RED SNAPPER (*Lutjanus sanguineus*) CAPTURED BY FISH TRAPS AT DIFFERENT DEPTHS IN PELABUHANRATU WATERS

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An experimental/exploratory fishing was carried out to determine the distribution of red snapper (*Lutjanus sanguineus*) by comparing the catch among different depths. The experiment was carried out in Cisolok, Pelabuhanratu Bay where 14 fish traps were deployed at seven different depths (2 traps at one depth range). Analysis concluded that there were no differences in number of fish caught among the seven depth ranges, but a significant different in the total weight of cacth among the seven depth ranges. Further studies are needed after the improvement of the traps to be suitable for coastal exposed condition.

Introduction :

Red snapper (*Lutjanus sanguineus*) is an important exportable fish species (Gunarso, 1995). The economic value of this species is attractive to fishermen because the price is very high when the fish captured alive. While the fishermen at Cisolok and Pelabuhanratu, commonly deploy their traps at about around 15 meters depth, studies on distribution of the fish at different depths are still rare, including the information on the proper sites for deploying traps. An experimental fishing was carried out in Pelabuhanratu to determine the distribution of red snapper in this area.

Methods :

Experimental fishing was carried in Cisolok, Pelabuhanratu Bay from August until October 1995 and January 1996. Fourteen fish traps were deployed and distributed over seven depth ranges : 5-10 m, 10-15 m, 15-20 m, 20-25 m, 25-30 m, 30-35 mm and 35-40 m. Two traps were allocated at each depth range. Overall, eight fishing trips 5-7 days were carried out. Cacth data were analysed using Kruskal-Wallis test to determine the effect of depth on the cacth.

Result and Discussion :

This experimental fishing caught 118 reef associated fish or 57.56 % and their weight 89.19 kg or 53.83 % as 82 for red snapper (*Lutjanus sanguineus*) or 64.14 kg and 36 for grouper (*Ephinephelus* sp.) or 25.05 kg, 5 individuals of other fishes, 55 individuals of squids (*Loligo* sp.) or 53.92 kg, and 27 individuals for crabs or 10.80 kg (Table 1-2). A total of 82 individuals or 64.14 kg of red snapper were caught and their lengths ranged from 18 to 56 cm (Table 3). A large proportion of red snapper (33 individuals or 32.64 kg) were caught from fish traps deployed at 10-15 m depth. 8 individuals red snapper was obtained from 35-40 m depth, but a lot of the traps were lost. Statistical analysis did not show a significant effect of depths on the total number but on the total weight of red snapper caught by the traps was significant (Kruskal-Wallis, $p>0.05$).

Based on the total weight of catch, this study confirms that the depths where local fishermen often deployed their traps (about 15 msters depth) are relatively good. A technical manual produced by Center of Research and Development of Fisheries suggest that traps for fishing demersal or reef associated fishes are deployed at sea bottom deeper than 35 meters [1]. However, we have experienced technical difficulty in Pelabuhanratu, i.e. the traps deployed at such depth were lost due to strong current or waves of Indian Ocean. Considering this problem, at could not me concluded that the fish were not there. Therefore, improvement of the traps to suit the local conditions must be made as a requirement to identify the presence of red snapper at the depth more than 30 meters.

Reference :

1) CARD. 1991. Technical Manual on The Utilization and Management of Some Economic Demersal Species (red snapper, white pomfret, sea catfish and bonyfish). Center for Agricultural Research and Development, Department of Agriculture, Jakarta. (In Bahasa Indonesia).
2) Gunarso, W. 1995. Red Snapper, An Export Commodity of Indonesia. Department of Fisheries Resources Utilization, Bogor Agriculture University, Bogor. (in Bahasa Indonesia).

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Table 1. The number of catch composition

Catch	Depth (m)							Number of Fish	%
	5-10	>10-15	>15-20	>20-25	>25-30	>30-35	>35-40		
Red snapper	11	33	11	7	5	7	8	82	40.00
Grouper	6	24	0	1	2	1	2	36	17.56
Squids	11	25	5	4	3	6	1	55	26.83
Crabs	0	0	9	6	6	6	0	27	13.17
Buntal	0	0	1	0	0	0	0	1	0.49
Kuwe	0	0	0	0	1	0	0	1	0.49
Jenaha	0	0	0	0	0	0	3	3	1.46
Total	28	82	26	18	17	20	14	205	100.00
%	13.66	40.00	12.68	8.78	8.29	9.76	6.83	100.00	

Table 2. The weight (kg) of catch composition

Catch	Depth (m)							Weight of Fish	%
	5-10	>10-15	>15-20	>20-25	>25-30	>30-35	>35-40		
Red snapper	10.32	32.64	6.09	2.03	2.75	2.81	7.50	64.14	38.71
Grouper	2.99	14.81	0.00	1.70	2.20	0.80	2.55	25.05	15.12
Squids	10.62	17.80	6.00	6.00	3.60	9.20	0.70	53.92	32.54
Crabs	0.00	0.00	3.60	2.45	2.45	2.30	0.00	10.80	6.52
Buntal	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.30	0.18
Kuwe	0.00	0.00	0.00	0.00	1.10	0.00	0.00	1.10	0.66
Jenaha	0.00	0.00	0.00	0.00	0.00	0.00	10.50	10.50	6.34
Total	28	65.25	15.99	12.18	12.10	15.11	21.25	165.71	100.00
%	14.44	39.38	9.65	7.35	7.30	9.12	12.82	100.00	

Table 3. Number of Fish and Total Weight of Catch of Red Snapper (*Lutjanus sanguineus*) Experimental Fishing with Traps at Different Depths

No.	Depth (meters)	Number of fish	Total weight* (kg)	Fish size range (TL, cm)
1.	5-10	11	10.32	25-50
2.	>10-15	33	32.64	25-50
3.	>15-20	11	6.09	18-43
4.	>20-25	7	2.03	20-25
5.	>25-30	5	2.75	20-36
6.	>30-35	7	2.81	18-35
7.	>35-40[a]	8	7.50	19.56
Total		82	64.14	18-56

* : Kruskal-Wallis Test indicates that total weight of catch was significantly different among traps deployed at different depths ($\alpha = 0.10$)

a : not included in the analysis, because alot of the traps were lost.