

Adoption of oyster culture by women in Kerala

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A study was conducted with the objective of examining the socio economic impact of the technology that was transferred to the women folk through various methodologies and to empower these women both socially and economically through the adoption of these technologies. Fisher folk in the coastal belts were identified from selected villages viz., *Ayiranthengu* (23), *Dalavapuram* (24) and *Azheekal* (23) and the technology of edible oyster culture was demonstrated. Data were collected from the women with the help of a structured interview schedule. Data were collected for a period of three months during the year 2002-03. Percentage analysis was done to categorise them under different groups. The study indicated that group farming appears to be the ideal means for the propagation of oyster culture in this region. Serious constraint faced by these groups were identified and suitable remedial measures suggested to overcome the constraints.

Key words : Socio-economic impact, transfer of technology, oyster culture, women, Kerala

Women play an important role both in capture and culture fisheries in India but still their contribution is not fully recognized. Several programmes were launched for the development of women in fisheries. In spite of this, not much has been accomplished to mitigate the challenges faced by women. Gender planning has been given due importance in all the development programmes both nationally and internationally. Participation of women in development programmes could enhance their work capacity, improve their skill and earning capacity. A technology transfer programme becomes effective when there is minimal or no gap between the potential and realized impacts of the technology. Transfer of technology must therefore be preceded by assessment and succeeded by refinement. One of the prerequisites for effective technology transfer is the appropriateness of the technology - a package that is technically feasible, economically viable, socially acceptable, environment-friendly, consistent with household endowments and relevant to users' needs. This is a dynamic concept whose elements will be subject to adjustment, change and evolution (Karl, 1993 and Anon., 1996). In the developed economies it

has been found that the small-scale enterprises have provided most, if not all, of the jobs created over the last couple of decades. World wide it is observed that small and medium enterprises create most of the jobs. Japan has 78 per cent, USA has nearly half and Korea has more than two third of its work force in small and medium enterprises of jobs. In India also emphasis should be made on the small-scale enterprises thereby the employment opportunities of the rural poor could be improved (Jhamtani, 2003).

With an aim to propagate the technology of oyster culture among coastal women the Central Marine Fisheries Research Institute, Cochin had launched a massive technology transfer programme in Kerala demonstrating the culture of edible oysters. The demonstrations were taken up in collaboration with Brackish Water Fish Farmers Development Agencies (BFFDA), Kerala State Department of Fisheries and NGOs. The main aim of the demonstration was to empower the women both socially and economically through the adoption of these technologies. Fisher folk in the coastal belts were identified and the technology of edible oyster culture was demonstrated to them. It

is a suitable technology that can be taken up by women and hence women self-help groups were formed and trained to take up the activity.

Even though the technology was transferred to the end users through various extension methodologies, the socio economic impact of the technology transfer was not attempted so far and this study was conducted with the objective to examine the socio economic impact. The project aimed at enhancing women's access to resources for better quality of life through adoption of technologies which are feasible for them so as to increase their income through involvement in skill development and income generating activities.

Materials and Methods

The study was conducted in the Kollam district of Kerala state. The locale was selected purposively because the oyster culture demonstrations were mainly done in this region. This technology was adopted by more than 250 farmers in estuarine areas of

Kollam and Allepey districts of Kerala. Seventy fisherwomen, representing the different Self Help Groups, actively involved in oyster culture were selected from the villages Viz., *Ayiramthengu* (23), *Dalavapuram* (24) and *Azheekal* (23) respectively through random sampling. The area of farm varied from 10 to 12 cents for the groups. Each group consisted of 8 to 12 members. Since the culture operations were undertaken on group basis individuals did not possess any area of their own. Data were collected from the women with the help of a structured interview schedule. Data were collected for a period of three months during the year 2002-03. Percentage analysis was done to categorise them under different groups.

Results and Discussions

The analysis of socio economic characteristics of the people will form a base for any intervention in the society and hence the profile characteristics of the fisher women involved in the oyster culture programmes were analysed and the same is presented in Table 1.

