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THE CATCH TREND OF THE COMMERCIAL TRAWL FISHERIES OFF RAMESWARAM*

Introduction

Fishery resources from the coastal waters off Rameswaram have been traditionally exploited by indigenous crafts and gears. Introduction of commercial trawling to tap the ground fishes and crustaceans along this coast has resulted in considerable expansion of the mechanised fisheries sector. The present account summarises the catch details of some of the commercially important fishes landed by the trawlers operating from Rameswaram (Verkottil) during the years 1980 and 1981.

Most of the trawlers are in the length of 30' and 32' with the horse power varying between 32.5 and 65 *(Mar. fish. Infor. Serv. T & E Ser. 11, 1979)*. Various fishing areas off Rameswaram covered by the trawlers are indicated in Fig.1.

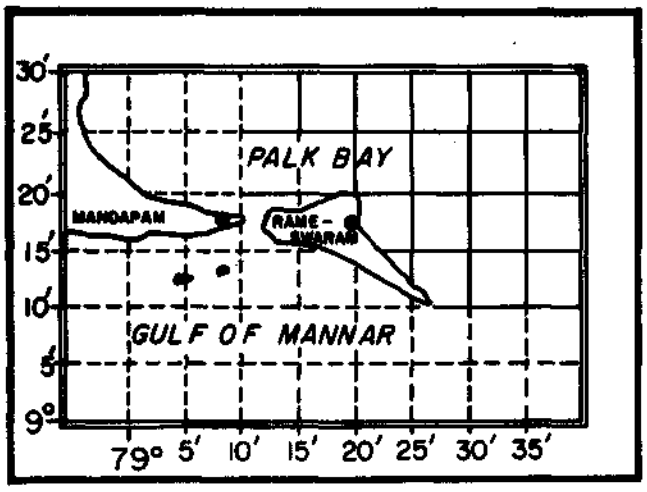

Fig. 1. Map indicating the various fishing areas off Rameswaram.

Monthly catch trend

Fig.2 represents the monthly catch trend and the estimated number of operations of units during the period. Maximum landings of 2,637 and 2,064 tonnes were recorded during June and July 1981 respectively; whereas in 1980 December and November landed more catch (1,837 and 1,632 tonnes respectively). As a whole, the year 1981 had recorded the maximum landings of 20,581 tonnes for an estimated 101449 number of operations of units showing an increase of about 43% and 38% in catch and in the number of operations of units respectively as compared to 1980. Similarly the catch per unit effort during 1981 also increased to 202.87 kg from 194.94 kg recorded in 1980.

Quarterwise catch composition

Table I shows the quarterwise catch trend and the percentage contribution of some of the important groups of fishes in the landings. The silverbellies represented by the genera *Leiognathus*, *Secutor* and *Gazza* formed the major group and contributed to about 52% and 50% of the total catch during 1980 and 1981 respectively; their catch increased from 7,474 tonnes in 1980 to 10,310 tonnes in 1981. Though maximum landings were noticed in the first quarter of both the years, good quantities were landed in the remaining quarters also. Elasmobranchs ranked second in the magnitude of the catch and formed about 16% and 17% of the catch during 1980 and 1981 respectively, the catch increasing from 2.370 tonnes in 1980 to 3,453 tonnes in 1981. While the third and fourth quarters of 1980 recorded higher landings, all the first three quarters of 1981 predominated in the landings of elasmobranchs.

Penaeid prawns mainly *Penaeus semisulcatus* and *Metapenaeus* spp. figured third in the landings; their share being about 10% of the total catch both in 1980 and 1981. The landings of prawns during 1980 showed an increasing trend from first quarter to fourth quarter. However in 1981 second and third quarters recorded higher landings. Sciaenids ranked next with 6% in 1980 and 10% in 1981. Their landings showed increasing trend from 103 tonnes in the first quarter to 371 tonnes in the fourth quarter. During 1981, all quarters registered more or less same catch trend.

