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RESEARCH ARTICLE

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ANALYSIS OF SUITABILITY OF THE PURSE SEINE FISHING AREA ACCORDING TO REGULATION OF MARINE AND FISHERIES MINISTER (PERMEN KP) NUMBER 71 OF 2016

Hawati¹, Angkasa Putra^{2,3,4}, Herianto Suriadin⁵, Arham Rumpa¹, Muhammad Maskur¹ and Nasrun Nurma⁵

¹Bone Polytechnic of Marine and Fisheries, Ministry of Marine Affairs and Fisheries of the Republic of Indonesia, Jl. Sungai Musi KM. 9, Watampone, Bone, South Sulawesi, 92719; ²Jakarta Technical University of Fisheries, Ministry of Marine Affairs and Fisheries of the Republic of Indonesia, Jl. AUP No. 1, Pasar Minggu, South Jakarta, DKI Jakarta, 12520; ³Institute of Productivity, Research, Innovation, and Development for Fisheries, Jl. AUP No. 1, Pasar Minggu, South Jakarta, DKI Jakarta, 12520; ⁴Indonesian Maritime Youths, EightyEight@Kasablanca Tower A, Jl. Raya Casablanca No. Kav. 88, Menteng Dalam, Tebet, Jakarta, DKI Jakarta, 12870; ⁵Indonesian Muslim University, Jl. Urip Sumoharjo KM. 5, Panaikang, Panakkukang, Makassar, South Sulawesi, 90231

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*Corresponding author: Angkasa Putra

ABSTRACT

Regulation of the Minister of Marine Affairs and Fisheries of the Republic of Indonesia number 71/PERMEN. KP/2016 on Fishing Lines and Placement of Fishing Equipment in the Fisheries Management Area of the Republic of Indonesia in article 22 paragraph (1), the placement of fishing gear and fishing aids in WPP RI is adjusted to the nature of fishing equipment. Some previous studies have reported that the operation of ring trawlers and the placement of rumpons in the waters of Bone Bay and Flores Sea are not in accordance with the path of its designation as stipulated in the Regulation of the Minister of Marine Affairs and Fisheries. Therefore, it is important to conduct research on purse seine in the waters of the Gulf of Bone in relation to The Minister of Marine Affairs and Fisheries Regulation number 71 of 2016. The study was conducted from November 2016 to March 2017 in Panyula Village, which is the fishing base area of purse seine fishermen and the waters of the Gulf of Bone. The study used a combination of survey methods and case studies. This study used two types: primary data and secondary data. The suitability of the area of arrest or the ring trawler arrest line to its designated path based on the technical aspects of each ring trawler unit according to Minister regulation 71 of 2016 is analyzed descriptively by comparing the path of its designation and the reality of the field. Based on observations of the position of the fishing area, the majority of ring trawler units make fishing on their allotments in accordance with The Minister of Marine Affairs and Fisheries Regulation 71 of 2016, however, there are fishing activities on fishing lines instead of their designation.

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INTRODUCTION

Regulation of the Minister of Marine Affairs and Fisheries of the Republic of Indonesia number PER.02/MEN.KP/2011 concerning Fishing Paths and Fishing Aids in Fisheries Management Areas of the Republic of Indonesia, later changed to Regulation of the Minister of Marine Affairs and Fisheries number 42/PERMEN.KP/2014 and last changed to the Regulation of the Minister of Marine Affairs and Fisheries of the Republic of Indonesia number 71/PERMEN.KP/2016

concerning Fishing Paths and Placement of Fishing Equipment in the Fisheries Management Area of the Republic of Indonesia in article 22 paragraph (1) that the placement of fishing gear and fishing aids in WPP RI adjusted to the nature of fishing gear. Selectivity level of fishing gear, type and size of fishing gear, size of fishing vessel, and fishing area. Mallawa et al. (2016 & 2017) reported that the operation of purse seines and the placement of fads in the waters of Luwu-Bone Bay and the Flores Sea were not in accordance with the designated route as regulated in the Minister of Marine Affairs and Fisheries Regulation above. Mallawa (2016) also reports that the number of

skipjack tuna catches is more when fishing in fade areas than outside fads. Ratnasari (2013) reported that in the waters of Barru, Makassar Strait, fishermen are more likely to catch fish outside their designated route, which is due to the fact that apart from their catch, they are also not aware of the regulations on fishing routes. What about purse seine fishing gear in Bone Regency? Based on the description above, it is considered important to conduct research on ring trawl fisheries in the waters of Bone Bay in relation to the Minister of Marine Affairs and Fisheries Regulation number 71 of 2016.

RESEARCH METHODS

Research Time and Place: This research was conducted from November 2016 to March 2017 in Panyula Village, which is a fishing base area for purse seine fishermen and the waters of Bone Bay. Map of research location in Figure 1.