Table 1. Socio economic profile of the respondents (n=70)

Parameters	Category					
Age	Young (< 35 years)	Middle (35-45 years)	Old (>45 years)			
No.	23 (32.85)	27 (38.57)	20 (28.58)			
Educational status	Illiterate 1 (1.4)	Primary 27 (38.57)	Middle 21 (30)	High school 15 (2)	Higher secondary 5 (7.14)	Collegiate 1 (1.4)
Type of family	Nuclear 50 (71.42)	Joint 20 (28.58)				
Housing Type	Kutchra 14 (20)	Pucca 22 (31.42)	Cement 34 (48.58)			
Experience in fishing related activities.	Low (<5 years) 27 (38.57)	Middle (5-10 years) 27 (38.57)	High (>10) years 16 (22.86)			
Annual income (Rs)	Low (< 5000) 21 (30)	Middle (5100-10,000) 28 (40)	High ($>10,000$) 21 (30)			

Figures in parenthesis indicates percentages

It could be seen from the table that 38.57 per cent of the beneficiaries belonged to middle age group. More than 30 per cent were having primary (I to V standard passed) and middle (VI - VIII standard passed) level of education and only 1.4 percent was illiterate (cannot read/write). This may be due to the high rate of literacy in the state of Kerala. Only 22.86 per cent of them had more than 10 years in fishing related activities. More than 70 percent had nuclear families. Forty percent had medium level of income between Rs. 5100 to Rs. 10,000 per annum.

Participatory planning process and approaches have become a necessity in most of the development programmes. Mostly the schemes and developmental projects for the welfare of the rural poor are implemented through the governmental and non-governmental organisation. As it is a fact that awareness leads to knowledge, it is the first step to create awareness among the coastal women regarding the organizations which are the means for their development. Mostly women are not exposed to or have less contact with the organizations. The organizations should also staff women field workers to promote women rights more aggressively and also they are catalytic for women empowerment. If women workers are more in developmental organisation this helps the women beneficiaries to have easy access to the organisation.

All the respondents (100%) were aware about the State Department of Fisheries because the programme was implemented in collaboration with them (table 2). Only 67.15% were aware about the lending policy of banks for the project. 71.43% of the respondents were not aware about the fisheries research organizations other than Central Marine Fisheries Research Institute. Majority (75.72%) were unaware about the activities of NGOs because they may not have received benefits or any other support from the NGOs.

Table 2. Awareness about organizations

Organizations	Aware	Not aware
State Department of Fisheries	70 (100)	-
Fisheries organizations (other than CMFRI)	20 (28.57)	50 (71.43)
Banks (regarding loan for Projects)	47 (67.15)	23 (32.85)
NGOs (activities)	17 (24.28)	53 (75.72)
Cooperative societies	54 (77.15)	16 (22.85)

Figures in parenthesis indicates percentages

Transfer of technology is effected through execution of different extension methods in order to enhance the receptivity of the end user. If the technological results are demonstrated the rate of convincing will be more. Another important way to communicate research findings is training. So under this project the mode of transfer of technology adopted was mainly through meetings, trainings and demonstrations.

It could be observed from Table 3 that majority were satisfied with the proficiency of the resource person (78.57%), content of the message delivered (67.14%) and practical applicability (74.28%). Since the demonstrations and training were directly conducted by the researchers the fisherwomen would have received the package of practice of technology in a more understandable way and also they have practically adopted the technology at their level. Only less than 20 per cent were not satisfied with the mode of transfer of technology. 28 percentage reported that since they are culturing oyster they are able to consume oyster meat.

It can be observed from table 4 that the participation in local organisation had increased (45.7%) which may be due to more contact with the local bodies and also, recreation had increased for 44.28%. Since they get more income they may be spending more towards recreation. Participation in social and religious organizations had increased for 31.42%.

Table 3. Perception of the mode of transfer

Perception	Most satisfied		Satisfied		Not satisfied	
	No	%	No	%	No	%
Proficiency of the resource person	55	78.57	7	10	8	11.43
Content of the message delivered	47	67.14	11	15.71	12	17.15
Practical applicability	52	74.28	12	17.15	6	8.57
AV aids used	25	35.72	38	54.28	7	10
Conviction of the message	32	45.73	37	52.85	1	1.42
Overall opinion about the programme	39	55.72	24	34.28	7	10

All of them stated that there was no change in their dowry. Only litigation, political participation and participation in local bodies had decreased for a small percentage of respondents.

