

## Mussel Farming Technology Dissemination to the Self Help Groups

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### ABSTRACT

The study is an attempt to assess the socio-economic impact of mussel farming by mobilising self-help groups in Kerala and Karnataka coastal belts. The study showed that mussel farming faced a number of impediments such as water salinity, seed availability, climatic vagaries, problems related to identification of proper beneficiaries and problems in marketing of mussels. The correlational analysis revealed a proportional relationship between group dynamics effectiveness and average yield obtained for each self-help group, which ensured a reasonable profit as a consequences of adoption of mussel farming.

Transfer of technology constitutes an inevitable link in the chain of development in marine fisheries sector of India. With the dwindling catch rate in marine fisheries, alternate employment generation is vital for livelihood security of coastal fishers. A situational analysis points to the need for empowering them using appropriate development strategies enabling adoption of technical innovations like mussel culture for entrepreneurship development and income generation. The advent of mussel culture technology has brought a transition in the fisheries sector. Creating awareness through training and demonstration programmes is mandatory for commercializing mussel farming technologies developed by the institute. Lack of knowledge about the farming methods and its profitability is one of the major factors, which has restrained adoption of these technologies by fishermen. The experimental trials conducted by CMFRI have proved the techno-economic feasibility of mussel farming. (Ashokan *et al.*, 2001 and Vipinkumar V.P. *et al.*, 2001). *Karwar* region in Karnataka, *Goa* and *Ratnagiri* region in *Maharashtra* are identified as suitable areas for adoption of mussel culture.

The major objectives taken care for the study were:

- i. To disseminate the mussel culture technology to the selected Self Help Groups in Karnataka coastal belts

through appropriate training and first line demonstrations.

- ii. To evaluate the social economic consequences of adoption of mussel farming by the selected Self Help Groups.

### METHODOLOGY

A situational analysis through PRA in Karnataka coasts was undertaken to identify suitable sites for mussel farming in open sea and estuaries. Self Help Groups were mobilised in Karnataka coastal belts and offered training through demonstration on mussel culture in open sea and estuaries at three sites namely Majali, Sunkeri and Bhatkal. Initially, training and demonstration programmes in two sites in Karwar were undertaken, one for raft culture in open sea in Majali of Dendebag and one for rack culture in Sunkeri of Kali estuary. The training was imparted to 45 members of three Self Help Groups each in 2 sites separately comprising a total of 90 participants. At Majali in open sea, a 5 x 5 metre raft and at Sunkeri of Kali estuary a 5 x 5 metre rack constructed for mussel culture. In Bhatkal, four Self Help Groups of 15 members each exclusively of women fisherfolk comprising a total of 60 participants were trained on mussel farming with a trial in 5 x 6 metre rack culture by long method in Mundalli river of Bhatkal estuary and Sunkeri of Kali

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estuary was identified as a suitable site for mussel culture and three Self Help Groups of 15 members were mobilized. Training was imparted on the mussel culture technology by technical experts in Sunkeri of Kali estuary for the beneficiaries of Self Help Groups. The growth parameters were recorded periodically and harvest was undertaken in time with the following results. A pre-tested well-structured interview schedule was prepared and a survey was undertaken among the beneficiaries to make out the profile of behavioural pattern and socio economic characteristics.

In the present study, the Effectiveness on Group Dynamics of these SHGs' was worked out based on Group Dynamics Effectiveness Index (GDEI). Group Dynamics Effectiveness was operationally defined for the study as the sum-total of the forces among the member of SHG based on the sub-dimensions, such as participation, influence and styles of influence, decision making procedures, task functions, maintenance functions, group atmosphere, membership, feelings, norms, empathy, interpersonal trust and achievements of SHG. (Vipinkumar and Baldeo Singh 1998, 2001). For the computation of the Group Dynamics Effectiveness Index (GDEI) the scores obtained for each of the above mentioned sub-dimensions were first made uniform and then multiplied by the corresponding weightage assigned to each as by expert judges. These scores were then added up to get the GDEI score of each respondent. An attempt to assess the social system consequences and socio economic consequences over a period of time especially after the interventions on mussel farming was made based on the expressed opinion of the members of the SHG.

