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Time Analysis of Crude Palm Oil (CPO) Loading and Unloading Activities at the Port of Tana Paser

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Abstract: Crude Palm Oil (CPO) is a vegetable oil derived from palm fruit pulp. This oil is naturally reddish in color because it contains high amounts of beta-carotene. Port Business Entity (BUP) is a business entity whose activities are specifically in the field of managing Terminals and other Port Facilities. One of the Port Business Entities in the Tanah Paser area is PT. Jaya Investama Terminal. This terminal utilizes the lease of state-owned goods with one of its business activities being the loading and unloading of Crude Palm Oil. (CPO). In its operations, there are various hindering factors that affect timeliness, resulting in suboptimal loading and unloading activities. This research aims to analyze various inhibiting factors affecting activities at the port. The research was conducted using a quantitative descriptive method approach. Subsequently, the findings were elaborated using a qualitative approach to observe the actual conditions that occurred during the research period. The data collection technique used is the observation technique. The data analysis used includes the stages of data collection, data reduction, data presentation, and conclusion drawing. The findings of the research indicate that the construction of additional storage facilities and the expansion of loading and unloading areas at the port are urgently needed to accommodate larger volumes. And the limited human resources in the CPO loading and unloading process also cause problems in the field, resulting in inefficient loading and unloading activities.

Keyword: Crude Palm Oil (CPO), Tana Paser Port, Timeliness, Efficiency, Loading and Unloading Activities

INTRODUCTION

According to Bambang Susantono, (2014) the Port is one part of the transportation infrastructure that can generate economic activity in a region because it is part of the chain of transportation and logistics systems. The most important thing is to strive for the port not only as a link, but also as a place to integrate several modes of transportation in order to achieve an optimal logistics system. This is certainly related to creating a balanced

transportation system so that the priority is the provision of integrated transportation facilities. However, the efficiency of transportation management is needed in order to achieve commodity distribution, capital mobility and higher business competition. Efficiency in the distribution and logistics system in the national and international trade system allows it to be achieved through the development of integrated transportation system technology between modes (Malisan, 2014:82). Tana Paser Port is a port in Paser Regency, East Kalimantan Province, Indonesia. In this case, many palm oil / Crude Palm Oil (CPO) commodities are unloaded at the port of Tana Paser, this port has been operating for loading and unloading CPO since September 2023, this port has a depth of ± 7 meters - ± 10 meters High Water Spring (HWS) and ± 2.4 meters - ± 5 meters Low Water Spring (LWS) with a pier length of 280 meters, Tana Paser Port is a port that has not been cultivated, the organizing unit office, Tana Paser Port is a government agency at the port as an authority that carries out the functions of regulating, controlling, supervising port activities and providing port services for ports that have not been cultivated.

In the loading and unloading of Crude Palm Oil (CPO) BUP PT Jaya Investama Terminal leases 420 meters of land, in this loading and unloading activity the legulator or port organizing unit office supervises so that no accidents or pollution occur in the port area. This activity is also to support the smooth loading and unloading of CPO, and increase non-tax state revenue (PNBP) by utilizing State Property (BMN). At the Port of Tana Paser there are several ships that carry out activities, one of which is CPO loading activities at the Port of Tana Paser. There are several types of ships entering Tana Paser Port such as Motor Tanker (MT), Barge (BG) with an average Gross Tone (GT) of 2000 Mt Cpo, with an average Loang over all (LOA) of 60 meters and an average Deadweight Tonnage of 4000 Mt, with an average shipload capacity of 2000 Mt capable of loading 3-4 Days. The amount of goods unloaded increases along with the flow of ships entering the port. The following is a table of Crude Palm Oil (CPO) ship visits at the port of Tana Paser:

