54. AN ECONOMIC ANALYSIS OF MARINE BOAT OWNERS IN THANJAVUR DISTRICT OF TAMILNADU IN INDIA

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ABSTRACT

The Socio-economic conditions of fisherman are playing a significant role is fishing Industry as production and many others problems of the industry largely depend on the human factors. The development of fishing industry in India largely depends on the provision of better facilities to fishermen. The skill of the individual fishermen and his intimate knowledge of fishing methods. Commercially exploitable area, best season, and the type of year to be used etc., are very essential for this hazardous Industry. The fishermen are working day and night carrying on an unending fight with nature.

KEYWORDS

Traditional Boat, Mechanized Boat, Fishing net and Fishermen

INTRODUCTION

In India, fish is first placed on the altar of the deity Durga and then eaten. On two particular days a year. It is the tradition alone that keeps puffer eating going in China, Japan and Korea, for this fish, dreaded as a poisonous fish, is not eaten in other parts of the world. Puffers indeed are highly poisonous containing a neurotoxin substance – the Tetrodotoxin – in some body parts like ovary, liver, intestine and skin, but not in the muscles. The toxic effect of the substance is several times stronger than that of potassium cyanide. Yet in these countries puffers sell at high price.

Inspite of serious efforts by both Govt. and Non-Governmental Organization to improve the lot of the coastal poor, where the majority of them living well below the poverty line, and the development of coastal villages has not kept pace with that of the rest of the country. The coastal villages often lack basic amenities like safe drinking water, electricity, housing, educational facilities, road facilities, medical care and communication. So the national planning commission has given special attention to fisheries sector to argument fish production, as it is one of those sectors eminently suited to assist a large mass of the economically, weaker and backward section of the society.

STATEMENT OF THE PROBLEM

The present research project, "An Economic analysis of Marine Boat Owners in Thanjavur District" chosen keeping in view of the perception of academicians towards applied research in social sciences during 1980s. Basically academicians are now interested in problems associated with long term policies which focus on bringing about

improvements in standard of living of vulnerable section of the population, creation of employment opportunities and thereby generating additional incomes for the poor and narrowing regional imbalances, etc. The choice of the topic is quite relevant when the following aspects are considered ;

Firstly, fishermen constitute one of the weaker sections of the society. Secondly, for out production whose staple food is rice, fish protein is one of the cheapest sources the availability of which is stepped up even by very small quantity would go a long way in making improvements in the physical quality of life.

Thirdly, the unexploited fishery resources offer vast scope for sustained employment opportunities. Fourthly, the National Commission on Agriculture constituted in 1976 stressed the need of economic studies with the coordination of the Fisheries and Statistics Departments on the cost and return functions, different fishing methods and the status of fishermen in different maritime states and insisted that the results should be reviewed for determining the economic impact of these studies. Finally in a backward district like Thanjavur, development of fisheries, if taken up in the right direction, would also contribute to narrowing the regional imbalances.

Thanjavur is one of the thirty two districts in Tamil Nadu and one among the ten maritime districts in the state. During 1990s two new districts such as Nagapattinam and Thiruvarur were formed by carved out from the present Thanjavur District, which has reduced the length of coast line from 290 kms to 47 kms. It increased the fishermen pressure on the fishing ground of the area.

The fishing ground in Thanjavur District, in mingling with two coastal zones of the Bay of Bengal and the Palk Bay, they have different topographies. It fishing operation of Thanjavur district both traditional and mechanized crafts are engaged. Instead of mutual dependence, inter rivalry is found in the two sectors.

Mallippattinam is an important fish landing center in the district with a fishing jetty and first Government boat repairing yard in Tamil Nadu was started here in the year 1974. The State Government allotted fund to construct a new fishing harbor at Sethubavachatram it is the another important landing center in the district. In the changed environment an in-depth study of this type will be highly useful for understanding the real problems of traditional and mechanized sectors of marine fishery in Thanjavur district and would help the planners to formulate suitable plans for other maritime districts of the state also.

