

## Empowerment of fisherwomen in Kerala – an assessment

SHYAM. S. SALIM AND R. GEETHA

Central Marine Fisheries Research Institute, Kochi - 682 018, Kerala, India

e-mail: shyam.icar@gmail.com

### ABSTRACT

Investing in women capabilities and empowering them to exercise their choice is not only valuable itself but also the surest way to contribute to the economic growth and development (UNDP, 2008). The fisheries sector is an important source of livelihood for women. In India, about 25% of women labour force is involved in pre-harvest activities, 35% in export marketing and 40% in internal marketing. The fisherwomen in Kerala play an important role in the fisheries sector in terms of their involvement in fishery related activities viz., fish vending, fish drying, prawn peeling, sorting, grading, fish packing, and net making. The study was focused on the empowerment status of fisherwomen in Kerala across the four occupational groups viz., fish retailer, fish vendor, dry fish makers, and value added fish producers. The specific objectives were to estimate the social, political and economic empowerment of fisherwomen involved in processing and marketing of fish and fishery products in Kerala. The study was based on the data collected from primary and secondary sources of selected coastal districts across the state. The different empowerment parameters like social, economic, legal and political were analysed with the help of scoring indices. The study revealed that highest level of gender discrimination faced by all the respondents across the four different occupational groups were in handling, transporting and storing bulk quantities of fish resources. The assessment of the empowerment indicated that the maximum empowerment was among the value added fish producers followed by retailers and least for the dry fish makers and vendors. The fisherwomen were politically empowered and less empowered legally. Overall, the results showed that, in Kerala, the fisherwomen were more politically empowered and also the composite fisherwomen empowerment index was high indicating better status of fisherwomen in former than in latter.

Keywords: Assessment, Empowerment, Fisherwomen, Kerala

### Introduction

Fisheries is a prime and growing sector in the Kerala economy which has been registering consistent growth of 5-6% during the past three decades. Fishing industry of Kerala which comprises of fish catching, processing and marketing provides employment to over 3.5 lakh personnel who constitute nearly 5% of the workforce of the state. Though the state is having only less than 10% of the country's total coastline, its water front contributes about 25% of the country's fish catch. Economically, the fish caught by around two lakh active fishermen contribute to the tune of about 1.86% of the net domestic product (NDP) of the state (Shyam, 2009). The most important role of fisherwomen in both artisanal and industrial fisheries is at the processing and marketing stages. In some countries, women have become important entrepreneurs in fish processing. In fact, most fish processing is performed by women, either in their own cottage-level industries or as wage labourers in the large-scale processing industry. Women are actively involved in the processing of fish catch, such as sun-drying, salting, smoking and preparing fish and fish-derived foods such as fish paste and cakes, either in cottage level industries, or as wage labourers in large scale processing industries. They are also normally the ones

who subsequently sell the fish products (Krishna Srinath, 1987).

Women dominate the seafood processing sector the world over. The manual dexterity required in processing seafood involves activities like sorting, grading, peeling, gutting, slicing *etc.*, is the primary reason for this dominance. However, women have been confined to the lower rungs of the production process (FAO, 2009). Though skill is defined as the ability or talent to perform a task well or better than average, the work done by women technically comes under the 'unskilled' or 'semiskilled' category as their employment does not require a formal education or education only up to some basic level. Over the years, even though the marine landings depleted, the share of the primary stakeholders in the consumer share hasn't decreased due to the sustained effort of the fisherwomen due to her participation in the forward integration in the marketing function as vendors/retailers. The fisherwomen in Kerala play an important role in the fisheries sector in terms of their involvement in fish related activities viz., fish vending, fish drying, prawn peeling, sorting, grading, fish packing, and net making. The average annual income of a fisherwoman in Kerala varied according to their occupations as ₹ 18,232 in sorting, ₹ 29,720 in peeling,

₹ 18,000 in value additions, ₹ 23,328 in curing and ₹ 59,760 in vending considering the seasonal employment (CMFRI, 2009). Mostly, they are involved in fish marketing followed by housekeeping and fish processing. In the fish processing units, women play an important role.