## RESULTS AND DISCUSSION

The SHGs' of Majali and Sunkeri were mobilized by the project team of CMFRI and the SHG's of Bhatkal were mobilized by a NGO namely Snebakuja. The first two trials and demonstrations were under the funding of CMFRI and for the last one, only the technical helps during the training and demonstration were offered by CMFRI. The major expenditure required for mussel farming is for the materials such as bamboo, nylon rope, coir, cloth, seed, etc. and labour costs essentially for construction, seeding, harvesting, etc. The yield particulars in all the ten SHGs' was noted and found as substantially good which proves the profitability of mussel farming in the subsequent trials because the material costs such as those of bamboo, rope, cloth and labour cost in construction etc. are negligible, this ensures reasonable profit as a major consequence of adoption of

Mussel farming enterprise bringing about economic empowerment of rural women through organised Self Help Groups.

The yield in Kg per metre length of the rope recorded in all SHGs' as average yield showed a positive relationship with GDEI score. The correlation ( $r=0.958139$ ) was found significant owing to the 't' value 9.465624 at 1 per cent level of significance (Table 1). Experience and observations already indicated that for a group to be developed as an SHG, it requires a period of at least 36 months and it is a hectic process. It has to pass through various phases such as Formation phase, Stabilisation phase and Self Helping Phase.

These Self Help Groups promote a cooperative and participative culture among the members, which ensures the empowerment culture of the Self Helping phase. The utilization of fund sources, accounts maintenance etc. are all perfectly accomplished with proper maintenance of the documented records by the group members. This ascertains the fulfillment of norms and standards of the SHG leading to economic empowerment of the members. The utilization of fund sources, accounts maintenance etc. are all perfectly accomplished with proper maintenance of the documented

Table 1. Relationship of Yield and GDEI of SHG's

SHG	Yield in Kg/m	GDEI score	Correlation Coefficient (r)	't' value
SHG1	9.2	53.71		
SHG2	9.1	52.31		
SHG3	8.9	51.91		
SHG4	12.6	57.32		
SHG5	12.7	56.68	0.958139	9.4656248**
SHG6	12.5	57.14		
SHG7	13.6	60.01		
SHG8	13.1	59.98		
SHG9	13.8	61.29		
SHG10	13.2	60.02		

Table 2. Constraints faced by the SHG members in mussel farming

Constraints	Rank
Unpredictable seed availability	1
Mortality of seeds during transportation	2
Reduced growth during certain period of the year	3
Marketing of mussels	4
Meat shucking problems	5
Social constraints like caste, conflicts, politics etc.	6

records by the group members. This ascertains the fulfillment of norms and standards of the SHG leading to economic empowerment of the members.

#### Constraints faced by the fisherfolk in mussel farming

Mussel farming faces a number of impediments like water salinity, seed availability, selection of location/site, climatic vagaries, identification of proper beneficiaries and proper monitoring opportunities. The major constraints faced by the fisherfolk in mussel cultivation are given in Table 2.

The open sea mussel culture in this particular case met with the impediment of unfortunate sabotage of the seeded mussel by some miscreants. It was rectified by reseeded, but the yield was not that much conspicuous compared to the trials undertaken in estuaries. All the SHG members are of unanimous opinion that the government agencies should come forward with improved marketing facilities, as marketing of the mussel was perceived as one of the biggest constraints. Provision of loans with reduced interest rates and freezer facility for storage of harvested mussels can bring about a breakthrough in this sector in the near future. Though the lucrative Goa market proximity was an added advantage for these mussel culture trials, appropriate strategies to address the socio-legal issues encountering mussel farming, awareness building and market development are the inevitable requisites for further expansion of mussel culture through community participation for sustainable development.