OBJECTIVES
The study focuses its attention mainly on traditional and mechanized sectors with the following specific objectives.

i.   To perform the Economic analysis of marine Boat owners

ii.   To assess the fishermen income of country and mechanized boat owners during the favourable and unfavourable seasons.

iii.   To search out income and expenditure of traditional boat owners and mechanized boat owners.

iv.   To analyze the operational costs of fishing of traditional boat owners and mechanized boat owners.

HYPOTHESES
The hypotheses framed during the course of study is as follows :

i.Wage and fuel are the major operational costs for traditional boat owners and mechanized boat owners.

ii.Seasons are the main cause for income for the traditional boat owners and mechanized boat owners.

iii.The significant role is occupied by the Income and Expenditure for traditional boat owners and mechanized boat

owners.

iv.   Household expenditure pattern varies between the country & mechanized boat owners significantly.

SELECTION OF REGIONS

Map showing the important fish landing centres in Palk Strait

Source : Secondary data

Mallipattinam, Adirampattinam and Sethubavachatram are the important fishing region of Pattukkottai. These three regions are selected for the study.

METHODS AND MATERIALS
DATABASE AND PERIOD OF THE STUDY

The study has employed both primary and secondary data. The primary data were collected for the financial year 2018-2019. The data were collected from the respondents by using interview schedule method from May 2018 to June 2019.

SELECTION OF THE STUDY AREA

Thanjavur District is the universe which consists of 2 fishing Taluks namely Pattukkottai and Peravurani. There are three important fish landing centres in the area viz. Adirampattinam, Mallipaatinam, Sethubavachatram. In the first stage the three landing centres are divided into three regions.

Thanjavur District

Mallipattinam	66
Adirampattinam	62
Sethubavachathiram	72
Total	200

The sample was distributed among two categories namely traditional boat owners and mechanized boat owners.
Country Boat -
The country boats which are used in

the traditional sector is locally known as "Vallam". These boats are madeup of forest wood and designed for fitting with 6HP Lambodi engine. It is about 7.7m in length. 1-3m in breadth and 0.7m in depth.

mechanized Boat -A mechanized boat is a modern fishing boat forms an ideal plat form which facilitates easy and quick transport, provided with on-board facilities for fitting the necessary equipments carrying out different types of operations.

Table
DISTRIBUTION OF SAMPLE VILLAGES AMONG SELECTED FISHING VILLAGES AND BY TYPE OF BOAT OWNERS

Sl. No	Name of the village / Region	Number of Respondents in		
		CB	MB	Total
MALLIPPATTINAM REGION				
1.	Rendampulikkadu	5	11	16
2.	Andivayal	5	11	16
3.	Chinnamanai	6	10	16
4.	Sambaipattinam	6	11	17
1.	Thambikkottai	6	9	15
2.	Karisakkadu	6	9	15
3.	Karungulam	6	10	16
4.	Vallikkollaikkadu	7	10	17
1.	Kollukkadu	7	11	18
2.	Semiyanmadevipattinam	7	11	18
3.	Puduppattinam	7	11	18
4.	Nadiyam	7	11	18
	Total	75	125	200

Source : Primary Data
Note : CB – Country Boat, MB – mechanized Boat

COLLECTION OF DATA
The 200 sample owners are selected by using multi stage stratified random sampling technique.
Primary data are collected by personal interview method from the informants by providing a pre-tested questionnaire. Data are collected for both favourable and unfavourable seasons in the study area for one calender year.
The requisite secondary data are collected from the published materials and from various related centres and organisations.

TOOLS USED FOR THE ANALYSIS IN THIS STUDY

Production Analysis

In fisheries economics, the term production is synonymous with, "catch" and "landings". In the present study, for analyzing the production, the quantity of fish arrived at landing center after rejection is taken in to account from the 75 sample owner of the country boats. In the landing centers the arrived fishes are kept in heap with the assistance of middle men so as to attract the buyers. The researcher with the help of a middle man quantified the produce in Kilograms for analyzing the production.