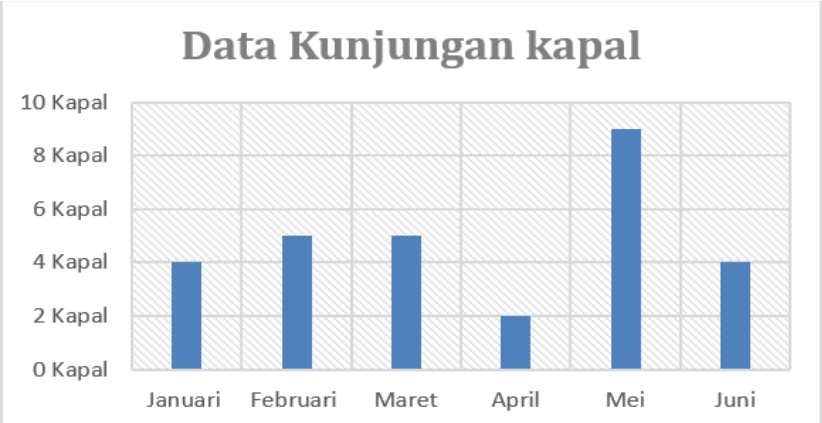

Figure 1. CPO Ship visits at Tana Paser class 2 port

Development During the last 6 months, from January to June 2024, the flow of ship visits through the port has increased well with an average of ship visits each month. The flow of ship visits at the port increases every month, especially in May, it increased by 9 ships, from the data showing an increase in the number of ships visiting the Port of Tana Paser. The amount of goods unloaded increases due to the number of ships entering the port. Meanwhile, with limited dock infrastructure that can hamper loading and unloading performance. Because it results in the delivery of goods through ship services will be delayed. And this delay can also harm the company and also the owners of the goods. The order of the number of truck units at the port is as follows:

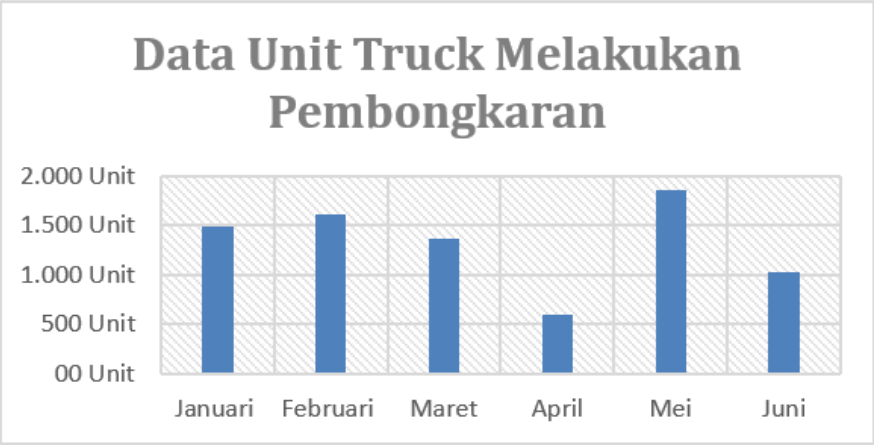

Figure 2. Unit Truck unloading

The number of tank truck visits that will unload in the port area, during these 6 months has experienced several decreases and increases, the target set by the company within a month is 1,200 truck units but due to factors that affect the unloading process there are a number of truck units that exceed the set target. And it causes obstruction of the loading and unloading process at the port of Tana Paser. The following is also the amount of cargo that was loaded from the transhit tank to the ship during these 6 months :