Other groups in the landings viz., catfishes, red mullets, lizardfishes, flatfishes, crabs and cephalopods contributed to less than 10% of the total catch during the two years.

Table II gives monthwise landings of prawns and other groups with their percentage in the total monthly catches. The monthly percentage contribution of prawns to the total catch during 1980 ranged from 6.71 to 13.88 showing an increase in the total catch of prawns during 1981. In the case of other groups the percentage contribution during 1980 and 1981 ranged from 86.56 to 96.47 and 86.12 to 93.29 respectively.

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Table 1. *Quarterwise landings of trawlnets (in tonnes)at Rameswaram (Verkottil) and the percentage contribution of various groups (in parenthesis) during 1980 and 1981.*

Groups	1980					1981				
	I Q	II Q	III Q	IV Q	Total	I Q	II Q	III Q	IV Q	Total
1. Elasmobranchs	410 (13.03)	309 (10.41)	754 (20.43)	897 (19.61)	2370 (16.48)	888 (16.44)	1116 (19.39)	810 (16.79)	639 (14.00)	3453 (16.78)
2. Catfishes	30 (0.95)	39 (1.31)	77 (2.09)	33 (0.72)	179 (1.24)	18 (0.33)	27 (0.47)	2 (0.04)	32 (0.70)	79 (0.39)
3. Sciaenids	103 (3.27)	146 (4.92)	196 (5.31)	371 (8.11)	816 (5.68)	517 (9.52)	575 (9.99)	506 (10.49)	528 (11.54)	2126 (10.33)
4. Leiognathids	2046 (65.05)	1720 (57.95)	1680 (45.53)	2028 (44.34)	7474 (51.98)	3035 (55.86)	2631 (45.70)	2318 (48.05)	2326 (50.84)	10310 (50.08)
5. Red mullets	45 (1.43)	60 (2.02)	87 (2.35)	148 (3.24)	340 (2.36)	137 (2.52)	145 (2.51)	121 (2.30)	105 (2.30)	508 (2.47)
6. Lizard fishes	20 (0.64)	20 (0.67)	40 (1.08)	55 (1.20)	135 (0.94)	51 (0.94)	53 (0.92)	49 (1.02)	52 (1.14)	205 (1.00)
7. Flatfishes	35 (1.11)	28 (0.94)	43 (1.17)	30 (0.66)	136 (0.95)	30 (0.55)	44 (0.76)	47 (0.97)	48 (1.05)	169 (0.82)
8. Prawns	167 (5.31)	338 (11.39)	360 (9.76)	502 (10.98)	1367 (9.51)	382 (7.03)	730 (12.68)	570 (11.82)	419 (9.15)	2101 (10.20)
9. Crabs	40 (1.27)	76 (2.56)	146 (3.96)	139 (3.04)	401 (2.79)	105 (1.93)	203 (3.53)	172 (3.57)	160 (3.50)	640 (3.11)
10. Cephalopods	10 (0.30)	21 (0.71)	31 (0.84)	23 (0.60)	90 (0.63)	27 (0.50)	47 (0.82)	46 (0.95)	38 (0.83)	158 (0.77)
11. Others	240 (7.63)	211 (7.11)	276 (7.48)	343 (7.50)	1070 (7.48)	243 (4.47)	186 (3.23)	183 (3.79)	220 (4.82)	832 (4.04)
Total	3146	2968	3690	4574	14378	5433	5757	4824	4567	20581
Eatimated number of operations of units	16861	16374	22013	23510	73758	23316	26658	26398	25077	101449
Catch per unit effort (kg)					194.94					202.87

