

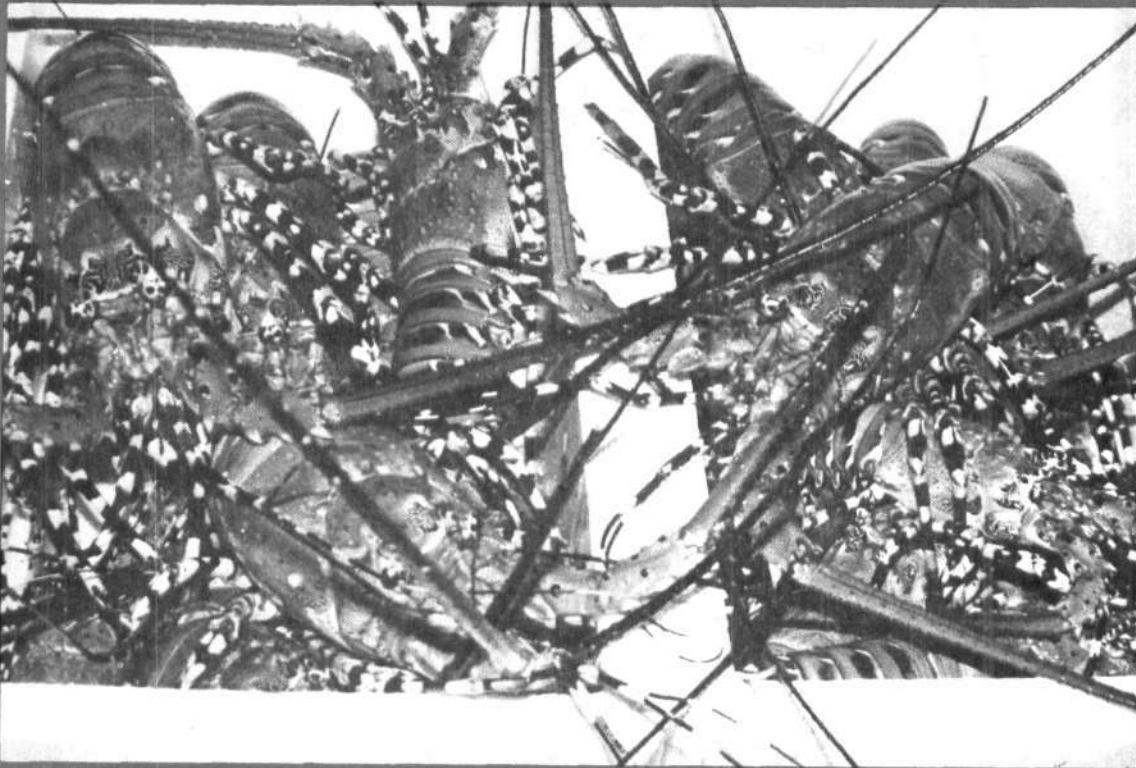


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IMPACT OF MOTORIZATION ON THE TRADITIONAL FISHERY AT TUTICORIN

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Introduction

An important change in the traditional fisheries at Tuticorin took place in 1986 when some, traditional fishermen started motorising their crafts. There were lots of foreboding among many fishermen about fitting their crafts with motor propellants. Ultimately, the advantage of motorization, in modern era, overwhelmed and every month many traditional fishermen fitted their crafts with machines for propulsion. With the passing of years the momentum increased

and by the end of 1992 all traditional plank built "Tuticorin type" fishing boats were fitted with motors. Generous loans were granted by commercial banks for the purchase of motors and those who could afford used their own resources.

The present study is an analysis on the impact of motorization on traditional fishermen and deals with the total fish catch of various gears using motorized crafts as compared with total catch by non-motorized crafts using similar gears and covers the period from 1986 to 1992.

Landings of important groups of fishes and important species by traditional fishermen at Tuticorin have been published earlier (*Mar. Fish. Infor. Serv., T&E Ser., 113*).

Initially, in 1986 a total of 90 boats went in for motorization. The number increased to 200 in 1987. In 1988 as many as 335 boats were fitted with motors. Motorized boats increased to 444 in 1989. Further increase was recorded in 1990 with 476 Tuticorin type boats fitted with motors. During 1991 the number of motorized boats stood at 472. By the end of 1992 all the traditional Tuticorin type fishing boats numbering 476 were fitted with motor propellants. Consequently, a gradual decrease in non-motorized crafts was noticed. During the period, many catamarans were also fitted with outboard engines. The details of motorization are given in Table 1.

