KOMPOSISI SUMBERDAYA IKAN HASIL TANGKAPAN PANCING ULUR DI PERAIRAN MALAUMKARTA PAPUA BARAT

RESOURCES COMPOSITION OF FISH RESULTS ABOUT TRACKING FISH IN WEST PAPUA MALAUMKARTA WATERS

Misbah Sururi* Ismail, Amir Suruwaky, Vicky R Katily, Lay Tjarles, Hendra Poltak

Politeknik Kelautan dan Perikanan, Sorong, Indonesia

***Email: misbahsururi.apsor@gmail.com**

ABSTRAK

Pancing ulur merupakan alat tangkap yang terdiri dari rangkaian tunggal tali dan mata kail untuk memancing ikan dan banyak digunakan nelayan di Perairan Malaumkarta. Tujuan penelitian ini mengidentifikasi jenis sumber daya ikan yang tertangkap di Perairan Malaumkarta dengan sistim *Drift Fishing* untuk kelestarian sumberdaya. Penelitian dilakukan sebanyak 6 (enam) kali di 3 lokasi pada bulan Juni sampai dengan September 2021. Metode yang dilakukan yaitu dengan survey pemancingan menggunakan Handline Metal Jig sistim hanyut (*drift*) pada kedalaman < 50 meter dan > 50 meter. Analisa dilakukan secara kuantitatif dan kualitatif. Hasil penelitian menunjukkan Ikan yang tertangkap terdapat 134 individu dan 20 jenis ikan dengan total berat 126,194 kg. Jenis ikan yang paling sering tertangkap adalah ikan *Letrinus sp*, sedangkan secara kuantitas adalah *Eumegistus illustris*. Hasil tangkapan di tiga lokasi pemancingan mendapatkan hasil bahwa pada kedalaman > 50 meter tertangkap 17 jenis, 62 individu, 104,625 kg dengan berat rata-rata 1,69 kg, sedangkan pada kedalaman < 50 meter tertangkap
11 spesies, 73 ekor, 22,039 kg dengan berat rata-rata ikan 301,91 gr. Hasil penelitian diperoleh pemanfaatkan sumberdaya ikan pada kedalaman > 50 meter menggunakan sistim *drift fishing*, dengan alat tangkap pancing ulur metal jig.

Kata Kunci: *Drift Fishing; Malaumkarta; Metal jig; Sumberdaya ikan,*

ABSTRACT

Hand line is a fishing gear consisting of a single string and hook for fishing and is widely used by fishermen in Malaumkarta waters. The purpose of this study is to identify the types of fish resources caught in the waters of Malaumkarta with the Drift Fishing system for resource conservation. The research was conducted 6 (six) times in 3 locations from June to September 2021. The method used was fishing survey using Handline Metal Jig drift system at depths < 50 meters and > 50 meters. The analysis was carried out quantitatively and qualitatively. The results showed that there were 134 individuals and 20 types of fish caught with a total weight of 126,194 kg. The type of fish that was most often caught was Letrinus sp, while in quantity it was Eumegistus illustris. The catch at three fishing locations showed that at a depth of > 50 meters, 17 species were caught, 62 individuals, 104.625 kg with an average weight of 1.69 kg, while at a depth of < 50 meters, 11 species were caught, 73 individuals, 22,039 kg with a weight of fish average 301.91

gr. The result of the research is that fish resources are utilized at a depth of > 50 meters using a drift fishing system, with a metal jig fishing line.

Keywords: *Drift Fishing; Fish resources; Malaumkarta; Metal jig*

INTRODUCTION

The waters of Malaumkarta, Sorong Regency, is one of the coastal areas whose ecosystems are very well preserved as the result of the application of the local wisdom. The utilization is split by two types of fishermen: main fishermen and side fishermen, whose main job is farming since the area is a fertile agricultural land. This area possesses a small island on the sea as a place for various animal ecosystems and for turtles to lay eggs. This area also has seagrass and coral reef ecosystems that are well-maintained so that various fish resources develop and grow well (Badarudin et al., 2021).

Sasi is used as the local wisdom efforts carried out by the surrounding community to maintain the marine ecosystem on several superior products such as lobster, sea cucumber and lola. In addition, the community only allows handline fishing gear in catching fish. Meanwhile, other fishing gear such as longlines, nets, and traps are prohibited in these waters (Sareo et al., 2021).