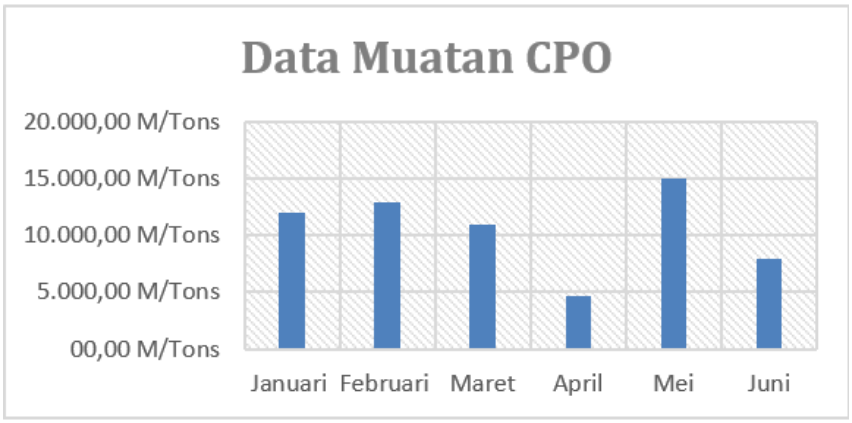

Figure 3. Loading at Tana Paser Port

PT. Jaya Investama Terminal is one of the important terminals at the port of tana paser as a Port Business Entity (BUP), one of which is on Crude Palm Oil (CPO) commodities and has a strategic role in the national palm oil industry. There are several problems at the port of tana paser, especially at PT Jaya Investama Terminal, which is one of the port business entities that serves Crude Palm Oil (CPO) loading and unloading activities. Factors such as inadequate infrastructure, inefficient operational procedures, limited human resources, and bad weather problems that result in delays that impact delivery times. By understanding the main causes of delays and bottlenecks in the unloading process, it is expected that effective solutions can be found to improve operational efficiency. Thus, it is necessary to develop infrastructure and services that can make the implementation of loading and unloading at the port of Tana Paser more effective. Based on the above case, the author conducted a research at the port of Tana Paser entitled “Time Analysis Of Crude Palm Oil (Cpo) Loading And Unloading Activities At The Port Of Tana Paser”.

Literature review

1. CPO Loading and Unloading Activities

According to Suyono (2003) the loading and unloading activities include many parts in a loading or unloading process. Loading and unloading services at the port are carried out by the Loading and Unloading Company (PBM). A loading and unloading company (PBM) is an Indonesian legal entity specifically established to organize and operate loading and unloading activities from the port to the ship (Gunawan, H., & Sianto, 2017). The stages of the CPO unloading process at the port include those presented in Figure 1.3 as follows:

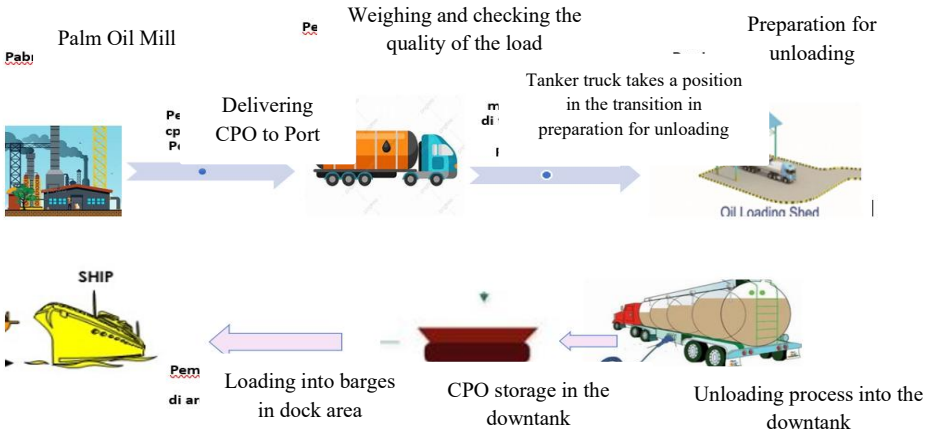

Figure 4. Flow of CPO Loading and Unloading Process

The explanation of Figure 4 above about the flow of the CPO loading and unloading process carried out at the Port of Tana Paser is as follows:Tahapan awal yaitu Pengiriman CPO ke area Pelabuhan.

a. After arriving at the Port, weighing and checking the quality of the cargo is carried out.
b. After that, the tank truck takes a position in the transition in preparation for unloading.
c. Unloading into transhit tank/downtank.
d. Once the tank truck is ready, the cargo is unloaded from the tank truck to the down tank.
e. Then the unloading process to the down tank, after the load is sufficient then pumped into the barge at the dock.

Of all the service procedures carried out by the port manager in this case, is PT. Jaya Investama Terminal as shown in the picture above, there are several service processes, namely the initial stage of ensuring that the CPO cargo arrives safely in the port area, after arriving at the port area, the CPO tank truck checks the cargo by the coconut parbik before the cargo is unloaded through the transhit tank, after ensuring that the cargo is safe, the cargo in the tank truck takes a position to unload, after the tank truck is in the right position to do so, CPO cargo is poured into the transhit tank, and after the cargo is in the transhit tank and is ready to be pumped into the CPO barge at the dock through the pipeline in the port area, after being pumped to ensure that the CPO cargo has been successfully loaded into the barge, therefore the loading and unloading process is very important for the success of the manager because it determines how fast or slow the ship is loading and unloading. The slow loading and unloading process will reduce port productivity and make users disadvantaged. To make the results of services at the port of Tana Paser more efficient and optimal, there must be a plan or action to improve the efficiency of loading and unloading work.

