

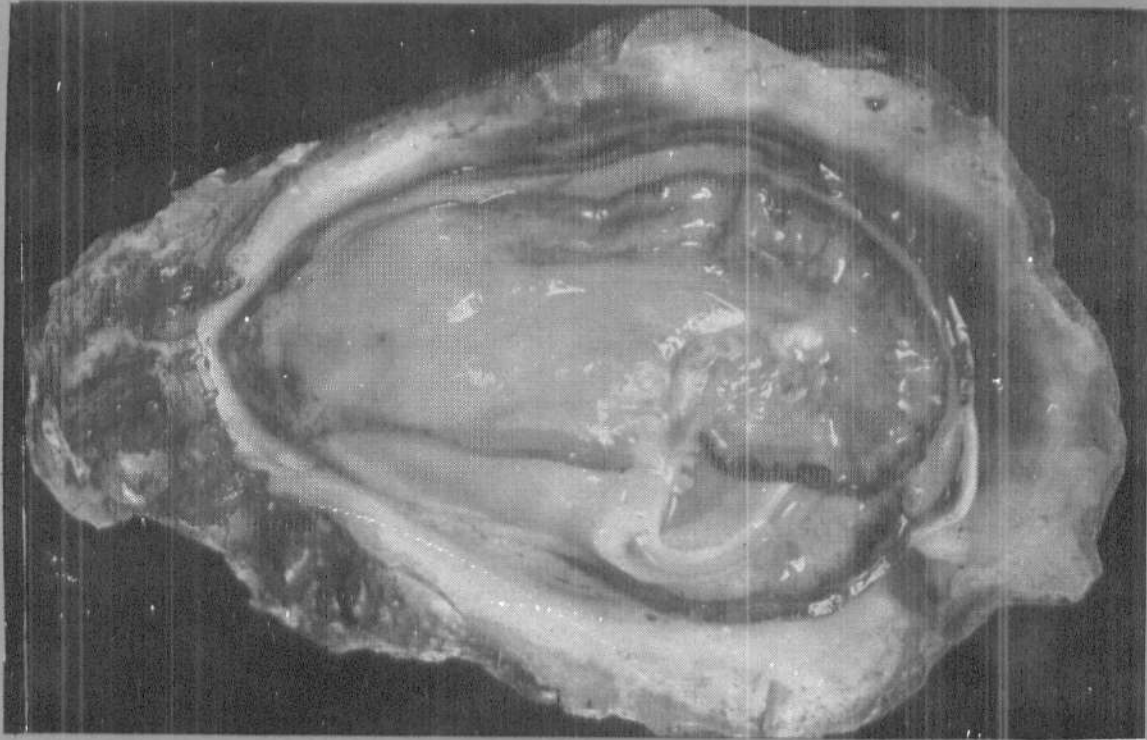


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भारतीय कृषि अनुसंधान परिषद्  
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## 846 ON THE COMPARATIVE CATCH TREND BY TRADITIONAL AND MOTORISED CRAFT AT ARANGAMKUPPAM NEAR MADRAS

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Machanisation of country craft in Tamil Nadu was initially attempted at Muttom in Kanyakumari district in 1970 under the Indo-Belgium Fisheries Project, but it was by 1979 a wide spread introduction could be achieved. Since then the motorisation of country crafts was at a slow pace in Tamil Nadu especially along the northern coastal districts. It was during the mid 1991 that the catamarans fitted with outboard engine made their first appearance on an experimental basis at Arangamkuppam and Pudupettai fish landing centres of Chengalpet and erstwhile South Arcot districts respectively (*Mar. Fish. Infor. Serv., T & E Ser., No. 116, 1992*) and

by 1992, the process of mechanisation gained momentum.

The present account is a preliminary study of the comparative catch trend between the traditional and motorised country crafts, landed at Arangamkuppam near Madras during pre-motorisation 1990-'91 and motorisation (1991-'92) period. The important gear operated from this centre were mostly gill nets comprising the trammel net, *Manivalai* (mesh size 20-25 mm and 135 mm for inner and outer layers respectively) mono filament gill net *Pannuvalai* (mesh size 35-55 mm) and the sardine gill nets *Kavalaivalai* (mesh

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size 20 - 25 mm) and *Thattakavalai valai* (mesh size 30-35 mm) besides the encircling bag net *Edavalai*.

The catch trend of different types of gear and effort expended by them in terms of number of unit operations during the pre-motorisation and motorisation periods are indicated in Fig. 1 and 2. The study revealed that motorised craft

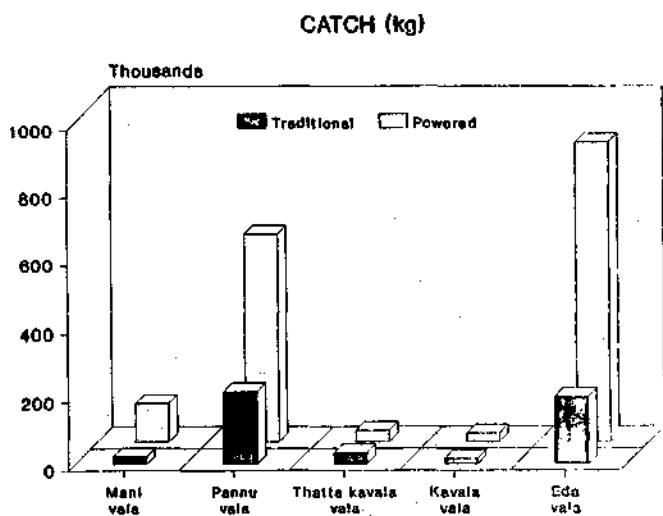


Fig. 1. Quantity of fishes landed by different gear operated by traditional and powered crafts during 1990-'91 and 1991-'92 respectively.

brought higher returns than the traditional ones of the pre-motorisation period. Thus units such as *Manivalai*, *Edavalai*, *Pannuvalai*, and *Kavalai valai* operated by powered crafts indicated a remarkable increase in catches by 420, 350, 187 and 50 % respectively, whereas *Thattakavalai valai* registered only a marginal increase of 1.3 %.

