

Proceedings



National Conference on
**Fisheries Economics,
Extension and Management**

January 5 & 6, 2000

Editors

**R. SATHIADHAS
K. VENKATESHVARAN**



Central Institute of Fisheries Education
(Deemed University-ICAR)
Fisheries University Road,
Seven Bungalows, Mumbai 400061

2 EQUITY AND ECONOMIC IMPLICATIONS OF MECHANISED FISHING ON TRADITIONAL FISHERY -- A STUDY IN TAMIL NADU*

R. Narayana kumar, S. Suryaprakash and H. Chandraskhar

*Central Marine Fisheries Research Institute, Cochin-682 014
University of Agricultural Science, Bangalore*

Abstract

Fishermen community is considered as a backward section of the Indian Society. The fishery development programmes focused on increasing the catch and in improving the socio economic status of the fishermen. The introduction of mechanised crafts has led to increased catch but this move was perceived to have adversely affected the wellbeing of the traditional fishermen as this crafts, competed with the traditional crafts in the conventional zone. In this context, this paper makes an attempt to study the impact of craft mechanisation on traditional fishery in Ramanathapuram District of Tamil Nadu. The socio economic status of labourers and owners of traditional crafts was compared in three different situations; situation I (where the traditional crafts alone operate), situation II (where operated alone with motorised crafts) and situation III (where traditional, motorised and mechanised crafts operate together). The investment on crafts and gears by the traditional crafts owners was the least (Rs.30,122) in situation I and the highest in situation II (Rs.40,988). The catch per craft and the annual household income of traditional craft owners were high in situation I as compared to situations II and III. The annual household expenditure was lower in situation I (Rs.32,917) than in situations II and III (Rs.38,144). The proportion of traditional crafts labourers migrating to mechanised crafts to augment their income was high in situation II (57 %) as compared to situation I (20 %) and III (40%). The annual household income of the traditional craft labourers was the highest in situation I. These changes show that the traditional fishery sector is being affected by the mechanised fishing.

Introduction

Fishermen community is considered as a backward section of the Indian society. The socio-economic characteristics on demography, age, literacy and related aspects influence fishermen's response to any new innovation (Sathiadhas, 1996). When fishing was traditional during the early fifties in India, mechanised crafts were introduced as a parts of mechanisation programme, to improve the catch from the sea. Though it had positive implications like increased catch, improvement of fishery infrastructure (see Sathiadhas and Venkatraman, 1981) it had also perceived to have adversely affected the livelihood of traditional fishermen in some cases (see Jacob, 1979, Santhakumar *et al* 1986 and Balan *et al* 1986). In this context, the present paper makes a modest attempt to study the economic and equity implications of mechanisation on traditional fishery in Ramanathapuram district of Tamil Nadu.

Data and methodology

The primary data were collected from the selected sample fishermen owners of mechanised, motorised and traditional crafts at selected landing centres for a period of one year (1997) covering all the seasons. The data were also collected from non-owners i.e., the fishermen labourers working in these crafts.

To facilitate the impact study, the landing centres were so selected to represent four different situations namely,

- Situation I :Traditional crafts alone operate: Thondi
 Situation II :Traditional and motorised crafts along
 Operate :Chinnappalam
 Situation III :All the three types of crafts: Chinna Erwadi
 Situation IV :Mechanised crafts along Operation: Rameswaram.

The impact was studied in two parts. In the first part, the impact of mechanisation on the traditional craft owners by comparing their status in situations I, II and III. The variables selected were catch per trips annual fishing days, annual income, migration to other economic activities, household expenditure, indebtedness and other changes during the past 10 years. In the second part the impact on the labourers working on traditional crafts was assessed by comparing their socio-economic status under these three situations. Tabular analysis was used to study these changes.

