zona Mandiri Indotrans. The problem that is often faced by PT Zona Mandiri Indotrans is the lack of a fleet of loading goods. In a day PT Zona Mandiri Indotrans can only load two to three trucks of fertilizer, due to the condition of PT Zona Mandiri Indotrans which lacks a fleet of trucks. Whereas in this case PT Zona Mandiri Indotrans needs 10 trucks or even more so that the fertilizer loading and unloading process can be completed immediately. This causes loading and unloading activities to be delayed because PT Zona Mandiri Indotrans must wait for the fleet that previously delivered goods to their destination to return to pick up the fertilizer to be loaded next, so this wastes a lot of time in the loading and unloading process. In addition, the scarcity of diesel fuel in 2022 also caused delays in the unloading process because the fleet that should have been ready in the field to load fertilizer, but had to queue for days to buy diesel fuel. This also wastes a lot of time for unloading.

Weather also causes delays in the unloading process because if the weather is not favorable such as rain, the unloading activities carried out must be postponed. Lack of unloading workers also affects the unloading time, because if the number of unloading workers in the field is less, the process of unloading fertilizer from the container and then transported to the truck becomes slow. One truck has to load 200 bags of fertilizer and 480 bags of fertilizer in one *20-foot container*. This unloading activity requires 7 unloading workers for one *container*. In a day, PT Zona Mandiri Indotrans' target for unloading fertilizer is 7 *containers*, but the reality is that PT Zona Mandiri Indotrans can only unload two *containers* due to a shortage of trucks and labor shortages.

Based on field findings that to complete the unloading of 20 *containers* of fertilizer, PT Zona Mandiri Indotrans was given *free time* from the shipping company for 14 days. Therefore, ideally the company needs four trucks with 21 laborers a day. With this amount the company can unload two *containers* per day and within 10 working days the company can complete the unloading of the 20 *containers* of fertilizer and avoid *demurrage*. In this case, it must be ensured that the number of trucks and laborers is always available every day in order to avoid *demurrage*.

2. Demurrage

Demurrage causes losses to the insurer due to delays in returning empty containers to the shipping company. Therefore, the company must pay attention to the factors that cause *demurrage* and the efforts that must be made to overcome the *demurrage* so that the unloading activities can run smoothly and can reduce losses.

Fertilizer unloading activities carried out by PT Zona Mandiri Indotrans often experience delays resulting in *demurrage* that must be paid by PT Zona Mandiri Indotrans. Delays in the implementation of unloading are caused by 7 factors, namely:

1. Truck Fleet Shortage

Fertilizer unloading activities carried out by PT Zona Mandiri Indotrans are not running smoothly due to a shortage of trucks, causing *demurrage* which is detrimental to the company. PT Zona Mandiri Indotrans has a fleet of 7 trucks but when it comes to loading and unloading fertilizers, PT Zona Mandiri Indotrans' trucks are loading other goods out of town. So that PT Zona Mandiri Indotrans must rent trucks from outside the company to be able to carry out fertilizer loading and unloading activities.

Based on the findings in the field, the number of trucks rented from outside the company is not sufficient for PT Zona Mandiri Indotrans. Fertilizer loading and unloading activities carried out by PT Zona Mandiri Indotrans in a day require 7 trucks or even more to carry out loading and unloading activities, but the reality that occurs in a day there are only two to three trucks that can be rented by PT Zona Mandiri Indotrans.

To overcome this problem, PT Zona Mandiri Indotrans rented a warehouse to reduce *demurrage* costs due to the shortage of trucks. This can be done by storing the fertilizer in the warehouse while waiting for a fleet of trucks to make fertilizer deliveries to Palm Oil Plantations in Morowali. By renting a warehouse, PT Zona Mandiri Indotrans can minimize the risk of *demurrage* because the goods have been emptied from the containers and can be stored safely in the warehouse.

Warehouse rental also requires additional costs, such as rental fees and warehouse management fees. However, it is more efficient when compared to having to wait for the availability of a fleet of trucks with the fertilizer remaining in the container because if the fertilizer is not immediately unloaded from the container for a long time, the *demurrage* costs incurred are also higher.

2. Labor Shortage

Labor is one of the most important things in loading and unloading activities. Fertilizer loading and unloading activities carried out by PT Zona Mandiri Indotrans are often late due to lack of labor. Based on field findings, only 7 to 10 workers come a day, and with the number of workers they can only unload one container a day. This causes the loading and unloading activities carried out to be late because from the results of interviews that PT Zona Mandiri Indotrans requires 20 to 30 laborers a day.

