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SOCIO-ECONOMIC STATUS OF MARINE FISHERMEN ALONG MADRAS COAST*

Introduction

All fishery developmental programmes are formulated with the objective of creating a base for increasing production and raising the economic status of people involved in this sector. However, the successful implementation of such programmes depends on the socio-economic condition of the target group. For planning and management of fisheries, greater attention has to be given to the social and economic aspects. Lack of such information has been one of the most serious impediments to effective policy making and planning, especially in the case of small-scale fisheries. In this context the Central Marine Fisheries Research Institute has taken up a project to conduct socio-economic surveys of small-scale fisheries in selected areas. The present paper gives the results of such a study conducted in two fishing villages, Thiruvottiyoorkuppam where non-mechanised fishing is carried out and Pudumanikuppam where fishing is done using mechanised crafts along the Madras coast during 1984-'85.

The definitions of terminologies used in the collection and interpretation of data are given below:

1. *Fisherman household*: Any household wherein atleast one member of the family is engaged either in active fishing or fishery related activities.
2. *Type of houses*:
 - a) *Hut*: A dwelling with thatched roof and having either a mud wall or an enclosure made of *thattis*.
 - b) *Kutch house*: A dwelling with a thatched roof and brick wall.
 - c) *Pucca house*: A dwelling with tiled roof and brick wall.
 - d) *Concrete house*: A dwelling having concrete roof.
3. *Literates*: All persons who can read and write.
4. *Educational status*:
 - a) *Primary*: Those who passed 5th standard.
 - b) *Secondary*: Those who passed 10th standard.
 - c) *Higher secondary*: Those who passed 12th standard.
5. *Family (household)*: Members sharing meals from one kitchen.
6. *Children*: All males and females below 12 years of age.
7. *Major occupation*: Occupation which brings more than 50% of the household income.
8. *Active fishermen*: Fishermen who actively engage in fishing as main occupation.
9. *Wage earners*: Fishermen who engage in fishing in other's boats for wages.
10. *Fishery related activities*: Activities like fish trading, processing/curing, transporting, loading/unloading, net splicing/repairing, boat building/repairing and other activities related to fishery.
11. *Other activities*: All non-fishery occupations.

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Results and discussion

All the 137 fishermen households in Pattinaverkuppam segment of Thiruvottiyoorkuppam and 601 households in Pudumanikuppam were covered in the socio-economic survey. About 95% of the households belong to Pattinaver community, others being Harijans, Telugu Naidus and Christian Meenava communities. A look on the housing pattern reveals that 90% of the fishermen households of Thiruvottiyoorkuppam and 66% of Pudumanikuppam are dwelling in huts (Table 1). The fishermen population of Pudumanikuppam comes to 3,223 and of Pattinavarkuppam to 747. The average size of fishermen families along with population composition, literacy and educational status in both the villages are given in Table 2. There is no striking difference in the average size of fishermen households in both the villages as it is 5.4 in Pudumanikuppam and 5.5 at Thiruvottiyoorkuppam. About 67% of the fishermen at Pudumanikuppam and 40% in Thiruvottiyoorkuppam are illiterates. Among the literates at Pudumanikuppam 38% each have primary and secondary education and 24% higher secondary education, and at Thiruvottiyoorkuppam 48% have primary education, 45% secondary and 7% higher secondary education.

The ratio between earning members and dependents is approximately 1:3 in Pudumanikuppam and 1:2 in Thiruvottiyoorkuppam. Out of a total population of 3,970 in the two villages, 1,430 persons (36%) are employed (Table 3). It is observed that out of those employed 59% in Pudumanikuppam and 56% in Thiruvottiyoorkuppam have active fishing as their occupation. Among those employed in fishery related activities, fish traders form the maximum (25% in Pudumanikuppam and 17% in Thiruvottiyoorkuppam) in both the villages.