Hand line is a fishing gear that is quite simple, consisting of a reel, nylon rope, swivel, and fishing rods that are adjusted to the size of the catch target.
. Generally, people use handlines to catch bottom fish, such as grouper, *Letrinus sp*, snapper, and others (Senewe et al., 2019; Surahman & Ilhamdi, 2019). However, in addition to catching fish, the coastal communities also live from developing coastal tourism, which are by being a guide of the Um Island and fishing.

Interviews with the community resulted that most fishermen only fish in Malaumkarta waters between 15 to 50 meters deep. They sail by rowboats, ketinting boats, and outboard motor longboats. Unfortunately, they often lower the anchors so that the boats do not drift while the fishing is carried out in coral reef areas. On the other hand, the handlines used by fishermen are indeed environmentally friendly, but, the anchors that are often lowered at the fish spot can potentially harm coral reefs.

One of the handline fishing methods that can be used without damaging coral reefs is drifting line fishing (Sururi et al., 2021). Meanwhile, fishermen have never used drift fishing and have not fished in places deeper than 50 meters.

This study attempts to conduct a trial capture using drift fishing. The purpose of this study was to compare the composition of catches obtained from the 20-50 meters deep strata and > 50 meters deep. The fishing gear used is a fishing rod with a reel and a metal jig as bait. This catch is expected to be a recommendation for fishermen in maintaining resource sustainability as well as a promotion in the use of tourism-based fishing in Malaumkarta waters, namely metal jig fishing tourism.

MATERIALS AND METHODS

Location and Time of Research

The study was conducted in 6 (six) trips in 3 (three) locations around

the Waters of Um Island, Malaumkarta, Makbon District, Sorong Regency, West Papua from September 5 to 7, 2021. The tools used are handrail fishing rods consisting of a rod, reel, and hook with a metal jig bait with an assist, The Metal Jig size is 60 gr – 200 gram. The research location is presented in Fig. 1 as follows:

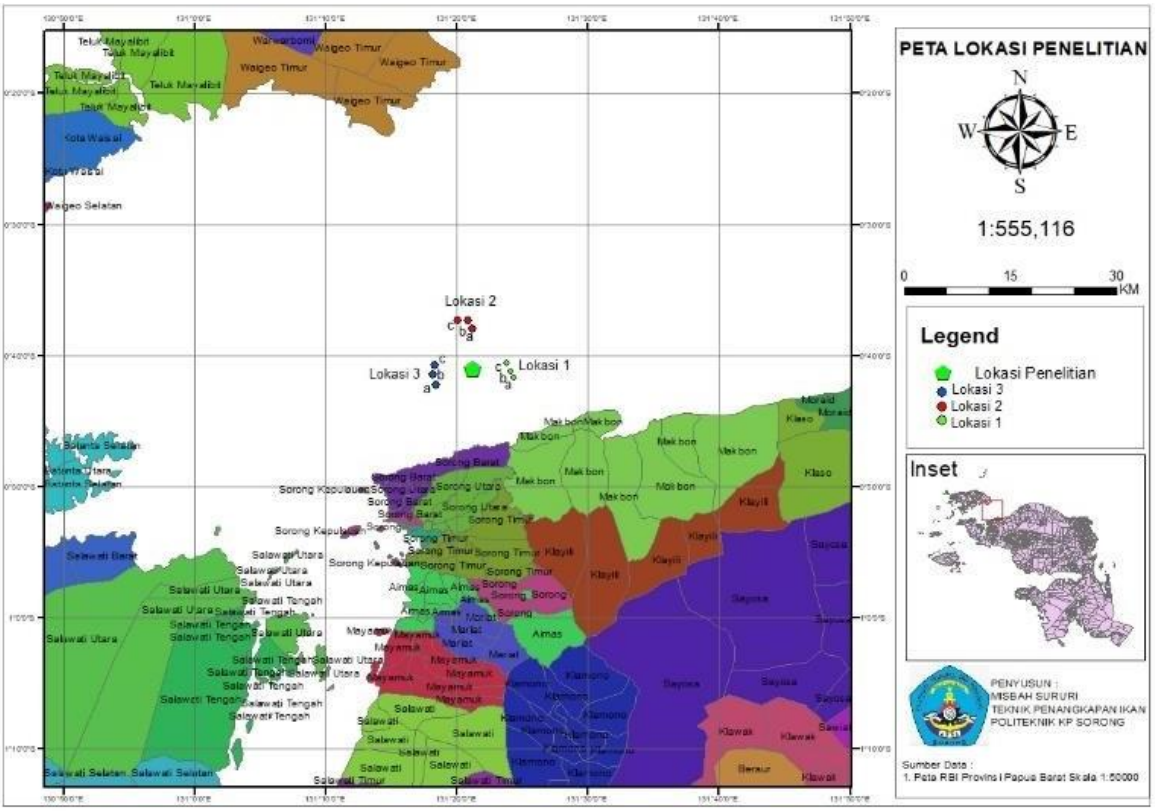

Figure 1. Research Site

Method
s

The catch composition data were obtained using a direct survey method to get primary data using direct observation by fishing directly at the research site and interviews with fishermen. The research location was set at 6 (six) points, consisting of 3 points at < 50 meters deep and 3 points at > 50 meters deep. The spots were chosen based on the oceanography of the waters and the depth contours found in the Boating Navionic Asia Africa application and supported by the information from the fishermen.

Data Analysis

The data obtained during the study were tabulated then analyzed quantitatively and qualitatively. A descriptive analysis is conducted
to provide information about the composition of fish resources caught on metal jigs with drift fishing systems at < 50 meters and > 50 meter-deep.

RESULTS AND DISCUSSION

Coral reefs found in Malaumkarta waters bring fertility at dawn and becomes the house for many fish. Coral is one of the marine biota that is sensitive to changes in sea water quality (Abrar *et al.,* 2014). The results of oceanographic observations of the waters around UM Island, Malaumkarta, Makbon District, West Papua are presented in Table 1.

Table 1. Osanographic parameters of the waters around the Um island, Malaumkarta.

Parameter	Location A			Location B			Location C		
	1	2	3	1	2	3	1	2	3
Temperature	25.4	25.3	25.4	25.1	25	25.2	25.3	25	24.9
DO	7.7	7.97	7.43	7.55	7.56	6.72	7.43	6.32	6.35
Depth	25	60	120	30	50	100	30	70	156
Salinity	26	27	30	29	29	32	29	31	33
pH	7.82	7.78	7.74	7.68	7.71	7.65	7.73	7.71	7.78
Brightness	22	20	17	24	26	19	21 m	20.5 m	18.5 m

The distribution of Sea Surface Temperature (SST) in Malaumkarta waters ranges from 24.9 – 25.4; salinity between 26 – 33 psu; pH between 7.65 – 7.82; DO ranging between 6.32 - 7.97; and brightness between 17-26 (m). This condition shows that the water quality is still in accordance with sea water quality standards, specifically for corals, according to the Decree of the Minister of the Environment of the Republic of Indonesia Number 51 of 2004.

Oceanographic conditions can be used as a productivity indicator of waters. Aspects related to the condition of the seawater in the oceanographic parameters include temperature, chlorophyll-a, pH, current, depth, and other factors that determine the presence of fish in a region (Arifin, 2014; Nurdin et al., 2014). The results of the study in three locations at the waters of Malaumkarta with three samples from each location show different temperature ranging from 24.9– 25.40C. The temperature conditions of the surface waters obtained tended to be relatively the same between sampling locations. Temperature plays a role in controlling the condition of aquatic ecosystems. An increase in temperature causes an increase in decomposition of organic matter by microbes (Effendi, 2003).

According to Garno (2016), dissolved oxygen in the waters of the West Coast of Sorong Regency ranges from 6.30 – 6.80 ppm, while the results of dissolved Oxygen (DO) measurements in this study ranged from 6.32 – 7.97 ppm. So, the value of DO obtained indicates that the waters of Malaumkarta are in excellent condition for the survival of marine biota and meet the standard of seawater quality with DO value > 5 ppm in accordance with the State Minister of Environment No. 51 year 2004

The results of salinity measurements in the Malaumkarta participants was similar to the sampling locations. Ranging from 26-33 ppt, the values obtained were heterogeneous with variations in values that were not too large. The low salinity in the waters of Malaumkarta is due to the flow of fresh water from around the Dore Bay. The pH measurement of Malaumkarta waters ranges from 7.65 – 7.82, the pH value of seawater is relatively more stable and normally between the range of 7.5 – 8.4 unless the waters are near the beach (Dojlido & Best, 1993).

The depth at which the sampling site was located ranged from 25 to 156 meters with brightness ranging from 17 to 26 m. The depth of waters is very influential in observing oceanographic dynamics, which is closely related to vertical temperature stratification, light penetration, density, and nutrient content which allows a condition that forms its own characteristics where demersal fish develop or associate at a certain depth distance (Hutabarat and Evans, 1984).