Persistent poverty and deteriorating economic conditions have forced many women from poor rural households to work outside their homes who ventured into varied economic activities while at the same time continuing to perform their traditional household duties (Swaminathan, 2011). Women play significant roles in all aspects of fisheries; both in the artisanal, small-scale sector and in the commercial sector, yet their roles remain unarticulated and unrecognised. The major constraints faced by women in fisheries include limited access and control over resources like water, land, boat, crafts and gear, knowledge, training, finance, tools, technologies, information technologies, little or no influence on the decision-making process especially in the public sphere, lack of proper infrastructure and support facilities for marketing and processing *etc.* (Shyam *et al.*, 2011). Fishing villages are deprived of basic amenities such as health care facilities, transportation and communication facilities, water supply and electricity (Dehadrai, 2002). Problems like anaemia, malnutrition and vitamin deficiency is observed in fishing communities especially among fisherwomen and children. Furthermore poor awareness/knowledge in the areas of health, nutrition and child care heightened their problems.

The overall objectives of the study were to document the empowerment status of women in fisheries across the different occupation in which they are involved. However the specific objectives are to analyse the role of fisherwomen in processing and marketing of fish and fishery products as a source of income generation and livelihood option in Kerala and to estimate the social, political and economic empowerment of fisherwomen involved in processing and marketing of fish and fishery products in Kerala.

**Materials and methods**

The study was based on the data collected from primary and secondary sources. The primary data was collected from selected respondents using comprehensive

and pre-tested questionnaires. The important variables considered for the study were age, religion, caste, family structure, education level, occupation, income level, assets, expenditure level, frequency of fish consumption along with total and average monthly quantity of fish and fish substitutes purchased, problems in fish consumption, awareness about the value added fish products, and problems in consumption of value added products.

The study was designed to be conducted among the fisherwomen, especially among four occupational groups *viz.*, fish retailer, fish vendor, dry fish makers and value added fish producers. A sample of 50 each from the above occupational groups (Table 1) was selected purposively with an equal distribution from all the major three regions of Kerala including northern Kerala, central Kerala, and southern Kerala as given in Fig. 1.

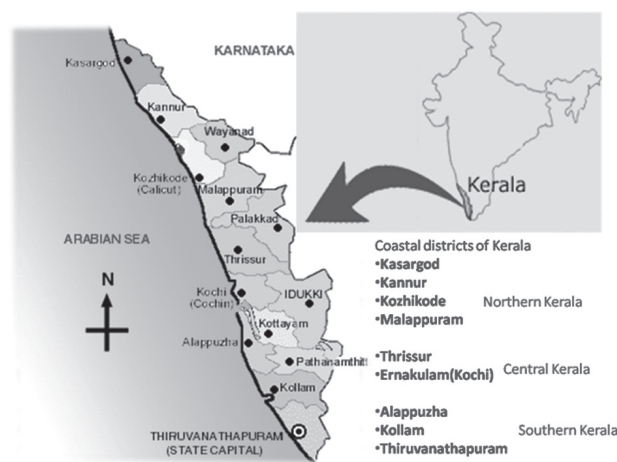


Fig. 1. Distribution of sampling areas for occupational groups

*Tools of analyses*

The data obtained from the respondents were systematically tabulated for the purpose of analysis. The study used the following methods of analyses to present the facts in a cogent manner, to draw meaningful conclusions and to generalise the level of empowerment of the respondent fisherwomen.

Table 1. Sampling distribution of occupational groups

Location	Occupational group				Total
	Fish retailer	Fish vendor	Dry fish maker	Value added fish producer	
Northern Kerala	10	19	18	21	68
Central Kerala	10	10	10	10	40
Southern Kerala	30	21	22	19	92
Total	50	50	50	50	200

### Average and percentage analysis

Average and percentage analysis were used to examine the different variables pertaining to the respondents of the survey. Male-female ratio, adult-children ratio, literacy ratio, earner-dependent ratio *etc.* were prepared for the analysis. Additionally respondents' species preferences, income and expenditure, savings and debt, networking *etc.* were analysed using average and percentage analysis.

