

Women Empowerment in Mariculture

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Introduction

Women empowerment is a ‘bottom-up’ process of transforming gender power relations, through individuals or groups developing awareness of women’s subordination and building their capacity to challenge it. Empowerment basically refers to the process of raising women status by way of promoting economic, social, political and local empowerment. The goals of women empowerment are to challenge patriarchal ideology, to transform the structures and institutions that reinforce and perpetrate gender discrimination and social inequality and enable poor women to gain access to and control over both material and information resources. The paradigm of empowerment means increasing the social, political, spiritual or economic strength of individuals and communities. A lot has already been echoed in the mainstream media and research perspective about the significance that gender equality and empowerment of women play in the overall modernization of any society. Empowering women in a society where they have been treated like doormats for centuries is a Herculean task. There is bound to be an internal resistance practically. It would be pertinent to make an attempt for the practical empowerment of women in the context of community development.

International Fund for Agricultural Development (IFAD) considers three pillars to achieve gender equality and women’s empowerment, which include

- **Economic empowerment:** Improving women’s access to income-earning opportunities and productive assets. Improving rural women’s economic status and helping them build an asset base contribute to breaking down gender stereotypes. Eliminating the barriers that prevent women from getting access to fundamental assets is crucial for broad-based economic growth and poverty reduction.
- **Decision-making:** Increasing women’s say in community affairs and strengthening women producers’ organizations. Rural poor people need to be able to influence the public and private decisions that affect their lives, if change is to be sustainable.
- **Well-being:** Improving access of rural people, in particular women, to basic services and infrastructure. Rural women give high priority to basic needs such as health services, water, education and infrastructure when consulted during planning of development initiatives. IFAD recognizes that lack of, or limited access to, essential services and infrastructure is a major obstacle to women’s advancement because it prevents them from participating in the mainstream of economic development and community life.

Women Empowerment in mariculture

It is an unequivocal proposition that, in the advancement of mariculture, and transfer of technologies, the Self-Help Groups (SHGs) of fisherfolk play a pivotal role. Rational utilization of common property resources for sustainable development without endangering the environment is possible through community participation. Bivalve mariculture has already been proved as one of the profitable enterprises in the coastal belts as a subsidiary income-deriving source of coastal fisherfolk especially women. The experimental trials conducted by CMFRI have proved the techno-economic feasibility of mussel and oyster farming. (Asokan *et al*, 2001 and Vipinkumar *et al*, 2001).

Being a developing sector, women participation in mariculture sector needs a meticulous planning for technological empowerment encompassing the social and economic barriers. On-farm trials conducted by DRWA, CIFA, CIBA and CMFRI have brought out, the strong motivation and capability among women for taking up aquaculture (Freshwater, brackish-water and Marine) through SHGs. Empowering women in different aquaculture/mariculture practices can provide suitable option for sustained economic and nutritional security of the family and thereby an in-depth observation on these dimensions made through the present study has ample scope to explore the paradigm of gender balance and women empowerment. Here an attempt has been made on exploration of a couple of case studies on role of Self-Help Groups of women fisherfolk in transfer of technology and advancement of aquaculture.

Case study on Bivalve farming by women SHGs in Kasargod and Kollam districts of Kerala state

Kasaragod, the extreme northern district of Kerala is particularly notable for green mussel and oyster farming as it has been successfully accomplished by the women SHGs. These groups were given financial assistance in the scheme namely; SGSY (Swarnajayanthi Gramaswa Rozgar Yojana) by the state government which takes care of economic empowerment of weaker sections (Vipinkumar *et al*, 2001). Subsidies, bank loans etc are the part and parcel of the scheme which focus attention on poverty alleviation through organised SHGs. This programme looks into training, credit, marketing, technical knowledge and basic facilities necessary for the upliftment of the poor to bring them above the poverty line within three years in such a way that they should have reasonable monthly earnings. Water bodies in the Kasargod coastal belt have ample scope for the judicious utilisation of bivalve farming, finfish culture, prawn and crab farming. (Asokan *et al*, 2001).