TABLE 1. Trends in motorization of fishing crafts in Tuticorin

Year	Tuticorin type boat		Catamaran		Total
	Motor-ized	Non-motor-ized	Motor-ized	Non-motorized	
1986	90	439	00	13	542
1987	200	340	00	17	557
1988	335	215	00	27	577
1989	444	118	00	26	588
1990	476	91	25	21	613
1991	472	79	24	62	637
1992	476	58	12	76	622

Trend of fisheries

Annual total fishing effort, total fish landings and catch per effort for different fishing gears operated by traditional fishermen from 1986 to 1992 are given in Table 2 and 3. By motorized units total landings came to 880.3 tonne in 1986. Estimated total landings came to 2,378.0 t in 1987 and 2,564.3 t in 1988. Total fish catch by motorized units touched the peak in 1989 with 4,202.1 t. Thereafter a steady decline in catch was reported with 3,847.6 t in 1990, 2,506.2 t in 1991 and 1,320.3 t in 1992. Average total fish landings for the six years by motorized units came to 2,528.4 t.

The fishery was quite different for non-

motorized traditional units. Extremely good landings of 4,623.0 t was estimated during 1986. Fish catch steadily came down during the next six years with total landings of 3,426.9 t in 1987, 926.1 t in 1988, 630.5 t in 1989, 515.2 t in 1990, 397.5 t in 1991 and 202.1 t in 1992. The seven year average by non-motorized traditional fishing units came to 1,531.6 t.

Remarks

As more and more traditional fishing boats were motorized, the number of non-motorized boats engaged in fishing steadily decreased. Total fish catch by non-motorized fishing units also steadily dwindled and came down to 202.1 t in 1992 from a peak catch of 4,623.0 t in 1986. On the other hand, a steady increase in fish catch by motorized crafts was noticed from a beginning low of 880.3 t in 1986. Peak catch of 4,202.1 t of fish was obtained in 1989 by motorized crafts. Thereafter for the next three years downward fluctuation in catch by motorized units was noticed touching an estimated low catch of 1,320.3 t during 1992. It is worth while to investigate the reason as to why the catch came down to such low level inspite of increased number of motorized boats engaged in the fishery.

Total quantity of fish caught both by motorized and non-motorized units put together also showed fluctuating trend till 1989 and since then steadily decreased. Because of the distributing trend in catch by motorized units, the initial euphoria for motorization turned into confusion among fishermen. In the study of the impact of motorization of country craft in Kerala (*CMFRI Special Publication, No. 45*) also indicated such a disturbing trend during 1980-'87 period.

One reason for decrease in fish catch after motorization of traditional crafts is the intensive fishing carried out by motorized units in the inshore areas traditionally fished by non-motorized fishing units. It is also possible that rsufficient recruitment is not taking place in the fishing grounds to give an encouraging trend in the motorized fishery. As a there is no going back on motorization, the earnest hope, of fishermen is that the downward trend in catch will be reversed in the near future.

TABLE 2. Effort, catch and catch per effort for all artisanal gears at Tuticorin : 1986 - 1992; motorised units

Gear	Effort-E	1986	1987	1988	1989	1990	1991	1992	Annual average in tonne
	Catch-C in tonnes C/E in kg								
Chala valai	E	00	12703	20102	24803	29922	23120	20699	18764
	C	00	1185.9	1664.8	3017.6	2587.7	1718.2	821.8	1570.9
	C/E	00	93.4	82.8	121.7	86.5	74.3	39.7	71.2
Paru valai	E	859	141.0	4687	286	648	51	214	381
	C	67.2	16.6	76.9	29.3	100.9	1.9	13.7	43.8
	C/E	78.2	118.0	164.2	102.3	155.8	37.8	64.0	102.9
Podi valai	E	1627	1630	1800	3351	3288	2092	1602	2199
	C	88.3	161.0	155.0	459.4	310.2	152.3	97.4	208.5
	C/E	54.2	98.8	86.1	147.8	94.4	72.8	60.8	87.8
Hand line	E	2856	650	444	442	970	254	00	802
	C	191.3	64.4	12.9	39.6	71.7	12.9	00	56.1
	C/E	67.0	99.0	29.2	89.5	74.0	50.7	00	58.5
Long line	E	6718	5643	3738	2834	3063	2858	2873	3961
	C	509.0	634.2	306.9	197.5	420.1	483.6	253.7	400.7
	C/E	75.8	112.4	82.1	69.7	137.1	169.2	88.3	104.9
Troll line	E	517	902	339	1496	660	419	167	643
	C	24.5	42.3	20.1	76.7	58.6	26.1	7.4	36.5
	C/E	47.5	46.9	59.3	51.3	88.8	62.1	44.0	57.1
Sinki valai	E	00	689	1528	1375	620	517	429	737
	C	00	68.3	87.0	83.9	32.4	41.2	21.7	47.8
	C/E	00	99.1	57.0	61.0	52.3	79.6	50.6	57.1
Thirukkai valai	E	00	1108	1928	1940	1457	751	746	1133
	C	00	163.6	215.3	246.5	197.4	70.0	104.6	142.5
	C/E	00	147.6	111.7	127.0	135.5	93.2	140.3	107.9
Hand line (Catamaran)	E	00	00	00	00	1162	00	00	166
	C	00	00	00	00	25.3	00	00	3.6
	C/E	00	00	00	00	21.8	00	00	3.1
Disco net (Prawn net)	E	00	2102	1314	702	2203	00	00	1264
	C	00	41.7	25.4	15.6	34.6	00	00	16.8
	C/E	00	19.8	19.3	22.3	15.7	00	00	15.4
Other gears (Mural valai)	E	00	00	00	00	189	00	00	27
	C	00	00	00	00	8.7	00	00	1.2
	C/E	00	00	00	00	40.00	00	00	6.6
Annual total catch (tonne)		880.3	2378.0	2564.3	4202.1	3847.6	2506.2	1320.3	3538.4