Composition of the Type of Fish Caught using Fishing Metaljig

Most fishing activities are carried out in the waters around Um Island because it has a productive coral reef ecosystem. The fishing capacity of the reef fleet used is relatively small (<5 GT), so that he fishing operations are a one-day trip or a day at sea, with some intervals/periods. According to (Mallawa & Sudirman, 2012; Vibriyanti, 2016), small-scale fishermen are characterized by the limited capital, boats and fishing gears used. In Table 2, the catch is presented by fishing stall in the waters around Um Island, Malaumkarta.

Table 2. The types of fish caught are stalling in the waters of Malaumkarta and its surroundings.

TYPES OF FISH	LATIN NAME	NO (PC)	WEIGHT (Gr)	DEPTH	
				20-50	50-100
Ketambak, lemcam	*Letrinus* sp	26	14,409	X	X
Raja Bau / Kakap Balong	*Diagramma* sp	7	7,140	X	X
Kurisi, Anggoli / flame snapper	*Ethelis* sp	8	10,735	x	x

Kakap Merahi/Malabar Snapper	*Lutjanus malabaricus*	7	2,980	x	x
Red Bas / kakap Merah Jarang gigi	*Lutjanus Bohar*	4	9,920		x
Bubara / Kwee Lilin , Gabu	*Caranx tille*	8	10,960	x	x
Grouper	*Epinephelus* sp	10	9,035	x	x
Mata bongsang / Deep sea bawal	*Eumegistus illustris*	7	32,580		x
Popondok	*Pomadasys argyreus*	5	1,640	x	x
Mala kuning / Brownstripe snapper	*Lutjanus Vitta*	16	2,160	x	
Gorara / badur kuning	*Lutjanus bengalensis*	8	995	x	
Alu-alu	*Sphyraena barracuda*	19	5,220	x	x
Kambing / Triggerfish	*Psedobalistes* sp	2	1,580	x	
Scomberomorus	*Scomberomorus* sp	1	3,365		x
Bagong, Kakap pasifik / Rubby Sniper	*Ethelis carbunculus*	1	2,935		x
Dogtooth Tuna	*Gymnosarda unicolor*	1	7,610		x
Tongkol	*Euthynnus affinis*	1	325		x
Cakalang Kambing / Selar Tengkek	*Megalasois cordyla*	1	1,160		x
Selar Momar / Malalugis	*Decapterus* sp	1	1,050		x
kapasan kerong	*Pomadasys* sp	1	395		x
Total		**134**	**126,194**	11	17

Referring to Table 2, it can be seen that the total catch of metal jig fishing in Malaumkarta waters during the study were 134 individuals and 20 types of fish with a total weight of 126.194 kg.

Figure 2.Types of fish caught by metal jig in the Malaumkarta waters

Among the 20 types of fish caught, 15 are the target fish and are economically vital, while 5 are the non-target fish such as *Pomadasys kaakan*, *Balistoides conspicillum*, *Sphyraena barracuda*, *Lutjanus bengalensis*

and *Lutjanus Vitta*. Among the fifteen important types of fish (*Letrinus sp, Diagramma sp, Etelis sp, Lutjanus malabaricus, Lutjanus Bohar, Caranx tille,, Epinephelus sp, Eumegistus illustri, Pomadasys argyreus, Decapterus* sp, *Psedobalistes* sp, *Scomberomorus* sp, *Etelis carbunculus, Gymnosarda unicolor*, *Megalasois cordyla*) that were caught, the *Letrinus sp* fish were the one being caught the most with the total of 26 fish, while *Eumegistus illustris* were the heaviest with a total weight of 32.580 kg. While the most caught non-target fish is Alu-alu (19 fish). The catch results are similar to the study conducted by M. Ikhsan et al, (2021) where the catch composition of the fishermen in Kampung Malaumkarta was generally dominated by the *Serranidae* family, which is 41.18%, *Lethrinidae* 33.87%, *Lutjanus* 28.63%, and the lowest *Hemiramphidae* was 23.41%.

Composition of Fish Catches at Location I.

Location I is at the east of Um Island, Malaumkarta Waters. This location is strategic as it is in front of the Dore Bay, Makbon District. According to the local fishermen, this location was the first fishing ground. Fishermen used to fish at this location at 15-30 meter-deep at the reef site. The catch survey began at the east of Um Island, which is in Dore Bay, from 20 to 100 meter-deep. The composition of the type of catch at Location I based on depth strata is presented in Tables 3 and 4.

Table 3. The catch results at Location 1 at 50 – 100 meter-deep.

