



NATIONAL AGRICULTURAL TECHNOLOGY PROJECT



Proceedings of the Workshop on

Empowerment of Fisher Women

**in Coastal Ecosystem of Andhra Pradesh,
Karnataka, Kerala and Tamilnadu**

THE COASTAL ECOSYSTEM OF
ANDHRA PRADESH, KARNATAKA, KERALA
AND TAMILNADU
ON
13th & 14th OCTOBER 2003
AT
UNIVERSITY AUDITORIUM
N.G. RANGA AGRICULTURAL UNIVERSITY
RAJENDRANAGAR, HYDERABAD - 500 030



**ANGRAU Auditorium, Rajendranagar, Hyderabad
13th & 14th October 2003**

SOCIO-ECONOMIC STATUS OF FISHERWOMEN

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If only the women of the world would come together, they display such heroic non-violence as to kick away the atom bomb like a mere ball. Women have been so gifted by God. Women's marvellous power is lying dormant. If the women of Asia wake up, they will dazzle the world.

-Mahatma Gandhi, 18th July 1947.

1. Introduction

Women play an invaluable role in the development of the household, society and hence the country. Mostly her contributions were not quantified (and can't be justifiably valued also by any means) and also not recognized. The role of women in the economy and their contribution thereon has been receiving attention in a much lesser pace than what they deserve. Presently women continue to excel men in many fields. For the educated employed women there have been some relief by virtue of their position in society, but who cares much about the women who are illiterates, living in rural and coastal areas and strive hard to earn their bread? The answer will be a silent no.

In India, women constitute about **50 per cent of the population** and comprise one third of the labour force. Women account for **32.5 per cent of the total work force of 121.63 million** (1993-94) and the figure is still increasing day by day. Among the different sectors of the Indian economy where women contribute significantly, fishery sector is an important one. Out of the **5.4 million active fishers** in India, **3.8 million (70.37%) are fishermen** and **1.6 million (29.63%) are fisherwomen**. These fisherwomen involve themselves in different fishery and fishery related avocations. 'About 25 per cent of the labour force in pre-harvest activities of fish, 60 per cent in export marketing and 40 per cent in internal marketing are women' (Dehadrai, 2002). But their contribution to the development of this sector was hardly recognized or rewarded suitably. A few studies have brought out their differential wage rates they experience in these activities. However, the fisherwomen were not given their due because of some handicaps they experience like poverty, illiteracy, insecure nature in the society and related aspects.

In certain parts of marine fishing villages, fisherwomen have to spend a major part of their time in fetching drinking water from roadside public hydrants. They also take decision on the expenditure on food for the households and also decide on the household activities (Vijaya Khader and Ramanamma, 1994). In spite of taking such responsibilities on both domestic and income earning activities for the improvement of the home, they are not recognized properly. In such a circumstances, there is a need for a regular assessment of the socio economic status of the fishers in general and that of the fisherwomen in particular to advocate to the policy makers to formulate suitable plans for their welfare and development. This in turn will result in the ultimate development of the society only. In addition to the socio economic status, the assessment of their nutritional status also deserves attention, which ultimately decides the capacity of the individual to work. With this broad theme in focus, a research project was formulated to study the status of fisherwomen in the coastal ecosystem of Andhra Pradesh, Karnataka, Tamilnadu and Kerala funded by the **National Agricultural Technology Project of World Bank**.

The project also aimed to assist the fisherwomen in identifying and implementing income-earning activities and to strengthen their ability to improve family, health and nutrition and sanitation. Voluminous data were collected on the different aspects of the socio economic status of the fisher women households and the data are compiled and analyzed. This paper aims at (1) making a comparative assessment of the socioeconomic status of the fisherwomen households and their standard of living in the coastal eco system of the selected States, (2) suggesting policy measures for the improvement of the socio economic status of the fisher women in the coastal ecosystems

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2. Methodology

In the four States of Andhra Pradesh, Karnataka, Kerala and Tamilnadu 13 coastal districts were selected based on their relative importance in fisheries in the respective States. From these districts, 28 coastal villages were selected based on their method of fishing-mechanized, motorized, non-mechanized and representation of different fisherwomen stakeholders in the district. A total of 5744 households were covered in all the four States. The details of the districts, villages and households are given in table 1.

2.1 Assessment of Socio Economic Status

A detailed socio economic survey was carried out with a pre-tested schedule. The data were collected on family size, age composition, literacy, occupation and income, maintenance of livestock other assets ownership pattern, ownership of fishing equipments, post harvest fishery and level of indebtedness of the fishers' households.

The socio economic status of the fisherwomen household was assessed by their literacy level, occupation pattern, income level, income& expenditure and level of indebtedness and a comparative assessment was made among these four states.