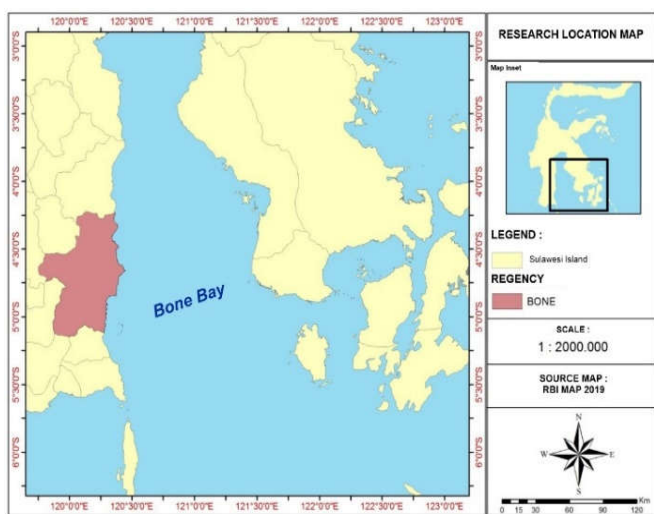


Figure 1. Map of research location

Research Methods: This research uses a combination of survey and case study methods. This study uses two types, namely primary data and secondary data. Primary data were obtained through direct observations during fishing operations and observations and measurements at fishermen's landing centers as well as through interviews with fishermen, boat owners, and policy makers. Secondary data was obtained from records of ship owners, the Fisheries Service, and other agencies. In this study, 15 units of ring trawlers were used or as examples were selected using the Stratified Random Sampling method where the strata were the sizes of small, medium, and large ships (Arikunto, 2010). The suitability of the fishing area or fishing line for purse seines with the designated route based on the technical aspects of each purse seine unit according to the Minister of Marine Affairs and Fisheries Regulation Number 71 of 2016 was analyzed descriptively by comparing the allotment route and the reality on the ground.

RESULTS AND DISCUSSION

The position of the fishing ground for each hauling in latitude and longitude is determined using GPS (Global Positioning System). Furthermore, the position of the fishing area in the field is overlaid with a map of the existing fishing area using GIS (Geographical Information System) and displayed in the form of a GIS map. From the results of the overlay, it can be seen that the hauling is suitable and not in accordance with its designation according to the Regulation of the Minister of Marine Affairs and Fisheries Number 71 of 2016. The results are shown in Table 1. Based on the data above, it can be seen that the length of the net ranges from 270-360 meters, the net depth is 37.6-57.8 meters, the top rope length is 270-360 meters, and the average mesh size is 2.54 cm.

Table 1. Results of Analysis of Technical Aspects of Purse Seine Catching Equipment in Bone

No.	Ship name	Catching Tool Size			
		Net length (meters)	Net height (meters)	Top rope length (meters)	Mesh size (cm)
1	KM. Hikma Jaya	360	53.7	360	2.54
2	KM. Cinta Kembar	280	43.7	290	2.54
3	KM. Iswan Neidar 01	300	53.7	300	2.54
4	KM. Cahaya Rasul	330	57.8	330	2.54
5	KM. Paredeang 87	300	51.0	300	2.54
6	KM. Pady Jaya 01	315	52.7	285	2.54
7	KM. Jusniati 01	330	53.7	300	2.54
8	KM. Bunga Padi 01	330	45.6	330	2.54
9	KM. Masna Jaya 03	345	53.7	350	2.54
10	KM. Mardi Jaya 01	315	55.6	280	2.54
11	KM. Hotel Mandar 06	314	37.6	320	2.54
12	KM. Bunga Padi 02	270	42.6	270	2.54
13	KM. Bintang Harapan	285	44.4	270	2.54
14	KM. Paddecengi 02	330	42.2	330	2.54
15	KM. Karya Agung	345	42.2	340	2.54