No	Types of Fish	Total (Pc)	WEIGHT (Gr)
1	*Diagramma* sp	4	3,900
2	*Etelis* sp	1	1,950
3	*Pomadasys argyreus*	3	1,155
4	*Caranx tille*	2	6,225
5	*Epinephelus* sp	1	3,210
6	*Letrinus* sp	2	515
7	*Lutjanus malabaricus*	1	260
8	*Megalasois cordyla*	1	1,160
9	*Etelis carbunculu*	1	2,935
10	*Eumegistus illustris*	2	9,290
	Total	**18**	**30,600**

Table 4. Catch Results at Location I, 20 – 50 meter-deep.

	Types of Fish	Total (Pc)	WEIGHT (Gr)
1	*Letrinus* sp	5	1,389
2	*Epinephelus* sp	3	1115
3	*Pomadasys argyreus*	2	485
4	*Lutjanus bengalensis*	6	635
5	*Diagramma* sp	1	1,100
6	*Caranx tille*	1	435
7	*Sphyraena barracuda*	8	2,020
	Total	**26**	**7,179**

At more than 50 meter-deep, *Diagramma* sp which were usually at an average of 50-70 meter-deep, were caught the most. Meanwhile, only 1-3 fish of other types are caught as presented in Table 3. *Pomadasys argyreus,* Epinephelus *sp*, *Caranx tille*, *Letrinus sp*, *Lutjanus malabaricus* were caught at 50-100 meter-deep, while *Etelis* sp and *Megalasois cordyla* were caught at 100 meter-deep. There are only two types of fish caught at more than 100 meter-deep, which are *Eumegistus illustris* at 250 meters and *Etelis carbunculus* at 170 meters. The total catch at this location was 30.6 kg.

The survey results show that only 8 types of fish were caught at < 50 meter-deep, with a total of 26 fish weighing 7.18 kg. *Sphyraena barracuda*, *Sphyraena barracuda* and *Letrinus sp* dominated the fish being caught. Fish that are economical were also caught at this location.

important species such as *Epinephelus* sp, *Caranx tille* and *Diagramma* sp, but the results are minimal, i.e. only one to two fish.

Composition of Fish Catches at Location II.

The next survey was conducted at location II, located in the northern part of the Um island. At this location, there is a stretch of rock on the north side of Um island towards the sea. There are also waters deep enough that there are people who install rafts to collect fish, making it easier to catch fish.

Fishing survey in these waters were also carried out at 20-50 meter-deep and > 50 meter-deep. Moreover, at this location, fishing was carried out up to 200 meter-deep. The composition of the catch type based on the depth strata at location II is presented in Tables 5 and 6.

Table 5. Site II was 50-100 m deep.

No	Types of Fish	Total (Pc)	Weight (Gr)
1	*Lutjanus Bohar*	1	4,525
2	*Epinephelus* sp	1	2,300
3	*Caranx tille*	1	2,180
4	*Decapterus* sp	1	1,050
5	*Diagramma* sp	1	1,215
6	*Sphyraena barracuda*	1	385
7	*Etelis* sp	1	1,505
8	*Letrinus* sp	7	2,795
9	*Lutjanus malabaricus*	1	315
10	*Scomberomorus* sp	1	3,365
11	*Eumegistus illustris*	4	19,060
	Total	**20**	**38,695**

Table 6. Location II was 20-50 m deep.

No	Types of Fish	Total (Pc)	Weight (Gr)
1	*Letrinus sp*	3	1,315
2	*Balistoides conspicillum*	3	2,050
3	*Lutjanus Bohar*	2	910
4	*Caranx tille*	2	985
5	*Lutjanus Vitta*	4	630
6	*Sphyraena barracuda*	2	770
	Total	**16**	**6,660**

In Location II, which is at the north of Um Island, more catches were at > 50 meters, namely 20 individuals, 11 species, with a total weight of 38.695 kg. The most caught species were *Letrinus sp* (7 fish), but the largest fish weight was *Eumegistus illustris*, at 19.06 kg. There were 4 *Eumegistus illustris* fish in total, weighing 4 to 5 kg per fish.

At a depth of less than 50 meters, the total catch is only 6.66 kg with a total of 16 individuals consisting of 6 species. The types of ecomis fish caught are *Letrinus sp*, *Lutjanus Bohar*, and *Epinephelus sp*, while the rest are non-target fish, such as *Balistoides conspicillum*, *Lutjanus Vitta* and *Sphyraena barracuda*. The number of catches at < 50 meter-deep is less than the catch at location I at the same depth.