Table 1. Village-wise distribution of different types of houses

Type of house	Pudumani-kuppam	Thiruvottiyoorkuppam
Huts	398	124
Kutch house	114	3
Pucca	56	—
Concrete	33	10
Total	601	137

Table 2. *The distribution of population, households, size of family and literacy*

Item	Pudumani-kuppam	Thiruvottiyoorkuppam
1. No. of house holds	601	137
2. Population details		
Adults		
Male	1,016	256
Female	1,059	249
Children		
Male	650	117
Female	498	125
Total	3,223	747
3. Average size of family	5.4	5.5
4. Literacy rate	33%	60%
5. Educational status		
Primary	403 (38%)	215 (48%)
Secondary	405 (38%)	202 (45%)
Higher secondary & above	251 (24%)	34 (7%)

Table 3. *Distribution of fishermen based on occupation*

Occupation	Pudumani-kuppam		Thiruvottiyoorkuppam	
	No. of fishermen	Per cent	No. of fishermen	Per cent
1. Active fishing	652	59	177	56
2. Fish trade	282	25	55	17
3. Net splicing/repairing	14	1	16	5
4. Drying/curing of fish	14	1	30	9
5. Other fishery related activities	88	8	2	2
6. Other activities	62	6	38	12
Total	1,112	100	318	100

Table 4. *Family-wise distribution of means of production and capital investment (in brackets percentages)*

Ownership of craft/gears	No. of families		Investment on fishing equipments (Rs.)	No. of families	
	Pudumani-kuppam	Thiruvottiyoorkuppam		Pudumani-kuppam	Thiruvottiyoorkuppam
Gear alone	4 (4)	—	< 2,500	21 (23)	13 (17)
Catamaran alone	16 (17)	—	2,501- 5,000	27 (29)	23 (31)
Catamaran with one type of gear	41 (45)	44 (59)	5,001- 7,500	15 (17)	18 (24)
Catamaran with two types of gears	20 (22)	14 (19)	7,501-10,000	13 (14)	14 (19)
Catamaran with 3 or more types of gears	4 (4)	13 (17)	> 10,000	16 (17)	7 (9)
Non-mech. plank-built boats	—	4 (5)			
Mechanised boats	7 (8)	—			

Table 5. *Classification of fishermen families based on major occupation and annual income*

Income group (Rs.)	Pudumanikuppam		Thiruvottiyoorkuppam	
	Fishery activities	Non-fishery activities	Fishery activities	Non-fishery activities
< 2,000	18	—	11	—
2,000-4,000	124	30	58	10
4,000-6,000	84	27	29	8
6,000-8,000	111	10	2	8
8,000-10,000	51	9	—	3
10,000-12,000	24	7	—	2
12,000-14,000	41	10	—	6
> 14,000	27	28	—	—
Total	480	121	100	37

About 6% in Pudumanikuppam and 12% in Thiruvottiyoorkuppam are employed in other sectors like services, business etc.

The fishermen families of Thiruvottiyoorkuppam wholly depend on indigenous fishing whereas those of Pudumanikuppam engage in traditional as well as mechanised fishing. About 55% of the households at Thiruvottiyoorkuppam and 16% at Pudumanikuppam have ownership of crafts and gears. Among the fishermen families having ownership of means of production,

21% at Pudumanikuppam have ownership of either gears alone or only catamarans (Table 4). About 67% of the owners in Pudumanikuppam and 78% in Thiruvottiyoorkuppam possess one or two types of nets which are not sufficient for efficient operation throughout the year. Only 4% of the catamaran owners in Pudumanikuppam and 17% at Thiruvottiyoorkuppam possess three or more type of gears. At Pudumanikuppam 8% of them have ownership of mechanised boats and at Thiruvottiyoorkuppam 5% have non-mechanised plank-built boats.

The initial investment on catamaran logs ranges from Rs. 1,000 to 5,000 per unit and non-mechanised plank-built boat ranges from Rs. 5,000 to 7,000, most of them being second hands. With regard to capital investment on fishing equipments, 23% of the owners at Pudumanikuppam and 17% at Thiruvottiyoorkuppam have invested less than Rs. 2,500 (Table 4). The capital investment on fishing equipments has been in the range of Rs. 2,501 to 5,000 for 29% and 31%, Rs. 5,001-7,500 for 17% and 24%, Rs. 7,501-10,000 for 14% and 19% and above Rs. 10,000 for 17% and 9% at Pudumanikuppam and Thiruvottiyoorkuppam respectively. The non-mechanised plank-built boats are operating gillnets (locally called as *Periya valai* costing about Rs. 5,000) throughout the year. The gears commonly used by catamarans are *Thattukavali valai*, *Gonda valai*, *Kavalai valai*, *Mathi valai*, *Thoore valai* and *Ral vala* for different seasons. The average initial investment on these gears ranges from Rs. 750 for *Mathi valai* to Rs. 2,500 for *Thattukavali valai*. The actual fishing days for catamaran units ranged from 177 to 276 during 1984-'85.