Table 1: Selected Districts, Villages and Households by state of study

Sl.No	State	Districts	Villages	Households
1	Andhra Pradesh	East Godavari	Uppada	200
			Dummulupetta	200
			Bhairavapalem	200
		West Godavari	Pathapadu	100
			Perupalem	100
		Prakasam	Pallepalem	250
			Vadarevu	250
		Nellore	Krishnapatnam	170
Mypadu	330			
	Sub-total			1800
2	Karnataka	Dakshina Kannada	Bengre	160
			Boloor	86
		Udupi	Mulki	75
			Hejamadi	87
			Malpe	240
			Thottam	223
			Gangolli	137
				Sub-total
3	Kerala	Allapuzha	Aroor	433
			Anjilickadu	47
		Kollam	Neendakara	348
			Theckumbhagam	83
		Thiruvananthapuram	Poovar	344
			Sub-total	
4	Tamilnadu	Thiruvallur	Pulicat	229
		Chennai	Kasimedu	298
		Kanchipuram	Kovalam	300
		Tuticorin	Ottapidaram	281
			Tuticorin	278
			Thiruchendur	285
			Sub-Total	
Grand total of the households in all the selected States				5744

2.2 Estimation of Standard of Living

The socio economic assessment will help to estimate the standard of living of the different groups of the people or community from whom the data is collected. Here an attempt is made to compare the annual per capita income and the Engel's Coefficient of the fisher's household. These two indicators are described below.

2.2.1 Annual Per capita income

This is calculated by dividing the annual income from all the sources by the average family size. The formula used is

$$\text{Annual Per capita income} = \frac{\sum_{i=1}^N (F + FR + OT)}{\text{Average Family Size}} \dots\dots\dots(1)$$

Where, i = the individual household
F = Annual income from Fishing in Rs.
FR = Income from fishery related work including aquaculture
OT = Income from other sources like non-fishery activities

2.2.2 Statistical Analysis

The data generated has been utilized to meet the objectives of the study. Frequency distributions, Mean and Standard Deviations and tests of significance were utilized and the results are provided for each of the variables studied. Analysis variance, Chisquare test and multiple comparison 't' test procedures were utilized and the results are been provided in the chapters (Visveswara Rao, 1996)

2.2.3 Engel's Coefficient

Engel's Coefficient indicates the percentage of amount spent on food by each family and the level of spending on food decides one's standard of living. It was calculated as follows

$$\text{Engel's Coefficient} = \frac{\text{Annual Expenditure on food}}{\text{Annual Total Expenditure}} \times 100 \dots\dots\dots(2)$$

3. Results and Discussion

The results are discussed in three sections. In **Section-I** the results of the socio economic assessment analysis are presented followed by a similar analysis of standard of living in **Section-II**. In the **section-III**, the states are ranked based on the selected socioeconomic indicators of the fisherwomen households namely, literacy rate, housing pattern, electricity facilities, annual per capita household income and Engel's Coefficient.

Section- I Assessment of Socio Economic Status

3.1 Population of the Households

The details of the villages, households selected for the study and the population of the households are presented in table 2

Table 2: Sex composition of households studied by state

Sl.No.	States	Number of Households Surveyed	Number of Family Members		
			Male	Female	Total
1	Andhra Pradesh	1800	3348 (51.92)	3100 (48.08)	6448 (100.00)
2	Karnataka	1008	2696 (47.46)	2985 (52.54)	5681 (100.00)
3	Kerala	1255	2694 (49.63)	2734 (50.37)	5428 (100.00)
4	Tamilnadu	1681	3920 (49.42)	4012 (50.58)	7932 (100.00)
	Total	5744	12658 (49.66)	12831 (50.34)	25489 (100.00)

Note: Figures in parenthesis are percentages

It is seen from the table that the total number of households selected for the study was 5744 from all the four states. The total population surveyed was 25,489 comprising 12658 males (49.66%) and 12,831 females (50.34%) indicating nearly equal proportion of male and female. The trend was similar in all the four states under study.

3.2 Family size

The details of the family sizes of the sample households are presented in table 3

Table 3: Family Size of the respondents studied by state

Sl No.	States	Family Size (Numbers)			Total number of households
		2-4	5-6	7-10	
1	Andhra Pradesh	1292 (71.78)	460 (25.56)	48 (2.66)	1800 (100.00)
2	Karnataka	325 (32.24)	381 (37.80)	302 (29.96)	1008 (100.00)
3	Kerala	747 (59.52)	383 (30.52)	125 (9.96)	1255 (100)
4	Tamilnadu	762 (45.33)	560 (33.31)	359 (21.36)	1681 (100.00)
	Total	3126 (54.42)	1784 (31.06)	834 (14.52)	5744 (100.00)

Note: Figures in brackets represent the percentages to the corresponding row total

It is seen from the table that 54.42 per cent of the sample households belong to small family size of 2-4. The medium family size of 5-6 accounted for 31.06 per cent of the households. Among the four states, the maximum proportion of family under small family size 2-4(71.78 %) was observed in Andhra Pradesh followed by Kerala (59.52 %) This may be due to the successful implementation of family planning programmers in these two states compared to other states. Besides the awareness of the people about small family size and its advantages also can be cited as reasons.

3.3 Age groups composition

The analysis of age groups indicates the human resources at different stages of productivity. The details of the age group composition are presented below in table 4.

