An Economic Appraisal of Marine Fishing Workers in Thoothukudi District, Tamil Nadu, India

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Abstract

In this an article authors should focus about the economical analysis and financial inclusion and promotions of micro-finance of marine workers in Thoothukudi district, Tamil Nadu, India. Fisheries sector occupies a very important place in the socio-economic development of the country. This sector is thus an important sourced of livelihood for a large section of economically backward population of the country, particularly in coastal areas. The state of Tamilnadu has a coastal length of 1076 k.m. which constitutes about 15 per cent of India's coastal line. Fishing workers, particularly in the fishing communities are the most disadvantaged group. They have a very low status in the society. There are about three lakhs fishermen in Tamil Nadu now, of which only about 37,000 are productively employed in fishing related activities. The present research aims at studying the economic appraisal of marine fishing workers in Thoothukudi district. The analysis reveals that the per capita income of the fishing workers households could be improved by increasing the number of earners in the family (t=2.166), level of employment (t=0.312) and value of productive assets (t=1.418). The per capita income of the fishing workers' households could be improved by increasing the number of earners in the family, the level of employment and the value of productive assets. The Government policies and programmes should be oriented towards Human Resource Development which in turn includes education, health care, nutrition of fishermen households, and educational and economic empowerment of women. The Government should provide small-scale fishermen with credit and subsidies through easy procedures to enlarge their boats, encourage more labour intensive fishing technology and fish processing at home.

Keywords: *Fishing, households, marine, and livelihood.*

Introduction

Fisheries sector occupies a very important place in the socio-economic development of the country. It has been recognized as a powerful income and employment generator as it stimulates growth of a number of subsidiary industries and is a source of cheap and nutritious food, besides emerging as an important item in export trade. This sector is thus an important sourced of livelihood for a large section of economically backward population of the country, particularly in coastal areas. The state of Tamilnadu has a coastal length of 1076 k.m. which constitutes about 15 per cent of India's coastal line. There are 591 fishing villages in 13 coastal districts in Tamilnadu starting from Tiruvallur District to Kanyakumari District. The fishermen living in these coastal fishing villages are 6.79 lakh, which

fisherwomen. . The literacy rate is 66 per cent. About 2.70 lakh marine fishermen are actively engaged in fishing. The above marine fishermen are seeking out livelihood by fishing in the continental shelf of 41,412 Sq. Km. engaging 8,500 mechanized fishing crafts and 41,000 traditional crafts. About 3.70 lakh metric tonnes of fish are caught in Coramandal Coast, Palk Bay, Gulf of Mannar Coast throughout the year.

Statement of Problem

Fishing workers, particularly in the fishing communities are the most disadvantaged group. They have a very low status in the society. There are about three lakhs fishermen in Tamil Nadu now, of which only about 37,000 are productively employed in fishing related activities. In Thoothukudi district, one of the important maritime districts of Tamil Nadu the fishing workers are busily engaged in all the shore-based activities like sorting, weighing, salting, drying, marketing, etc. However, their economic activities often go unnoticed. Here there is no scientific and extensive study on the economic activities of fishing workers. Hence a research is required inevitably to weed out the exploitation of the weaker section with total illiteracy living along the coastal line. It will throw light on their real contribution for economic development. This will also pave the way for proper compensation for their activities through suitable policy measures. The present research aims at studying the economic appraisal of marine fishing workers in Thoothukudi district.

Objectives of the Study

The following are the important objectives of the study:

1. To examine the pattern of income distribution of fishing workers in Thoothukdui district;
2. To evaluate the factors which influence the income of fishing workers in these samples; and
3. To suggest policy measures for the fishing workers.

Methodology

This study covers a period of one year from April 2009 to March 2010. The present research has considered Thoothukudi district as the study area since it has the lengthiest coast in Tamil Nadu and is also strategically located in the two major segments of the coast, viz., the Gulf of Mannar.

As far as the present study is concerned, the investigator has proposed to collect the data required, by adopting stratified percentage sampling technique. The total respondents belong to the traditional sector, which includes vallam boats, mechanized boats and fiber boats. The total fishing laborers are 70,465 in these villages. The researcher has taken sample households from these villages on the basis of percentage to total laborers and the total number of sample respondents from 12 villages comes to 600. The data collected from these sample respondents has been carefully processed, edited and tabulated for analytical purposes.