The number of employment days increased to 180 days and 60% of the respondents reported that they got employment under this programme. On an average an income of Rs.1500 per month was realized. Nearly 80 per cent of the respondents reported that their savings increased between 5 to 10 percentage. Annual indebtedness decreased by 5 to 10% as reported by the beneficiaries. Nearly 50% of them reported that other fisherwomen used to discuss with them regarding the oyster culture practices and hence they feel that they gained social recognition after adopting this technology. No much change in value addition was reported.

88% of the respondents reported that the subsidy for inputs had increased (table 5). This may be because in order to propagate the technology, some of the organizations may have given input subsidies. 78.58% of the respondents reported that the credit availability has also increased. Credit availability may increased because of the income generated through this activity making them more credit worthy and banks willing to finance them. Since this technology was adopted on a group basis, 56 per cent reported that they their level of cooperation from neighbouring fishermen/women had increased. Labour and input availability had not changed because their family members helped in most of the jobs.

The degree of success or failure of any developmental programme depends upon the intensity of problems faced by the people involved in the programmes. So it is

Table 4. Social system consequences

Parameters	Increased		Unchanged		Decreased	
	No	%	No	%	No	%
Litigation	-	-	61	87.15	9	12.85
Political participation			64	91.43	6	8.57
Participation in cooperatives, panchayat, local bodies	32	45.7	33	47.15	5	7.15
Dowry	-	-	70	100	-	-
Recreational	31	44.28	39	55.72		
Social and religious functions	22	31.42	48	68.58		

Table 5. Social welfare consequences

Parameters	Increased		Unchanged		Decreased	
	No	%	No	%	No	%
Price	32	45.71	38	54.29	-	
Cost of inputs	24	34.28	46	65.72		
Credit availability	55	78.57	15	21.43		
Labour availability	-	-	70	100		
Labour cost	15	21.42	55	78.58		
Local availability of inputs	-	-	70	100		
Subsidy for inputs	62	88.57	8	11.43		
Cooperation of neighbouring fishermen	39	55.73	22	31.42	9	12.85
Transportation costs	-	-	70	100	-	-
Change in housing pattern	8	11.43	62	88.57		

necessary that the constraints need to be identified and suitable remedial measures should be suggested to overcome the constraints.

All the respondents reported lack of efficient marketing system as a problem (table 6). There are no regular takers for the produce. Moreover the demand for the oysters in the local market is also less. If they have to sell the product in the internal markets, the profit they get is less. Mohanty and Jain (1996) also reported that absence of proper marketing channel in the rural sector is a constraint for fish culture. Seventy-six percentages reported that they were not aware about the services offered by the

fisheries organisation like credit availability, and other financial support. Complexity of the technology was reported as a problem by 74 per cent. Insufficient training was reported as a problem by only 12 per cent.

The areas in and around *Ashtamudi* lake had enormous potential to develop edible oyster culture as an alternative avocation for women. The study indicates that group farming appears to be the ideal means for the propagation of oyster culture in this region. Lack of legislation for the use of common water bodies is a serious constraint faced by these groups and reclamation of land adjoining to water bodies is the threat posed by the encroachers. Hence a cautious leasing policy of water bodies should be done.

Table 6. Problems encountered by the beneficiaries

Constraints	No	%
Lack of efficient marketing facilities	70	100
Unawareness of supply of services offered by organisation	53	75.71
Complexity of the technology	52	74.28
Economic profitability	41	58.57
Cost of input	38	54.38
Lack of extension system	30	42.85
Input availability	26	37.14
Physical compatibility	20	28.50
Insufficient training programmes	8	11.42
Cultural compatibility	7	10.00

The author wishes to express her gratitude to Dr. Mohan Joseph Modayil, Director, CMFRI, Cochin for granting consent to take up this study as a part of the Institute's research project. Thanks are also due to Dr. R. Sathiadhas, Head, SEETT division for correcting the manuscript and giving valuable suggestions. The data collection work carried out by Shri T.N. Pushkaran and K.P. Salini, Technical Assistants of SEETT Division is also hereby acknowledged.

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