It is seen from the table that the maximum proportion of the sample comes under the age group 19-35 years (33.18 per cent -both Male and Female) followed by 6-18 age group (30.99 %) and 36-50 age group (17.62 %). Considering the productive age group as 19-50 years, about 50 per cent of the populations under this group support the remaining 50 per cent. Across the four states Karnataka had the maximum share of population under the age group 19-35 (38.28 %) followed by Andhra Pradesh (33.58%)

3.4 Religions and Caste

The details of the religion and caste of the sample respondents are presented in Table 5.

Table 5: Sample households studied by Religion and Caste

Sl.No.	States	Religion			Caste			
		Hindu	Muslim	Christians	BC	SC/ST	MBC	Total
1	Andhra Pradesh	1681 (93.39)	0 (0.00)	119 (6.61)	1800 (100.00)	0 (0.00)	0 (0.00)	1800 (100.0)
2	Tamilnadu	671 (39.92)	132 (7.85)	878 (52.23)	282 (16.78)	83 (4.94)	1316 (78.29)	1681 (100.0)
3	Kerala	451 (36.00)	27 (2.00)	777 (62.00)	1255 (100.00)	0 (0.00)	0 (0.00)	1255 (100.0)
4	Karnataka	993 (98.52)	7 (0.69)	8 (0.79)	947 (93.95)	61 (6.05)	0 (0.00)	1008 (100.0)
5	Total	3796 (66.09)	166 (2.89)	1782 (3.02)	4284 (74.58)	144 (2.51)	1316 (22.91)	5744 (100.0)
6	χ^2 (level of significance)	2197.04 (p<0.001)			4415.99 (p<0.001)			

Note: Figures in parenthesis are percentages

It can be observed from the table that 66.09 per cent of the respondents belong to Hindu religion, followed by Christian religion (31.02 %) and Muslim religion (2.89 %). Among the states, the maximum share of the population belonging to Hindu religion was observed in Karnataka (98.51 %) followed by Andhra (93.39 %). The maximum proportion of the sample belonging to Christian religion was observed in Kerala (62.00%) and Tamilnadu (52.23%). Regarding the caste composition, most of the sample respondents belonged to backward caste (74.58%) followed by most backward caste (22.91%) but this (MBC) was seen only in Tamilnadu State.

Table 4: Composition of sample households studied by Age and sex

SI No.	States	Age in years										Total Popul- ation
		0-5		6-18		19-35		36-50		>50		
		M	F	M	F	M	F	M	F	M	F	
1	Andhra Pradesh	309	278	1086	1103	1088	1084	579	462	242	217	6448
		(4.80)	(4.31)	(16.84)	(17.1)	(16.87)	(16.81)	(8.98)	(7.17)	(3.75)	(3.36)	(100.00)
2	Karnataka	117	130	749	745	1013	1162	541	624	276	324	5681
		(2.06)	(2.29)	(13.18)	(13.12)	(17.83)	(20.45)	(9.52)	(10.98)	(4.86)	(5.70)	(100.00)
3	Kerala	217	217	651	597	814	923	618	631	380	380	5428
		(4.00)	(4.00)	(12.00)	(11.00)	(15.00)	(17.00)	(11.38)	(11.62)	(7.00)	(7.00)	(100.00)
4	Tamilnadu	429	506	1466	1502	1182	1192	515	522	328	290	7932
		(5.41)	(6.38)	(18.48)	(18.94)	(14.90)	(15.03)	(6.49)	(6.57)	(4.14)	(3.66)	(100.00)
	Total	1072	1131	3952	3947	4097	4361	2253	2239	1226	1211	25489
		(4.21)	(4.44)	(15.50)	(15.49)	(16.07)	(17.11)	(8.84)	(8.78)	(4.81)	(4.75)	(100.00)

Note: Figures in parenthesis are percentages

M= Male

F= Female

3.5 Literacy Status

Literacy is considered as an indicator of development. Concerted efforts are being taken at all levels to increase the literacy level of the people. The details of the literacy level of the respondents are presented in table 6

It is seen from the table that the literacy level in the selected area of study was 70.49 per cent higher than the national average of 63.86 per cent. This can be attributed to the fact that even at national level the rate of growth of literacy during last decade was 4.35 per cent. Across the states, except in Andhra Pradesh, in the remaining three states the literacy of the sample respondents was about 70 per cent. This is little contradictory to the fact that it is Andhra Pradesh, which registered the highest growth rate in literacy during the last decade (1991-2001) at 8.59 per cent. (8.43 % to 17.02%) Regarding the levels of literacy, 52.02 per cent had studied up to primary 42.03 up to secondary levels.

3.6 Occupational Pattern

The details of the occupational pattern of the study area are presented in table 7.