Operational Costs

The day to day expenses incurred on the working of the craft is termed as operational costs and it is also referred as variable cost or working capital. In the traditional sector for operating a country boat the following expenses are to be met out by the owner.
(i)   Wages
(ii)   Fuel
(iii)   Middle man commission
(iv)   Boat and net repairing
(v)   Village contribution and
(vi)   Miscellaneous

Input – Output Relation

The major inputs of fisheries are, i) craft, (ii) the different type of nets, (iii) labour (iv) fuel. Along with these factors, the modern fisheries economists added, the number of fishing trips, oceanographic, environmental and seasonal factors also in the inputs of fisheries. In the present study, sufficient and reliable data are not available pertaining to the inputs mentioned by the modern economists. So the traditional inputs like fishing trips, capital, labour and their relation with output are taken into account for analyzing the input – output analysis.

Arithmetic Mean

In mathematics and statistics, the arithmetic mean, often referred to as simply the mean or average when the context is clear, is a method to derive the central tendency of a sample space. The term "arithmetic mean" is preferred in mathematics and statistics because it helps distinguish it from other means such as the geometric and harmonic mean.

Co-efficient of Correlation

Pearson product-moment correlation coefficient, also known as r, R, or Pearson's r, a measure of the strength of the linear relationship between two variables that is defined in terms of the (sample) covariance of the variables divided by their (sample) standard deviations.

FINDINGS

In the traditional sector, the fishing is carried on four days in a week, while in the mechanized sector crafts are operated three days in a week. So in the two sectors it is found that the fishing activities were not carried out continuously.

In the nature of fishing trips, it is observed that only one trip was attempted in a day, in both the sectors. The country boats are operated within four nautical miles from the sea shore, while the mechanized crafts are carrying, out fishing operation beyond nautical miles. On an average, the country boats attempted 86 trips and 54 trips in favourable and unfavourable seasons respectively. The mechanized crafts, on an average had undertaken 54 fishing trips in favourable season and 43 trips in unfavourable season. Most of the catches in traditional sector were meant for the local markets and in the mechanized sector the targeted species were for distant markets and also for export. It is observed that the

quantity, size and quality of species varied in the two sectors.

The average production of a country boat differed in the two seasons, when the average production was 3,387 kg in favourable season ; it was 1,472 kg in unfavourable season. In the mechanized sector, during the favourable season the average production of a craft was 4,482 Kg while in unfavourable season the average production was 2,891 kg.

It is studied that in the traditional sector that there was 15 Kg more production in favourable season in a trip than that of in unfaourable season. In mechanized sector, there was 19 Kg more production in a fishing trip during favourable season than that of in unfavourable season. It is found that in traditional sector 70 percent of the total production was gained in favourable season while in mechanized sector the percentage was 61.

The analysis of operational costs of a craft shows that wage was the major part of the costs in the traditional sector that accounted for 60 percent of the total costs incurred. In mechanized sector the major portion of the costs incurred on fuel and it stood at 76 percent.

The results of correlation and regression analysis in the nature of fishing trips and production reveal that in the two sectors there were no significant relation found between the trips and quantum of production. The trip wise net income finding is that a country boat earned Rs. 262 in a trip during the favourable months while it stood at Rs. 149 unfavourable season. So a country boat earned Rs. 113 more income in a trip during favourable season than unfavourable season. In the mechanized sector on an average, a mechanized boat earned Rs. 3,047 more income in favourable season than unfavourable season.

The number of labourers employed in the traditional sector is more in favourable season than in the unfavourable season and the difference stood at 2. The difference is at 1, in the mechanized sector. The present study reveals that traditional sector was not conductive for more employment of labour.

It is computed that the rate of return of capital in the traditional sector is 20 percent, while the observation in mechanized sector is 25 percent.

The study on households income of the owner fishermen reveals that the traditional boat owners receive 20 percent of their annual total household income from non fisheries industry, in the mechanized sector it is 5 percent. The per capita income of a traditional boat owner is Rs. 5,817 and for mechanized boat owner the per capita income is Rs. 20,055.

It is understood from the pattern of consumption expenditure that the traditional boat owner's families spend 67 percent of their income on food while it is 37 percent in mechanized sector. The spending on education is 4 percent in traditional sector while it is 7 percent in mechanized sector.

The housing scenario explains that, in traditional sector 95 percent of the owner fishermen live in owned houses and others were in leased houses. Of the total houses, 92 percent are tiled and remaining 8 percent are terraced. In the mechanized sector 94 percent of the fishermen live in owned houses and 6 percent are living in leased houses. Of the total houses 71 percent are terraced and remaining 29 percent are tiled. In the nature of housing, owner fishermen have comfortable houses comparing with the labour fishermen.