According to the Regulation of the Minister of Marine Affairs and Fisheries Number 71 of 2016 chapter VI article 23 paragraph 1 (a-d) to paragraph 2 (a-b), and based on the length of the net and the mesh size of the trawl nets used by fishermen in Panyula Village, it must be operated on the Fishing Line IB, II, and III. The results of the analysis of the suitability of fishing lanes and technical aspects of vessels and technical aspects of ring trawl fishing gear are related to the Minister of Marine Affairs and Fisheries Regulation Number 71 of 2016 that ring trawlers are only allowed to operate on Fishing Lane IB, Fishing Lane II, chapter VI article 22 paragraph 1, the placement of API and ABPI in fishing lanes and the State Fisheries Management Area of the Republic of Indonesia (WPPNRI) is adjusted to the nature of the API, selectivity level and API capacity, type and size of ABPI, size of fishing vessel and fishing area, chapter VI article 23 paragraph 1, API for small pelagic ring trawlers with one vessel, operated using the following sizes: (a) mesh size 1 inch and top rope 300 meters, using ABPI in the form of fads and lamps with a total power of 4,000 watts, using a motor boat measuring 10 GT and operating on Fishing Line IB, Fishing Line II, and Fishing Line III at WPPNRI 571-573 and WPPNRI 711-718, (b) mesh size 1 inch and top rope 400 meters, using ABPI fads and lamps with a total power of 8,000 watts, using motor boats measuring 10 GT to 30 GT, and operating on Fishing Line II and Fishing Line III at WPPNRI 571-573 and WPPNRI 711-718, (c) mesh size 1 inch and top rope 600 meters, using ABPI fads or lamps with a total power of 16,000 watts, using motor boats measuring >30 GT, and operating on Fishing Line III in WPPNRI 571, WPPNRI 711, 712, 713, 715, and 718, (d) mesh size 1 inch and top rope ris above 600 meters, using fads or lamps with a total power of 16,000 watts, using motor boats measuring > 30 GT –up to 100 GT, and operated on Fishing Line III in WPPNRI 572 and 573 and WPPNRI 714, 716, and 717.

Furthermore, paragraph 2, large pelagic ring seine API is an active API, operated by using the following measures: (a) mesh size 2 inch and top rope 700 meters, using fads or lamps with a total power of 16,000 watts, using motor boats measuring > 10-30 GT, and operating on Fishing Lane II and Fishing Lane III in WPPNRI 572 and 573 and WPPNRI 714, 716, and 717, and (b) API of large pelagic ring seines is an active API, operated using the following sizes: (a) mesh size 2 inch and top rigging rope ≤ 1,500 meters, using FADs or lamps with a total power of 16,000 watts, using motor boats measuring > 30 GT, and operating on Fishing Lanes II and Fishing Lanes III at WPPNRI 572 and 573 and WPPNRI 714, 716, and 717. The lanes are designated for each trawl unit the ring of Panyula Village, Bone Regency is presented in Table 2. Using fads or lamps with a total power of 16,000 watts, using motor boats measuring > 10-30 GT, and operating on Fishing Lanes II and Fishing Lanes III in WPPNRI 572 and 573 and WPPNRI 714, 716, and 717, and (b) API for large pelagic ring seines is an active API, operated using the following sizes: (a) mesh size 2 inch and top rigging rope ≤ 1,500 meters, using FADs or lamps with a total power of 16,000 watts,

using motor boats measuring > 30 GT , and operated on Fishing Lines II and Fishing Lines III in WPPNRI 572 and 573 and WPPNRI 714, 716, and 717. The lanes for each unit of trawl ring in Panyula Village, Bone Regency are presented in Table 2. Using fads or lamps with a total power of 16,000 watts, using motor boats measuring > 10-30 GT, and operating on Fishing Lanes II and Fishing Lanes III in WPPNRI 572 and 573 and WPPNRI 714, 716, and 717, and (b) API for large pelagic ring seines is an active API, operated using the following sizes: (a) mesh size 2 inch and top rigging rope ≤ 1,500 meters, using fads or lamps with a total power of 16,000 watts, using motor boats measuring > 30 GT , and operated on Fishing Lines II and Fishing Lines III in WPPNRI 572 and 573 and WPPNRI 714, 716, and 717. The lanes for each unit of trawl ring in Panyula Village, Bone Regency are presented in Table 2. and operated on Fishing Line II and Fishing Line III in WPPNRI 572 and 573 and WPPNRI 714, 716, and 717, and (b) API large pelagic ring seines are API active, operated using the following sizes: (a) mesh size 2 inches and rise rope 1,500 meters, using FADs or lamps with a total power of 16,000 watts, using motor boats measuring > 30 GT, and operating on Fishing Line II and Fishing Line III in WPPNRI 572 and 573 and WPPNRI 714 , 716, and 717. The allotment path for each seine ring unit in Panyula Village, Bone Regency is presented in Table 2. Operated using the following sizes: (a) mesh size 2 inch and top rope 1,500 meters, using FADs or lamps with a total power of 16,000 watts, using motor boats measuring > 30 GT, and operated on Fishing Lane II and fishing lanes Fish III in WPPNRI 572 and 573 and WPPNRI 714, 716, and 717. The allotment route for each trawl ring unit in Panyula Village, Bone Regency is presented in Table 2. Operated using the following sizes: (a) mesh size 2 inch and top rope 1,500 meters, using fads or lamps with a total power of 16,000 watts, using motor boats measuring > 30 GT, and operated on Fishing Lane II and fishing lanes Fish III in WPPNRI 572 and 573 and WPPNRI 714, 716, and 717. The allotment route for each trawl ring unit in Panyula Village, Bone Regency is presented in Table 2.