Table 7: Occupational Pattern of fisherwomen

States	Occupation				
	Fishing	Fish.rel. & Aqua.	Non-fishery	Others	Total
1.Andhra Pradesh	575 (41.19)	452 (32.38)	299 (21.42)	70 (5.01)	1396 (100.00)
2.Karnataka	330 (50.15)	0 (0.00)	297 (45.14)	31 (4.71)	658 (100.00)
3.Kerala	687 (27.0)	1257 (49.0)	592 (24.0)	0 (0.00)	2536 (100.00)
4.Tamilnadu	0 (0.00)	169 (52.00)	0 (0.00)	156 (48.00)	325 (100.00)
TOTAL	1592 (25.80)	1878 (30.44)	1188 (19.25)	257 (5.22)	4915 (100.00)

Note1: The figures in brackets indicate the percentages to the corresponding row total

2: Occupational pattern is significantly different between states ($\chi^2=2063.75$, $p<0.001$)

It is seen from the table that overall, fishery provides employment for 25.80 per cent of the respondents families; fishery and related provides, for 30.44 per cent and non-fishery activities gives employment for 19.25 per cent of the respondents. Across the States, fishing provided employment for 50 per cent of the households in Karnataka and 41.19 per cent in Andhra Pradesh. Fishery related occupation like prawn peeling; processing and packing provide employment for 49 per cent in Kerala. This is mainly because the State has a good number of processing units and the maximum number of fisherwomen involved in such fishery related activities are found in this State.

Table 6: Literacy status of state wise respondents by sex

Sl.No	States	Illiterate	Literate	Total Population	Primary Level		Secondary Level		Collegiate Level		Total Literates	Literates		Sex Ratio
					M	F	M	F	M	F		M	F	
1	Andhra Pradesh	4026 (62.44)	2422 (37.56)	6448 (100.00)	877 (36.21)	662 (27.33)	509 (21.02)	312 (12.88)	54 (2.23)	8 (0.33)	2422 (100.00)	1440	982	681.9
2	Karnataka	1516 (26.69)	4165 (73.31)	5681 (100.00)	1123 (26.96)	1049 (25.19)	755 (18.13)	626 (15.03)	267 (6.41)	345 (8.28)	4165 (100.00)	2145	2020	941.7
3	Kerala	1055 (19.44)	4373 (80.56)	5428 (100.00)	982 (22.46)	947 (21.66)	1085 (24.81)	1060 (24.24)	158 (3.61)	141 (3.22)	4373 (100.00)	2225	2146	965.4
4	Tamilnadu	926 (11.67)	7006 (88.33)	7932 (100.00)	1816 (25.92)	1889 (26.96)	1630 (23.27)	1592 (22.72)	30 (0.43)	49 (0.70)	7006 (100.00)	3476	3530	1015.5
5	Total	7523 (29.51)	17966 (70.49)	25489 (100.00)	4798 (26.71)	4547 (25.31)	3979 (22.15)	3590 (19.98)	509 (2.83)	543 (3.02)	17966 (100.00)	9286	8680	

Note 1: Figures in parenthesis are percentages

2: Literacy status is found between states ($\chi^2=4860.09$, $p<0.001$)

3.7 Housing Pattern

The details of the households by ownership and type of house are provided in table*8.

Table 8: Number (percentage) of households by ownership and type of house

SI.No	States	Ownership Status			Type of house		
		Own	Rent	Total	Pucca	Kutchra	RCC
1	Andhra Pradesh	1791 (99.50)	9 (0.50)	1800 (100.00)	910 (50.55)	644 (35.78)	246 (13.67)
2	Karnataka	945 (93.75)	63 (6.25)	1008 (100.00)	821 (81.44)	156 (15.48)	31 (3.08)
3	Kerala	1245 (99.00)	10 (1.00)	1255 (100.00)	587 (46.70)	453 (36.00)	215 (17.30)
4	Tamilnadu	1430 (85.07)	251 (14.93)	1681 (100.00)	666 (39.62)	360 (21.42)	655 (38.96)
5	Total	5411 (94.20)	333 (5.80)	5744 (100)	2984 (51.95)	1613 (28.08)	1147 (19.97)
6	χ^2 (level of significance)	407.10 (p<0.001)			864.19 (p<0.001)		

Note: Figures in parenthesis are percentages

It is found that most of the respondents (94.20 %) lived in their own houses. Among the different types of houses 51.95 per cent lived in *pucca* houses, 22.08 per cent lived in *kutchra* houses and the remaining lived in RCC structures. The housing pattern in the study locations indicates that the respondents are having fairly a good standard of living. This may due to the assistance provided by the concerned State Governments for fishing community to build the houses or building colonies for them.

3.8 Fuel and Electricity Facilities

Fuel and electricity are the two vital components for living. The details of the facilities available in the selected households are provided in table 9

Table 9: Households by possession of Fuel and Electricity Facilities

SI.No	States	Electrification		Fuel			
		Yes	No	Kerosene	LPG	Fire Wood	Total
1	Andhra Pradesh	1531 (85.06)	269 (14.94)	566 (31.44)	81 (4.50)	1153 (64.06)	1800 (100.00)
2	Karnataka	817 (81.05)	191 (18.95)	454 (45.04)	38 (3.77)	516 (51.19)	1008 (100.00)
3	Kerala	979 (77.00)	276 (23.00)	100 (8.00)	88 (7.00)	1067 (85.00)	1255 (100.00)
4	Tamilnadu	1449 (86.20)	232 (13.80)	607 (36.11)	132 (7.85)	942 (56.04)	1681 (100.00)
5	Total	47.76 (83.15)	968 (16.85)	1727 (30.07)	339 (5.90)	3678 (64.03)	5744 (100.00)
6	χ^2 (level of significance)	42.66 (p<0.001)		456.84 (p<0.001)			

Note: Figures in parenthesis are percentages

It is seen from the table that 83.15 per cent of households had electricity facilities. Among the different fuels used, firewood accounted for major share of 64.03 per cent followed by kerosene (30.07%). About six percent of the households have been using Liquefied Petroleum Gas (LPG) also. Across the States, in Tamilnadu, the maximum proportion of households (86.20%) having electricity facilities were observed followed by A/P (85.06%), Karnataka (81.05%) and Kerala (77.0%). Regarding the fuel, firewood continues to provide a major source of fuel to all the fishers' households across the states.

