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Socio-economic status of fishermen operating FRP boats in Nagapattinam District, Tamil Nadu: a special focus on poverty and income inequality

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ABSTRACT

Socio-economic status is a major indicator of livelihood and the two crucial factors determining livelihood are poverty and income inequality. The present study assessed the livelihood status of fishermen operating fibre re-inforced plastic (FRP) boats (motorised) of 9-10 m L_{OA} . Socio-economic status, including poverty and income inequality of fishermen, comprising both owners (FRP_O) and labourers (FRP_L) of FRP boats were estimated. The average daily *per capita* income earned by FRP_O and FRP_L were ₹1256 and ₹105 respectively. It was low for FRP_L during low income level and was almost same as the poverty line described by World Bank (\$1.25 per day). The Gini-coefficient revealed high level of income equality among the fishermen. The quintile income distribution of 20% of the richest and poorest indicate no inequality among the fishermen operating FRP boat.

Keywords: Expenditure, FRP boat, Income inequality, Poverty, Socio-economic status

Fishing is a highly unorganised and unregulated activity which provides employment and livelihood to millions of fisherfolk either directly or indirectly. Small scale fishing communities are the poorest and most disadvantaged population in the world (Bene *et al.*, 2000). Fishermen earn comparatively less income than others in low skill jobs (Scott, 1954). Poverty is one of the major threats to the fishermen communities and is still an unsolved social issue in many of the developing countries, particularly in Asia and Africa. Kurien (2005) stated that at the global level about 5.8 million small scale fishers earn less than US\$1 per day and continue to be in a state of poverty. The present study was conducted in Nagapattinam District of Tamil Nadu, for assessing the socio-economic status of fishermen operating motorised fibre glass reinforced plastic (FRP) boats with special emphasis on poverty and income inequality.

Nagapattinam is one of the coastal districts in Tamil Nadu having 23,541 active fishermen of which 2,002 use motorised FRP boats (CMFRI, 2005). After the tsunami that struck the coast in December 2004, the conversion of wooden catamarans into FRP crafts and supply of FRP crafts as part of rehabilitation measures paved a new future for FRP crafts in this area (Jeeva *et al.*, 2011). The present study was based at two coastal villages namely, Akkaraipettai and Kechankuppam in Nagapattinam District. Motorised FRP boats with 9 - 10 m L_{OA} using outboard engine were selected for the study. Data collected separately from 120 fishermen

comprised 60 FRP boat owners (FRP_O) and 60 FRP boat labourers (FRP_L) using random sampling method. The data included important socio-economic variables *viz.*, age, education, family size, number of earning persons in a family, monthly income, housing type, social association and expenditure pattern.

Percentage analysis was used to assess the socio-economic characteristics, income and expenditure. Poverty among the fishermen operating FRP boats was assessed using single economic criterion *i.e.*, *per capita* income (PCI). As adopted by World Bank, for international comparisons, \$1.25 per day PCI was selected as poverty line in the present study (World Bank, 2005). Poverty calculation for both the minimum and maximum income levels of fishermen were done following the World Bank method of estimation.

Even though, poverty is considered as a multi-dimensional phenomenon, lack of income is considered as a standard measure of estimating poverty (Makoka and Kaplan, 2005). An attempt was made towards assessing the income inequality using Gini coefficient with reference to Lorenz curve (Khattak and Hussain, 2008) and 20% poorest and richest quintile income among the fishermen (Coudouel, 2002).

Majority of the fishermen were above 35 years of age. Among FRP_O, majority (38.33%) had completed middle school level of education while among FRP_L, majority (43%) had only primary level of education. Higher

education was low (less than 5%) due to maximum middle school level drop outs mostly due to economic compulsion to support their family at young age (Table 1). Illiteracy was high among FRP_L (31%).