Quilon or Kollam, is an old seaport town on the Arabian coast very conspicuous for brown mussel and oyster farming. About 30 per cent of this district is covered by the Ashtamudi Lake, thereby making it the gateway to the backwaters of the state. Kollam is an important maritime district of the state with a coast line of 37.3 kms. Fishing has a prominent place in the economy of the district. Neendakara and Sakthikulangara villages thrive in fishing. Cheriazheekkal, Alappad, Pandarathuruthu, Puthenthura, Neendakara, Thangasseri,

Eravipuram, Paravoor and Thekkumbhagam are nine among the 26 important fishing villages. There are 24 inland fishing villages also. One third of the state's fish catch is from Kollam.

This study was undertaken in two panchayats namely Cheruvathur and Padanna in Kasargod district and Thekkumbhagam and Neendakara in Kollam district. The brackish water estuary systems of these panchayats are extremely suitable for bivalve farming. Similarly, in Kaunagappally thaluk situated 27 kms north to Kollam, Thekkumbhagam and Neendakara panchayats were selected and of these, Dhalavapuram and Malibagam villages of Thekkumbhagam panchayat and Pannakkalthuruthu and Puthanthuruthu villages of Neendakara panchayaths were selected for data collection. As much as 200 households undertaking bivalve farming were selected and male and female counterparts in each household were separately interviewed, comprising a total of 400 respondents. The data regarding gender participation in different activities, gender needs, decision making and access and control over the resources in respect to bivalve culture were collected through personal interviews of the respondents with the help of a pre tested well structured interview schedule. In addition to this, 10 Self Help Groups of women engaged in bivalve culture at random from 2 districts were selected for drawing explorative case studies to measure the Group Dynamics through personal interviews of the respondents. The Group Dynamics of members of SHGs was measured by developing an index called Group Dynamics Effectiveness Index (GDEI) which 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 & styles of influence, decision making procedures, task functions, maintenance functions, group atmosphere, membership, feelings, norms, empathy, interpersonal trust and achievements of SHG. (Vipinkumar and Singh, 1998). The Benefit-Cost ratio was analysed in each group and cost dynamics were worked out. The problems and constraints faced by the women were also assessed in each case and listed out. The cost estimates of all the selected SHGs were also computed and by taking in to consideration of major expenditure required for bivalve farming is for the materials such as bamboo, nylon rope, coir, cloth, seed, etc. and labour costs essentially cover construction, seeding, harvesting etc. the Net Operating Profit and B:C ratio also were calculated for different SHGs to draw valid inferences.

The study, focused attention on Group Dynamics Effectiveness as a trait of SHGs resulted by the joint influence of individual members of the group generated out of skills and orientations from the past life experiences. It definitely varies from person to person, place to place, time to time, situation to situation and in turn from group to group. This might be the probable reason for the differential degree of GDEI observed among respondents. Six SHGs engaged in mussel farming were selected from two panchayaths Cheruvathur and Padanna in Kasargod district and 4 SHGs from Kollam district to draw explorative case studies through personal interviews of the respondents.

A Glimpse on the Profile of Cost Estimates of Bivalve Farming SHGs

The women's groups constituted in the scheme DWCRA started mussel farming as early as 1996. When the SHGs are economically empowered with the provision of loan facilities, the returns from mussel farming help them to repay the loan slowly. The loan was granted through Farmers' Service Cooperative Banks and North Malabar Gramin Banks in Cheruvathur and Padanna panchayaths of Kasargod district. Majority of the SHGs showed considerable progress in repayment of the loans, which can be concluded as an indication of the profitability of mussel farming. The BC Ratio in all the ten SHGs was computed and found as substantially good which proves the profitability of Mussel farming in the initial trial itself and since during the subsequent years, 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 SHGs.

Experiences 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 SHGs promote a cooperative and participative culture among the members, which ensures the empowerment culture of the Self Helping phase. The loan sanctioning, utilisation, accounts maintenance and timely repayment of loans 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 relationship of yield and GDEI of selected SHGs is also presented in Table 2. 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 coefficient value was ($r = 0.863$). One of the major dimensions of GDEI is achievements of SHG which is an indirect representation of yield and economic gain from the micro-enterprise of the SHGs. Therefore, it is quite natural to observe a positive relationship of yield or BC Ratio with GDEI.

