

## Social Impact and Women Empowerment through Mussel Farming in Kerala, India

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**ABSTRACT** *Mussel farming has gained popularity along the southwest coast of India with more than 3,000 women becoming owners of mussel farms. Vasanth Kripa and Vazhoor Gopalan Surendranathan show how training alone was not sufficient to motivate villagers to adopt a new technology; instead visual observations of the success of the technology are essential for removing the 'risk aversion' attitude. Support from the government prompted women to form self-help groups. This led to group farming, which helped women overcome social inhibitions and prove their competence.*

**KEYWORDS** *women aqua-planners; aqua-managers; rural aquaculture; self-help groups*

### Introduction

Women have been involved in aquaculture and fisheries since time immemorial. Although not actively involved in actual fishing operations in the sea, women have usually assisted the male members of the family and were recognized as 'collaborating spouse'. The term 'collaborating spouse', taken from the French, is often used to describe women who play an important supporting role in the fisheries sector (Frangouides and O'Doherty, 2005). Today the organizational structure in fisheries has one important characteristic, almost all tasks that are performed at sea are done by men as these are physically demanding. Women are confined mainly to activities on land. However, there are several instances where women play a major role, for example harvesting of molluscs.

In India, mussel farming is considered a new or unconventional technology. Hence convincing villagers as well as the planners and developers, of the worthiness of the technology, was very difficult. Since 1996 popularization of mussel farming has been identified as a technical programme of the Central Marine Fisheries Research Institute (CMFRI) and accordingly extensive training programmes have been conducted for nearly a decade by the staff of CMFRI. Because of these attempts, farming of the green mussel *Perna viridis* became a popular avocation in the villages of Kerala, a state along the southwest coast.

It is well known that women represent about 70 percent of the poor and there are gender inequalities. Farming of marine mussels has been found to be a women-friendly technology in Kerala. The technology was chosen by the women self-help groups (SHGs) in Kasargod, a coastal district in north Kerala. These groups were designed as a strategy for poverty alleviation, and also to increase women's access to resources and their power in household decision-making. The success of the adoption of mussel farming by the SHGs in Kasargod and its impact in other realms within the same villages and in other distant regions are presented.

Attempts were made to develop mussel farming in 16 villages in Kerala during the period 1996–2006. Critical analysis of the role of financial supports and adoption levels of mussel farming was made for these locations. For studying the socio-economic background of the mussel farmers, a schedule was prepared and data were collected through enumerators at Kasargod. Data were also collected on sharing of responsibilities, sourcing of inputs and marketing. Within Kasargod district a micro-level survey was conducted in four adjacent villages. Based on these data, the extent and nature of impact in the society in terms of number of employment opportunities created and the impact on women's empowerment were analysed.

### Technology dissemination and initial impacts

During the initial stages of technology dissemination, CMFRI was the sole institute providing training on mussel farming. CMFRI trained villagers, state officials and bankers. Convinced by the worthiness of the technology, other technology promoters began to extend training facilities to farmers.

The first impact of these programmes was the acceptance of the technology, which is worth promoting as a rural development programme. Till then, only shrimp farming was considered as a mariculture activity for funding and for rural development. The actual impact of the technology began to be felt in the society when the financial support for the technology became available to

the farmers and when women SHGs started adopting this technology.

Based on the support (training and finance) extended to the farmers in the 16 test centres, five different adoption types were identified. Adoption level was considered as low when there were less than ten farms, as medium when there were 10–50 farms and as high when the number of farms exceeded 50. There was no impact (Type I) in 36 percent of the sites and in all these villages, the villagers did not get any financial support. In 16 percent of the locations there was low level of adoption with financial support (Type II). In 16 percent of the sites there was medium level of impact (Type III) when the farmers were provided financial assistance. In Type IV, the adoption levels were high mainly because of the group-farming systems and formation of women SHGs. In 5 percent of the sites, adoption Type V was observed, that is, without any financial assistance and solely based on the demonstration during the training programme, villagers adopted the technology. This study indicates that in a developing country, where the farmers are poor, it is essential to provide financial support to villagers to start the farms.

A micro-level data analysis indicated that most villagers were hesitant to take up mussel farming even though they were impressed by the demonstrations and attracted by the funds available. They became really brave to venture into this new business because of the impressive harvests made by other farmers. This indicates that most villagers are averse to new ventures when there is some risk involved.