Table 2. Fishing Paths for Purse Seine in accordance with PERMEN KP No. 71 Year 2016

NO.	Ship name	Fishing Ground Area in Bone Bay				
		I	HE	IB	II	III
1	KM. Hikma Jaya				☐	☐
2	KM. Cinta Kembar				☐	☐
3	KM. Iswan Neidar 01				☐	☐
4	KM. Cahaya Rasul				☐	☐
5	KM. Paredeang 87				☐	☐
6	KM. Padly Jaya 01				☐	☐
7	KM. Jusniati 01				☐	☐
8	KM. Bunga Padi 01				☐	☐
9	KM. Masna Jaya 03				☐	☐
10	KM. Mardi Jaya 01				☐	☐
11	KM. Hotel Mandar 06				☐	☐
12	KM. Bunga Padi 02				☐	☐
13	KM. Bintang Harapan				☐	☐
14	KM. Paddecengi 02				☐	☐
15	KM. Karya Agung				☐	☐

To determine the suitability of fishing areas and fishing routes based on the Regulation of the Minister of Marine Affairs and Fisheries Number 71 of 2016 concerning fishing gear and the placement of fishing aids, this study carried out taking the fishing position of purse seine fishermen in Bone Regency as many as fifteen units operating. at night with the same fishing base in position S'04,30.748 – E'120'23,713 each 30 hauling trawlers as presented in Table 3 and the distribution can be seen in Figure 2.

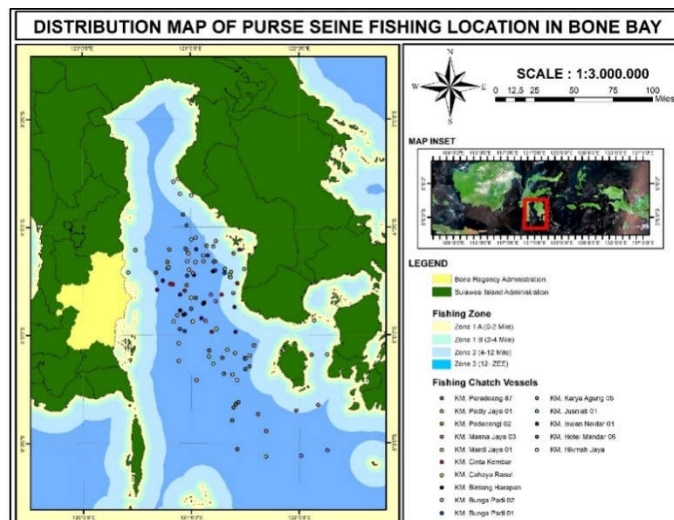


Figure 2. Purse Seine distribution map in Bone Bay

KM Hikma Jaya: Based on the observations obtained from the Global Positioning System (GPS) at the longitude and latitude positions of the research area which are summarized in Table 3 then a map of the fishing location is made using the Arc GIS mapping program to produce a map as shown in Figure 2. In the figure it can be seen that there are three fishing locations that are not in accordance with PERMEN KP No. 71 of 2016 which has been carried out by KM Hikma Jaya in this case the location of the arrests is in the IA and IB fishing lanes. Based on the analysis of the technical aspects of vessels and fishing gear, KM Hikma Jaya is only allowed to operate on fishing lanes II and fishing lanes III. Therefore, KM Hikma Jaya is one of the purse seine arresting units that violates the rules set by the government.

During a 30-hauling operation, KM Hikma Jaya committed a violation outside the designated fishing lane for 12 hauling operations and 18 hauling operations in accordance with the established rules for carrying out fishing operations. There was a violation in determining the location of fishing due to the large number of catches obtained, which amounted to 11,112 kg in fishing lines IA and IB when compared to catches obtained in fishing lanes II and III which were only about 4,284 kg. KM Cinta Kembar in Table 3 and Figure 2 it can be seen that there is one fishing location that is not in accordance with PERMEN KP No. 71 of 2016 which has been carried out by KM Cinta Kembar, in this case the location of the arrest is in the IB arrest line. Based on the analysis of the technical aspects of vessels and fishing gear, KM Cinta Kembar is only allowed to operate on fishing lanes II and fishing lanes III. Therefore, KM Cinta Kembar is one of the purse seine arresting units that violates the rules set by the government. During a 30-hauling operation, KM Cinta Kembar committed a violation outside the designated fishing lane for 8 hauls and 22 haulings in accordance with the rules that have been set for carrying out fishing operations.

KM Isdar Neiwani 01: On Table 3 and Figure 2 shows that ship 3 carried out fishing operations at two fishing locations that were not in accordance with PERMEN KP Number 71 of 2016 in this case the location of the arrest is in the IA and IB fishing lanes. Based on the results of the analysis of the technical aspects of the ship and fishing gear, KMI swan Neidar 01 only allowed to operate on fishing lane II and fishing lane III. Therefore, KMI swan Neidar 01 is one of the purse seine fishing units that violates the rules set by the government. During the fishing operation as many as 30 hauling, KM Iswan Neidar 01 committed violations outside the fishing lane that had been set as many as 12 hauling times and 18 hauling times in accordance with the rules that had been set for carrying out fishing operations. There was a violation in determining the fishing location because the number of catches obtained was 9,888 kg in the IA and IB fishing lanes when compared to the catch obtained in the II and III fishing lanes, which was only around 4,272 kg.