2. Efficiency

Efficiency is the level of savings in using existing resources in order to achieve the desired goals. Efficiency is divided into two, namely time efficiency and cost efficiency. Time efficiency is the level of savings in terms of time during implementation until when the project is completed. Meanwhile, cost efficiency is the level of economic savings and sacrifices made to achieve predetermined goals (Qomariyah & Hamzah, 2013).

Meanwhile, according to Investopedia, Efficiency is the highest level of performance that produces the highest amount of output with the smallest amount of input. To become more efficient, we must reduce the amount of unnecessary resources used to produce a certain output, such as energy and time. The main goal of efficiency is to gain the most profit with the least amount of effort. Therefore, efficiency is very important in running a business. In addition to the main goal above, there are some additional efficiency goals, including:

a. Improving resource utilization and reducing wasted resources.
b. Improve unit performance in the hope of improving results as well.

Crude Palm Oil (CPO)

Oil palm or Elaeis Guineensis Jacq is a plant that produces palm oil or Crude Palm Oil and palm kernel which is often known as Palm Kernel Oil. Crude palm oil comes from the processing of oil palm fruit. This oil palm plant originates from western Africa, this plant can also grow well in several regions, namely in Malaysia, Thailand, and Indonesia. The oil palm fruit has a fruit fiber called pericarp and a palm kernel. The pericarp consists of three layers: mesocarp, pulp, and endocarp. The kernel consists of the seed coat or testa, the protective shell of the kernel or endosperm and the kernel. The kernel has an oil content of about 44%, the mesocarp has an oil content of about 56%, and the endocarp has no oil content at all (Syahril, 2023).

This liquid bulk cargo and the CPO unloading process are transported through pipelines powered by pumps. The pipeline connects the cargo hold on the ship with the onshore storage tanks, or vice versa from the onshore storage tanks. Pumps, electric motors, valves, and pipelines serve as the main tools for unloading. Dry/liquid bulk goods loading and unloading activities are organized in multipurpose terminals or in special bulk terminals equipped with special facilities and installations. The loading and unloading output is highly dependent on the capacity of the installed equipment or mechanization. The main equipment for moving liquid bulk cargo consists of a series of tools that help a system. Individually, these tools do not stand alone, but are subsystems of the loading and unloading system as a whole. Liquid cargo flows from drop tanks to ship tanks, in this case from ship tanks to drop tanks or vice versa, and or from cars to drop tanks. CPO commodities and their derivatives are sent to various regions, such as balikpapan, gersik, and bontang and we will optimize the operation of the port of tana paser, shipping CPO and its derivatives as much as 56,591.88 tons at this time in 2024 PT Jaya Ivestama Terminal has an integrated pipeline facility at the dock that connects the droptank and or downtank CPO in the tana paser port area which is supported by 1 pipeline. This Ponding Liquide loading Point (PLLP) is one of the facilities to launch CPO loading and unloading activities at the port of tana paser which has been running since January 2024 until now.

3. Tana Paser Port

According to the Directorate General of Sea Transportation, UPP Class II Tana Paser or Tana Paser Port is a port located in Paser Regency, East Kalimantan Province, Indonesia. This port is one of the important ports in East Kalimantan that serves as a gateway for trade and distribution of goods in the region. With its strategic location on the banks of the Mahakam River, the port provides easy access to transport goods to and from the surrounding area.

Tana Paser Port is also surrounded by land full of natural resources such as coal, palm oil, and so on. Registering special terminals totaling 29 to support certain main businesses by each owner. In addition, this port provides facilities and infrastructure / basic facilities and supporting facilities that can support and facilitate the distribution of goods at the port.

4. Port Business Entity (BUP)

Definition of Port Business Entity (BUP) According to the Regulation of the Minister of Transportation of the Republic of Indonesia with number PM 57 of 2020 Article 1 Point 20, Port Business Entity (BUP) is a business entity whose business activities are specifically in the field of terminal exploitation and other port facilities.

METHOD

The research method used in this research is qualitative research methods, qualitative research adhering to the original research design can be a sign that the data analysis carried out is inadequate, not consistency. In addition, researchers also cannot change the data. There is no similarity of data researchers will collect data derived from different collection methods such as observation, interviews (Sitasari, 2022).

