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Analysis of Operational Performance of Fishery Port Tanru Sampe Jeneponto, South Sulawesi

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Abstract

The fishing port combines fishing activities at sea and distribution activities to consumer areas. The fishing port must guarantee the needs of ships that dock and land and ensure that the landed catch remains of good quality. The Tanru Sampe Fishing Port in Jeneponto Regency, South Sulawesi Province, is a type D Fish Landing Base (PPI) with a pier length of 45 m, a pool depth of around 0.5-4 m, an operating vessel capacity of 19-24 GT, and loading and unloading time of around 4 -5 hours. The condition of limited depth and long loading and unloading time causes the frequency of fishing to be less optimal. The research aims to analyze the port's performance using parameters based on the standards of the Director General of Capture Fisheries Number 20/KEP-DJPT/2015. The results of the study show that the performance of the port is generally of moderate value, with assessment parameters: 1) Administration and information of three variables, only one good variable, namely the availability of human resources, 2) Port facilities of six variables, only four variables have good value, namely the length of the pier, the depth of the pool, the completeness of marketing and distribution facilities, and the availability of portland. 3) Four out of nine variables for general services are good: mooring services, fishery production, frequency of ship visits, and ice distribution. n In investment and industry, there are three good variables: port land use and employment.

Keywords: Port performance; Fishing port; Port Tanru of Sampe

1. Introduction

The fishing port combines fishing activities at sea and distribution activities to consumer areas. The fishing port must guarantee the needs of the ships that dock and land and ensure that the landed catch remains of good quality. Thus, the fishing port protects ships going in and out of the port, the handling, processing, distribution of landed catch, and management and administration functions. For this reason, managing an effective and efficient fishing port is necessary.

Port performance is the port's success in serving ships and [1]. Performance is the result of work that strongly relates to organizational strategic objectives, customer satisfaction, and contribution to the economy [2]. According to [3], performance measurement is the process of recording and measuring the achievement of the implementation of activities in the direction of achieving the mission through the results displayed in the form of products, services, or processes. Port activities must be measured and stated of

their relationships with the achievement of the mission of the fishing port. According to [4], the high port performance indicates that the port provides good service.

The Tanru Sampe Fishing Port in Jeneponto Regency supports the economy of residents, especially those who work as fishermen. The Tanru Sampe Fishery Port is a fish landing base (PPI/Type D) equipped with a pier of 45 meters, a depth of about 1.5 meters, several vessels operating in six ships with an average capacity of 20 GT, and a draft of 1.2 meters. The loading and unloading time is about 4-5 hours with an average load of 10 cork ships (1 cork contains 40 kg of fish) and a place for marketing fish products.