Increase in effort in terms of number of unit operations by motorised craft was evident in the case of *Edavalai*, *Manivalai*, *Pannuvalai* and *Kavalaivalai* and it was by 658, 236, 135 and 108 % respectively. The study revealed that with the increase in the number of unit operations substantial increase in the landings by different gear could be noted. However, the increase in catch and effort exhibited by the powered craft was not reflected in the catch per unit estimates of

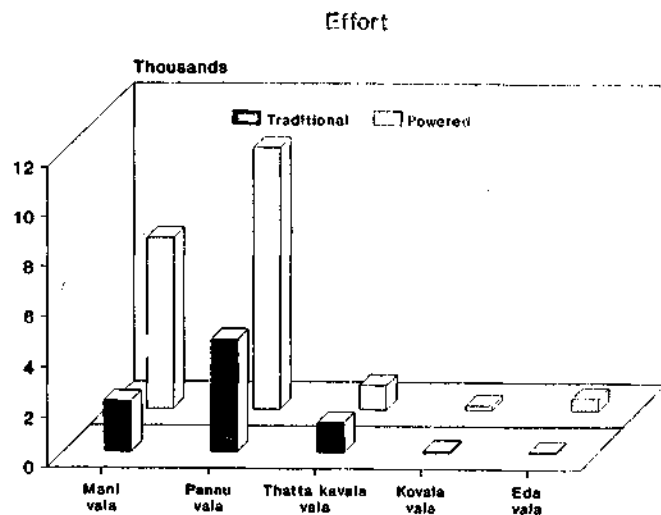


Fig. 2. Fishing effort in number of unit operations expended by different gear in traditional and powered sectors during 1990-'91 and 1991-'92 respectively.

various gear as compared to the non-motorised country crafts (Table 1). Though slight increase in CPUE could be noted in the case of *Manivalai* and *Pannuvalai* operated by powered crafts, *Kavalaivalai* and *Edavalai* operated by traditional craft indicated a definite increase of CPUE while no change was evident in *Thattakavalai valai*.

TABLE 1. Average catch per unit effort (in kg) of different gear operated by traditional and powered craft at Arangamkuppam during 1990-'91 and 1991-'92 respectively

Type of units	Traditional craft	Powered craft
<i>Mani valai</i>	13.5	20.0
<i>Pannuvalai</i>	54.6	63.4
<i>Thattakavalai valai</i>	36.3	36.6
<i>Kavala valai</i>	47.0	22.0
<i>Edavalai</i>	1,405.0	835.7

The species composition of the fish catches of both artisanal and motorised units comprised mainly of pelagic species (Table 2). The study revealed that there was not much difference in the species composition of fish landed by both types of craft due to the fact that the gear operated by them fished in the same ground. However, it was interesting to observe higher catch of oil sardine by artisanal *Edavalai* units while higher returns of mackerels came from motorised crafts.

## Remarks

The catch trend of motorised country craft, operating various gear suggested that the increase in catch by this sector over the traditional ones was by about 246 % indicating higher returns from *Pannuvalai*, *Manivalai* and *Edavalai*. It appears that the *Thattakavalai* was not preferred by the motorised craft due to lesser catches.

It is observed that *Pannuvalai* and *Manivalai*

were operated by the same motorised craft depending upon the availability of fishes and this diversified fishing may be one of the reasons for high catches, but substantial increase in the catch per unit for different gear was not evident as compared to the non-mechanised fishing units.

The author is thankful to Mr. P.K. Mahadevan Pillai, CMFRI, Cochin for rendering help in the preparation of this report.

TABLE 2. Percentage contribution of different groups of fishes caught in various gear operated by non-motorised and motorised catamaran crafts at Arangankuppam during 1990-'91 and 1991-'92 respectively

Groups	Gill Nets									
	<i>Mani Valai</i>		<i>Pannu Valai</i>		<i>Kavalai</i>		<i>Thattakavalai</i>		Encircling bag net ( <i>Edavalai</i> )	
	NM	M	NM	M	NM	M	NM	M	NM	M
Wolf herring	-	-	4.7	14.5	-	9.0	-	-	-	-
Oil sardine	-	-	-	-	-	-	-	2.8	95.0	17.4
Other sardines	-	-	-	-	95.1	88.5	5.0	-	3.0	-
<i>Thryssa</i>	7.7	9.0	3.8	1.7	4.9	1.3	22.5	17.7	-	-
Other clupeoids	-	-	2.0	1.0	-	-	3.4	-	-	-
Thread fins	1.3	-	6.4	3.4	-	-	-	-	-	-
Croakers	44.9	49.0	6.5	2.7	-	-	6.6	10.9	-	-
Ribbon fishes	-	-	1.6	4.9	-	-	1.0	25.1	-	-
Carangids	2.3	5.0	21.0	8.6	-	-	28.2	9.9	-	-
Silver bellies	1.0	6.2	1.2	2.1	-	-	4.0	1.4	-	-
Mackerels	-	-	41.7	53.5	-	-	-	-	1.0	80.6
Seer fishes	-	-	8.7	5.3	-	-	-	-	-	-
Flat fishes	13.6	6.3	-	-	-	-	-	-	-	-
Prawns	10.7	10.2	-	-	-	-	-	-	-	-
Crabs	11.8	7.4	-	-	-	-	-	-	-	-
'Others'	6.7	0.9	2.4	2.3	-	1.2	29.3	32.2	1.0	2.0