### Scoring method

The different empowerment parameters like social, economic, legal and political were analysed with the help of scoring indices. The scoring index is based on binary continuum of 0 and 1 indicating yes or no or a three point continuum of 1, 2 and 3 indicating low, medium and high.

### Measurement of women empowerment

The measurement of women empowerment was based on the four major indicators *viz.*, economic, social, political and legal. Information about their age, religion, caste, family type, educational status, occupation, income level, assets, expenditure on food and non-food items, time spent for household activities, discrimination in economic activities, level of participation in social activities, decision making ability, level of accessibility to resources, awareness about the health and nutritional status, some of the political and legal indicators, *etc.* were collected from the sample fisherwomen. The following tools were used to find out the empowerment of fisherwomen in the study area.

Rank order correlation co-efficient was estimated to compare the gender discrimination in the economic activities, decision making ability, access to legal process and systems as well as access to political systems and citizens power among the four categories of fisherwomen such as dry fish makers, value added fish producers, fish vendors and retailers. The rank order correlation co-efficient was estimated by using the following formula (Bala *et al.*, 2006):

$$\text{Rank order correlation co-efficient } (r_s) = 1 - 6 \frac{\sum d^2}{n^3 - n}$$

where, d = difference in ranks assigned to a particular gender discrimination aspect among four different categories of fisherwomen and n = number of gender discrimination aspects under consideration or the highest rank.

Before estimating the rank order correlation coefficient, the ranks of each parameter / aspect considered in a particular empowerment indicator category were determined through calculation of Mean Percent Score (MPS) for each of them respectively using the following formula (Rahman and Naoroze, 2007):

Mean Percent Score (MPS) =

$$\sum \frac{\text{Scores actually obtained from sample fisherwomen}}{\text{Maximum possible score to be obtained from sample fisherwomen}}$$

where, i denotes parameter/aspect considered in a particular empowerment indicator category.

Women empowerment index was calculated by capturing the responses of fisherwomen on economic, social, political and legal aspects. To calculate the economic empowerment index, data on purchase and selling price of fish and fishery products, timing of auction and its convenience, equal participation in auctions, bargaining power during auction, discrimination in transportation, storage and handling of fish and fishery products and accessibility of getting credit in financial institutions, *etc.* were used as suggested by Mathew (2003). Similarly, decision making ability, access to information resources and knowledge about health and nutritional status were the indicators included to calculate the social empowerment index (Sen and Batliwala, 2000).

The empowerment index of fisherwomen for a particular indicator type, *viz.*, economic, social, and political and legal, was calculated by adding the scores obtained in each aspect of respective indicator. The overall empowerment index of particular category of fisherwomen was estimated by arriving at the average of the indices obtained under all four empowerment indicator categories. The scoring index was based on both binary continuum of 0 and 1 indicating 'yes' or 'no' and three point continuum of 0, 1 and 2 or 1, 2 and 3 indicating 'no', 'little' and 'more' or 'low', 'medium' and 'high', respectively. The following formula was used to measure the empowerment index of the particular category of fisherwomen:

Fisherwomen Empowerment Index (FEI) =

$$\sum \frac{\text{Scores actually obtained for each aspect of empowerment indicator}}{\text{Maximum possible score to be obtained for each aspect of empowerment indicator}} \times 100$$

Composite Fisherwomen Empowerment Index (FEI) =

$$\sum \frac{FEI_i}{4} \times 100$$

where, i denotes the four categories of empowerment indicators, *viz.*, economic, social, political and legal.

## Results and discussion

### Gender discrimination in economic activities

Gender discrimination of fisherwomen in economic activities was analysed with the help of capturing the responses on various aspects and by calculating the rank order correlation co-efficient. The aspects on which responses were sought include purchase price at auction market, sale price at destination market, timing of auction, equality of participation in auction, bargaining power during

auction, difficulty in transportation, difficulty in storage, difficulty in handling bulk quantities, difficulty to have tie-up with middlemen and difficulty in getting credit.