Assessment of Gender Perspectives in Bivalve Farming

An assessment of gender perspectives in terms of gender need and gender role in mussel farming in Kasargod and Kollam districts was also done as a part of the study. 200 households from each district were selected and male and female counterparts in each household were separately interviewed in these 2 districts, comprising a total of 400 households. The gender participation in different activities, gender needs, decision making and access and control over the resources in respect to mussel culture were analyzed. Opinion of men and women in above aspect was found to be similar without any significant difference. However, differential gender response was observed between the villages in Kasargod and Kollam districts. Significantly, the accounting/money transaction is under the control of women and the most important requirement perceived by both men and women is the timely availability of spat. In case of participation and need, both men and women share

almost the same opinion (Sahoo *et al*, 2009). Socio-economic, technological and export support requirement was analyzed for gender mainstreaming. Male and female respondents in a household were separately interviewed for getting the response of gender needs in terms of access to resources in mussel/oyster culture, participation in various activities of bivalve farming, gender needs and decision making in various stages. The participation profile in various activities concerned with bivalve farming is presented in Table 3. The gender response in participation in various activities in mussel farming in such as female alone, male < female, male = female, male > female and male alone indicated separately by male and female are presented. It indicates the participation profile in gender perspective in mussel farming for male and female separately. It can be glanced clearly from the perusal of the table that, the male dominating operations of bivalve farming are after care, arranging bamboo poles and ropes, seeding nets, canoeing to the sites, harvesting, hiring canoes to estuary, mussel spat collection, post harvest operation, raft construction, seeding rate and seeding, site selection, transport to shore and tying the seeded ropes to the raft which are labour intensive as per the responses of both male and female. But the female dominating activities are record keeping, shell disposal, marketing of live mussel, shucked mussel, meat shucking etc. In the same way, response to access to resources, the gender needs and the extent of decision making in various activities concerned with bivalve farming of male and female also were assessed separately.

Problems and constraints of gender in bivalve mariculture

Mussel and oyster 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 problems and constraints faced by the women in mussel cultivation in the rank order are unpredictable seed availability, meat shucking problem, marketing of mussel, mortality of seeds during transportation, reduced growth during certain years, social constraints like caste splits, conflicts etc. to a limited extent. Here also, all the group 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. It would be pertinent to have a study on the drudgery in bivalve farming trials as well as effect of coir retting zones on growth and attachment of mussel seeds to the strings, which often found by experiences. Laboratory experiments should be broadened to study the effect of coir retting zones on growth of mussel. Similarly, 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 seeding, harvesting, sorting, grading, packing and marketing with an intention of export potential. Irrespective of the location specific problem-oriented resource based alternative programmes for income generation, this study emphasises on the gender need and gender role also ultimately for economic empowerment through bivalve farming as a means of poverty eradication through SHGs.

Case study of Mussel Farming Women SHGs in Malabar Fisheries Sector in Vallikkunnu of Malappuram district, Kerala State

It is a matter of great concern that, despite the economic and socio-cultural significance of fishing in Kerala state, the women fisherfolk at large are outside the mainstream of the society in the economically disadvantaged category without accruing the benefits from fishing industry. (Kurien, 1994) Malabar areas of Kerala always stand backward and less progressive than the rest of Kerala and about half of the coastline of Kerala state is of Malabar. (MCITRA, 2003) But fisherfolk especially women rarely gain the benefits even when there is tremendous consideration for fish production because fisheries development was most often discriminated from the development of fishing community. This case study in Malabar essentially focused on the major objective of assessing the Group Dynamics of the SHGs of women fisherfolk and identifying the important dimensions contributing to their effectiveness and assessing the influence of personal and socio psychological characteristics on Group Dynamics.

The practical dissemination of bivalve farming technologies in the potential maritime locations in Malabar coasts was undertaken in Kadalundy of Vallikkunnu grampanchayat in Malappuram district of northern Kerala by training 62 women fisherfolk under Community Development Scheme (CDS) of *Kudumbasree* District Mission. These women were mobilised into 12 SHGs comprising 60 members with a provision of a distinct loan amount and 40 per cent subsidy with a reasonable nominal amount as beneficiary contribution in each SHG. The members possess the joint responsibility through a strong internal amendment with a firm base of interpersonal trust. Assessment of the Group Dynamics Effectiveness of the SHGs was attempted by interviewing the members with standardized protocols developed and the groups with substantial effectiveness score were identified.)