For companies engaged in *freight forwarding* such as PT Zona Mandiri Indotrans, labor shortages can cause delays in the process of shipping goods such as fertilizer shipments to Palm Oil Plantations in Morowali, which in turn can cause *demurrage* costs. A study by Zheng et al. (2019) found that labor shortages are a significant factor in causing delivery delays and *demurrage* costs in logistics companies.

The study shows that increasing the number of laborers or unloaders can help reduce delays in the delivery of goods and reduce *demurrage* costs. In addition, PT Zona Mandiri Indotrans can also confirm to the labor foreman regarding the readiness to unload fertilizers and PT Zona Mandiri Indotrans can also look for laborers from outside the port.

3. Solar Scarcity

Scarcity of fuel, such as diesel, can cause delays in the delivery of goods and result in *demurrage* costs for *freight forwarders*. This happens because *freight forwarders* cannot deliver vehicles or trucks on time if they run out of fuel or have to queue for available fuel.

Based on the results of interviews with the Director of PT Zona Mandiri Indotrans, he stated that the scarcity of diesel fuel caused *demurrage* because the unloading activities carried out were hampered due to having to queue for hours and even days just to refuel diesel fuel on each truck that would leave to deliver fertilizer to its destination.

The available fuel may not be sufficient to meet the needs of all the trucks that must be operated, especially in the event of scarcity caused by external factors such as supply shortages or increased demand in the market. This may cause the truck fleet to be unable to operate optimally and experience delays in the delivery of goods, which in turn may trigger *demurrage* charges if the goods are not picked up on time by the recipient.

To overcome this problem, PT Zona Mandiri Indotrans could adopt several strategies, such as developing a better and more organized fuel procurement plan, i.e. by establishing cooperation with fuel providers to ensure the availability of sufficient fuel supply for loading and unloading operations.

4. Truck Fleet Damage

Damage to truck fleets can cause delays in the delivery of goods and trigger *demurrage* costs for *freight forwarders*. This happens because a damaged truck fleet cannot operate optimally and must be repaired first before it can be used again to deliver goods.

Based on field findings, when loading and unloading there are several trucks that experience damage such as damage to the brakes, broken axles, and punctured tires. So that it delays the loading and unloading activities.

Truck breakdowns can be caused by several factors, such as fatigue or wear and tear on vehicle components, accidental damage, or lack of required routine maintenance and repairs. If a truck is damaged and needs to be repaired, PT Zona Mandiri Indotrans must wait until the repair is complete before it can continue delivering fertilizer. This can cause delays in the delivery of goods and trigger *demurrage* costs if the goods are not unloaded in a timely manner.

To overcome this problem, PT Zona Mandiri Indotrans can adopt several strategies, such as conducting regular maintenance and repairs on the truck fleet to prevent breakdowns, considering the use of a spare truck fleet or renting other trucks to cope with emergency situations.

5. Unloading Tool

Delays in the loading and unloading process can be a cause of *demurrage* at PT Zona Mandiri Indotrans. Poorly functioning or unavailable loading and unloading equipment can cause delays in the loading and unloading process, which in turn can trigger *demurrage* charges if the goods are not unloaded on time by PT Zona Mandiri Indotrans.

The unloading activities of PT Zona Mandiri Indotrans use *forklifts* and *reach stackers* in lowering and raising fertilizers from containers that cannot be reached by unloading workers. Based on information obtained from PT Zona Mandri Indotrans, there are only two units for *forklifts* and four units for *reach stackers* at Pantoloan port. This affects the speed and slowness of the unloading process because to use the tool PT Zona Mandiri Indotrans must queue and wait for the tool to be used by other companies.

To overcome this problem, PT Zona Mandiri Indotrans implemented a strategy of arriving early to the unloading field in order to get the first opportunity to use the unloading equipment.

6. Document Delay

Delays in the document delivery process can be a cause of *demurrage* for *freight forwarders*. Unavailable, missing or delayed documents can cause delays in the freight forwarding process, which in turn can trigger *demurrage* charges if the goods are not unloaded on time.

Loading and unloading activities carried out by PT Zona Mandri Inodtrans require several documents including B/L (*Bill of Lading*) documents.. B/L (*Bill of Lading*) is a very important document so that the company is allowed by the shipping company to unload cargo.

Based on information obtained from the Director of PT Zona Mandiri Indotrans that the B/L document was slowly sent from the *shipper* which resulted in late unloading activities to be carried out because the shipping party had to see and wait for the B/L (*Bill of Lading*) document to be provided by PT Zona Mandiri Indotrans and later the fertilizer could be unloaded immediately. documents are provided by PT Zona Mandiri Indotrans and later the fertilizer can be unloaded immediately.

