Volume 2 Issue 1(2023): 21-25 e-issn 2962-0759
Tropical Marine Environmental Sciences

Composition of Catch Results from Gombang Fishing Tools in Prapat Tunggal Village, Bengkalis District, Riau Province

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Article Info

Received
05 August 2023

Accepted
10 September 2023

Keywords:
Prapat Tunggal, Gombang, Composition, Catch.

Abstract

One of the livelihoods of the people of Prapat Tunggal Village, Bengkalis Regency, Riau Province, is fishing. The fishing gear fishermen operate is longline, gombang, drier, and gill nets. The research was conducted in June to determine the composition of catches from gombang fishing gear in Prapat Tunggal Village. The method used is a survey method and descriptive analysis. From the results of this research, the number of catches from gombang fishing equipment was 153.77 kg or 433,290 fish. The dominant net is rebon shrimp, which is the main catch of 77.90% of the total weight of the trap and the bycatch catch of 20.92%, as well as the discard catch of 1.17%.

1. Introduction

Prapat Tunggal Village is one of the villages in the north of Bengkalis Island, which is located at the coordinates 1° 32' 53.204" N-102°3'1.55" E and 1°33'39.067"- 102°3'1.466". Prapat Tunggal Village was an expansion village of the central Meskom Village in 2013.

One of the dominant livelihoods of the people of Prapat Tunggal Village is fishing. The abundance of marine products makes Prapat Tunggal Village have distinctive products in the form of fish crackers and shrimp paste (belacan), which makes Prapat Tunggal Village a shrimp paste and fisheries industrial area in Riau Province, especially in Bengkalis Islands Regency. 480 people work as fishermen. The fishing gear operated by fishermen in Prapat Tunggal Village is longline, gombang, kerih, and gill net (Data Profil Desa, 2020).

Gombang is a type of fishing gear that is static, with a semi-permanent installation that opposes the direction of water currents, namely, tidal and ebb currents (Pulungan et al., 2012). Gombang fishing gear consists of a gombang net such as a bag, body, mouth, wings, buoy, weight, top rope, bottom rope, float rope, weight rope, tie rope, anchor rope, and stakes. Even though the gombang fishing gear is operated passively or remains in the water, it is still very possible to catch several types and sizes of fish that are not the target of the catch because the gombang has a small mesh size. The research aims to determine the composition of catches from gombang fishing gear in Prapat Tunggal Village, Bengkalis Regency, Riau Province.

2. Methodology

2.1. Time, Place, and Materials

The research was conducted from 10 to 16 June 2022 in Prapat Tunggal Village, Bengkalis Regency, Riau Province. The method used in this research is a survey method, namely making direct observations with fishermen to follow the fishing process, from lowering fishing gear to calculating the number of catches when raising gombang fishing gear.

2.2. Method

The sampling gear was operated for seven days. Every day, the results are collected four times, namely twice at high tide and twice at low tide. The data collected is the number of catches in weight and tails and the type of fish

caught. The yields obtained are grouped into three, namely main catch, bycatch, and discard. The grouping of catches is then calculated based on percentages. The results obtained were then analyzed descriptively.

3. Result and Discussion

3.1. Gombang Fishing Equipment

The construction of gombang fishing equipment consists of a gombang net, namely the bag, stomach, waist, body, mouth, wings, buoy, weight, top rope, bottom rope, float rope, weight rope, tie rope, restraining rope, and stakes. The gombang fishing gear used in Prapat Tunggal Village has a total length of 22 m. The entire size of the body is 3.70 m, the wings are 12 m, the mouth is 1 m, the total length of the waist is 2.90 m, the length of the stomach is 1.55 m, and the length of the pouch is 0.85 m. The mesh size of the gombang wings is 14 cm, the mouth is 9.70 cm, and the mesh size of the pocket is 1.36 cm. Gombang nets are made from dark green polyethylene (PE). The wings, body, and pockets are knitted using English knots. The top ris rope and bottom ris rope are made of polypropylene (PP) with a diameter of 9 mm. The buoy rope and weight rope are made from the same material, polypropylene (PP), with a diameter of 4.8 mm.

The length of the rope used is 10 m and is adjusted based on the depth of the fishing area. Three buoys are used, 1 of which is tied to the mouth on the top rope, and two more are tied to the left and right of the wings. Each buoy has a distance of 5 m. The type of buoy used is a capsule buoy with a length of 0.6 m and a diameter of 140 mm. The weights used are made of cement and weigh 4-5 kg. Each weight is installed by tying one weight to the bottom ris rope and two pieces tied to the left and right center of the wing, which are tied parallel to the bottom of the buoy tie.