Findings

The traditional craft owners harvested the highest catch per trip (9.31 kg) when they operated alone (situation I) compared to their counter parts in situation II (6.50 kg) and situation III (7.11 kg) (Table 1). This can be attributed to the absence of competition from the other two crafts in situation I compared to situations II and III. A similar observation was made in Karnataka where with the introduction of purse seiners, the catch of the *rampani* units declined besides affecting their livelihood (Jacob et al 1979, Sathakumar et al 1986, Panikkar and Sathiadhas, 1993) The annual fishing days were maximum in situation I (241 days) followed by situation II (235) and situation II Z (227). The annual income from fishery activities was also high in situation I (Rs.59, 796) compared to situations II and III. This may because of the higher catch per trip in situation I as also its composition (which comprised of high valued prawns). It is interesting to not that about 60 per cent of the craft owners in situation III worked as carries boats and engaged in sea weed collection. This is because, during low catch period, they tried to earn their income by transporting the catch from the mechanised boats which cannot anchor near shore. This can be construed as a positive implication of mechanisation. The annual household expenditure was maximum in situation II. The maximum investment on crafts and gears was also the highest in situation II. The other socio-economic impacts indicated that about 50 per cent of the respondents could find some improvement in their ward's education. It is important to note that only 10 per cent of the respondents that too in situation I could experience an improvement in their housing pattern, during the past 10 years.

The impact of mechanisation on traditional craft labourers is presented in Table 2. It is seen from the table that the annual employment in fishing was maximum in situation II (231 days) compared to situations III and I (231). It is important to note that the proportion of women of the fish labourers family engaged in fish retail sales was maximum (70%) situation I followed by situation III (60%) and situation II (57%) The

proportion of labourers migrating to work in mechanised boats was highest in situation II (57%) followed by situations III (40%) and situation I (20%). This is because of the proximity of more number of mechanised landing centres near situation II. This is viewed as a positive implication of mechanised fishing. The annual household income and expenditure of the labourer house hold income and expenditure of the labourer household was maximum in situation I (Rs. 17,544 and Rs. 21,696) followed by situations II (Rs. 15,871 and Rs.19, 340) and situation III (Rs.15546 and Rs. 19432). The gap is bridged by borrowing. The other changes during the past 10 years indicated that there is improvement in their children education but no improvement in their housing pattern. This is an indication of their poor socio economic status

TABLE 1. Impact of mechanisation on traditional craft owners

Socio-economic parameter	Situation I	Situation II	Situation III
1. Catch per trip (Kg)	9.31	6.50	7.11
2. Operating cost per trip(Rs)	230.34	182.40	186.72
3. Net revenue per trip (Rs)	79.45	36.08	48.22
4. Annual fishing days	241	235	227
5. Proportion of migration to mechanised boats as carrier boats (%)	--	--	60%
6. Annual house hold income			
a) Fishery activities	65101	58523	57362
b) Fishery related and others	59796	51343	53332
7. Annual household expenditure	5305	7180	4030
8. Investment on crafts & gear	32197	38144	32724
9. Amount borrowed	30122	40988	30214
10. Amount repaid	18875	10700	4400
11. Other changes in past 10 years	3200	3600	1760
a) Improvement in children's education	50%	60%	40%
b) Improvement in housing			
c) Purchase of consumer durable	10%	0%	0%
	30%	50%	30%

TABLE 2. Impact of mechanisation on labourers working in traditional crafts

Socio-economic parameter	Situation I	Situation II	Situation III
1. Annual employment in fishing (In days)	231	236	231
2. Proportion of fisherwomen of household engaged in fish retail sales (%)	70	57	60
3. Migration to mechanised boats			
a) Proportion (%)			
b) Duration (months)			
4. Annual household income (Rs)	20	57	40
a) Fishery and fishery related	3	2	3
b) Others	17544	15871	15546
5) Annual household expenditure	15944	14971	14546
6) Amount borrowed	1150	900	1000
7) Amount repaid	21696	19340	19432
8) Other changes in past 10 years (%)	4200	3500	4000
a) Improvement in children's education	1480	1167	1300
b) Improvement in housing			
c) Purchase of consumer durable	30%	60%	20%
	0%	0%	0%
	40%	50%	10%

Conclusion and policy implications

Fishing in India has been a traditional avocation before independence. The introduction of mechanised crafts has helped to increase the fish production but at the same time has adversely affected the livelihood of traditional fishermen (craft owners). The study revealed that the catch per trip was maximum when the traditional crafts operate alone. But at the same time, the mechanised crafts have provided employment opportunities for labourers. This may lead to a situation wherein the traditional craft owners might come to work in mechanised crafts. Hence, the study suggests the need for regularisation of the about operation of mechanised, motorised and traditional crafts considering the socio-economic characteristics of different groups of fishermen. This will help in bringing a harmonious relation among the different craft operators and for the long-term sustenance of the sector.

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