Composition of Types of Fish Catches at Location III

Location III is on the west side of Um Island. Fishermen convey that the fishing location on the west side of the island starts around the island along the long reef to the waters of Suatut and Asbakin. Site sampling was carried out only on the surroundings of Suatut Island up to Suatut Waters with a depth of 20-50 meters and 50 meter-deep waters.

> The composition of catch types by depth strata at Location III is presented in Tables 7 and 8.

Table 7. Location III was 50-100 m deep.

No	Types of Fish	Total (Pc)	Weight (Gr)
1	*Gymnosarda unicolor*	1	7,610
2	Letrinus sp	5	6,655
3	*Lutjanus Bohar*	3	5,395
4	*Lutjanus malabaricus*	2	1,275
5	*Etelis* sp	6	7,280
7	Diagramma sp	1	925
8	*Epinephelus* sp	1	615
9	*Caranx tille*	1	625
10	*Euthynnus affinis*	1	325
11	*Eumegistus illustris*	1	4,230
12	*Pomadasys* sp	1	395
	Total	**24**	**35,330**

Table 8. Location III, west of the Um island, Malaumkarta, 20-50 m deep.

No	Types of Fish	Total (Pc)	Weight (Gr)
1	Letrinus sp	4	1,740
2	*Lutjanus malabaricus*	1	220
3	*Lutjanus bengalensis*	2	360
4	*Epinephelus* sp	3	1,795
5	*Caranx tille*	1	510
6	*Lutjanus Vitta*	12	1,530
7	Sphyraena barracuda / Great barracuda	8	2,045
	Total	**31**	**8,200**

At > 50 meters deep, Location III is dominated by *Letrinus sp* and kurisi fish. The total catch of one trip was 35 kg, consisting of 13 species of 24. Fish that are caught are almost identical to Locations I and II, such as Diagramma sp, *Epinephelus* sp, *Lutjanus malabaricus*, Epinephelus sp, *Eumegistus*

illustris. There were other types of fish that were not caught at the previous location, namely *Gymnosarda unicolor* and *Euthynnus affinis* fish.

Letrinus sp also dominates at < 50 meters deep, after *Lutjanus Vitta*. Unfortunately, *Lutjanus Vitta* was not the target of the catch. The total catch for < 50 meter-deep was only 8.2 kg consisting of 8 species and 31 individuals. The total number of these catches is much smaller compared to locations at > 50 meter-deep. These catches are in accordance with the results of research by Sareo *et al* (2021) which show that the dominant catch of Malaumkarta fishermen is *Lethrinus sp*.

Figure 3. *Letrinus sp* dominates the catch at Location III

The high catch of fishermen from coral fish species groups is assumed because fishing ground is around the waters of Um Island, which is a habitat for coral fish. The uniformity of the type of catch caught is arguably come from the same size of fishing line. This can be seen from the size of the fishing line, bait, and fishing techniques that are more focused on catching coral. According to (Marasabessy et al., 2018) the catch of fishermen around coastal and archipelagic waters can come from various species, where it will be difficult to reduce the catch of a single species when several species can be caught together.

Comparison of catches by depth

According to (Symbolon et al., 2009; Symbolon, 2011), the optimization of a fishing operation is determined by the process of the fishing operation itself. Furthermore, Mukhtar (2010) one of the success factors of fishing operations is the determination of fishing areas to be precise. The limited fishing gear and boats used as well as skills in managing businesses are also still relatively minimal, causing fishing productivity to get stucked. According to Muchlisin et al., (2012) , fishermen still use knowledge based on experience in determining fishing areas, so catches tend not to be optimal. On the other hand, high operational costs also becomes one of the problems faced by them. Thus, a lot of information is needed regarding the conditions of potential capture areas in an effort to speed up the trip of capture operations and suppress expenditure.

Fishing activities in fishing in the Malaumkarta Waters are carried out in the morning at 06.00 WIT until the afternoon at 16.00 WIT. The capacity of the fishing boat is relatively small and without crews so that fishing is carried out on one day trip. Fishing can be done in one or several departures

within a day (Marasabessy et al., 2018). The fishing location is around the waters of Um Island, which is generally a coral fishing area and tends to be shallower. Based on information from local fishermen, on average, they fish at 15-30 meter-deep. In Table 9, the differences in characteristics are presented comprehensively to the depth of fish caught using metal jig.

Table 9. Differences in the characteristics of catches.