Table 3. Social system consequences

S.No.	Items	Percentage		
		Increased	Un changed	Decreased
1.	Litigation	50	49	1
2.	Political participation	48	41	11
3.	Participation in co-operation	30	63	7
4.	Dowry	19	70	11
5.	Recreational activities	53	37	10
6.	Social & religious fund	79	20	10

#### Social system consequences and socio economic consequences

An attempt to assess the social consequences and socio economic consequences over a period of time especially after the interventions on mussel farming was made based on the expressed opinion of the members of the SHG. The social system consequences was assessed in terms of the parameters such as Litigation, Political participation, Participation in co-operation, Dowry, Recreational activities, Social and religious fund provision was made in percentage value. The socio economic consequences were assessed on the parameters such as Price, Cost of inputs, Credit availability, Labour availability, Labour cost, Local availability of inputs, Subsidy of inputs, Co-operation and Transportation cost.

From the (Table 3) it is noted that 70 per cent of the fishermen expressed that social and religious fund has increased and 68 per cent of them told that their level of political participation is increased. Regarding the Socio Economic consequences from the (Table 4) it is noted that the transportation cost is increased by 82 per cent and labour cost is increased by 79 per cent and 67 per cent expressed change in their housing pattern. Similar interpretations can be made on other parameters also.

Table 4. Social economic consequences

S.No.	Items	Percentage		
		Increased	Un changed	Decreased
1.	Price	65	35	0
2.	Cos of input	63	23	14
3.	Credit availability	43	41	16
4.	Labour availability	25	24	51
5.	Labour cost	79	17	4
6.	Local availability of inputs	29	53	18
7.	Subsidy of inputs	28	39	33
8.	Co-operation	33	39	28
9.	Transportation cost	82	16	2
10.	Change in housing pattern	67	28	5

### CONCLUSION

An attempt has been made to assess the socio economic impact of mussel farming by mobilizing Self Help Groups in Kerala and Karnataka coastal belts. Mussel farming is slowly achieving considerable significance because of its profitability. But it is inevitable to take care of the selection of suitable sites fulfilling the essential parameters for undertaking mussel culture trials. It would be pertinent to have study on the effect of coir retting zones on growth and attachment of mussel seeds to the strings, which is often found to be not suitable by experiences and observations. The export potential of mussel can be promoted through value addition experiments on depuration plants in filtered seawater. Organised fishermen's cooperatives can play a vital role in various stages of seedling, harvesting, sorting, grading, packing, and marketing with an intention of export potential.

The study emphatically disclosed the deep rooted influence of Group Dynamics network among the farmer folk as influenced by their participation, influence and styles of influence, decision making procedures, task function, maintenance function, group atmosphere, membership, feelings, norms, empathy, interpersonal trust and achievements of SHG. Irrespective of the location specific problem oriented resource based alternative programmes for income generation, this study emphasises on the economic empowerment of rural women through mussel farming as a means of poverty eradication through Self Help Groups because, poverty can only be alleviated by mobilising the poor to solve their actual problems in the form of organised SHG's. In the impact assessment, the correlation analysis revealed, a proportional relationship between the Group Dynamics Effectiveness and Average Yield obtained for each SHG, which ensures reasonable profit as a major consequence of adoption of Mussel farming enterprise bringing about economic

empowerment of fisherfolk through organised Self Help Groups. Similarly the social system consequences and socio economic consequences over a period of time, after the interventions on mussel farming were also assessed made based on the expressed opinion of the members of the SHG.

### ACKNOWLEDGEMENTS

I am immensely grateful to Prof.(Dr.) Mohan Joseph Modayil, the Director, Central Marine Fisheries Research Institute, Cochin-18 for his constant encouragement to do the Mussel Culture Projects and in the preparation of this paper.

My thanks are due to Dr. R.Sathiadhas, the Head of the Division of Socio Economic Evaluation and Technology Transfer, Dr. K.K. Appukuttan, the former Head, Molluscan fisheries Division for the wholehearted cooperation rendered in exploring case studies in Karnataka State.

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