A breakthrough harvest results were noticed in the SHGs due to the high market demand of mussel up to 5 Rs per piece and Rs 250 per kg of meat. The computation of harvest particulars, economic analysis, estimation of socio-psychological characteristics and yield dynamics were undertaken in the SHGs and brought out a BC ratio of 3.5:1 on an average. The influence of personal and socio-psychological characteristics of SHG members on Group Effectiveness also was assessed along with gender perspectives on decision making aspects and gender need analysis in mussel culture. The harvest results of mussel farming by the women SHGs had great expectations on SHG enterprise as a major means of poverty alleviation as each SHG in turn ensures economic sustainability of 5 families. The local availability of green mussel and local self sufficiency of edible mussel products of diversified uses with low cost of production and moderate selling rate make satisfied customers in turn attracting consumers of other states to the enterprise. Ultimately through gender mainstreaming and women empowerment and socio-economic upliftment through the mobilised women SHG, the local economic development of Vallikkunnu gets improved which in turn leads to radical development of fishers of Kerala state in a broader sense. Success cases of SHG mobilization were elucidated and documented which could be used as

case models for promoting group action of SHGs on a sustainable basis. The Simple Correlation analysis of the sub-dimensions is presented in Table 7 and it was noticed that Achievement of SHGs was the most important dimension followed by Participation and Group Atmosphere. (Vipinkumar *et al*, 2015)

Simple Correlation analysis of sub-dimensions with GDEI

Sl. No	Variable	Quantified value in Per cent
1	Participation	0.947**
2	Influence and Styles of influence	0.938**
3	Decision making procedures	0.919**
4	Task functions	0.907**
5	Maintenance functions	0.913**
6	Group atmosphere	0.945**
7	Membership	0.874**
8	Feelings	0.879**
9	Norms	0.884**
10	Empathy	0.869**
11	Interpersonal trust	0.918**
12	Achievements of SHG	0.949**

** Significant at 1 % level of significance

Cage Fish Farming: Success story of SHGs in Edavanakkad and Manjanakkad, Kerala

Cage fish farming technology ensures an exemplary entrepreneurial venture for the utilization of public water bodies for the livelihood enhancement of coastal fisherfolk. The open water resources of our country are widely utilized for fish production by establishing location-specific cage culture systems. ICAR-CMFRI plays a vital role in disseminating the cage fish culture technology throughout the coastal belt of the country. As a part of the project entitled “Empowerment of Scheduled Caste fisherfolk through Entrepreneurial Capacity Building of Self-Help Groups in marine sector” funded by Department of Science & Technology, New Delhi, under Scheduled Cast Sub Plan (SCSP) scheme, successful cage culture ventures were undertaken in Edavanakkad and Manjanakkad villages of Ernakulam district of Kerala state by mobilizing 3 SHGs.

One SHG consisting of 10 members with an equal proportion of men and women was mobilized for doing cage fish culture in Veerampuzha backwater at Edavanakkad, Vypin Island, Erankulam. Similarly, 2 SHGs with an equal proportion of men and women were mobilized in Manjanakkad. The technical assistance was provided by the experts from Krishi Vigyan Kendra (KVK) of CMFRI which played a pivotal role in practical implementation of the project. A series of training programmes including the theoretical aspects and practical demonstrations on cage fabrication and management was undertaken with the subject matter experts. Interaction meetings for imparting awareness among fisherfolk beneficiaries were organized in the sites and training programmes including cage fabrication and cage installation along with fish seed selection, grading and feeding were successfully carried out

for the SHGs. A training pamphlet in vernacular was distributed to the SHG members as a ready reckoner for convincing the cage culture technology. A floating cage made using Galvanized Iron (GI) frame of 4m x 4m x 2m was fabricated and 800 Asian seabass fingerlings of 10 cm size seeds were stocked in the cage established in Edavanakkad.