No	Comparison	20-50 meters	More than 50 meters
1	Number of Species	11 species (39.3%)	17 species (60.71%)
2	Number of Individuals	73 individuals	62 individuals
3	Total Weight caught	22.039 kg (17.39%)	104.625 kg (82.60%)
4	Average weight of fish caught	301.91 gr	1,686 gr / 1.69 kg
5	Number of target / economical Fish	29 individuals / 11.51 kg	56 individuals /101.64 kg
6	Number of non-target Fish	47 individuals/10,525 kg	6 individuals /2. 985 kg

The number of species caught at > 50 meter-deep were 17 species (60.71%) more than the number of species at < 50 meter-deep, which was only 11 species. Although, the number of individuals caught is greater at < 50 meter-deep. This can be interpreted that at a depth of less than 50 meters, there are relatively fewer types of fish with a relatively small size. The tabulation results in Table 4 show that the average weight of fish caught as a whole is 301.9 grams at a < 50 meter-deep, while at > 50 meter-deep, the average weight reaches 1,686 grams or 1.69 kg. This suggests that fishing opportunities at > 50 m deep is better to be developed because there are more fish resources of a larger size.

Fishermen as fishery activity actors have different income values depending on the catch (production) and the price of the catch commodity. The type of Kerapu fish (*Lethrinidae*) has a higher economic value, followed by Lutjanus Bohar (*Lutjanus*) and *Letrinus sp* (*Serranidae*) fish, while *Sphyraena barracuda* and other non-target fish are the results by-catch at relatively low selling prices. Based on interviews, the highest income of the fishermen is up to Rp. 400,000- and the lowest is Rp.200,000, - with catches ranging from 4 kg to 10 kg / trip. Meanwhile, the productivity of fishing using metaljig showed that the total catch amount at a depth of > 104.625 kg (82.60%), the average per trip was 34.87 kg. This number of catches is 4.75 times more than the catch at a depth of < 50 meters, which is 22.039 kg (17.39%) with an average per trip of 7.35 kg. This shows that fishing at > 50 meter-deep brings much more fish compared to the catch of fishermen in general. Meanwhile, at a depth of < 50 meters, the results are relatively same as the catch of fishermen. So, the waters of Malaumkarta with a depth of > 50 meters are a potential fishing ground for fishing. The recommended fishing gear is handline fishing rods with metal jig baits. This fishing location is excellent for fishing tourism potential for the people of Malaumkarta.

The sustainability of resources is a special characteristic of the waters of Um Island, so metal jig fishing at

> 50 meters deep is also highly recommended because drifting is often being done there as well, making no place for anchors, so it will not be exposed to coral reefs. Meanwhile, ordinary fishing fishers drop anchor 2 – 5 times in each fishing time, so as not to get carried away. Anchors dropped by fishermen can hit coral reefs, given that fishermen fish around coral reefs.Table 9 also shows that non-target fish caught at < 50 meters deep as many as 47 fish, or 61.8% of the target fish, which are 27 fish. Meanwhile, at > 50 meters deep, the target fish reached 56 fish or 90.32% compared to only 6 non-target fish. This value indicates that the opportunities and potential for the development of catching dish should be at > 50 meter-deep, while < 50 meters should not be used for fishing. This is intended to maintain the sustainable potential of coral reefs, and can be used for other tourist potential such as diving or snorkeling.

CONCLUSION

Fishing using metal jig fishing with drift fishing can result in 134 individuals and 20 types of fish being caught with a total weight of 126.194 kg. The most frequently caught type of fish is *Letrinus sp* fish, while quantitatively, it is *Eumegistus illustris*. The results obtained from 3 (three) fishing sites show that at > 50 meters deep, there were 17 types of fish caught, consisting od 62 individuals, 104.625 kg with an average weight of 1.69 kg, while at < 50 metres deep there were 11 species fish being caught, consisting of 73 individuals, 22.039 kg with an average weight of 301.91 gr per individual. So, it is recommended to utilize fish resources at a depth of > 50 meters using a drift fishing system, with handline fish with jig metals.

REFERENCES

Abrar, M., S. M. C. Herandarudewi, R. Siringoringo & K. Wibowo. (2014). Resiliensi dan Perlindungan Habitat Terumbu di Perairan Gugus Pulau Pari. *Kepulauan Seribu, Jakarta, Laporan Kegiatan Penelitian, UPT Loka Pengembangan Kompetensi SDM Oseanografi Pulau Pari, Lembaga Ilmu Pengetahuan Indonesia*.

Adhuri, D. S. (2002). *Selling the sea, fishing for power: A study of conflict over marine tenure in the Kei Islands, Eastern Indonesia*.

Arifin, Z. (2014). Arah dan Rencana Riset Oseanografi pada Samidera Hindia 2015-2020. *Pusat Penelitian LIPI-Oseanografi. Jakarta, 64*.