Table 3. Location of Arrest

No.	Ship name	Personal Fads		Regulation of Minister		
		Fishing Ground Position		Suitability		
		Latitude (S)	Longitude (E)	Yes	No	
1	KM Hikmah Jaya	03°42'019"	120°47'804"		<input type="checkbox"/>	
2		03°34'046"	120°43'442"	<input type="checkbox"/>		
3		03°32'074"	120°38'899"	<input type="checkbox"/>		
4		05°05'478"	121°14'955"		<input type="checkbox"/>	
5		05°20'304"	121°14'684"		<input type="checkbox"/>	
6		03°39'150"	120°45'547"	<input type="checkbox"/>		
7	KM. Cinta Kembar	04°30'077"	121°15'644"		<input type="checkbox"/>	
8		04°37'037"	121°15'120"	<input type="checkbox"/>		
9		04°50'496"	121°11'033"	<input type="checkbox"/>		
10		04°22'575"	120°37'690"	<input type="checkbox"/>		
11		04°24'471"	120°38'720"	<input type="checkbox"/>		
12		04°27'498"	120°43'818"	<input type="checkbox"/>		
13	KM Isdar Neiwan 01	04°05'458"	121°11'955"		<input type="checkbox"/>	
14		04°11'040"	121°20'955"	<input type="checkbox"/>		
15		04°17'400"	121°18'055"	<input type="checkbox"/>		
16		04°09'411"	121°06'205"	<input type="checkbox"/>		
17		04°07'320"	120°54'540"	<input type="checkbox"/>		
18		04°39'330"	121°20'250"		<input type="checkbox"/>	
19		04°32'333"	120°54'02"			
20		04°28'100"	120°44'25"	<input type="checkbox"/>		
21		04°27'470"	120°37'260"	<input type="checkbox"/>		
22		04°54'260"	121°23'104"	<input type="checkbox"/>		
23		04°47'220"	121°05'045"	<input type="checkbox"/>		
24		KM Cahaya Rasul	03°38'022"	120°59'0961"		<input type="checkbox"/>
25			04°36'200"	120°48'731"	<input type="checkbox"/>	
26			04°50'150"	120°59'120"	<input type="checkbox"/>	
27	04°51'340"		121°10'250"	<input type="checkbox"/>		
28	KM Paradeang 87	03°59'771"	120°47'607"	<input type="checkbox"/>		
29		03°51'483"	120°47'647"	<input type="checkbox"/>		
30		03°48'298"	120°42'822"	<input type="checkbox"/>		
31		04°46'639"	120°45'534"	<input type="checkbox"/>		
32		04°37'144"	120°51'701"	<input type="checkbox"/>		
33		04°37'503"	120°56'250"	<input type="checkbox"/>		
34	04°14'319"	121°02'647"	<input type="checkbox"/>			
35	04°17'498"	120°40'038"	<input type="checkbox"/>			
36	KM Padly Jaya 01	05°14'214"	121°17'927"	<input type="checkbox"/>		
37		05°19'003"	121°23'430"	<input type="checkbox"/>		
38		05°02'747"	120°39'854"	<input type="checkbox"/>		
39		05°12'783"	120°49'839"	<input type="checkbox"/>		
40		05°06'249"	121°10'863"	<input type="checkbox"/>		
41		05°09'783"	121°09'839"	<input type="checkbox"/>		
42	04°09'335"	120°58'038"	<input type="checkbox"/>			
43	04°06'104"	120°58'948"	<input type="checkbox"/>			
44	04°50'124"	122°05'201"		<input type="checkbox"/>		
45	KM Jusniati 01	04°11'759"	120°47'720"	<input type="checkbox"/>		
46		05°08'214"	121°17'927"	<input type="checkbox"/>		
47		04°10'345"	120°56'653"	<input type="checkbox"/>		
48		04°15'503"	121°15'881"	<input type="checkbox"/>		
49		04°07'980"	121°10'548"	<input type="checkbox"/>		
50		04°05'113"	120°51'559"	<input type="checkbox"/>		
51	04°03'467"	120°59'808"	<input type="checkbox"/>			
52	04°04'903"	121°05'120"	<input type="checkbox"/>			
53	KM Bunga Padi 01	04°08'964"	120°58'927"	<input type="checkbox"/>		
54		04°12'903"	120°56'120"	<input type="checkbox"/>		
55		04°15'639"	121°08'647"	<input type="checkbox"/>		
56		04°40'498"	120°43'818"	<input type="checkbox"/>		
57	04°45'774"	120°56'033"	<input type="checkbox"/>			
58	KM Masna Jaya 03	04°13'202"	121°32'156"	<input type="checkbox"/>		
59		04°14'212"	121°33'200"	<input type="checkbox"/>		
60		04°40'727"	121°06'128"	<input type="checkbox"/>		
61		04°59'413"	121°32'176"	<input type="checkbox"/>		
62		04°59'728"	122°05'118"	<input type="checkbox"/>		
63		05°36'185"	122°07'213"	<input type="checkbox"/>		
64		05°39'872"	121°32'577"	<input type="checkbox"/>		
65		05°40'128"	121°48'618"	<input type="checkbox"/>		
66	05°42'123"	121°30'433"	<input type="checkbox"/>			
67	KM Mardi Jaya 01	04°09'221"	120°26'202"	<input type="checkbox"/>		
68		04°17'324"	120°33'879"	<input type="checkbox"/>		
69		04°21'250"	120°20'318"	<input type="checkbox"/>		