There are several factors that can cause delays in the document delivery process, such as errors in the administrative process, lack of adequate preparation or coordination, or problems with information and communication systems.

To overcome this problem, PT Zona Mandiri Indotrans can adopt several strategies, such as improving coordination and better preparation, as well as adopting more advanced technology to improve the efficiency and speed of document delivery.

The findings of this study are in accordance with previous research conducted by Layli (2020) which states that the factors causing delays in loading and unloading that cause *demurrage* are the full dock of Cigading port, late *Letter of Credit* payments and late *Bill of Lading* documents.

7. Weather

Bad weather can be a cause of *demurrage* at PT Zona Mandiri Indotrans. Bad weather can hamper or even delay the delivery of goods or fertilizers, especially if the weather conditions are extreme, such as storms or floods. Delays in the delivery of goods can trigger *demurrage* charges if the goods are not unloaded on time from the container.

Bad weather can cause various problems in the loading and unloading process, such as damage to vehicles or infrastructure, difficulties in delivering goods, and even safety risks for employees and truck fleet drivers. If the weather conditions are extreme, it may trigger road or port closures, which will aggravate the situation and trigger higher *demurrage* costs.

To overcome this problem, PT Zona Mandiri Indotrans communicated the problem to the shipping company and requested an additional day policy to carry out unloading activities that had been delayed due to bad weather.

A study by Aliyah et al. (2020) found that there are 5 causes of *demurrage*, namely improper maintenance strategies, operators not running according to SOPs, abrasive raw materials, high vibrations and high frequency of hydraulic system *breakdowns*. The study is different from this study which found that there are 7 factors causing *demurrage*, namely lack of truck fleet, lack of labor, truck fleet damage, scarcity of diesel fuel, queues in the use of unloading equipment, delays in B/L (*Bill of Lading*) documents and bad weather. This shows the development in the study of *demurrage*.

From the results of the research that has been done, there are 5 categories that can cause *demurrage* at PT Zona Mandiri Indotrans, namely *man*, *machine*, *method*, *environment* and *material*. This is described in the following *fishbone diagram*:



Figure 3. Fishbone Diagram of Demurrage Causes of PT Zona Mandiri Indotrans

Source: Reprocessed Data (2023)

From Figure 3. above that in the *man* category there are two factors that cause *demurrage*, namely labor shortages. Unloading labor greatly affects the fast and slow loading and unloading activities carried out. In the *mechine* category, it is known that damage to the truck disrupts the unloading process and the unloading process is stopped while the time given by the shipping party continues to run. So in this case, if it exceeds the *free time* limit, the company will be subject to *demurrage* from the shipping company. In the *method* category, there are three factors that cause *demurrage* at PT Zona Mandiri Indotrans, namely the first, the delay in the B / L (*Bill of Lading*) document from the *shipper*, this causes PT Zona Mandiri Indotrans to be unable to unload fertilizer due to not getting permission from the shipping company if the document is not shown. The second factor in the *method* category is that the shortage of trucks can cause *demurrage* because if the truck fleet does not meet the required number, the unloading activity will take a long time to unload, so this causes *demurrage*. The last factor in the *method* category is the queue *for* using *forklifts* and *reach stackers*, based on the findings in the field that companies operating at Pantoloan Port must take turns to use these tools, this can delay loading and unloading activities carried out. The last category is *environment*, it is known that bad weather causes *demurrage* because it will delay loading and unloading activities.

Based on the results of the research and discussion above, it was found that the point of *demurrage* on the loading and unloading route and efforts to reduce *demurrage* by PT Zona Mandiri Indotrans. The following is a picture of the point of *demurrage* on the fertilizer unloading line/stage carried out by PT Zona Mandiri Indotrans:



Figure 4. Demurrage Occurrence Points and Efforts to Reduce Demurrage PT Zona Mandiri Indotrans

Source: Reprocessed Data, (2023)