Table 6. *Annual expenditure pattern in Rupees of different categories (1984-'85)*

Item	Pudumanikuppam			Thiruvottiyoorkuppam		
	Catamaran owners	Wage earners	Allied group	Catamaran owners	Wage earners	Allied group
Food	4,475.00	3,160.00	3,280.00	4,144.60	2,635.00	2,900.00
Cloth and foot wear	527.00	620.00	432.00	981.60	566.00	444.00
Light and fuel	197.00	172.00	156.00	182.40	120.00	126.00
Education	92.00	51.00	60.00	125.00	73.60	102.00
Tobacco and bidis	586.00	310.00	516.00	113.00	153.60	82.00
Medical	75.00	130.00	48.00	17.00	120.00	62.00
Conveyance and entertainment	1,524.00	837.00	1,032.00	552.00	281.00	466.00
Others	411.00	260.00	352.00	226.00	132.80	142.00
Annual total	7,617.00	5,540.00	5,886.00	6,341.60	4,082.00	4,324.00
Per day expenditure	20.87	15.18	16.10	17.37	11.18	11.85

Table 7. Occupation-wise fishermen families and the extent of credit with source

Village	Families availed loan (%)	Loan per indebted family (Rs.)	Percent contribution of loan				Others
Type of occupation			Fish traders	Money lenders & boat owners	Co-op. society	Banks	
Thiruvottiyoorkuppam							
Craft owners	24	600	7	—	—	—	93
Wage earners	76	769	13	84	—	3	—
Fishery allied group	40	200	38	62	—	—	—
Pudumanikuppam							
Craft owners	30	1,000	—	—	42	16	42
Wage earners	55	850	15	68	—	—	17
Fishery allied group	40	250	40	—	20	—	40

Analysis of income levels of the fishermen families has brought out some interesting results. The income-wise distribution of fishermen families in both the villages is given in Table 5. It is seen that the families in the income group of Rs. 2,000-4,000 per year are more in both the places. This group is mostly constituted by the wage earners. They are under-employed as the catamaran owners do not engage them during the lean seasons. Similarly it is seen that the families in which atleast one member is engaged in non-fishery activities are economically well off and there is no family in this category with an annual income of less than Rs. 2,000 in both the places. Further it is seen that among the fishermen households at Thiruvottiyoorkuppam who are engaged in fishing and allied activities, no family earns an income of above Rs. 8,000 per annum. This is mainly due to the fact that not a single fisherman household at Thiruvottiyoorkuppam owns a mechanised boat. The average annual income of a fisherman household in Pudumanikuppam worked out at Rs. 7,600 as against Rs. 4,500 at Thiruvottiyoorkuppam. The average annual income of a fisherman household, depending entirely on fishing and fishery related activities, is found to be Rs. 7,100 in Pudumanikuppam and Rs. 3,500 in Thiruvottiyoorkuppam while fishermen families in which atleast one member is engaged in other activities is found to be Rs. 9,500 in the former and Rs. 7,000 in latter village.

The household expenditure pattern of fishermen families representing catamaran owners, wage earners and those engaged in allied activities in Thiruvottiyoorkuppam and Pudumanikuppam is given in Table 6. About 56 to 57% of the household expenditure in Pudumanikuppam and 64 to 67% in Thiruvottiyoorkuppam

is for food items. The annual household expenditure was Rs. 7,617 and Rs. 6,342 for families of catamaran owners, Rs. 5,540 and Rs. 4,082 for wage earners and Rs. 5,886 and Rs. 4,324 for families engaged in allied activities in Pudumanikuppam and Thiruvottiyoorkuppam respectively. The expenses for conveyance and entertainment range from 15 to 18% of household expenditure at Pudumanikuppam and 7 to 11% at Thiruvottiyoorkuppam. It may be noted that the expenditure incurred for the purpose of education and medical care is the least in the household expenditures.