Badarudin, M. I., Marasabessy, I., & Sareo, F. P. B. (2021). Keadaan Sosial dan Ekonomi Nelayan Ikan Karang Kampung Malaumkarta Distrik Makbon Kabupaten Sorong Papua Barat. *Jurnal Riset Perikanan Dan Kelautan*, *3*(2), 370–384.

Corvianawatie, C., & Abrar, M. (2018). Kesesuaian kondisi oseanografi dalam mendukung ekosistem terumbu karang di Perairan Pulau Pari. *Jurnal Kelautan Nasional*, *13*(3), 155–161.

Dojlido, J., & Best, G. A. (1993). *Chemistry of water and water pollution*. E. Horwood.

Edmondri, E. (1999). *Studi Penangkapan Ikan Cakalang dan Madidihang di Perairan Sumatera Barat pada Musim Timur.*

Effendi, H. (2003). *Telaah kualitas air bagi pengelolaan sumberdaya dan lingkungan perairan*.

Garno, Y. (2016). Status Kualitas Perairan Pesisir Barat Kabupaten Sorong.

Jurnal Teknologi Lingkungan, *17*(1), 21–28.

Hutabarat, S., & Evans, S. M. (1984). *Pengantar Oseanografi*. *Penerbit Universitas Indonesia*. UI Press), Jakarta.

Mallawa, A., & Sudirman, S. (2012). Teknik penangkapan ikan. *Jakarta: Rineka Cipta*.

Marasabessy, I., Fahrudin, A., Imran, Z., & Agus, S. B. (2018). Pengelolaan Berkelanjutan Perikanan Demersal di Kawasan Pulau Nusa Manu dan Nusa Leun Maluku Tengah. *ALBACORE Jurnal Penelitian Perikanan Laut*, *2*(1), 13–27.

Muchlisin, Z. A., Fadli, N., & Siti-Azizah, M. N. (2012). Genetic variation and taxonomy of Rasbora group (Cyprinidae) from Lake Laut Tawar, Indonesia. *Journal of Ichthyology*, *52*(4), 284–290.

Mukhtar, M. (2010). Klasifikasi Alat Penangkapan Ikan. *Dinas Kelautan Dan Perikanan*.

Nurdin, E., Panggabean, A. S., & Restiangsih, Y. H. (2014). Analisa hubungan kondisi oseanografi dengan fluktuasi hasil tangkapan purseseine tuna di Laut Banda. *Prosiding Pertemuan Ilmiah Nasional Tahunan X ISOI 2013*, 223–232.

Sareo, F. P. B., Marasabessy, I., Badarudin, M. I., & Basri, L. (2021). Persepsi Masyarakat Nelayan Kecil Terhadap Sistem Sosial Ekologi Perikanan Karang di Perairan Pulau Um (Studi Masyarakat Kampung Malaumkarta Provinsi Papua Barat). *Jurnal Riset Perikanan Dan Kelautan*, *3*(1), 276–289.

Senewe, G. S., Kumajas, H. J., & Pamikiran, R. D. C. (2019). Pengaruh jenis umpa terhadap hasil tangkapan pancing dasar di Pantai Desa Poopoh. *Jurnal Ilmu Dan Teknologi Perikanan Tangkap*, *4*(1), 16–21.

Simbolon D, Irnawati R, Sitanggang LP, Ernaningsih D, Manopo VEN, Tadjuddah M, K., & Mohamad, A. (2009). Pembentukan daerah penangkapan ikan. *Bogor, IPB*, 145.

Simbolon, D. (2011). *Bioekologi dan dinamika daerah penangkapan ikan*. Dept. Penanfaatan Sumberdaya Perikanan IPB.

Surahman, A., & Ilhamdi, H. (2019). Karakteristik dan Hasil Tangkapan Pancing Ulur di Perairan Teluk Cendrawasih Samudera Pasifik. *Buletin Teknik Litkayasa Sumber Daya Dan Penangkapan*, *16*(2), 83–86.

Sururi, M., Ismail, I., Muhammad, S., & Poltak, H. (2021). Characteristics and Catch of Jig Metal Fishing Rods in the Waters Around Sorong West Papua. *Enrichment: Journal of Management*, *12*(1), 1000–1007.

Vibriyanti, D. (2016). Kondisi sosial ekonomi dan pemberdayaan nelayan tangkap kota Tegal, Jawa Tengah. *Jurnal Kependudukan Indonesia*, *9*(1), 45–58.