Nuclear family is the predominant family type, with maximum four members. Social development programmes of Government of Tamil Nadu have greatly influenced the structural change from joint to nuclear families (Narayanakumar and Krishnan, 2013). The average fishing experience was 19 and 23 years in FRP_O and FRP_L respectively. Housing is an important socio-economic indicator with high proportion of tiled houses for FRP_O (48.33%) and FRP_L (76.34%). About 45% under FRP_O category resided in concrete houses.

Table 1. Socio-economic characteristics of fishermen operating FRP boat

Particulars	FRP _O (n = 60)	FRP _L (n = 60)
Age	36 yr	38 yr
<i>Education (%)</i>		
i. Illiterate	25.00	31.00
ii. Primary level	31.67	43.00
iii. Middle level	38.33	22.00
iv. High school level	5.00	4.00
<i>Type of family (%)</i>		
i. Nuclear	65.00	56.00
ii. Joint	35.00	44.00
Family size	3	4
Experience in fishing	19 yr	23 yr
<i>Housing type (%)</i>		
i. Thatched	6.67	12.53
ii. Tiled	48.33	76.34
iii. Concrete	45.00	11.13
Monthly income (₹)	31406	2617
Membership of SHGs (%)	36	16
Women involvement (%)	49	46

Table 2. Income details of fishermen operating FRP boat

Particulars	FRP _O		FRP _L		Total	
	Min	Max	Min	Max	FRP _O	FRP _L
PCI per day (₹)	975	1538	81	128	1256	105
PCI per day (\$)	17.95	28.30	1.50	2.36	23.13	1.93
Monthly PCI (₹)	24375	38438	2031	3203	31406	2617
Annual PCI (₹)	124800	196800	10400	16401	160800	13400

Table 3. Quintile income distribution of the fishermen operating FRP boat

Category	Quintiles					Poorest/ Richest Ratio
	Poorest	Second	Middle	Fourth	Richest	
FRP _O	305378 (18%)	318858 (19%)	329415 (20%)	340136 (21%)	358387.30 (22%)	0.85
FRP _L	28346 (19%)	29511 (19%)	30395 (20%)	31645.25 (21%)	31928 (21%)	0.89

The average daily income of FRP_L was ₹105 which was relatively less than FRP_O (₹1,256) and was less when compared to the minimum wages of various other employments *viz.*, coir manufacturing and food processing industry in Tamil Nadu (GOI, 2011). The average monthly income of FRP_O was ₹31,406 and the same for the FRP_L was ₹2,617 (Table 2). The annual income ranged between ₹1,24,800 and ₹1,96,800 for FRP_O and between ₹10,400 and ₹16,400 for FRP_L.

The expenditure of FRP_O and FRP_L showed priority in the order of spending towards: food, education, fishing, health, entertainment and other heads. Maximum spending was on food and the proportion of income spent on food was more among FRP_L (57%) compared to the FRP_O (44%) as stated by Engel's law of expenditure while describing the expenditure pattern of various income groups (Syrovatka, 2003). Both groups spend considerable proportion on education (16 and 18% respectively). Expenditure on fishing accounted for 16% in case of FRP_O.

Poverty analysis indicated that the PCI of FRP_L was near to poverty line while considering the average daily PCI at minimum income levels. They were also at high risk as the difference between the daily PCI and World Bank poverty line was between \$0.25 to \$1 (Table 2). It was observed that the major reason for poverty among fishermen was lack of knowledge to mobilise earnings and lack of saving and investment habit (Abila *et al.*, 2006). The quintile income distribution of 20% of the richest and poorest indicate no inequality among the fishermen operating FRP boat (Table 3).

The study revealed that the fishermen operating FRP boat in two selected villages in Nagapattinam District were poor with a low socio-economic condition. This study highlights the vulnerability of FRP fishermen labourers to poverty. Even though, fishing is an open access activity

with high competitiveness; there was no peculiar pattern of unequal income distribution among the fishermen. The awareness and knowledge level of fishermen towards the adoption of innovative fisheries technologies and exposure to alternative livelihood opportunities other than fishing must be enhanced in order to improve the socio-economic condition of the fishermen and to considerably enhance their livelihood status.

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