TABLE 3. Effort, catch and catch per effort for all artisanal gears at Tuticorin : 1986 - 1992; non-motorised units

Gear	Effort-E Catch-C in tonnes C/E in kg	1986	1987	1988	1989	1990	1991	1992	Annual average in tonne
Chala valai	E	51115	35419	15132	5467	4066	3288	1855	16620
	C	3816.7	2908.7	685.1	287.0	229.1	149.9	63.0	1162.8
	C/E	74.7	82.1	45.3	52.5	56.3	45.6	34.0	55.8
Paru valai	E	510	24	00	00	52	00	00	84
	C	37.8	0.9	00	00	7.9	00	00	6.7
	C/E	74.1	40.0	00	00	151.0	00	00	37.9
Podi valai	E	614	00	00	00	00	00	00	88
	C	31.1	00	00	00	00	00	00	4.4
	C/E	50.6	00	00	00	00	00	00	7.2
Hand line	E	3754	3836	1015	1186	907	722	00	1631
	C	222.6	181.3	28.9	47.9	59.4	103.8	00	92.0
	C/E	59.3	47.0	28.5	40.4	64.5	143.8	00	54.8
Long line	E	1483	790	1236	509	238	78	00	619
	C	74.6	32.6	58.0	37.7	19.9	3.3	00	32.3
	C/E	50.3	41.2	46.9	74.4	83.6	41.7	00	48.3
Troll line	E	223	00	00	00	00	00	00	32
	C	6.5	00	00	00	00	00	00	0.9
	C/E	29.1	00	00	00	00	00	00	4.2
Stinki valai	E	1755	872	00	00	338	00	00	424
	C	96.1	72.5	00	00	6.3	00	00	25.0
	C/E	54.1	83.1	00	00	18.7	00	00	22.3
Thirukkai valai	E	2551	998	00	130	00	00	00	526
	C	288.2	185.0	00	5.6	00	00	00	68.4
	C/E	113.0	185.4	00	4.3	00	00	00	43.2
Hand line (Catamaran)	E	00	00	00	00	656	00	00	94
	C	00	00	00	00	7.4	00	00	1.1
	C/E	00	00	00	00	11.2	00	00	1.6
Shore seine	E	191	103	154	102	179	53	206	141
	C	49.4	16.5	29.4	104.5	126.7	35.4	82.3	63.5
	C/E	258.8	160.2	190.6	1024.3	707.5	667.0	399.7	486.9
Thallumadi	E	00	1045	2637	3814	2466	1608	1873	1920
	C	00	29.4	42.0	97.9	47.5	28.3	19.7	37.8
	C/E	00	28.1	15.9	25.7	19.3	17.6	10.5	16.7
Podi valai	E	00	00	1902	2171	292	1322	00	812
Hilsa net (Catamaran)	C	00	00	82.7	49.9	11.0	73.1	00	30.9
	C/E	00	00	43.5	23.0	37.9	55.3	00	22.8
Prawn net	E	00	00	00	00	00	270	3628	557
	C	00	00	00	00	00	2.9	25.2	4.0
	C/E	00	00	00	00	00	10.6	6.9	2.5
Nandu valai (Catamaran)	E	00	00	00	00	00	112	13.7	202
	C	00	00	00	00	00	0.8	11.9	1.8
	C/E	00	00	00	00	00	8.4	9.1	2.5
Annual total catch (tonne)		4623.9	3426.9	926.1	630.5	515.2	397.5	202.1	1531.6