3.9 Maintenance of Livestock

The livestock are maintained as subsidiary or domestic support activity. The data on the livestock maintained by the sample households are presented in table 10.

Table 10: Annual Income & Distribution of Households by Maintenance and type of Livestock

Sl.No.	States	Maintenance of Livestock			Type of Livestock				Average Annual Income (Rs.)
		Yes	No	Total	Cattle	Poultry	Duck	Others	
1	Andhra Pradesh	458 (25.44)	1342 (74.56)	1800 (100.00)	185 (40.39)	226 (49.35)	47 (10.26)	0 (0.00)	7358
2	Karnataka	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
3	Kerala	75 (6.00)	1180 (94.00)	1255 (100.00)	4 (5.00)	25 (34.00)	29 (39.00)	17 (22.00)	Negligible
4	Tamilnadu	197 (11.72)	1484 (88.28)	1681 (100.00)	77 (39.09)	120 (60.91)	0 (0.00)	0 (0.00)	3520
5	Total	730 (15.41)	4006 (84.59)	4736 (100.00)	266 (36.44)	371 (50.82)	76 (10.41)	17 (2.33)	5429
6	χ^2 (level of significance)	242.24 (p<0.001)			257.42 (p<0.001)				

Note1: The figures in brackets indicate the percentages to the total households who are maintaining livestock

2: Differences between states are significant (p<0.001)

It is observed from the table that only 15.41 per cent of the respondents maintained livestock to support or generate income for the family. Among those who maintain livestock, 50.88 per cent had poultry and 36.44 per cent cattle. The maximum average annual income realized from maintaining livestock was observed in A.P (Rs 7358) followed by Tamilnadu (Rs 3520). In Karnataka, it was informed that the fishing communities in the two coastal districts do not own any livestock. It is a tradition that they do not own. Only a few families possessed chicks for domestic consumption

3.10 Ownership of fishing equipment

The details of the fishing equipment owned by the respondents are provided in table 11.

Table 11: Ownership and type of the Fishing Equipment

Sl.No	States	Ownership status		Type of equipment		
		Yes	No	Craft & gear	Gear alone	Accessories
1	Andhra Pradesh	645 (35.83)	1155 (64.17)	407 (63.10)	134 (20.78)	104 (16.12)
2	Karnataka	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
3	Kerala	314 (25.00)	941 (75.00)	176 (56.00)	138 (44.00)	0 (0.00)
4	Tamilnadu	281 (16.72)	1400 (83.28)	281 (100.00)	0 (0.00)	0 (0.00)
5	Total	1240 (26.18)	3496 (73.82)	864 (69.68)	272 (21.94)	104 (8.38)
6	χ^2 (level of significance)	165.56 (p<0.001)		276.79 (p<0.001)		

Note 1: The figures in the bracket represent the percentage to the total number of fishermen who owns a fishing equipment

2: Ownership and type of fishing equipment possessed are different between states (p<0.001)

It is seen from the table that out of the total respondents only, 26.18 per cent of the households owned some sort of fishing equipments. Among them, about 70 per cent owned crafts and gears, 22 per cent owned gears alone and the remaining owned some accessories. The male members of the households own these equipments. As per the information collected, in Karnataka, in the sample households, the male members work as crewmembers only in boats owned by others. Besides, the families were so selected in Karnataka that they represent poorer sections of the society.

3.11 Ownership of consumer durables

The possession of consumer durables is considered as a status symbol or an improved standard of living. The details of the consumer durable owned by the respondents are given in Table 12

Table 12: Possession of audio video equipment

Sl. No	States	Possession of equipment			Type of equipment		
		Yes	No	Total	Audio	Video	Others
1	Andhra Pradesh	1065 (59.17)	735 (40.83)	1800 (100.00)	810 (76.06)	139 (13.05)	116 (10.89)
2	Karnataka	489 (48.51)	519 (51.49)	1008 (100.00)	276 (56.44)	173 (35.38)	40 (8.18)
3	Kerala	477 (38.00)	778 (62.00)	1255 (100.00)	186 (39.00)	176 (37.00)	115 (24.00)
4	Tamilnadu	1099 (65.38)	582 (34.62)	1681 (100.00)	392 (35.67)	707 (64.33)	0 (0.00)
5	Total	3130 (54.49)	2614 (45.51)	5744 (100.00)	1664 (53.16)	1195 (38.18)	271 (8.66)
6	χ^2 (level of significance)	248.24 (p<0.001)			794.41 (p<0.001)		

Note: Figures in parenthesis are percentages

It is seen from the table that about 55 per cent of the respondents owned some sort of consumer durable. Among those owners, 53.16 per cent possessed audio equipment while 38.18 per cent possessed video equipments. The audio equipments included transistor radio or tape recorders while the

video equipment comprised T.V. Sets. Among the four States, the maximum proportion of households owning a consumer durable was found in Tamilnadu (65.38%) and Andhra Pradesh (59.17%). It was interesting to note that the maximum proportion of households having no consumer durable was observed in Kerala.