70		04°21'320"	121°08'819"	<input type="checkbox"/>	
71		04°20'300"	121°09'800"	<input type="checkbox"/>	
72		04°22'350"	121°10'722"	<input type="checkbox"/>	
73		04°58'619"	121°08'728"	<input type="checkbox"/>	
74		04°59'720"	122°02'808"		<input type="checkbox"/>
75		05°02'600"	121°05'300"	<input type="checkbox"/>	
76		05°04'722"	121°07'318"	<input type="checkbox"/>	
77		05°56'700"	121°36'328"	<input type="checkbox"/>	
78	KM Hotel Mandar 06	05°01'458"	121°10'005"	<input type="checkbox"/>	
79		05°06'935"	121°12'371"	<input type="checkbox"/>	
80		05°07'345"	121°14'205"	<input type="checkbox"/>	
81		05°09'258"	121°17'785"	<input type="checkbox"/>	
82		05°30'443"	121°20'371"	<input type="checkbox"/>	
83		05°31'458"	121°19'335"	<input type="checkbox"/>	
84		05°33'443"	121°18'335"	<input type="checkbox"/>	
85		05°40'458"	121°18'285"	<input type="checkbox"/>	
86		05°48'935"	121°22'211"	<input type="checkbox"/>	
87		KM Bunga Padi 02	04°04'114"	120°51'701"	<input type="checkbox"/>
88	04°09'627"		120°55'457"	<input type="checkbox"/>	
89	04°37'721"		120°47'328"	<input type="checkbox"/>	
90	04°51'813"		120°48'314"	<input type="checkbox"/>	
91	04°49'204"		120°48'148"	<input type="checkbox"/>	
92	04°04'903"		120°56'120"	<input type="checkbox"/>	
93	04°02'639"		120°47'647"	<input type="checkbox"/>	
94	04°03'964"		120°58'927"	<input type="checkbox"/>	
95	04°04'114"		120°51'701"	<input type="checkbox"/>	
96	04°08'997"		120°58'857"	<input type="checkbox"/>	
97	KM. Bintang Harapan	04°12'873"	120°58'220"	<input type="checkbox"/>	
98		04°33'536"	120°56'683"	<input type="checkbox"/>	
99		04°35'458"	120°56'656"	<input type="checkbox"/>	
100		04°38'500"	120°48'363"	<input type="checkbox"/>	
101	04°40'521"	120°50'348"	<input type="checkbox"/>		
102	KM. Padecengi 02	04°09'204"	120°38'607"	<input type="checkbox"/>	
103		04°11'503"	120°40'420"	<input type="checkbox"/>	
104		04°05'319"	120°58'647"		<input type="checkbox"/>
105		04°24'498"	120°57'038"	<input type="checkbox"/>	
106	04°10'278"	121°08'948"	<input type="checkbox"/>		
107	KM. Karya Agung 05	04°22'344"	121°11'642"	<input type="checkbox"/>	
108		04°23'821"	121°13'630"		<input type="checkbox"/>
109		04°20'173"	120°42'312"	<input type="checkbox"/>	
110		04°25'037"	120°56'310"	<input type="checkbox"/>	
111		04°37'038"	121°09'120"	<input type="checkbox"/>	
112		04°39'137"	121°10'223"	<input type="checkbox"/>	
113		06°02'137"	122°03'763"	<input type="checkbox"/>	
114		06°05'140"	121°56'300"	<input type="checkbox"/>	

KM Cahaya Rasul: In Table 3 and Figure 2 from the observations, it can be seen that there is one fishing position that is not in accordance with the PERMEN KP Number 71 of 2016 shows: that ship 4 has carried out fishing operations outside of its territory in the longitude and latitude positions of the fishing ground research area at south latitude 03°38'022" and 120°59'0961" east longitude. The location of the FADs that are violated are in the IA's arrest lane. Based on the results of the analysis of the technical aspects of the ship and fishing gear, KM Cahaya Rasul allowed to operate on fishing lane II and fishing lane III. Therefore, KM Cahaya Rasul one of the purse seine fishing units that violates the rules set by the government. During a 30-hauling operation, KM Cahaya Rasul committed 9 hauling and 21-hauling activities outside the designated fishing lane, in accordance with the rules that have been set for carrying out fishing operations. There was a violation in determining the location of fishing due to the large number of catches obtained, which was 7,440 kg in the IA fishing line when compared to the catch obtained in the II and III fishing lanes, which was only around 4,770 kg.