Similarly in Manjanakkad, two floating cages were fabricated and 400 each of Asian Seabass seeds of 10 cm size and 500 each of Pearl spot seeds of 7 cm size were stocked in these cages. The grading process as per the size was done systematically after 1-2 weeks. The aftercare was undertaken systematically up to the appropriate marketable size. The linkage established gave the benefit of the provision of a deep freezer from CMFRI under the NICRA project to the leaders of SHGs along with seed and solar spot lights in the cages.

The gender analysis, performance level of SHG, Empowerment Index and economic feasibility analysis were assessed with socio-economic surveys undertaken in the selected localities. The male and female counterparts of the families were separately interviewed to determine the gender mainstreaming aspects in terms of equity and equality to access to resources, participation profile, decision making aspects, gender need analysis etc. Though most of the activities are male dominating, the female counterparts of the households also do have definite role in decision making, feed preparation, management, harvesting, sales and marketing etc. The harvest done just before Christmas on 22nd December, 2020 in Edavanakkad brought out a bumper output of 600 kg sea-bass with an approximate weight of 1 to 1.5 kg/fish. The SHG leader Sri. Devadas says, “the first harvest was commenced with the intention of utilizing the marketing opportunity at the time of Christmas and New year, and the harvest was undertaken as per the demand of the consumers. The market promotion was essentially accomplished through social media like Facebook, Whatsapp etc. and the entire attempt was a remarkable accomplishment.

The social and economic empowerment dimensions and capacity building aspects achieved highest score in Empowerment Index. The economic feasibility analysis gave an average Benefit Cost ratio for cage culture as 2.5: 1 in the first year. Even though, the similar harvest results were achieved in Manjanakkad SHGs also, this case became relevant and conspicuous because, the SHG Leader Gopi reveals the incident of a heavy loss he met with in cage farming, a couple of years back due to water pollution and therefore, this success story is a triumph over the tragic episode that happened in the past. He articulates the practical lessons learned in cage culture. The loss he met with in cage culture in Chittoor areas because of pollution of water bodies due to effluent discharge was quite notable through print and visual media. From the practical lessons learned, he came out in flying colours with a bumper harvest in the SHG. These success stories of SHGs elucidated can be used as case models and practical manuals for promoting group action for mobilizing SHGs on a sustainable basis in similar future endeavors (Vipinkumar *et al*, 2022)

Case study on Seaweed Culture by women SHGs in Tamil Nadu

In India, cultivation of seaweed, *Kappaphycus alvarezii* was initially started at Mandapam during 1995–1997 (Eswaran *et al.*, 2016) which was initiated by PepsiCo during

2002 and later taken over by Aqu Agri in 2008 (Krishnan and Narayanakumar, 2010). Many SHGs of women have been formed by the Corporate houses Pepsi, followed by Aqu Agri (Narayanakumar and Krishnan, 2011). Familiarity and know-how acquired from experimental and field cultivation of *K. alvarezii* in several Indian coastal areas indicate the possibility of large-scale commercial cultivation and a means of additional income generation for the coastal fisherfolk. Commercial cultivation of *K. alvarezii* was started in 2005 along the Tamil Nadu coast. Now, *K. alvarezii* production is carried out in five coastal districts of Tamil Nadu namely Ramanathapuram, Pudukottai, Thoothukudi, Thanjavur and Kanyakumari. Around 60 species of commercially important seaweeds with a standing crop of 1,00,000 tons occur along the Indian coast from which, nearly 880 tonnes dry agarophytes and 3,600 tons dry alginophytes are exploited annually from the wild. Seaweed products like agar, algin, carragenan and liquid fertilizer are in demand in global markets and some economically viable seaweed cultivation technologies have been developed in India by CMFRI and Central Salt and Marine Chemical Research Institute (CSMCRI). CMFRI has developed technology to culture seaweeds by either vegetative propagation using fragments of seaweeds collected from natural beds or spores (tetraspores/ carpospores). It has the potential to develop in large productive coastal belts and also in onshore culture tanks, ponds and raceways. Recently the culture of the carrageenan yielding sea weed *Kappaphycus alvarezii* has become very popular and is being cultivated extensively by SHGs along the Mandapam coast. To make the seaweed industry more economically viable, research aimed at improvement of strains of commercially important species by isolating viable protoplasts and somatic hybridization techniques is being carried out. The rate of production of *Gelidiella cerosa* from culture amounts to 5 tonnes dry weight per hectare, while *Gracilaria edulis* and *Hypnea* production is about 15 tonnes dry weight per hectare. Pilot scale field cultivation of *Kappaphycus alvarezii* carried out in the near shore area of Palk Bay and Gulf of Mannar showed maximum increase in yield of 4.3-fold after 30-32 days in Palk Bay and 5.7-fold after 22-34 days in Gulf of Mannar. This is a promising venture being undertaken by the women SHGs in Mandapam. So far as much as 1200 families were engaged in seaweed farming of which 60% of the farmers are women.