The details on gender discrimination in the economic activities among four categories of fisherwomen in the study area are given in Table 2.

Further, the rank order correlation coefficient ( $r_s$ ) between processors and marketers in Kerala was 0.70. It showed that both the groups of fisherwomen felt more similar with respect to the discriminating aspects in Kerala. This could be understood by the similar or closer ranks assigned by them for most of the aspects of gender discrimination considered under the study.

Table 2. Gender discrimination in the economic activities of fisherwomen

Aspects	Kerala			
	Processor*		Marketer**	
	MPS	Rank	MPS	Rank
Difficulty in getting credit	27.50	4	29.00	7
Exercising bargaining power during auction	16.50	9	28.50	8
Difficulty in handling the bulk quantities of fish and fishery products	48.00	1	69.00	2
Convenience	20.00	8	57.50	3
Inability to exercise tie up with sales	14.50	10	18.50	9
Difficulty in storage of the products	39.50	3	56.00	4
Selling price of fish and fishery products at markets	26.00	5	29.00	7
Hurdles in transportation of the products	47.50	2	72.00	1
Purchasing prices of fish and fish products from the auction site / market	24.50	6	32.50	5
Equal participation in auctions	21.00	7	29.50	6
Rank order correlation co-efficient ( $r_s$ )			0.70	

\* Processors include dry fish makers and value added producers, \*\*Marketers include both fish retailers and vendors

The results revealed that among the various aspects in their economic activities, the women fish processors felt highly discriminated from their male counterparts on handling the bulk quantities, transportation and storage of fish and fishery products. This could be understood by the high Mean Percent Score (MPS) of 48.00, 47.50 and 39.50 of these aspects respectively. On the other side, they did not feel much discrimination on the aspects of having tie-up with middlemen (14.50), bargaining power during auction (16.50), its timing (20.00) and equality in participation (21.00). In the case of women fish marketers, the most discriminating aspects were found to be transportation of fish and fishery products (72.00), handling the bulk quantities (69.00) and timing of auction (57.50). Conversely, the least discriminating aspects for them were having tie-up with middlemen (18.50), bargaining power during auction (28.50) and credit access and sale price (both 29.00). Interestingly, the aspect of timing of auction was felt differently by the two groups of women fish processors and marketers. While the former felt it less discriminatory, the latter expressed it more. This was mainly because of the fact that marketers themselves participate in daily auctions for purchase of fresh fish for selling in the destination markets and to the consumers, whereas the processors usually source their raw materials through their agents.

Overall, the results indicated that the most common aspects in which the all four categories of fisherwomen were discriminated from their men-folk were found to be handling of bulk quantities of fish and fishery products, transportation, storage, access to credit from institutional agencies and difficulties during auction. Appropriate institutional arrangements by way of bringing out some guidelines for equal participation of fisherwomen in auction, fixing of minimum quantities (quota) of fish for women, and priority for fisherwomen to institutional credit access by the government agencies may lessen the gender discrimination of fisherwomen, thereby empowering them ultimately.

#### *Decision making ability of fisherwomen*

Decision making ability of the fisherwomen was analysed on various parameters related to their day to day life and it was linked directly with their level of empowerment. At the same time, it is influenced by some other external factors also. Various aspects, on which the decision making ability of the fisherwomen was measured, were family planning, marriage of their daughter, children's education, family health issues, buying gifts for social functions, religious events, choice of guest and entertainment at social functions, giving loan to others,

spending money for relatives, purchasing assets to home, decisions on husband's job and husband's habits. The details on level of freedom on decision making ability in household activities among four categories of fisherwomen in the study area are given in Table 3.

with respect to their level of freedom on the decision making ability in Kerala State, which could be understood by the similar or closer ranks assigned by them for most of the aspects in decision making ability of fisherwomen considered under the study.