The gombang fleet used by fishermen in Prapat Tunggal Village is a wooden boat with a length of 7 m and a width of 1.5 m. The wooden ship is driven using an outboard engine. The type of machine used by fishermen is a robin machine. There is one fisherman who operates gombang fishing gear in one fleet.

The operation of gombang fishing gear consists of several stages, namely the preparation stage, going to the fishing area, setting, and hauling. The preparatory steps by fishermen are refueling in the form of gasoline, fishing supplies in the form of food and drinks needed at sea, and fishing equipment. The distance from the drying area (shoreline) to the fishing ground area is 300-400 m. Next, the setting process is carried out by tying the bag rope to the stake, after which the float is attached to the top and middle edge of the mouth of the gombang. The process of setting up the gombang fishing gear takes approximately 30 minutes.

After the gombang operates for 4 to 4.5 hours, the fishing gear is withdrawn (hauling). Towing or lifting the gombang fishing gear is done by releasing the bag rope tied to the stake. Next, the bag rope is pulled so that the bag can be lifted onto the boat, and the process of collecting the catch is carried out

3.2. Catch

The catch during the study amounted to 22 species (Table 1). The largest catch during the study was reborn shrimp (107.7 kg), followed by red shrimp (12.1 kg). Meanwhile, the lowest yield was anchovies (0.25 kg). The fish caught can be grouped into main catches, by-catches, and discarded catches. The complete catch results are listed in the following Table 1.

According to Nofrizal and Romie (2018), the main catch from gombang fishing gear is rebon shrimp. Apart from that, there are also other types of shrimp. The main net is red shrimp (Table 2). Bycatch obtained from gombang fishing gear is 17 species of fish (Table 3). Discards are discarded nets that are usually thrown into the sea, alive or dead. The discarded catch from gombang fishing gear consists of 3 species (Table 4).

If we look at the composition of the catch by weight (kg), it shows that the main net is 77.90%, the by-catch is 20.92%, and the discarded catch is 1.17%. Meanwhile, if we look at the composition of the trap in terms of the number of individuals (heads), it shows that the main catch is 99.71%, the by-catch is 0.26%, and the discarded net is 0.02%. The percentage results can be seen in Figures 1 and 2.

The operating principle of gombang fishing gear is to utilize the speed of the current (Pujiono, 2015). The current push causes the wave fishing gear to sink further to the bottom of the water so that the fish caught are generally demersal fish that are carried along

and follow the current. During the research, there were 22 species caught using fishing gear wavering. The types of fish caught during the research consisted of shrimp, cuttlefish, squid, crabs and fish.

Table 1. Composition of Catch

No.	Catch		Total Weight (kg)	Total Number (fish)
	Local name	Scientific name		
1.	Rebon shrimp	*Sergestes similis*	107.7	430,920
2.	Red Shrimp	*Parapenaeopsis sp*	12.1	1,120
3.	Striped Shrimp	*Panaeus monodon*	5.1	377
4.	White Shrimp	*Metapenaeus monoceros*	0.59	35
5.	Layur	*Trichiurus lepturus*	8.5	136
6.	Kitang	*Scatophagus argus*	0.45	5
7.	Biang	*Setipinna breviceps*	0.26	23
8.	Spiny	*Arius maculaticus*	0.90	95
9.	White Pomfret	*Pampus argenteus*	0.96	18
10.	Black Pomfret	*Parastromateus niger*	0.74	15
11.	Squid	*Loligo vulgaris*	0.53	7
12.	Striped Crab	*Matuta planipes*	1.25	82
13.	Cuttlefish	*Sepia officinalis*	1.94	67
14.	Yellow Pufferfish	*Lagocephalus lunaris*	0.20	15
15.	Dust	*Arius thalassinus*	0.35	5
16.	Lomek	*Harpodon nehereus*	1.41	13
17.	Gonjeng	*Anchovies*	0.59	42
18.	Mackerel	*Scomberomorus commerson*	0.92	15
19.	Chicken Feather	*Thryssa mystax*	7.4	104
20.	Puput Fish	*Ilisha megaloptera*	0.36	18
21.	Sole	*Cynoglossus lida*	1.27	62
22.	Anchovy	*Clupeodes lile*	0.25	116
Amount			153.77	433,290