3.12 Women in Post-Harvest Fishery

Fisherwomen play a vital role in the post harvest operation of fish. Once the fish are landed, they take charge of it regarding sales, drying and processing and related aspects. Their efforts have not been quantified effectively so far. The details of the involvement of fisherwomen in different post harvest activities are given table 13.

Table 13: State wise number (%) of Women studied by post harvest activities

Sl. No.	State	Post harvest activities					Total
		Sun drying	Smoking of fish	Salting	Value addition & process	Fish vendors	
1	Andhra Pradesh	228 (28.18)	23 (2.84)	129 (15.95)	0 (0.00)	429 (53.03)	809 (100.00)
2	Karnataka	647 (64.19)	0 (0.00)	0 (0.00)	0 (0.00)	361 (35.81)	1008 (100.00)
3	Kerala	50 (4.00)	0 (0.00)	151 (12.00)	602 (48.00)	452 (36.00)	1255 (100.00)
4	Tamilnadu	42 (24.85)	0 (0.00)	0 (0.00)	0 (0.00)	127 (75.15)	169 (100.00)
5	Total	967 (29.84)	23 (0.71)	280 (8.64)	602 (18.57)	1369 (42.24)	3241 (100.00)

Note: Figures in parenthesis are percentages

It is found that out of 5744 households, in 3241 (56.42 %) households, women involve themselves in post harvest operation of fish besides looking after household activities. Among them the maximum number of fisherwomen are involved in fish sales (42.24%) followed by sun drying (29.89 %). Across the states, in Karnataka 64.19 percent were involved in sun drying while in Tamilnadu the proportion of fish vendors is maximum (75.15 %). About 50 per cent of the fisher women were involved in value addition in Kerala. This is mainly because of the number of processing industries in the State and especially in Alapuzha district.

3.13 Annual income and expenditure

The details regarding the annual income earned from different sources and expenditure are given in tables 14 and 15.

The analysis of the annual income was made by grouping the income into four slabs namely: less than Rs 24,000, between Rs 24,000 and Rs 36,000, between Rs 36,000 and Rs 48,000. It was found that overall 39.76 per cent of the respondents were earning an income of less than Rs 24,000 per annum. Next to this, 26.44 per cent of the respondents earned an annual income between Rs 24,000 and Rs 36,000. Across the states, in Karnataka (79.76 %) and Andhra Pradesh (57.00%) only the percentage of income earners below Rs 24,000 was high (above 50 %). The maximum share of respondents earning the highest income slab of above Rs 48,000 was found in Kerala (36 %) and Tamilnadu (36.76 %)

The details of the percentage contribution of different items of income and expenses are given in table 15. It is seen from the table that the income from fisheries accounted for 93.54 per cent of the

annual income followed by income from other sources (5.87%). The income from aqua culture was found in Andhra Pradesh only.

It is also seen from the table that the expense on food occupied the major share (60.68%) followed by clothes (8.69%) and medicines (5.87 %). This indicates that the maximum proportion of income is being spent on food only, which is an indicator of their standard of living.

Table 14: Respondents by average annual household income

Sl.No.	States	Total Number of households	Annual Income range (Rs.)			
			Less than Rs.24,000	Rs.24,001- Rs.36,000	Rs.36,001- Rs.48,000	Above Rs.48,000
1	Andhra Pradesh	1800 (100.00)	1026 (57.00)	434 (24.11)	236 (13.11)	104 (5.78)
2	Karnataka	1008 (100.00)	804 (79.76)	198 (19.64)	5 (0.50)	1 (0.10)
3	Kerala	1255 (100.00)	50 (4.00)	602 (48.00)	151 (12.00)	452 (36.00)
4	Tamilnadu	1681 (100.00)	404 (24.03)	285 (16.96)	374 (22.25)	618 (36.76)
5	Total	5744 (100.00)	2284 (39.76)	1519 (26.44)	766 (13.34)	1175 (20.46)
6	χ^2 (level of significance)	2334.43 (p<0.001)				

Note: Figures in parenthesis are percentages

Table 15: Average annual household income and expenditure (%)

Sl. No.	States	Source of Household Income				Household Expenditure								
		Fishery	Aquaculture	Others	Total	Food	Clothes	Fuel	Electricity	Medicines	Education	Recreation	Others	Total
1	Andhra Pradesh	95.18	2.34	2.48	100.00	73.25	5.84	3.06	2.92	5.08	2.40	2.68	4.77	100.00
2	Karnataka	100.00	0.00	0.00	100.00	79.26	7.32	4.34	2.53	1.89	3.58	0.49	0.59	100.00
3	Kerala	81.00	0.00	19.00	100.00	49.00	12.00	10.00	2.00	8.00	5.00	4.00	10.00	100.00
4	Tamilnadu	97.99	0.00	2.01	100.00	41.20	9.60	4.84	9.84	8.50	11.00	3.18	11.84	100.00
5	Average	93.54	0.59	5.87	100.00	60.68	8.69	5.56	4.32	5.87	5.50	2.59	6.80	100.00

Note : Variations in sources of household income and expenditure between states are significant ($p < 0.001$)

3.14 Level of Indebtedness

The fisher's household availed loans from different sources to meet their needs. The details of the loans availed are given in table 16.