Therefore, a technique is needed to analyze the qualitative data that has been collected by researchers in order to obtain answers in accordance with the formulation of existing problems. This study aims to analyze various factors inhibiting activities in the port of research conducted with a quantitative descriptive method approach based on data. The data analysis process is described through several stages such as observation, data collection, data reduction and drawing conclusions, and the research data source is any type of information that has a link between the research data including:

Observation

Observation means collecting data directly from the field. The method of observation or observation is a daily activity with direct observation itself because the observer sees, hears, or listens directly to a research object and then concludes the results he observes (Rizky Fadilla & Ayu Wulandari, 2023). This data collection method focuses on direct observation of activities that occur during the loading and unloading process of CPO entry at the port of Tana Paser. Without making observations first, the researcher will have difficulty in determining the subjects and objects to be studied.

Data Collection Techniques

According to (Sugiyono 2016: 308) in (Noor, 2011) Data collection techniques are the main step in research, because the main purpose of researching is to obtain data. Without data collection techniques. Researchers are unlikely to obtain data to get the standard of data that has been determined for data collection, There are data collection techniques including interviews.

Interviews are one of the techniques that can be used to collect research data. simply, and it can be said that an interview is an event or a process of interaction between the interviewer and the source of information or the interviewee through direct communication (Rizky Fadilla & Ayu Wulandari, 2023), This qualitative research was conducted by direct interviews and dealing with respondents by interviewing the company and the port involved in the loading and unloading process at Tana Paser Port.

Data Reduction

Data Reduction The data obtained from the field is quite a lot, so it needs to be recorded carefully and in detail. As stated earlier, the longer the researcher goes to the field, the more the amount of data obtained will be more numerous, complex, and complicated. For

this reason, it is necessary to immediately analyze the data through data reduction. Reducing data means summarizing, selecting the main things, focusing on the important things.

Drawing Conclusions

The third step in data analysis in qualitative research according to Miles and Huberman (2014) is conclusion drawing and verification. The initial conclusions put forward are still temporary, and will change if no strong evidence is found that supports the next stage of data collection (Sirajuddin Saleh, 2017).

RESULTS AND DISCUSSION

In the last six months, the flow of vessel visits for units serving CPO commodities has shown significant decreases and increases. Especially in May, there was a high spike in the number of vessel visits compared to the previous months, as can be seen in the figure below:

MONITORING ACTIVITIES PLLP JANUARY-JUNE 2024

No	Mount	Vessel Name		PKS	Amount of Loading		Activities Time	
					Unit Truck Tanki	Shore's Figure/ Bil of Loading (BL)	Waktu Start Bongkar	Waktu Selesai Pemuatan
1	Januari	TB. ISA	BG. WIDMARINO3500.1	PT. SSM	189 Unit	1.500,00 M/Tons	28 Des 2023 / 20:30	30 Des 2023 / 11.59
				PT.AAMU	254 Unit	2.000,00 M/Tons	02 Jan 2024 / 16.47	04 Jan 2024 / 00.23
2		TB. ENTEBE EDMERALD	BG TIGA JAYA 2728	PT. CBSS	494 Unit	4.000,00 M/Tons	05 Jan 2024 / 19:08	09 Jan 2024 / 23:36
3		TB. ANGGREK INDAH 6	BG. TSM II	PT. CBSS	116 Unit	1.050,00 M/Tons	14 Jan 2024 / 16:32	16 Jan 2024 / 01:25
				PT. CBSS	131 Unit	950,00 M/Tons	16 Jan 2024 / 11:38	17 Jan 2024 / 02:18
4		TB. YUCHAI MARINE 2	BG. ADM 03	PT. CBSS	242 Unit	1.950,00 M/Tons	18 Jan 2024 / 16:19	20 Jan 2024 / 08:38
				PT. CBSS	67 Unit	530,00 M/Tons	20 Jan 2024 / 15:35	21 Jan 2024 / 00:24
		Sub Total			**1.493 Unit**	**11.980,00 M/Tons**		
1	Februari	TB. RASYID FORTUNA	BG. FORTUNA 27	PT. CBSS	371 Unit	3.000,00 M/Tons	28 Jan 24 / 13:23	30 Jan 24 / 23:11
				PT. CBSS	126 Unit	1.000,00 M/Tons	31 Jan 24 / 10:55	01 Feb 24 / 08:54
2		TB. RAJAWALI PERKASA	BG. CAMAR LAUT I	PT. AAMU	254 Unit	2.000,00 M/Tons	02 Feb 24 / 11:11	03 Feb 24 / 22:15
3		TB. YUCHAI MARINE 2	BG. ADM 03	PT. CBSS	67 Unit	530,00 M/Tons	05 Feb 24 / 17:44	06 Feb 24 / 22:13
				PT. CBSS	244 Unit	1.950,00 M/Tons	07 Feb 24 / 11:13	09 Feb 24 / 01:09
4		TB. OPTIMUS 772	BG. LUMINOR 09	PT. SSM	189 Unit	1.500,00 M/Tons	11 Feb 24 / 17:47	13 Feb 24 / 05:00
				PT. HSS	121 Unit	997,41 M/Tons	13 Feb 24 / 20:17	16 Feb 24 / 23:37
5		TB. YUCHAI MARINE 2	BG. ADM 03	PT. CBSS	246 Unit	1.950,00 M/Tons	19 Feb 24 / 11:58	21 Feb 24 / 21:34
		Sub Total			**1.618 Unit**	**12.927,41 M/Tons**		
1	Maret	TB. YUCHAI MARINE 2	BG. ADM 03	PT. CBSS	68 Unit	530,00 M/Tons	29 Feb 24 / 17:19	29 Feb 24 / 23:57
				PT. CBSS	241 Unit	1.950,00 M/Tons	01 Mar 24 / 10:53	03 Mar 24 / 08:25
2		TB. ANGGREK INDAH 8	BG. TSM IX	PT. CBSS	289 Unit	2.300,00 M/Tons	13 Mar 24 / 13:35	15 Mar 24 / 00:12
				PT. CBSS	87 Unit	700,00 M/Tons	15 Mar 24 / 13:35	16 Mar 24 / 10:03
3		TB. ADAM TAG 5	BG. HAMCO CPO	PT. AAMU	253 Unit	2.000,00 M/Tons	18 Mar 2024/ 19:30	20 Mar 24 / 13:55
4		TB. PRIMA SAKTI VI	TB. PRIMA SAMUDERA VI	PT. HSS	125 Unit	998,34 M/Tons	21 Mar 2024/ 19:11	23 Mar 24 / 00:23
5		TB. YUCHAI MARINE 2	BG. ADM 03	PT. CBSS	65 Unit	530,00 M/Tons	25 Mar 24 / 10:46	25 Mar 24 / 19:45
				PT. CBSS	243 Unit	1.950,00 M/Tons	26 Mar 24 / 10:58	28 Mar 24 / 08:20
		Sub Total			**1.371 Unit**	**10.958,34 M/Tons**		
1	April	TB. AS PERFACT	BG. AS GLORY	PT. SSM	253 Unit	2.000,00 M/Tons	29 Mar 24 / 22:42	02 Apr 24 / 18:08
				PT. HSS	63 Unit	498,70 M/Tons	02 Apr 24 / 22:42	03 Apr 24 / 08:27
2		TB. ANDALAN	BG. INTI INTAN	PT. CBSS	275 Unit	2.200,00 M/Tons	04 Apr 24 / 11:00	06 Apr 24 / 05:50
		Sub Total			**591 Unit**	**4.698,70 M/Tons**		
1	Mei	TB. OSEANIK 3	BG MEL 02	PT. CBSS	369 Unit	2.979,89 M/Tons	02 Mei 2024 / 13:01	04 Mei 2024 / 23:10
					61 Unit	500,00 M/Tons	05 Mei 2024 / 16:59	07 Mei 2024 / 00:42
2		TB. OPTUMUS 772	BG. LUMINOR 9	PT. HSS	186 Unit	1.497,54 M/Tons	8 Mei 2024 / 16:16	10 Mei 2024 / 03:48
3		TB. OSEANIK 3	BG MEL 02	PT. AAMU	251 Unit	2.000,00 M/Tons	10 Mei 2024 / 20:25	12 Mei 2024 / 17:51
4		MT. SENSONIX		PT. CBSS	92 Unit	750,00 M/Tons	14 Mei 2024 / 12:35	15 Mei 2024 / 03:53
5		TB. TOL LANDAX	BG. PANEN 1	PT. SSM	127 Unit	1.000,00 M/Tons	16 Mei 2024 / 15:58	17 Mei 2024 / 17:28
6		TB. ANDALAN	BG. INTI INTAN	PT. CBSS	273 Unit	2.200,00 M/Tons	19 Mei 2024 / 11:37	21 Mei 2024 / 10:44
7		TB. SERASI 16	BG. SERASI 17	PT. CBSS	148 Unit	1.200,00 M/Tons	22 Mei 2024 / 13:29	23 Mei 2024 / 21:14
8		TB. ANDALAN	BG. INTI INTAN	PT. CBSS	275 Unit	2.200,00 M/Tons	28 Mei 2024 / 11:55	30 Mei 2024 / 03,37
9		TB. AS MARINE 9	BG. AS MARINE 19	PT. HSS	77 Unit	625,52 M/Tons	29 Mei 2024 / 19:50	31 Mei 2024 / 00:05
		Sub Total			**1.859 Unit**	**14.952,95 M/Tons**		
1	Juni	TB. ANDALAN	BG. INTI INTAN	PT. CBSS	276 Unit	1.950,00 M/Tons	07 Juni 2024 / 13:37	09 Juni 2024 / 02:05
				PT. CBSS	31 Unit	250,00 M/Tons	09 Juni 2024 / 11:12	09 Juni 2024 / 21:50
2		TB. ONI XV	BG. ILIR JAYA	PT. HSS	154 Unit	1.218,89 M/Tons	11 Juni 2024 / 00:25	12 Juni 2024 / 16:17
3		TB. YUCHAI MARINE 2	BG. ADM 03	PT. CBSS	66 Unit	530,00 M/Tons	19 Juni 2024 / 11:11	19 Juni 2024 / 22:17
				PT. CBSS	243 Unit	1.950,00 M/Tons	20 Juni 2024 / 11:32	22 Juni 2024 / 03:27
4		SPOB. HAMDAM		PT. AAMU	251 Unit	2.000,00 M/Tons	28 Juni 2024 / 11:09	29 Juni 2024 / 19:35
		Sub Total			**1.021 Unit**	**7.898,89 M/Tons**		