Table 2. Main Catch Results from Gombang Fishing Gear

No.	Catch		Weight (kg)	Number (fish)
	Local Name	Scientific name		
1.	Rebon Shrimp	*Sergestes similis*	107.7	430,920
2.	Red Shrimp	*Parapenaeopsis* sp	12.1	1,120
Amount			119.8	432,040

Table 3. Bycatch Results

No.	Catch		Weight (kg)	Number (fish)
	Local Name	Scientific name		
1.	White Shrimp	*Metapenaeus monoceros*	0.59	35
2.	Striped Shrimp	*Panaeus monodon*	5.1	377
3.	Layur	*Trichiurus lepturus*	8.5	136
4.	Kitang	*Scatophagus argus*	0.45	5
5.	Biang	*Setipinna breviceps*	0.26	23
6.	Spiny	*Arius maculaticus*	0.90	95
7.	White Pomfret	*Pampus argenteus*	0.96	18
8.	Black Pomfret	*Parastromateus niger*	0.74	15
9.	Squid	*Loligo vulgaris*	0.53	7
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11.	Lomek	*Harpodon nehereus*	1.41	13
12.	Gonjeng	*Anchovies*	0.59	42
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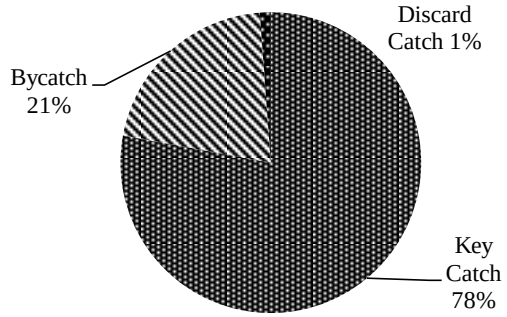
No.	Catch		Weight (kg)	Number (fish)
	Local Name	Scientific name		
14.	Chicken Feather	*Thryssa mystax*	7.4	104
15.	Puput	*Ilisha megaloptera*	0.36	18
16.	Sole	*Cynoglossus lida*	1.27	62
17.	Anchovy	*Clupeodes lile*	0.25	116
Amount			32.17	1,148

Table 4. Results of Discard

No.	Catch		Weight (kg)	Number (fish)
	Local Name	Scientific name		
1.	Dust	*Arius thalassinus*	0.35	5
2.	Striped Crab	*Matuta planipes*	1.25	82
3.	Yellow Pufferfish	*Lagocephalus lunaris*	0.20	15
Amount			1.80	102



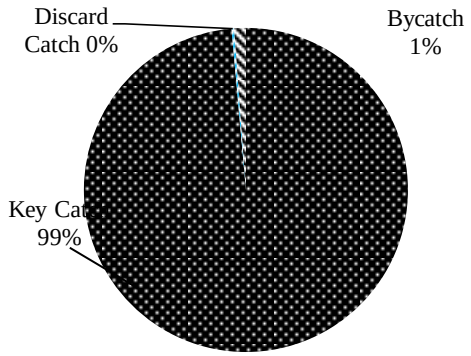


Figure 1. Percentage Diagram of Catch Composition based on Weight

Figure 2. Percentage Diagram of catch composition by type

The main catch was rebon shrimp (*Sergestes similis*), with a total weight of 107.7 kg, and red shrimp, with a total weight of 12.1 kg. Rebon shrimp and red shrimp are the main catch because these shrimp are the main target of Gombang fishermen. It can also be seen from previous research by Syofyan & Nofrizal (2005) that the main catch from gombang fishing gear is rebon shrimp.

Meanwhile, the bycatch from gombang fishing equipment consists of 17 types with a total weight of 32.17 kg. In a broad sense, bycatch includes all animals, not the primary target caught during fishing gear operations (Eayrs, 2005). Moreover, the catch from gombang fishing equipment consists of 3 types with a total weight of 1.80 kg. This type of fish is used as a discarded catch because, according to local fishermen, the fish has low economic value and cannot be consumed. Usually, the discarded catch will be returned to the waters. It can also be seen, according to Vestergaard (1996), which discarded catches usually occur because species have low economic value and are of a size that is not suitable for consumption.

4. Conclusion

The research showed the r that has been carried out show that the number of fish caught was 22 species with a total weight of 153.77 kg and a total of 430,920 individuals. The highest catch type during the research was reborn shrimp, the main catch weighing 107.7 kg and 430,920 fish. Meanwhile, the highest catch occurred on the fifth day, 35.48 kg

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