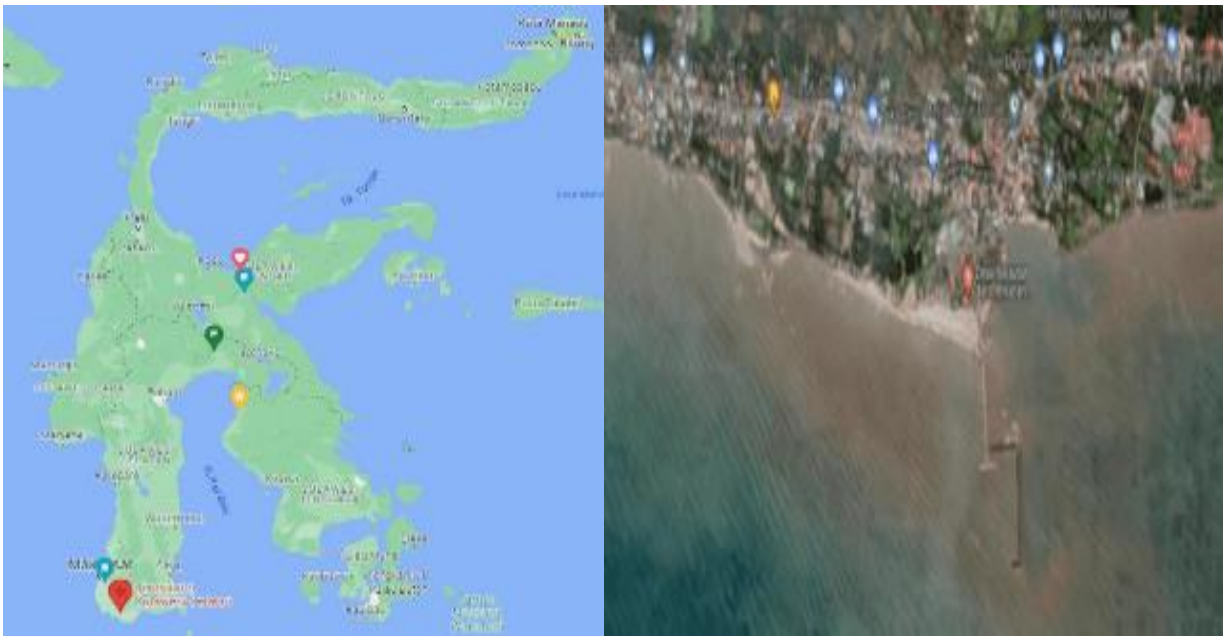

Figure 1. Location of Tanru Fishing Port, Jeneponto [5].

The ship's operation is not optimal with limited depth conditions and long loading and unloading times (limited shipping frequency and catch). The research is intended to analyze the performance of fishing ports that are useful for planning and developing ports and services to fishing vessels and their cargo so that fishermen's income can increase.

2. Methods

Measure the Tanru Sampe Fishing Boat Landing Base (PPI) operational performance by giving scores for each parameter and sub-parameter by PPI users and managers based on port operational performance achievements. The realization of the performance achievement is then compared with the standard indicators in the Decree of the Director General of Capture Fisheries Number 20/KEP-DJPT/2015 [6].

According to [7] and [8], fishing ports are classified into:

1) Ocean Fishing Ports (PPS/Type A) serving fishing vessels that carry out fishing activities in the territorial sea, the Indonesian Exclusive Economic Zone, and the high seas. This port has a minimum fishing boat mooring facility of 60 GT, a minimum pier length of 300 meters, and a minimum basin depth of 3 meters, and can accommodate a minimum of 100 fishing vessels or a minimum total number of 6,000 GT vessels at once. The fish landed at this port are partly for export purposes and there is a fishing industry in it;

2) The Archipelago Fishery Port (PPN/Type B) serves fishing vessels that carry out fishing activities in the territorial sea and the Indonesian Exclusive Economic Zone. It requires a minimum fishing boat mooring facility of 30 GT, a minimum pier length of 150 m, and minimum basin depth of 3 meters, and it can accommodate a minimum of 75 fishing vessels or a minimum total number of 2250 GT fishing vessels at once;
3) Coastal Fishing Ports (PPP/Type C) serve fishing vessels conducting activities in inland waters, archipelagic waters, and territorial seas. This port must have a minimum fishing boat mooring facility of 10 GT, with a minimum pier length of 100 meters, a minimum basin depth of 2 meters, and can accommodate a minimum of 300 GT fishing vessels at once;
4) Fish Landing Base (PPI/Type D) serves fishing vessels that carry out activities in inland waters and archipelagic waters, has mooring facilities for fishing vessels of a minimum of 3 GT with a minimum pier length of 50 m, a basin depth of 2 meters and able to accommodate a minimum 20 fishing vessels or a minimum total of 60 GT fishing vessels at once.

In [9, 10, 11], operational service performance is the measurable result of work achieved at the port in carrying out ships, goods, utility services facilities, and tools in a certain period and units.

The parameters assessed in the PPI Indicator standard based on the Decree of the Directorate General of Capture Fisheries Number 20/KEP-DJPT/2015 [6] consist of four parameters: administration and information systems, fishing port facilities, public services, and investment and industry. Each parameter has different weights, scales, and values according to the level of port performance assessment. The indicators of parameters can be seen in Table 1, 2, 3 and 4.

Table 1. Standard indicator parameters for administration and information systems.