Table 3. Decision making ability of fisher women

Aspects	Kerala			
	Processor*		Marketer**	
	MPS	Rank	MPS	Rank
Buying gifts for social functions	52.00	7	57.50	7
Giving loan to others	54.50	6	57.00	8
Family health issues	60.50	2	68.00	3
Children's education	48.50	8	49.00	10
Purchasing assets for home	60.00	3	69.00	2
Family planning (Number of children / Abortions / Birth intervals)	43.00	10	50.50	9
Decisions on the husband's job/business	17.50	11	8.50	11
Marriage decisions (especially for girls)	44.00	9	64.00	5
Spending money for their relatives	56.50	5	66.00	4
Choice of guest and entertainment at social functions	60.00	3	63.50	6
Religious events	68.00	1	71.00	1
Suggestions on the husband's habits				
(i) Alcoholism	4.50	12	8.00	12
(ii) Smoking cigarette	3.00	14	6.00	14
(iii) Playing cards	3.50	13	6.50	13
Rank order correlation co-efficient ( $r_s$ )	0.92			

\* Processors include dry fish makers and value added producers, \*\*Marketers include both fish retailers and vendors

Among various aspects on which their decision making ability was studied, the women fish processors in Kerala had more freedom to decide on attending religious events, family health issues, choice of guest and entertainment at social functions and purchasing the assets for home. This could be understood by MPS of 68.00, 60.50, 60.00 and 60.00 secured by these aspects respectively. Conversely, they had less freedom to give suggestions on their husband's habits of smoking cigarette (3.00), playing cards (3.50) and drinking alcohol (4.50) and decisions on the husband's business (17.50). Similarly in the case of women fish marketers, it was found that they had more freedom to decide on attending religious events (71.00), purchasing the assets for home (69.00) and family health issues (68.00). On the other hand, they had less freedom to give suggestions on their husband's habits of smoking cigarette (6.00) playing cards (6.50), drinking alcohol (8.00) and decisions on his business (8.50).

The rank order correlation coefficient ( $r_s$ ) between processors and marketers in Kerala was 0.92. It showed that both the groups of fisherwomen felt more or less similar

Overall, the results indicated that the most common aspects, in which the all four categories of fisherwomen were found to be having more freedom, were on attending the religious events, caring about family health issues, purchasing the assets for home, choice of guest and entertainment at social functions and buying gifts for social functions, whereas, the fisherwomen had very less freedom to decide on their husband's habits and business. It shows that the fisherwomen do not have much freedom to suggest on their husband's personal behaviour and business, while they are permitted to take decisions on some of the common family events, indicating their less empowerment in both categories of fisherwomen irrespective of the contribution of income to their family.

#### Access to legal processes

Access to legal process, awareness on women rights, timely redressal of concerns, access to legal systems, knowledge about legal establishments, discrimination during legal process, aversion towards exercising legal rights and opinion on the fairness of legal systems by

fisherwomen was analysed by seeking responses from them and assigning ranks accordingly. The details about the level of access to information on the various aspects among four categories of fisherwomen in the study area are given in Table 4.

extension agencies, women welfare groups and civil societies should further intensify their efforts towards making these fisherwomen more empowered than what they are now.

Further, the rank order correlation coefficient ( $r_s$ ) between processors and marketers was 0.85. It showed

Table 4. Access to legal process and systems

Aspects	Kerala			
	Processor*		Marketer**	
	MPS	Rank	MPS	Rank
Women rights awareness	46.50	7	40.50	7
Timely redressal of concerns	53.50	6	51.50	5
Access to legal systems	73.50	2	45.50	6
Knowledge about legal establishments	75.50	1	67.50	1
Discrimination during legal process	59.50	5	52.50	4
Aversion towards exercising legal rights	71.50	3	64.50	2
Opinion on the fairness of legal systems	66.50	4	58.50	3
Rank order correlation co-efficient ( $r_s$ )	0.85			

\* Processors include dry fish makers and value added producers, \*\*Marketers include both fish retailers and vendors

Among the various information resources on which their level of access was sought, it was found that the two different categories felt highly discriminated from their male counterparts on accessing the knowledge about legal establishments. This could be understood by the high MPS assigned to these information resources by the sample respondents, ranging from 75.50 to 95.90.