Ship KM Paradeang 87: In Table 3 and Figure 2, the observations show that KM Paradeang 87 carried out fishing operations on fishing lines II and III in accordance with PERMEN KP Number 71 of 2016 from the results of the analysis of technical aspects of ships and fishing gear. During the fishing operation as many as 30 hauling, KM Paradeang 87 got a catch of 5504 kg. Based on the results of interviews with fishermen KM Paradeang 87 stated that the low catch compared to other purse seine fishing fleets was due to ignorance about potential fishing areas and not knowing the peak season, which resulted in low catches due to inconsistent fishing ground positions.

KM Padil Jaya 01: In Table 3 and Figure 2 from the observations, it can be seen that there is one fishing position that is not in accordance with the PERMEN KP Number 71 of 2016 shows: that KM. Padil Jaya 01 has carried out fishing operations outside its territory in the longitude and latitude positions of the fishing ground research area at south latitude 04°50'124" and 122°05'201" east longitude. The location of the fads that are violated are in the IA's arrest lane. Based on the results of the analysis of the technical aspects of ships and fishing gear, KM Padil Jaya 01 only allowed to operate on fishing lane II and fishing lane III. Therefore, KM Padil Jaya is one of the purse seine fishing units that violates the rules set by the government. During the fishing operation as many as 30 hauling, KM Padil Jaya committed violations outside the fishing lane that had been set as many as 8 hauling times and 23 hauling times in accordance with the rules that had been set for carrying out fishing operations. There was a violation in determining the fishing location due to the large number of catches obtained, which was 4,740 kg in the IA fishing line when compared to the catch obtained in the II and III fishing lines, which was only around 3,332 kg.

KM Jusniati 01: In Table 3 and Figure 2, the observations show that KM Jusniati 01 carried out fishing operations on fishing lines II and III in accordance with PERMEN KP Number 71 of 2016 from the analysis of technical aspects of vessels and fishing gear. During the hauling operation 30 times, KM Jusniati caught a catch of 4795 kg. Based on the results of interviews with fishermen KM Jusniati 01 stated that the low catch compared to other purse seine fishing fleets was due to ignorance about potential fishing areas and not knowing the peak season which caused the catches to be low due to inconsistent fishing ground positions.

KM Bunga Padi 01: In Table 3 and Figure 2, the observations show that KM Bunga Padi 01 carried out fishing operations on fishing lines II and III in accordance with PERMEN KP Number 71 of 2016 from the analysis of technical aspects of vessels and fishing gear. During the fishing operation as many as 30 hauling, KM Bunga Padi 01 got a catch of 7324 kg. Based on the results of interviews with fishermen KM Bunga Padi 01 stated that the low catch compared to other purse seine fishing fleets was due to ignorance about potential fishing areas and not knowing the peak season which resulted in low catches due to inconsistent fishing ground positions.

KM Masna Jaya 03: In Table 3 and Figure 2 from the observations, it can be seen that there is one fishing position that is not in accordance with the PERMEN KP Number 71 of 2016 shows: that ship 9 has carried out fishing operations outside of its territory in the longitude and latitude of the fishing ground research area at south latitude 04°59'728" and 122°05'118" east longitude. The location of the fads that are violated are in the IB's capture lane. Based on the results of the analysis of the technical aspects of the ship and fishing gear, KM Masna Jaya 03 only allowed to operate on fishing lane II and fishing lane III. Therefore, KM Masna Jaya 03 is one of the purse seine fishing units that violates the rules set by the government. During the fishing operation as many as 30 hauling, KM Masna Jaya 03 committed violations outside the fishing lane that had been set for 7 hauling and 23 hauling in accordance with the rules that had been set for carrying out fishing operations. There was a violation in determining the fishing location due to the large number of catches obtained, which was 6,420 kg in the IB fishing line when compared to the catch obtained in the II and III fishing lanes, which was only about 4,200 kg.