The average household expenditure per day worked out at Rs. 21 for catamaran owners, Rs. 15 for wage earners and Rs. 16 for families engaged in fishery related activities at Pudumanikuppam. The average daily household expenditure at Thiruvottiyoorkuppam was found to be Rs. 17 for catamaran owners, Rs. 11 for wage earners and Rs. 12 for those engaged in allied activities.

Credit facilities

The availability of credit is a major indication of the tempo of economic activities of any area. The extent of credit availability is comparatively very low to the traditional fishermen. The percentage of families in debt in this area ranges from 24 for craft owners to 76 for wage earners. The information on the extent of indebtedness and contribution of different agencies in the supply of credit is given in Table 7.

Among catamaran owners 24% at Thiruvottiyoorkuppam and 30% at Pudumanikuppam are in debt, the average outstanding debt per indebted family being

Rs. 600 at the former place and Rs. 1,000 at the latter. The magnitude of credit provided by institutional agencies is nil at Thiruvottiyoorkuppam and about 58% at Pudumanikuppam. About 75% of the wage earners at Thiruvottiyoorkuppam and 55% at Pudumanikuppam have availed loans, the average outstanding loan per indebted family being Rs. 769 and Rs. 850 respectively. Almost the entire loan amount advanced to wage earners is contributed by the non-institutional agencies. About 40% of fishermen in both the places engaged in fishery allied activities are in debt. The average outstanding debt per indebted family of this group has been Rs. 200 at Thiruvottiyoorkuppam and Rs. 250 at Pudumanikuppam.

The role of institutional agencies in providing loan to the traditional fishermen of Thiruvottiyoorkuppam and Pudumanikuppam was very meagre. The co-operative societies and the commercial banks can play a better role under specialized schemes in providing loans to the fishermen for the purchase of crafts and gears. The linkage of production with marketing through co-operatives will be immensely helpful to avoid the default of repayment and to eliminate middlemen from fish trading.

Landing and disposal of catch

Both Thiruvottiyoorkuppam and Pudumanikuppam landing centres are primary fish markets. At Thiruvottiyoorkuppam the number of fish traders is comparatively very less and in general fishermen get lesser price. Hence during the time of higher catches, the catamarans operating from here used to land catches at Pudumanikuppam. The role of women in the subsidiary activities of marine fishing is considerable in Madras region. About 70% of the persons participating in marketing activities at these landing centres comprised women. Among the 30 auctioneers at Pudumanikuppam, 25 are women. Similarly among 35 petty traders at the landing centre, 30 are women. There are about 50 women involved in sorting of fish and peeling of prawns. Daily, on an average, 10 cycle rickshaws are engaged in the transportation of fish waste from Pudumanikuppam for drying.

The mode of disposal of fish at the landing centre is auctioning. Wholesalers, retailers and bulk consumers participate in the auctioning. There is a set of auctioneers at the landing centre. Among them there are two groups; one being those who simply charge 2 to 5% of the gross value of the disposed product as their commission. The other group of auctioneers advance loan to the craft owners under a contract by which auctioning can be done only by them. This group of auction-

eers not only take 2 to 5% of the gross value of the fish as their commission for auctioning but also 8 to 15% of the catch as the interest for the money advanced. There are both male and female auctioneers and it is their duty to collect the money and deliver it to the fishermen. Two types of auctioning prevail in this area. In one case, after the catch is sorted out into different groups, a bulk of each group is auctioned starting from a low value and in the other, mostly for prawns, the price per kg will be fixed by auction and the same will be disposed off after weighing, to the highest bidder.

Fish being a perishable commodity, the auctioning of it provides maximum competition among the buyers and enables quick disposal. But at times it also leads to problems especially during bumper catches. The buyers more frequently, especially at small landing centres, join together and quote very low prices depriving the fishermen from getting the benefit of the spurt in the market. Here the public agencies can play a better role by entering the market to purchase the excess supply over demand at a minimum support price.