Source: Recap of loading and unloading activity data from the Company

Figure 5. Monitoring ship visits

Based on Figure 5 above, in January the initial process of loading and unloading with the number of CPO tank trucks 1,493 units and the total load of 11,890 M / ton has a time of 180 hours, with an average loading and unloading time of 66 M / ton per hour, and can be

said to be still not good, while in February the initial process of loading and unloading with the number of CPO tank trucks 1618 units and the total load of 12. 972 M/Ton has a time of 161 hours, with an average loading and unloading time of 80 M/Ton per hour, and can be said to be quite good, in March the process of starting loading and ending loading with the number of CPO tank trucks 1,371 units and the number of loads 11. 890 M / ton has a time of 180 hours, with an average loading and unloading time of 66 M / ton per hour, and can be said to be still not good, in April the process of starting loading and ending loading with the number of CPO tank trucks 1618 units and a total load of 12,972 M / ton has a time of 161 hours, with an average loading and unloading time of 80 M / ton per hour, and can be said to be quite good. And in May the process of starting unloading and ending loading with the number of CPO tank trucks 1,859 units and the total load of 14,952 M / ton has a time of 220 hours, with an average loading and unloading time of 67.9 M / ton per hour, and can be said to be not good, In June the process of starting unloading and ending loading with the number of CPO tank trucks 1,021 units and the total load of 7,898 M / ton has a time of 100 hours, with an average loading and unloading time of 71.8 M / ton per hour, and can be said to be not good.

So, it is known that the value of performance achievement at the port of Tanah Pasar which has poor achievement results lies in the aspect of CPO services in the timeliness of loading and unloading, where performance achievement is considered good if it reaches the standards set by the company, such as in terms of CPO loading and unloading time. Meanwhile, the company has a standardized CPO loading and unloading activity time of 75 M / Ton per hour. The results of observations in the field of BUP PT. Jaya Investama Terminal also recorded an average volume of 10,570 M / ton per month. And the monthly ship visit is 5 ships that carry out CPO loading and unloading activities at the Port of Tana Paser, with an average monthly tank truck unit reaching 1,325 fleets that carry out unloading.