This is understandable from the fact that historically the fish markets are traditionally dominated by males, who have more control and monitoring over the price and quantities of fish and fishery products handled in the fish markets in Kerala State. On the other hand, all the four groups of fisherwomen felt less discriminated in accessing the KVK / Village resource centres and market associations, knowledge about capacity building programmes, credit and financial institutions and Government programmes / subsidies. This could be related to the recent implementation of several women-centric welfare programmes through the respective state agencies such as Matsyafed and Kudumbashree in Kerala targeting the economically weaker sections of women, in general and fisherwomen, in particular.

But, at the same time, the results revealed that in general, fisherwomen were highly discriminated in all the chosen aspects of access to information resources. This could be seen from the high MPS they secured that ranges from 36.33 to 95.90, indicating that they have a very poor stake in decision making when compared to their menfolk. This might be due to a very low level of literacy among fisherwomen, lack of awareness about their status and rights, social belief and customs attached to women, *etc.* Public

that both the groups of fisherwomen felt similar with respect to discriminating aspects in level of access of legal systems and process sources. This could be understood by the similar or closer ranks assigned by them for most of the aspects in level of access considered under the study.

#### *Access to political systems and citizens power*

The access to political systems and citizens' power was studied using the following parameters like participation in political process, level of perception about political system, exercise franchise in elections, knowing the elected representatives, membership in political entities/ organisation, awareness on the election process and awareness on the women reservation bill. The details on access to political systems and citizens power among four categories of fisherwomen in the study area are given in Table 5.

It could be seen from the above table that both fish processors and marketers had high awareness in the election process, high level of perception about the political system and high participation in political process. On the other side, both the categories of fisherwomen had less awareness on the women reservation bill, knowledge on the elected representatives, less exercising franchise in elections and low membership in political entities / organisations

Further, the rank order correlation coefficient ( $r_s$ ) between processors and marketers was found to be 0.86. It showed that both the groups of fisherwomen felt more or less similar with respect to access to political systems and citizens power in Kerala state, which could be seen by the similar or closer ranks assigned by them for most of the aspects.

Table 5. Access to political systems and citizens power

Aspects	Kerala			
	Processor*		Marketer**	
	MPS	Rank	MPS	Rank
Participation in political process	81.5	3	79.5	3
Level of perception about political system	84.5	2	81.5	2
Exercise franchise in elections	76.5	5	78.5	4
Knowing the elected representatives	74.5	6	74.5	5
Membership in political entities/ organisation	78.5	4	72.5	6
Awareness on the election process	86.5	1	86.5	1
Awareness on the women reservation bill	66.5	7	59.5	7
Rank order correlation co-efficient ( $r_s$ )	0.86			

\* Processors include dry fish makers and value added producers, \*\*Marketers include both fish retailers and vendors

#### Empowerment of fisherwomen

The empowerment of fisherwomen was studied for fish processors and marketers by constructing the empowerment index. The estimated results are given in Table 6.

(53.08% ) and economic empowerment index (41.15%). On the other side, legal empowerment index was abysmally low (29.18% ), indicating their inability and lack of awareness in empowering themselves. Overall the results showed that the fisherwomen were more politically

Table 6. Empowerment of fisherwomen in Kerala

Fisherwomen category	Empowerment Indicators				Fisherwomen Empowerment Index	't' value
	Economic	Social	Political	Legal		
<b>Processor</b>						
Dry fish maker	38.67	51.3	56.72	27	43.42	6.129* (-7.134)
Value added fish producer	33.12	55.28	63.42	35.3	46.78	6.012* (8.152)
<b>Marketer</b>						
Vendor	47.61	51.9	49.85	26.3	43.92	6.732* (6.931)
Retailer	45.18	53.82	53.24	28.12	45.09	7.427* (6.023)
Overall Index	41.15	53.08	55.81	29.18	44.80	

Note: Figures in parentheses indicate estimated 'standard error' values; \* =  $p < 0.01$

It could be seen from Table 6 that the composite fisherwomen empowerment index was 44.80%. Among all four categories of fisherwomen in Kerala, value added fish producers were found better empowered (46.78%), followed by retailers (45.09%), vendors (43.92%) and dry fish makers (43.42% ). This could be understood from the fact that value added fish producers and retailers, to certain extent, were better educated and economically well-off when compared to the other two categories of fisherwomen, who were generally from the lower income group.