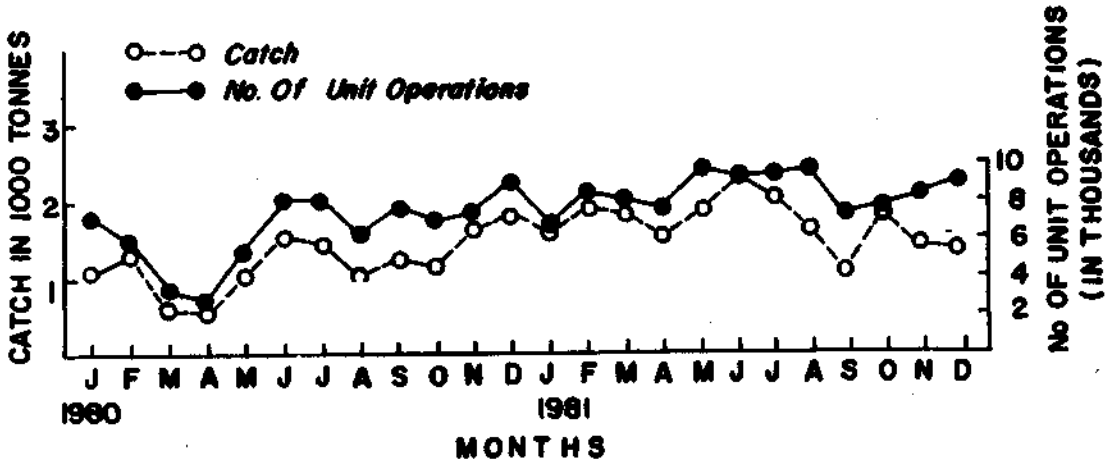

Fig. 2. Monthly catch trend and the number of unit operations during 1980-'81 at Rameswaram (Verkottil)

Table 2. *Monthwise landings of prawns and other groups (in tonnes) at Rameswaram (Verkottil) and their percentage contribution during 1980 and 1981.*

	Prawns		Other groups	
	Catch	Percentage	Catch	Percentage
1980				
January	90	8.23	1004	91.77
February	48	3.53	1312	96.47
March	29	4.19	663	95.81
April	31	6.31	460	93.69
May	105	10.78	869	89.22
June	202	13.44	1301	86.56
July	148	10.50	1261	89.50
August	87	8.67	916	91.33
September	125	9.78	1153	90.22
October	103	9.32	1002	90.68
November	163	10.00	1469	90.00
December	236	12.85	1601	87.15
Total	1367		13011	
1981				
January	121	7.31	1534	92.69
February	137	7.10	1793	92.90
March	124	6.71	1724	93.29
April	194	12.49	1359	87.51
May	255	13.88	1582	86.12
June	281	11.87	2086	88.13
July	235	11.39	1829	88.61
August	197	11.70	1487	88.30
September	138	12.83	938	87.17
October	133	7.19	1716	92.81
November	132	9.48	1259	90.52
December	154	11.55	1173	88.45
Total	2101		18480	

Remarks

The introduction of mechanised trawlers along the coast off Rameswaram had resulted in considerable expansion of traditional fisheries of silverbellies, while elasmobranchs, prawns and sciaenids form other important fisheries. The catch trend of the present study indicates the availability of silverbellies in large quantities throughout the year. As the operation of bottom trawl nets during the day time yields better catches of silverbellies, intensive day fishing will bring the required quantities of fishes as raw material to the fish meal plant located at Mandapam.

The study revealed that an increase of 38% in the number of unit operations in 1981 has resulted in an increase of 43% in the landings. The increase in the number of units in operation in 1981 is noticed in the first two quarters of the year and along with that substantial increase in catch also is recorded in these two quarters. The overall increase in catch per unit effort in 1981 is, however, marginal, rising from 194.9 kg to 202.9 kg. Since the increase in input of effort has resulted in a substantial increase in the catches along with increase in catch per unit effort, and the area of operations remaining more or less the same, it would appear that there is scope for further increased exploitation of resources available in this area, especially, silverbellies, elasmobranchs, prawns and sciaenids.