No	Administration & Information System	Weight (W)	Scale (S)	Indicator Standard
1	Budget Absorption Realization	4	4	75% − 100%
			3	50% − 75%
			2	25% − <50%
			1	<25%
2	Port Revenue	4	4	> 90% of the target
			3	60% − 90% of the target
			2	30% − 60% of the target
			1	<30% of the target
3	Availability of Human Resources for Fishery Port Management	4	4	Complete (HR data, institutional legal basis, organizational structure)
			3	Less complete
			1	Not available

Table 2. Standard indicator parameters for port facilities.

No	Port Facility	Weight (W)	Scale (S)	Indicator Standard
1	Port basin capacity	4	4	>75 GT
			3	50 − 75 GT
			2	25 − <50 GT
2	Pier length	4	4	> 50 m
			3	34 − 50 m
			2	17 − < 34 m

No	Port Facility	Weight (W)	Scale (S)	Indicator Standard
3	Basin depth	4	4	> 2 m
			3	1 − 2 m
			2	50 cm − <1 m
4	Repair facilities (Docking, workshop)	2	4	Available
			1	Not Available
5	Marketing & distribution facilities	2	4	Complete (Market, TPI, refrigerated vehicle)
			3	Moderate
			2	Less
			1	Not Available
6	Availability of port land	4	4	> 2 ha
			3	1-2 ha
			2	0.5 - < 1 ha
			1	< 0.5 ha

Table 3. General service parameter indicator standards

No.	Public service	Weight (W)	Scale (S)	Score (W x S)/4	Indicator Standard
1	Anchoring service	5	4	4	>5 GT
			3	3	2-5 GT
			2	2	< 2 GT
2	Fishery Production	5	4	4	>2 tons per day
			3	3	1-2 tons per day
			2	2	< 1 GT
			1	1	Not reporting
3	Call Ship Frequency	4	4	4	> 7 unit
			3	3	5-7 unit
			2	2	2-4 unit
			1	1	1 unit
4	Socialization and Technical Supervision	4	4	4	> 3 activities
			3	3	3 activities
			2	2	2 activities
			1	1	Not available
5	Facilitation of counselling, supervision and control of fish resources, fish quarantine, publication of research results, monitoring of coastal areas, marine tourism, quality development, processing and marketing, and distribution of fishery products	4	4	4	> 4 activities
			3	3	3-4 activities
			2	2	1-2 activities
			1	1	Not available
6	Implementation of K5	4	4	4	Good
			3	3	Moderate
			2	2	Poor
			1	1	Bad

Table 4. Standards of investment and industry parameter indicators.

No	Investment & Industry	Weight (W)	Scale (S)	Score (W x S)/4	Indicator Standard
1	Fishery product processing services at WKOPP	3	4	3	> 2 unit
			3	2.25	2 unit
			2	1.5	1 unit
			1	0.75	Not available
2	Port land use	3	4	3	Highly optimal (80 − 100%)
			3	2.25	Optimal (60 − 70%)
			2	1.5	Sufficiently optimal (40 − 59%)
			1	0.75	Less than optimal (<40%)
3	Employment	3	4	3	> 150 people per month
			3	2.25	100 − 150 people per month
			2	1.5	50 − <100 people per month
			1	0.75	< 50 people per month

3. Results and Discussion

The characteristics of Tanru Sampe Jeneponto Port are based on Law no. 31 of 2006 [7] concerning the classification of fishing ports, and Port operational performance is obtained by calculating the standard assessment parameters that have been set by the Director General of Capture Fisheries Number 20/KEP-DJPT/2015 [6].

3.1. Port Characteristics

Fish Landing Base (PPI/Type D) serves fishing vessels that carry out activities in inland waters and archipelagic waters, has mooring facilities for fishing vessels of a minimum of 3 GT with a minimum pier length of 50 m, with a basin depth of 2 meters and able to accommodate a minimum of 20 vessels fisheries or a minimum total of 60 GT fishing vessels at once. The Tanru Sampe port's character meets all the Fish Landing Base requirements except for the pond depth, which is only 1.5 meters.

(a) (b)

Figure 3.1. (a). PPI Tanru Sampe pier and (b). TPI PPI Tanru Sampe building**.**

3.2. Port Operational Performance

3.2.1. Administration and Information System Parameters

According to the head of UPTD PPI Tanru Sampe Mr Evendi Amba, SE administrative activities and information services at PPI Tanru Sampe since 2015 have not been appropriately managed, resulting in the realization of budget absorption and port revenues, on average less than 20% of the target. In addition, the availability of human resources is also very lacking, which affects port services. Based on the interview, the assessment results are presented in Tabel 5.