In the two sectors, 58 percent of the population is males and more number of persons was in the age group of 30-45. It is observed that the average family size is 6 in traditional sector and 7 in the mechanized sector.

Pertaining to the educational status

of the fishermen, it is found that 61 percent of the sample populations are literates in the two sectors. The female literacy is 21 percent in the traditional sector after the plus two levels the rate is declining considerably. In the mechanized sector the female literacy rate is 39 percent and not much decline is found after plus two levels.

As religion is one of the important social factors in moulding the development of a society, the present study attempts on the religion of the sample owners. It is found that, 92 percent of the sample traditional boat owners are Hindus, Muslims and Christians are in the second and third places respectively. In the mechanized sector, though the sample units are in the same order but the percentage of Hindus is lesser while the percentage of Muslims and Christians are high comparing to the traditional sector.

In the nature of the distribution of income, moderate inequalities of income are found in the two sectors and the degree of inequalities are more in mechanized sector than the traditional sector.

CONCLUSION

Presently India is rated to possess excess fishing capacity. The marine fisheries in the light of open access system with scant regard for responsible fishing is in a crucial phase now and requires quick review and implementation of appropriate management measures to sustain the fisheries at the present level of production and to prevent the system from a near collapse.

For the present study, samples of 75 families from traditional boat owners and 125 families from mechanized boat owners are selected. Primary data are collected with the help of well prepared questionnaire issued to the respondents and secondary data are collected from published materials. The data are applied to analyze, production, capital, income, cost and the socio economic conditions of traditional and mechanized owner fishermen. Some of the statistical tools such as tables, diagrams, arithmetic mean, and co-efficient of correlation are applied suitably in this study.

The fishermen of this area have pointed out that the months January to July as favorable season compared with the other months because during this period more catches are realized and the remaining months, August to December are the unfavorable season for fishing.

The traditional crafts are engaged in fishing four days in a week, Sunday, Tuesday, Thursday and Friday are allotted for them. While mechanized crafts are permitted to go in to sea on Monday, Wednesday, and Saturday. With regard to the fishing trips, days and ground an agreement has been arrived at by the two sectors. Further all over the Tamil Nadu coast the fishing activities are banned from April 15 to May 25 because this period is considered as the breeding season for fishes.

More fishing trips have been attempted in favourable season than the unfavourable season in the two sectors. Totally 86 percent of the annual trips are carried out in favourable season in the traditional sector while that of 65 percent in mechanized sectors.

Pertaining to the production, more quantity of catches is gained in favourable season in the two sectors. The analysis of operational costs explains the major expenditure is on wage in the traditional sector and on fuel in the mechanized sector. Like wise per trip income is also more in favourable season in the two sectors. It is concluded that favourable season is playing a major role in the marine fisheries of the study area.

The rate of return of the capital is more in mechanized sector than the traditional sector. It is calculated that the rate of return is 20 percent in

traditional sector and 25 percent in the mechanized sector. The general opinion that traditional sector of any industry could be able to provide more employment is not true in the case of marine fishery of this district because it is observed that on an average 4 labourers in the favourable season and 2 in unfavourable season are employed in a trip in traditional sector, in mechanized sector the persons employed are 4, in favourable season and 3 in unfavourable season.

The per capita income of the traditional boat owners is lower than the mechanized boat owners. The traditional boat owners spend 67 percent of their total annual income on food items whereas the mechanized boat owners spend 35 percent.

In the two sectors of the total sample population males are outnumbered the females and more number of family members are in between 30 to 45 years age group. The average number of family size is 6 in traditional sector and 7 in the mechanized sector. The owner fishermen are having a good educational status and better housing facilities.

According to prof. Utsa Patnaik, the poverty level expenditrue is one that could provide 2,403 calories, in 1999-2000 was Rs. 566.60 per month per capita in rural areas. if this estimate is applied, it is understood that all the sample owner fishermen are above the poverty level in the study area.

Finally it is concluded that in the present study all the hypotheses framed for this research are proved and accepted.

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