A pragmatic examination on the impact of women SHGs in gender mainstreaming was embarked on the 10 sea weed farming SHG units operating at Ramanathapuram district in Tamil Nadu state. An explorative assessment on extent of empowerment, performance level, gender characteristics and economic feasibility analysis was carried out based on socio-economic surveys and personal interviews using pre-tested and structured data gathering protocols with standardized scales and indices. Overall assessment of performance of SHGs on various factors was found to be very good. Level of performance and Empowerment Index of selected SHGs are presented in Table 8. The pragmatic evaluation of seaweed producing units efficaciously being undertaken by Self Help Groups of fisherfolk in Ramanathapuram district of the state of Tamil Nadu brought out a couple of valid suppositions. It was understood that, though majority of the operations especially the labour intensive ones are male dominated, the female counterparts also do have a definite role in site selection, seeding, drying, packing etc.

Case study on Ornamental Fish culture by women SHGs in Kerala state

Ornamental fish culture fresh water and marine accomplished by women SHGs is another profit-oriented venture in mariculture sector. Ornamental fish culture units established by the mobilized SHGs of women fisherfolk by Society for Assistants to Fisher women (SAF) as well as private groups in Iringal Craft village in Vatakara of Kozhikkode district, Keezhillam location of Ernakulam district and Vykom areas of Kottayam district were taken into consideration for the study. Under the project entitled “Science Technology Innovation Hub in Fishereis sector: Kochi, Ernakulam” funded by Department of Science & Technology, New Delhi, under Scheduled Cast Sub Plan (SCSP) scheme, successful ornamental cage culture ventures were undertaken in Kadungallur of Ernakulam district of Kerala state by mobilizing a trans gender couple, a trans male married to a trans female. The brief essence of the indicative economics of the fresh water ornamental fish unit is projected here (Vipinkumar *et al*, 2022)

For working out of the economics of the ornamental fishery unit, a unit size of 125 m² owned plot with 45 m³ water holding capacity tanks were taken in to consideration. We considered the guppy fish and gold fish for the ornamental fish culture unit with summer monsoon and winter spawning seasons. on an average it is assumed that 1.25 lakhs of fries will be produced in entire unit and only 50 per cent of which will be reaching to the final stage before marketing in first year. on an average 12 rupee is getting for a pair while marketing.)

Conclusion

The article has attempted to disclose the deep-rooted influence of Group Dynamics network among the SHGs women fisherfolk in five different narrative cases concerned with mariculture like mussel and oyster farming, cage culture, seaweed culture, ornamental fish culture etc. It is a truth that, to bring in social change and economic prosperity, no nation can ignore fifty per cent of its population. Removal of gender imbalances should be established as a priority for ensuring rapid economic development. This would mobilize the remaining fifty percent of the country’s human resources and would result in the smooth movement of the economic wheel. National policies should be resolute in tackling this issue and local bodies should ensure the implementation of these policies at the community level (Shyam *et al*, 2011). It is an essential requisite that, there is immense need to create better opportunities for women in coastal fishing communities to enhance their social and economic role and enable them to participate in development efforts, rehabilitation and conservation of the coastal and aquatic environment. The special features of fisheries and aquaculture make it necessary to link microfinance to appropriate technology development and transfer to women clients.

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