KM Mardi Jaya 01: In Table 3 and Figure 2 it can be seen that there is one fishing location that is not in accordance with PERMEN KP Number 71 of 2016 which has been carried out by KM Mardi Jaya 01 in this case the location of the arrest is in the IB fishing line. Based on the analysis of the technical aspects of vessels and fishing gear, KM Mardi Jaya 01 is only allowed to operate on fishing lanes II and fishing lanes III. Therefore, KM Mardi Jaya 01 is one of the purse seine arresting units that violates the rules set by the government. During the fishing operation for 30 hauls, KM Mardi Jaya 01 committed violations outside the designated fishing lane as many as 6

hauling times and 24 hauling times in accordance with the rules that have been set for carrying out fishing operations.

KM Hotel Mandar 06: In Table 3 and Figure 2, the observations show that KM Hotel Mandar 06 carried out fishing operations on fishing lines II and III in accordance with PERMEN KP Number 71 of 2016 from the analysis of technical aspects of vessels and fishing gear. During the fishing operation as many as 30 hauling, KM Hotel Mandar 06 got a catch of 6,022 kg. Based on the results of interviews with fishermen, KM Hotel Mandar 06 stated that the low catch compared to other purse seine fishing fleets was due to ignorance of potential fishing areas and not knowing the peak season which resulted in low catches due to inconsistent fishing ground positions.

KM Bunga Padi 02: In Table 3 and Figure 2, the observations show that KM Bunga Padi 02 carried out fishing operations on fishing lines II and III in accordance with PERMEN KP Number 71 of 2016 from the analysis of technical aspects of vessels and fishing gear. During the fishing operation of 30 hauling, KM Bunga Padi 02 got a catch of 5,470 kg. Based on the results of interviews with fishermen, KM Bunga Padi 02 stated that the low catch compared to other purse seine fishing fleets was due to ignorance about potential fishing areas and not knowing the peak season which caused the catches to be low due to inconsistent fishing ground positions.

KM Bintang Harapan: In Table 3 and Figure 2, the observations show that KM. Bintang Harapan conducts arrest operations on fishing paths II and III in accordance with PERMEN KP Number 71 of 2016 from the analysis of technical aspects of vessels and fishing gear. During the fishing operation as many as 30 hauling, KM Bintang Harapan got a catch of 3,780 kg. Based on the results of interviews with fishermen KM Bintang Harapan stated that the low catch compared to other purse seine fishing fleets was due to ignorance about potential fishing areas and not knowing the peak season which resulted in low catches due to inconsistent fishing ground positions.

KM Padecegi 02: In Table 3 and Figure 2 from the observations, it can be seen that there is one fishing position that is not in accordance with the PERMEN KP Number 71 of 2016 shows: that ship 14 has carried out fishing operations outside of its territory in the longitude and latitude positions of the fishing ground research area at south latitude 04°05'319" and 120°58'647" east longitude. The location of the fads that are violated are in the IA and IB arrest lanes. Based on the results of the analysis of the technical aspects of ships and fishing gear, KM Padecegi 02 only allowed to operate on fishing lane II and fishing lane III. Therefore, KM Padecegi 02 is one of the purse seine fishing units that violates the rules set by the government. During the fishing operation as many as 30 hauling, KM Padecegi 02 committing violations outside the established fishing lanes as many as 10 times hauling and 20 times hauling in accordance with the rules that have been set to carry out fishing operations. There was a violation in determining the fishing location due to the large number of catches obtained, which was 10,580 kg in the IA and IB fishing lines when compared to the catch obtained in the II and III fishing lines, which were only around 3030 kg.

KM Karya Agung 05: In Table 3 and Figure 2 from the observations, it can be seen that there is one fishing position that is not in accordance with the PERMEN KP Number 71 of 2016 shows: that the KM Karya Agung ship has carried out fishing operations outside its territory in the longitude and latitude positions of the fishing ground research area at south latitude 04°23'821" and 121°13'630" east longitude. The location of the fads that are violated are in the IB's capture lane. Based on the results of the analysis of the technical aspects of the ship and fishing gear, KM Karya Agung only allowed to operate on fishing lane II and fishing lane III. Therefore, KM Karya Agung is one of the purse seine fishing units that violates the rules set by the government. During the catching operation of 30 hauling, KM Karya Agung committing violations outside the established fishing lanes as many as 8 times hauling and 22 times hauling in accordance with the rules that have been set for carrying out fishing operations. There was a violation in determining the

fishing location due to the large number of catches obtained, which amounted to 9,463 kg in the IB fishing line when compared to the catch obtained in the II and III fishing lanes which was only around 5,422 kg.

CONCLUSION

Based on the observation of the position of the fishing area, the majority of the purse seine units catch on the designated route according to the Regulation of the Minister of Marine Affairs and Fisheries Number 71 of 2016, however, there are fishing activities on the fishing line that is not designated.

SUGGESTION

The government should conduct socialization, especially to purse seine fishermen, regarding purse seine operational locations regulated by the Marine Affairs and Fisheries Government No. 71 of 2016 so as to reduce the occurrence of violations with the hope that fishermen will know the impact of the prohibited fishing route on the fishery sector.

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