Table 16: Level and sources of household indebtedness

Sl.No.	States	Percentage of respondents availing loan*	Source of loan (%)**		Average Loan availed/ household (Rs.)	Average Rate of interest (%)
			Institutional	Non-Institutional		
1	Andhra Pradesh	32.72	43.39	56.61	17,074	22.63
2	Karnataka	0	0	0	0	0
3	Kerala	32.60	18.60	81.40		9.00
4	Tamilnadu	69.40	1.29	98.71	12,500	44.00
	Average	44.91	21.09	78.91	9857.3	25.21

Note * Percentage to the total households sampled in the respective States

** Per cent to the total of those who availed loan

1: Variations between states are significant ($p < 0.001$)

In the study area 44.91 per cent of the respondents had availed some sort of financial assistance. Among them, 21.09 per cent availed loans from institutional sources and 78.81 per cent from non-institutional sources like friends, relatives, moneylenders and auctioneers. The average annual rate of interest was 25.21 per cent. The rates of interest observed higher in Tamilnadu and Andhra Pradesh. In Karnataka it was explained that the indebtedness of fisherwomen is limited to small extent and mostly they are taken from Cooperative societies. Because of regular repayment, the respondents have explained that they have no loans. But this remains as an issue to be studied in detailed.

Part II Analysis of Standard of Living

The welfare of the household is measured in terms of their standard of living. There are a few measures of standard of living. But, each one has its own merits and demerits. Considering the available data, the following measures of standard of living were analyzed in this study.

3.15 Annual household income and per capita income

The incomes from all the sources earned by the fisheries household were pooled and divided by the average family size of the fishers' household to arrive at the per capita income. The results are presented in table 17.

Table 17: Annual household income and per capita income (Rs.)

Sl.No	States	Source of household income				Family Size	Per capita Income
		Fishery	Related	Others	Total		
1	Andhra Pradesh	29923	818	2580	33821	4.0	8455.25
2	Karnataka	21785	0	0	21785	5.0	4357.00
3	Kerala	22194	0	5206	27400	4.0	6850.00
4	Tamilnadu	13464	0	312	13776	5.0	2755.20

It is seen from the table that the average annual per capita income works out to Rs.8455.25 for Andhra Pradesh, followed by Kerala (Rs.6850), Karnataka (Rs.4351) and Tamilnadu (Rs.2755.25). This indicates that the fishermen of Andhra Pradesh are comparatively at a better standard of living than the others. This may be due to the fact that they get high additional income from aquaculture, compared to their counterparts in the other states.

3.16 Engel's Coefficient Of Standard Of Living

This measure indicates the percentage of expenditure on food in relation to the total expenditure. As this percentage increases, it indicates that their income is enough to meet their food needs, leaving only little for other expenses. The results are presented in table 18 and figure 1.

Table 18: Engel's Coefficient of Standard of Living

Sl.No	States	Expenditure on food	Total Expenditure	Engel's coefficient
1	Andhra Pradesh	23256	33861	72.94
2	Karnataka	17265	21785	79.26
3	Kerala	67130	137000	49.00
4	Tamil Nadu	5715	13776	41.49
	Average	28342	51601	54.90

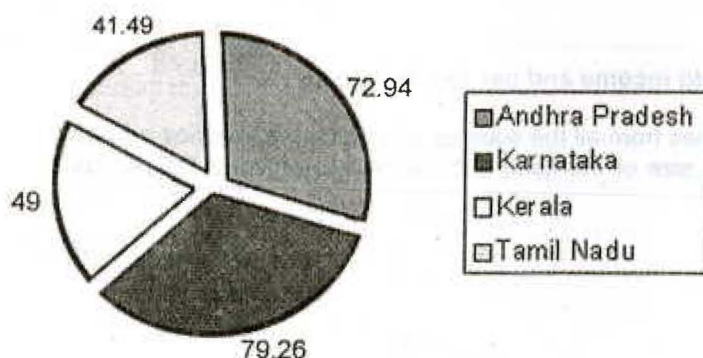


Fig. 1 Engel's Coefficient of Standard of living

It is seen from the table that, the over all Engel's coefficient which is the expenditure on food as a per cent of the total income, i.e. 54.90% per cent. Among the States, the Engel's coefficient was the highest in Karnataka (79.26 %) followed by Andhra Pradesh (72.94 %). In Tamilnadu and Kerala the coefficient is well below 50 per cent, which puts them at comparatively in an advantageous position than the other two. **The higher the Engel's coefficient and the lower the savings rate, the lower is the standard of living.**

Section-III: Comparative socio-economic assessment

In this section, the socioeconomic status (including the standard of living) of the fisherwomen households has been compared by ranking them with respect to selected parameters. They are literacy level of the respondents' household, housing pattern, electricity facilities, per capita household income and Engel's Coefficient. These parameters had already been worked out in the earlier section and only the rankings alone are presented in table 19.