Table 5. The assessment of administrative and information system parameters.

No.	Administration & Information System Parameters	Weight (W)	Scale (S)	Indicator Standard	Score	Result (WxS)/4
1	Budget Absorption Realization	4	4	75% − 100%	1	1
			3	50% − <75%		
			2	25% − <50%		
			1	<25%		
2	Port Revenue	4	4	> 90% of the target	1	1
			3	60% − 90% of the target		
			2	30% − <60% of the target		
			1	<30% of the target		
3	Availability of Human Resources for Fishery Port Management	4	4	Complete (HR data, institutional legal basis, organizational structure)	3	3
			3	Moderate		
			2	Less complete		
			1	Not available		
					Total	5

One of the three administrative and industrial parameter variables has a good value: the variable availability of human resources for managing fishing ports. While the other two variables, namely the budget absorption realization variable and the Port revenue variable, have less value.

3.2.2. Parameters of Fishing Port Facility

For the parameters of the Fishery Port Facility, data were also obtained based on the results of interviews with the head of the UPTD PPI Tanru Sampe, along with giving a scale based on the results of interviews (Table 6).

Table 6. The assessment of fishery port facility parameters

No	Port Facility Parameters	Weight (W)	Scale (S)	Indicator Standard	Score	Result (WxS)/4
1	Port Basin Capacity	4	4	>75 GT	3	3
			3	50 − 75 GT		
			2	25 − <50 GT		
2	Pier length	4	4	> 50 m	3	3
			3	34 − 50 m		

			2	17 − 34 m		
3	Port Basin Depth	4	4	> 2 m	4	4
			3	1 − 2 m		
			2	50 cm − 1 m		
4	Repair facilities (Docking, workshop)	2	4	Available	1	0.5
			1	Not Available		
5	Marketing & Distribution Facilities	2	4	Complete (Market, TPI, refrigerated vehicle)	3	1.5
			3	Moderate		
			2	Less		
			1	Not available		
6	Availability of port land	4	4	> 2 ha	4	4
			3	1 − 2 ha		
			2	0.5 − <1 ha		
			1	< 0.5 ha		
					Total	16

Two of the six-port facility parameter variables have excellent values: the basin depth and the availability of port land. Three variables have an excellent value: port capacity, completeness of marketing and distribution facilities, and the length of the pier. Meanwhile, another variable needs to be added: the repair facility (docking, workshop) variable.

3.2.3. General Service Parameters

The scale of public service parameters for PPI Tanru Sampe data was obtained based on interviews with ship owners, fishermen and the head of UPTD PPI Tanru Sampe. Te assessment results can be seen in Table 7.

Table 7. The assessment of public service parameters

No	General Service Parameters	Weight (W)	Scale (S)	Indicator Standard	Score	Result (WxS)/4
1	Anchoring service	5	4	>5 GT	4	5
			3	2 − 5 GT		
			2	< 2 GT		
2	Fishery Production	5	4	>2 tons/day	3	3.75
			3	1 − 2 tons/day		
			2	< 1 GT		
			1	Report NA		
3	Call Ship Frequency	4	4	> 7 unit	3	3
			3	5 − 7 unit		
			2	2 − 4 unit		
			1	1 unit		
4	Socialization and Technical Supervision	4	4	> 3 Activities	2	2
			3	3 Activities		
			2	2 Activities		
			1	Not available		

No	General Service Parameters	Weight (W)	Scale (S)	Indicator Standard	Score	Result (WxS)/4
5	Facilitation of counselling, supervision and control of fish resources, fish quarantine, publication of research results, monitoring of coastal areas, marine tourism, quality development, processing and marketing, and distribution of fishery products	4	4 3 2 1	>4 Activities 3 − 4 Activities 1 − 2 Activities Not available	2	2
6	Implementation of K5	4	4 3 2 1	Good Moderate Poor Bad	1	1
7	Clean water distribution	4	4 3 2 1	100% 75 − 99% 50 − 74% < 50%	1	1
8	Ice delivery (ship)	4	4 3 2 1	100% 75 − 99% 50 − 74% < 50%	3	3
9	Fuel distribution (ship)	5	4 3 2 1	100% 75 − 99% 50 − 74% < 50%	1	1.25
					Total	21.7