The results of the calculation of the analysis of the loading and unloading system at the port from January to June, there are still results that have an average value of unloading and loading time that has not reached the standard set by the company PT. Jaya Investama Terminal is 75 M/Ton Per Hour in March, April, and May. In addition, it was found that the results of the analysis of the queue system in March with a long time value. The problem of loading and unloading time can also be caused by the delay in the delivery of CPO from the palm oil mill which is too long and the unloading capacity in the port area is only enough to carry out 4 units of tank trucks which has an impact on the loading and unloading of CPO in the port area which causes the loading time to be longer.

In the CPO loading and unloading activities by PT. Jaya Investama Terminal at the Port of Tana Paser, there are also obstacles to the loading and unloading process that come from the management of human resources in charge of driving tank trucks (Drivers), the number is very limited, which should be 200 units with drivers per month with 8 hours of work, but the reality in the field is that only 50 units are available with driver working hours that can reach up to 10/12 hours and make the loading and unloading process take a long time, especially for large-scale CPO loading and unloading activities which can cause drivers to experience fatigue and require regular breaks. In addition, the port only has 1 (one) down tank with a capacity that can only accommodate 50 M / ton of CPO. Plus the factor of bad weather conditions such as heavy rain or strong winds and terrain that is difficult to reach on the way which can hamper the timeliness of the CPO transition tank truck and the transition time of the tank truck to return to the palm oil mill becomes less effective.

Based on the results of observations and direct interviews with the Director of PT. Jaya Investama Terminal, Mr. Moch Khoirul Anwar, Head of the PPLP Operations Division, Mr. Faizal Fanany and Transportir about the cause of the delay in the loading and unloading process, it turns out that in addition to Internal Factors there are also External Factors of the

company, these factors must be a concern so that there are achievements in the CPO loading and unloading process. A breakdown of the results of observations and interviews is shown in the table below:

Table 1. Internal and External Factors Timeliness at BUP PT. Jaya Investama Terminal

Internal Factors	External Factors
Limited port capacity is an obstacle to handling large volumes of docked vessels, which can hinder the smooth running of the process.	With the increasing number of ship visits. This can affect the accuracy of the loading and unloading process due to inadequate infrastructure and services.
Infrastructure limitations that only have 1 (one) down tank with a capacity of 50 M / ton CPO.	Adverse weather conditions such as heavy rain or strong winds and difficult terrain can hinder the loading and unloading process and affect efficiency.
The limited land of the unloading area is only enough for 4 units to be able to unload.	The limited number of transport units / fleets that cause delays in the loading and unloading process.
	Insufficient manpower/human resources with improper rotation of working hours causing delays.

Table 4.2 above shows the conditions that exist in the loading and unloading of CPO at BUP PT. Jaya Investama Terminal and at the Monitoring Table of ship flow visits, it was concluded that the CPO loading and unloading process at BUP PT. Jaya Investama Terminal, Management of PT. Jaya Investama Terminal needs to conduct further evaluation and research to set improvement targets that are in accordance with the company's conditions, both from internal and external factors. So that the smooth implementation of CPO loading and unloading activities can be achieved.

CONCLUSION

Based on the results and findings of the problem discussion conducted by researchers on the topic of this research, there are several conclusions that can be made, the first obstacle that causes the unloading process is not optimal loading and unloading, namely the port capacity is not sufficient to handle incoming ships on a large enough CPO volume scale, it is necessary to provide adequate facilities and a more efficient scheduling system for ships and optimal use of time slots. This aims to minimize waiting time and queues, so that the loading and unloading process takes place faster and without obstacles.

The limitation in port facilities that only have 1 (one) down tank is a bottleneck, hence the need to build additional storage facilities and expand the unloading area to accommodate more CPO volume. This increased capacity is essential to accommodate volume surges and improve workflow efficiency.

The lack of human resources/labor in the CPO loading and unloading process also causes various problems in the field such as tank truck drivers (Drivers) who experience fatigue. Therefore, the Company needs to increase the number of transport units/fleets that cause delays in the loading and unloading process and rejuvenate by recruiting new employees by providing training, skills and knowledge to its employees. As well as improving supervision of operational activities properly to minimize disruptions and downtime so that loading and unloading work activities run effectively and efficiently.

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