But, interestingly, the results showed that they were empowered more politically, than socially, economically and legally in that order. The overall political empowerment index was 55.81% , followed by social empowerment index

empowered in Kerala and the composite fisherwomen empowerment index was high indicating that the fisherwomen are comparable to other sectors when it comes to empowerment.

The study has analysed the empowerment of two categories of fisherwomen such as processors and marketers in Kerala by capturing their responses on four broad categories of indicators such as those on economic, social, political and legal aspects. The study used the rank order correlation co-efficient to find out the level of discrimination from their men-folk in four aspects such as gender discrimination in the economic activities, decision making ability of fisherwomen, access of information from various sources and level of knowledge about health and

nutritional aspects of fisherwomen. The results revealed that the gender discrimination in the economic activities in both states indicated that the most common aspects in which the all two categories of fisherwomen were discriminated from their men-folk were found to be handling of bulk quantities of fish and fishery products, transportation, storage, access to credit from institutional agencies and difficulties during auction. The assessment of the empowerment indicated that the empowerment was the most for the value added fish producers followed by retailers and least for the dry fish makers and vendors. The fisherwomen were politically empowered and legally less empowered. Overall the results showed that, the fisherwomen were more politically empowered in Kerala and also revealed that the composite fisherwomen empowerment index was high indicating better status of fisherwomen. Appropriate institutional arrangements by way of bringing out appropriate guidelines for equal participation of fisherwomen in auction, fixing of minimum quantities (quota) of fish for women, and priority for fisherwomen to institutional credit access by the government agencies may lessen the gender discrimination of fisherwomen.

## References

- Bala, B., Sharma, S. D. and Sharma, R. K. 2006. Knowledge and adoption level of improved technology among rural women owing to extension programmes. *Agri. Econ. Res. Rev.*, 19 (2): 301-310.
- CMFRI 2009. *Annual Report 2009*. Central Marine Fisheries Research Institute, Cochin, 122 pp.
- Dehadrai, P. V. 2002. Women at the centre stage for socio-economic change in fishing community, In: Kohli Singh, M. P. and Ratna, T. (Eds.), *Women in fisheries*. Indian Society of Fisheries Professionals, Mumbai. India, p. 1-7.
- FAO 2008. FAO Fisheries and Aquaculture Report 2008. *The state of world fisheries and aquaculture*. Food And Agricultural Organization of The United Nations, Rome.
- Krishna Srinath 1987. Role of women in small scale fisheries - A case study, *Mar. Fish. Inform. Ser., T & E Ser.*, 72: 12-17.
- Mathew, G. 2003. Keynote address in *the Workshop on a decade of women's empowerment through local governance*, Institute of Social Sciences and South Asia Partnership, Canada.
- Rahman, H. M. and Naoroze, K. 2007. Women empowerment through participation in aquaculture: Experience of a large-scale technology demonstration project in Bangladesh. *J. Social Sci.*, 3(4): 164-171.
- Sen and Batliwala 2000 Empowering women for reproductive rights: In: Presser, H. B. and Sen, G. Eds., *Women's empowerment and demographic processes: Moving beyond Cairo*, Oxford University Press, Oxford, p. 15-36.
- Shyam. S. Salim, Bindu Antony, Geetha, R. and Ganesh Kumar, B. 2011. *Women empowerment and fisheries sector in Kerala*, Central Marine Fisheries Research Institute, Cochin, 165 pp.
- Shyam. S. Salim 2009. Profile of marine fisheries sector in India. *Compendium on National Conference of State Fisheries Ministers*, Bhubaneswar, Orissa, 4-5 July 2009. Central Marine Fisheries Research Institute, Cochin.
- Swaminathan, M. S. 2011. The wheat mountains of the Punjab. *The Hindu*, Wednesday, May 11, 2011. 10 pp.