One of the nine Public Service Parameters has an excellent value, namely the anchorage service variable. The three variables with good scores are the Fishery Production variable, the Vessel Visit Frequency variable, and the Ice Distribution (Ship) variable. Two variables have moderate values, namely the socialization variable and technical guidance, and the variable Extension Facilities, Supervision and Control of Fish Resources, Fish Quarantine, publication of research results, monitoring of coastal areas, marine tourism, quality development, processing and marketing, and distribution of results. In comparison, the other three variables have less value, namely the K5 implementation variable, the clean water distribution variable and the fuel distribution variable (ships).

3.2.4. Investment and Industry Parameter

The assessment of investment and industrial parameters as the data were obtained from the head of UPTD PPI Tanru Sampe can be seen in Table 8.

Table 8. The assessment of investment and industry parameters

No	Investment & Industry Parameter	Weight (W)	Scale (S)	Indicator Standard	Score	Result (BxS)/4
1	Fishery product processing services at WKOPP	3	4 3 2 1	> 2 unit 2 unit 1 unit Not available	1	0,75

No	Investment & Industry Parameter	Weight (W)	Scale (S)	Indicator Standard	Score	Result (BxS)/4
2	Port land use	3	4	Highly optimal (80 − 100%)	4	3
			3	Optimal (60 − 70%)		
			2	Sufficiently optimal (40 − 59%)		
			1	Less than optimal (<40%)		
3	Employment	3	4	> 150 people/month	3	2,25
			3	100 − 150 people/ month		
			2	50 − 100 people/month		
			1	< 50 people/month		
					Total	6

One out of three investment and industrial parameters variables has a good value, namely the Port Land Utilization variable, and one variable with a moderate value, namely the labor absorption variable. In contrast, the fishery product processing service has a low value.

3.3. PPI Tanru Sampe Performance Assessment Results

The results of the performance evaluation of fishing ports are determined by the Regulation of the Directorate General of Capture Fisheries Number 20/KEP-DJPT/2015 [6] concerning guidelines for evaluating the operational performance of fishing ports, with the assessment category: weight (A) multiplied by Scale (S) divided by 4. the success of each parameter, then the value is totaled to get the assessment category.

According to the Regulation of the Directorate General of Capture Fisheries Number 20/KEP-DJPT/2015 [6], the results of the performance evaluation of fishing ports are divided into four categories, namely:

1. Very good, if NK = (86 − 100)
2. Good, if NK = (66 − 85)
3. Moderate, if NK = (46 − 65)
4. Less, if NK = (0 − 45)

Table 9. The performance assessment of Fishery Port Tanru Sampe Jeneponto

No	Parameters	Performance Value
1	Administration and Information Systems	5
2	Fishing Port Facilities	16
3	Public service	21.75
4	Investment and Industry	6
	Total	48.75

Based on Table 1, 2, 3, 4, and 9, the performance value of Tanru Sampe's PPI is 48.75. Therefore, it is classified into category three, which means a moderate performance value.

4. Conclusions

1. Based on Law no. 31 of 2006 concerning the fishing ports' classification, Tanru Sampe Jeneponto is classified into type D Fish Landing Bases (PPI).
2. The operational performance of the Tanru Port is assessed based on the parameters of the Director General of Capture Fisheries Number 20/KEP-DJPT/2015. In general, it has a moderate value, with the following parameters
   - Administration and industry; have three variables that influence administration and industry. Only one variable has an excellent value: the availability of human resources for managing fishing ports.
   - Port facilities; three of six port facilities variables have excellent values: the pier length variable, basin depth, and port land availability. One variable with a good value is port capacity.
   - Public Service; has nine variables. One variable has an outstanding value, namely the anchorage service variable. The three variables with good scores are the Fishery Production variable, the Vessel Visit Frequency variable, and the Ice Distribution (Ship) variable.
   - Investment and Industry, one variable with a good value is the Port Land Utilization variable of the three influential variables.

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