The required primary data has been collected from the selected households with the help of a comprehensive, pre-tested enquiry schedule, through personal interview method. For this, the study has adopted average, multiple regression and disparity ratio and Gini ratio are used to measure the income inequality.

Results and Discussion

Pattern of Income Distribution

Collecting information regarding the income earned from all sources is an essential pre-requite to analyze the income and consumption pattern

of the households. Therefore, to get a correct idea about the income pattern of the respondents, it is necessary to include the income from all sources. The table 1 presents the gross income of the respondents.

Average Annual per capita Income of the Sample Households

In order to analyze the nature of distribution of income, annual per capita income has been considered and it is presented in the form of frequency distribution in Table 2.

Table :1. Total Gross income by Source

Source of Income	Vallam Craft		Mechanized Boats		Fibre Boats	
	Annual Income (Gross) in Rs.	% share in Total Annual Income	Annual Income (Gross) in Rs.	% share in Total Annual Income	Annual Income (Gross) in Rs.	% share in Total Annual Income
Fish Catching	4,156,800	45.68	4,778,200	43.70	4,956,500	44.09
Livestock	354,700	3.90	336,400	3.08	387,200	3.44
Land income	558,000	6.13	475,800	4.35	498,500	4.43
Business	2,135,000	23.46	3,242,500	29.66	3,332,200	29.64
Salaries	724,000	7.96	732,500	6.70	715,200	6.36
Rent	645,000	7.09	715,600	6.54	708,900	6.31
Interest	527000	5.79	653,000	5.97	643,800	5.73
Total	**9,100,500**	**100.00**	**10,934,000**	**100.00**	**11,242,300**	**100.00**

It is observed from Table 1 that of the annual gross income, income from fish catching constitutes a major source of income from vallam craft, mechanized boat and fibre boats. 45.68 per cent, 43.70 per cent and 44.09 per cent of the total annual gross income have been derived from fish catching in vallam craft, mechanized boat and fibre boats respectively. Next to this, business gives a considerable amount of income to the households of the families of these three craft groups. 23.46 per cent, 29.66 per cent and 29.64 per cent of the gross income has been received from business by vallam craft, mechanized boat and fibre boats respectively. Thus it is inferred from the analysis that income from fish catching and business constitutes a major source of income followed by salaries.

In Table 2 the sample households are classified into five groups on the basis of their average annual per capita income. It is observed from the table that the important point to be noted here is that out of 200 sample households in each craft groups, a greater proportion of households are below the level of the income of Rs.75, 000. This proportion is found higher in vallam craft and mechanized boat workers than in fibre boat workers. Thus it is clear from the analysis that the distribution of annual per capita income among the three craft groups are positively skewed distribution.

The Extent of Inequality in the Distribution of Income

In order to analyze the extent of inequality in the distribution of per capita income in the study

area, Gini co-efficient and disparity ration has been used in the present study.

Nature of Inequality

Table 3 depicts the nature of distribution of per capita income among all the respondents. The data presented in the table have been worked out by arranging the total sample households by ascending order according to their per capita income and then classifying them into deciles groups. The share of the total per capita income for each decile group has been calculated and the cumulative percentages have been computed.

Table: 3 – Decile Distribution of Per Capita Income

Decile Group	Percentage Share in Annual per capita Income	Cumulative Share in Annual Per capita Income
0 - 10 (I)	12.17	12.17
10 – 20 (II)	27.66	39.83
20 – 30 (III)	19.67	59.50
30 – 40 (IV)	14.50	74.00
40 – 50 (V)	6.67	80.67
50 – 60 (VI)	4.00	84.67
60 – 70 (VII)	3.33	88.00
70 – 80 (VIII)	3.50	91.50
80 – 90 (IX)	3.67	95.17
90 – 100 (X)	4.83	100.00

Table 3 reveals that the bottom per capita income groups, 30 per cent (decile group I to III) of the respondents receive 59.50 per cent. Of the total sample households, 60 per cent of them (decile group I to VI) share 84.67 per cent. The remaining 15.33 per cent is enjoyed by 40 per cent (decile VII to X).

Gini Co-efficient

Gini ratio co-efficient is estimated with the help of the Lorenz curve. The following form of formula was computed for measuring Gini co-efficient.

$$G = 1 + - (nyi + (n-1)y2 \ldots + 2yn-1 + yn-1 + yn\_$$

Where,

G = Gini co-efficient

n = number of individuals

y1 = Income of individual rank

(y1<= y2 <= yn-n1 <= yn)

y = mean income

The Gini concentration ratio is calculated with help of the above equation. The estimated value of Gini ratio is 0.32. It clearly indicates that the inequality in the distribution of per capita income is low in the sample households.