Table 19: Comparative socio economic status of the fisherwomen households in the selected States (Ranks)

Sl.No.	States	Literacy level	Housing pattern	Electricity facilities	Per capita household income	Engel's Coefficient	Total of ranks	Grading of overall ranks
1	Andhra Pradesh	IV	II	II	I	III	12	II
2	Karnataka	III	I	III	III	IV	14	IV
3	Kerala	II	III	IV	II	II	13	III
4	Tamilnadu	I	IV	I	IV	I	11	I

It is seen from the table that none of the states has maintained a consistency in the rankings. The State having a first rank in one indicator secures the last rank in another one. Hence, it becomes very difficult to conclude, among these four States which is first and which follows the first one. However, if we take the total of the ranks scored by the States, it is found that **Tamilnadu** has scored first rank in three out of five parameters (60%) and remain to top the list. But if we take the important indicator of Standard of living namely, the Engel's Coefficient, it is **Tamilnadu that ranks first** since only 41.20 per cent of the income, they spend on food and the rest they were able to mobilize for other uses.

4. Summaries and Conclusion

The assessment of the socio economic status and the analysis of standard of living can be summarized as follows:

- The details of the villages and households selected for study show that there are nearly equal number of males to that of females.
- Small family size of 2-4 dominated the surveyed households represented by 54 percent of the households. Among the four states, Andhra Pradesh has maximum proportion of small family norm (71 %) followed by Kerala with 60 %. This shows that the implementation of family planning programmes in these states is successful.
- About 70 percent of the respondent belongs to Hindu religion and most of them belong to the Backward Class (75%).
- The overall literacy rate observed in the respondents' household was 70.49 percent, higher than the national average of 62.86 percent. Out of this 50 percent had studied up to the primary level.
- Nearly 95 per cent of the respondents lived in their own houses and the maximum proportion (51.95%) of the houses was a *pucca house* mainly because of the supporting scheme of the Government.

- About 85 percent of the households have electricity facilities. About 65 percent of them used firewood as fuel.
- Very few proportion of the households (15.41%) only maintained livestock for domestic support and earn some income from it.
- About 60 percent of the fisherwomen involve themselves in the post-harvest activities to earn income.
- Fisheries share 95 percent of the annual household income and the remaining shared by aquaculture and others.
- The expenditure on food is the maximum (60.68%), which, is the Engel's coefficient of standard of living. This indicates a lesser standard of living given a low savings rate.
- Indebtedness is a serious problem faced by 44.9 per cent of the respondents who had availed loans mostly from non-institutional sources (78.91 %) at an average annual rate of 25 percent interest.

Thus in conclusion it can be mentioned that, the socio economic status of the fisherwomen in the selected States with respect to housing pattern, literacy level, essential amenities like drinking water and electricity is good. Regarding the income generating activities, fisheries is the only source and run a high risk of going out of employment if the fisheries fails. They also do not know any other avocation and do not develop interest to have an alternative source of income unless motivated and supported. Despite these facilities, their standard of living is comparatively at a lower level indicated by the high Engel's coefficient and low rate (or practically nil) of savings. The level of indebtedness is also high because of the income factor. Their dependency on non-institutional sources for loans is driving them to the brim of insolvency. Hence, there is a need for a comprehensive plan for overall development of the sector.

5. Policy implications

The above findings of the study prompts the following policy implications to formulate a comprehensive development plan for the welfare of the fishing community of the study area.

- Creation of opportunities in alternate income generating activities for the fisherwomen especially in the field of post-harvest fishery and mariculture activities **with a suitable market link.**
- Provision of **technical and institutional financial support** to the fisherwomen who take up such alternate income generating activities mainly through **Self Help Groups (SHG's)** after ascertaining their involvement and commitment.
- Creation of **appropriate fishery infrastructure** like **common cold storage, freezing plants, drying yards** to **facilitate** the fisherwomen to take up post-harvest fishery activities on a group basis.
- **Encouragement of maintaining some livestock wherever feasible** to serve as domestic support as well as to supplement the income of the family
- Above all, **creation of awareness about the importance of savings and investment** in domestic and occupational commitments to improve their standard of living.

Last but not the least, it can be believed that if the fisherwomen are motivated and provided suitable technical and financial support, they will strive to improve their families' standard of living and also the fishery sector. This step will definitely yield good results in terms of the contribution of this sector to the economy of the country. It will be apt to conclude this paper with the following quotation.

In order to awaken the people, it is the women who has to be awakened. Once she is on the move, the

household moves, the village moves, the country moves and thus we build the India of tomorrow.

-Pandit Jawahar Lal Nehru