Usually 2 to 4 fishermen go in a catamaran for fishing. The number of persons going for fishing depends on the size of the craft and the type and number of gears used for fishing operations. Normally the sharing system is followed in the distribution of revenue. The revenue is divided equally among the crew members keeping aside a single share for the craft and gear. The share of the craft and gear differs depending on the type of gear used. Whenever the gears operated are comparatively costly and the risk involved is also more, the net proceeds are divided into three shares, one for the craft and gear and the rest being equally divided among the crew. However, a fixed ratio for sharing is not strictly followed on all the days of fishing. Whenever there is very less returns, the operational cost is entirely borne by the craft owner and the gross returns is equally divided among the crew.

Conclusions and recommendations

The average annual income of a fisherman household works out at Rs. 7,600 at Pudumanikuppam and Rs. 4,500 at Thiruvottiyoorkuppam and the per capita income at Rs. 1,417 in the former and Rs. 837 in the latter. Since Pudumanikuppam is a major landing centre, fishermen are not only engaged in active fishing but also involved in diversified fishery related activities. Among the active fishermen many are involved in mechanised fishing as wage earners. Further both mechanised and traditional fishermen at Pudumanikuppam realise better income due to comparatively higher prices

for their catch. Diversified fishery activities resulted from mechanisation and better infrastructure facilities are the factors responsible for better income at Pudumanikuppam as compared to Thiruvottiyoorkuppam.

The study indicates that 84% of the fishermen households at Pudumanikuppam and 46% at Thiruvottiyoorkuppam have no means of production. Even among the fishermen who have ownership of fishing equipments, about 90% at Pudumanikuppam and 80% at Thiruvottiyoorkuppam possess catamaran. Most of these catamaran owners have only one or two types of nets which is not sufficient for efficient operation throughout the year.

The daily average household expenditure worked out at Rs. 21 for catamaran owners, Rs. 15 for wage earner and 16 for families engaged in fishery related activities at Pudumanikuppam. It was found to be Rs. 17 for catamaran owner, Rs. 11 for wage earners and Rs. 12 for those engaged in fishery related activities at Thiruvottiyoorkuppam. The expenses incurred on health and education purposes are found to be very low in both the villages. Credit availability in these two villages is also not sufficient and 47% of the households at Pudumanikuppam and 42% at Thiruvottiyoorkuppam are in debt. The average outstanding debt per indebted household ranges from Rs. 200 to Rs. 1,000 for different categories. The role of co-operative societies and commercial banks in supplying credit is found to be negligible.

Based on the study, a few suggestions are made for the overall development of traditional fishery in this area. It has been observed that price of catamaran logs has been fast escalating in recent years and

the catamaran fishermen who are only at subsistence level of operation find it difficult to replace the old logs with new ones. Hence it is suggested that logs can be supplied to catamaran operators at subsidised rates by the Forest Department of State Government. At present, for long and short term loans, not only for the investment in fishing equipments but also for household expenditure to tide over the lean season, the fishermen have to depend on private money lenders by which they remain perpetually in debt. Formation of village level co-operatives of fishermen is essential not only to provide credit to acquire means of production but also to do fish marketing and to supply fishing equipments at reasonable price.

Pudumanikuppam is the biggest fish landing centre along Madras coast. The fisheries harbour available here has not been utilized for landing of fishing boats. Hence steps have to be initiated for the effective utilization of harbour by fishermen. But this centre does not have proper infrastructure facilities such as ice plants, freezing plants *etc.* Fishermen can get reasonable price for their produce only if adequate infrastructure facilities are made available at the landing centre.

Sea erosion is a major problem in Thiruvottiyoorkuppam, which has to be prevented on an urgent basis. The conflicts between mechanised and non-mechanised sectors can be avoided by restricting the area of operation of mechanised boats. Since the employment pressure on traditional fishery sector is on the increase, most of the fishermen are under-employed. Hence it is imperative to create alternate employment opportunities in the coastal areas to absorb the excess manpower in the fishery sector.