Disparity Ratio

To find out the extent of inequality, disparity ratio has been used in the present study. It is the ratio between the mean value of per capita income of the top and the bottom decile groups. It has been used as a measure of concentration. Symbolically,

$$I = M10 / M1$$

Where,

I = Disparity Ratio

M10 = Mean value of per capita income of tenth decile group

M1 = Mean value of per capita income of the first decile group

The minimum value of this measure is unity implying perfect inequality, larger deviations from unity implied greater inequality and vice versa.

The disparity ratio has been measured with the help of the above formula. The ratio between the per capita income of the bottom 10 per cent and the top 10 per cent is 1:1.32. The disparity ratio indicates that there is a low disparity among the sample households.

The above analyses such as nature of inequality, Gini ratio and disparity ratio indicates that there are less income inequalities among the different categories of fishermen labourers. Therefore, the first hypothesis namely 'There is no income variation among different categories

of fishing workers of Thoothukudi District, Tamil Nadu, India is proved.

Analysis of Determinants of Income

In this section, an attempt has been made to analyze the factors which determine the per capita income of the households. The quantitative relationship between the income and the determinants has been studied by fitting a linear income function with income as the dependent variable and family size, number of earning members, level of employment, average wage rate per persons, value of productive assets and Dependency ratio as independent variables.

The function applied to a cross section of fishing workers households to examine the factors influencing the income of the household model is,

Log PY = ß0 + ß1logFS + ß2logEM + ß3logLE + ß4logAWR + ß5logVPA + ß6logDR + + U

Where, PY- Per capita Income (in Rs.), FS- Family Size (in numbers), EM -Number of earning members, LE- Level of Employment (in days), AWR- Average Wage Rate (in Rs.), VPA- Value of Productive Assets (in Rs.), DR- Dependency ration, U - Disturbance term, ß0, ß1, ß2, ß3, ……..ß6 are the parameters to be estimated. The above model was estimated by the method of least square and the result is furnished in Table 4.

Table: 4
Estimated Results of Multiple Regression Model for Income
Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.818	0.675	0.564	1113.5664

a Predictors: (Constant), FS, EN, LE, AVR, VPS, DR

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	2.55E+09	6	425408102.4	26.269	.000
Residual	1.21+E10	599	26148562.06		
Total	1.46E+10	600			

a) Predictors: (Constant), FS, EN, LE, AVR, VPS, DR b) Dependent Variable: PY Coefficients

	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	23491.24	1126.78		8.892	.000
FS	-0.2427	.203	.196	-1.063	.000
EN	2.6057	.412	.112	2.166	.000
LE	0.5090	0.620	.262	0.312	.000
AVR	0.4147	1.175	.878	0.938	.520
VPS	0.1892	.223	.157	1.418	.000
DR	0.1065	1.392	0.634	0.161	.623

a. Dependent Variable: PY

The co-efficient of multiple determinations (R2) is significant with a value of 0.675, indicating that the explanatory variables included in the income function could explain 68 per cent of the variation in the income of the fishing workers households in the sample. Among the significant variables, number of earning members, level of employment and value of productive assets are positively related to per capita income.

The above analysis reveals that the per capita income of the fishing workers households could be improved by increasing the number of earners in the family (t=2.166), level of employment (t=0.312) and value of productive assets (t=1.418). The measures to reduce the family size among the fishing workers households would also enhance the per capita household income significantly in the study area.

Conclusion

The above analysis concludes that, the income from fish catching and business constitutes a major source of income followed by salaries of the fishing workers. The distribution of annual per capita income among the three craft groups such as vallam craft, mechanized boat and fibre boats have been positively skewed distribution. The nature of inequality, Gini ratio and disparity ratio indicate that there are less income inequalities among the different categories of fishermen laborers. The per capita income of the fishing workers' households could be improved by increasing the number of earners in the family, the level of employment and the value of productive assets. The Government policies and programmes should be oriented towards Human Resource Development which in turn includes education, health care, nutrition of fishermen households, and educational and economic empowerment of women. As the fishermen spend whatever they earn, the government shall insist on compulsory small savings on the part of fishermen while selling the fish. The Government should provide small-scale fishermen with credit and subsidies through easy procedures to enlarge their boats encourage more labour intensive fishing technology and fish processing at home.

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