From Figure 4 above, the point of *demurrage* is at the *stevedoring* and *cargodoring* stages. *Demurrage* that occurs at the *stevedoring* stage is caused by goods that have arrived at the port and have been transferred to the *container yard* of PT Pelindo IV (Persero) Pantoloan not immediately transferred to the stacking field and not unloading activities by PT Zona Mandiri Indotrans due to several factors that cause *demurrage*. Furthermore, in the unloading activities carried out by PT Zona Mandiri Indotrans, *demurrage* usually also occurs when the goods have been moved from the *container yard* of PT Pelindo IV (Persero) Pantoloan to the PT Toloan goods stacking field or commonly referred to as the *cargodoring* stage. The cause of this is due to factors that cause the goods are not unloaded by PT Zona Mandiri Indotrans. Based on field findings, one of the efforts made by PT Zona Mandiri Indotrans to reduce *demurrage* is renting a warehouse. The warehouse is used by the company to store fertilizers that cannot be loaded or delivered to oil palm plantations in Morowali so that the shipping containers can be returned immediately. PT Zona Mandiri Indotrans rented a tronton truck to move the goods/fertilizers from PT Toloan's stacking yard to the warehouse. The efforts made by PT Zona Mandiri Indotrans are currently sufficient to ease the company's burden in dealing with *demurrage*. Reducing *demurrage*, PT Zona Mandiri Indotrans strives for the availability of warehouses to store fertilizers from containers in order to minimize *demurrage* that occurs.

From the description of the discussion of the research results above, external factors and internal factors along with the impact and solutions to overcome *demurrage* at PT Zona Mandiri Indotrans are found in the form of the following table:

Problem solution			
Problem Source	Problem Form	Impact	Solution
Internal	1. Lack of truck fleet	Impact on loading and unloading activities that cannot be completed in accordance with the predetermined time and cause <i>demurrage</i> .	1. Renting a truck 2. Renting a warehouse to store fertilizers removed from containers.
	2. Truck fleet damage	The impact on loading and unloading activities is slow and can lead to <i>demurrage</i> .	1. Make improvements 2. Renting trucks from outside the company.

Problem Source	Problem Form	Impact	Solution
	3. Labor shortage	The impact on loading and unloading activities is slow due to lack of labor.	1. Prior to the unloading day, the company should confirm with the labor foreman about the readiness to unload the fertilizer.
External	1. Diesel scarcity	Loading and unloading activities are delayed because they have to queue for diesel for hours or even days. So this causes <i>demurrage</i> .	1. Purchase diesel starting from the day before the ship docks at Pantoloan Port.
	2. Queue for use of loading and unloading equipment	May delay unloading activities.	1. Must arrive early at the unloading site to get an early opportunity to use the unloading equipment.
	3. B/L (<i>Bill of Lading</i>) document delays	It can hamper unloading activities due to the shipper company being late in sending B/L documents and the time given by the shipping party continues to run. As a result, this causes losses for PT Zona Mandiri Indotrans because it has to bear <i>demurrage</i> because it is late in unloading cargo.	1. Frequently communicate with the <i>shipper</i> and remind them that important documents such as B/L can be sent early so that there is no need to delay unloading activities.
	4. Bad weather	It can hamper the loading and unloading process and can delay it for days. This can lead to <i>demurrage</i> .	1. Communicating this issue to the shipping company and requesting an additional day policy to carry out unloading activities that had been delayed due to bad weather.

Source: Reprocessed Data (2023)

Based on Table 2 above regarding the internal and external factors that cause *demurrage* at PT Zona Mandiri Indotrans, there are two causes that are prioritized in handling, namely the shortage of truck fleets and the scarcity of diesel. PT Zona Mandiri Indotrans strives for the availability of a warehouse so that it can unload and move all fertilizers from the container to the warehouse, so that the container can be returned to the shipping party and can minimize *demurrage*. The scarcity of diesel fuel, PT Zona Mandiri Indotrans purchases diesel fuel starting from the day before the ship docks at Pantoloan Port so that when loading and unloading activities are carried out, each fleet is ready and does not have to queue for diesel fuel which results in late loading and unloading activities.

CONCLUSIONS

The occurrence of *demurrage* at PT Zona Mandiri Indotrans is caused by delays in unloading fertilizer so that PT Zona Mandiri Indotrans is late in returning the container to the shipping party in an empty state. Factors causing *demurrage* on fertilizer loading and unloading activities at PT Zona Mandiri Indotrans due to lack of truck fleet, damage to the truck fleet to be used, lack of loading and unloading labor, bad weather during loading and unloading of fertilizers, scarcity of diesel fuel, and late B/L (*Bill of Lading*) documents. The efforts made by PT Zona Mandiri Indotrans to overcome *demurrage* due to delays in loading and unloading fertilizers are that the company rents a warehouse to store fertilizers from containers that have not been loaded due to a shortage of trucks and the company supplies diesel fuel for each truck before the goods arrive at the port.

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