The major impact of the technology was that the women in rural areas began to get an opportunity for self-employment. In Kasargod district there are two different types of women mussel farmers: women who start the farms as family enterprises based on family support and women SHGs. There has been a progressive increase in the number of women mussel farmers since 1996 and in the production of farmed mussels (Figure 1). The production increased from 2 tonnes in 1996 to 7,500 tonnes in Kasargod district and to 10,500 tonnes in the state by the year 2006. Initially, during 1996–1997 there were no family farms owned

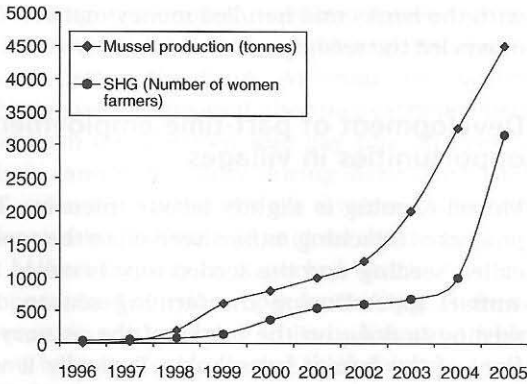


Figure 1: Progress in production and number of women farmers in Kasargod district during the period 1996–2005

by women, but there were nearly 40 women in mussel farming through two SHGs. By 2005–2006, the number of women benefited through formation of SHG increased to 3,150. This shows that though there are women who can take a leadership role and establish a business with family support, majority of women in developing coastal areas find group activity better. In each group five or six women take the lead and 14–16 other women follow them. They are also active and comply with the decision of the leaders. They are content with the activities and the profit earned. In the recent years, men have also started forming groups and operating in the same manner as women’s SHGs. Flexibility of working hours, proximity of the farm site to the homestead, easy adoptability, low risk and reasonably good profit are the main factors motivating more women to start new farms each year.

### Women as aqua-planners and aqua-managers

The study indicated that women progress as business managers and the fact that they invest more in farming year after year clearly shows their managerial skills. In several instances, the number of mussel ropes stocked in farms by women’s SHG was about 600–800 initially during 2000–2001 and the same group found that they could increase the level of investment and consequently

increase the farm size and stocking density to a range of 2,000–3,000 ropes proving their management skills. The survey also indicated that women SHG’s are capable of corresponding with banks, seed suppliers and marketing agents. Although they received the support of the male members initially, they gradually became independent and began to handle all the farm activities independently.

The survey indicated that all the women farmers utilized the profit to repay loans, debts, for children’s education, health care, house purchase and children’s marriage. Thus, the whole family has benefited.

### Socio-economic profile of women farmers

The survey indicates that the majority (35 percent) of the women farmers in Kasargod who belong to SHGs were in the age group 21–30 followed by 32 percent in the 31–40 age group. There was considerable difference in the 51–60 age group between the two types of farmers (Figure 2). The survey also indicated that for 63 percent of the women who adopted mussel farming, this was the sole source of income (Figure 3). About 21 percent of the women had coir making as a supplementary source of income while 11 percent were involved in agriculture and 5 percent also worked as labourers in other areas.

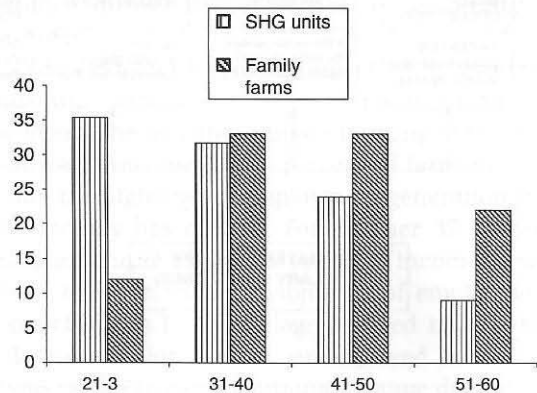


Figure 2: Age profile (percentage occurrence) of women mussel farmers in Kasargod district, Kerala

None of the women farmers had higher education or had attended any skill development training. However, 60 percent of the women farmers were literate and had attended primary school. About 40 percent of the women especially of the SHGs did not have formal education. In a group, they were mainly active workers while those who have had formal education managed the liaison

with the banks and handled money matters. The others led the seeding and farming activities.

### Development of part-time employment opportunities in villages

Mussel farming is slightly labour intensive. The process of attaching mussel seed on to the rope is called 'seeding' and the seeded rope is called the 'mussel rope'. During the farming season, the seeding is done on the banks of the estuary in front of the farmer households. Typically it was found that an average farmer employs about three extra labourers and the SHGs also hire about 18–25 extra women to seed the ropes. It was estimated that during 2005–2006, 12,627 labour days were created for seeding mussels (Figure 4). Women obtained payment of US\$ 1.1 per day for seeding and at this rate it was estimated that labour worth US\$ 14,000 was generated in the mussel farming areas during 2005–2006 period.

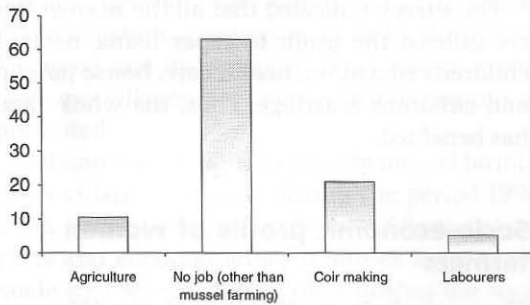
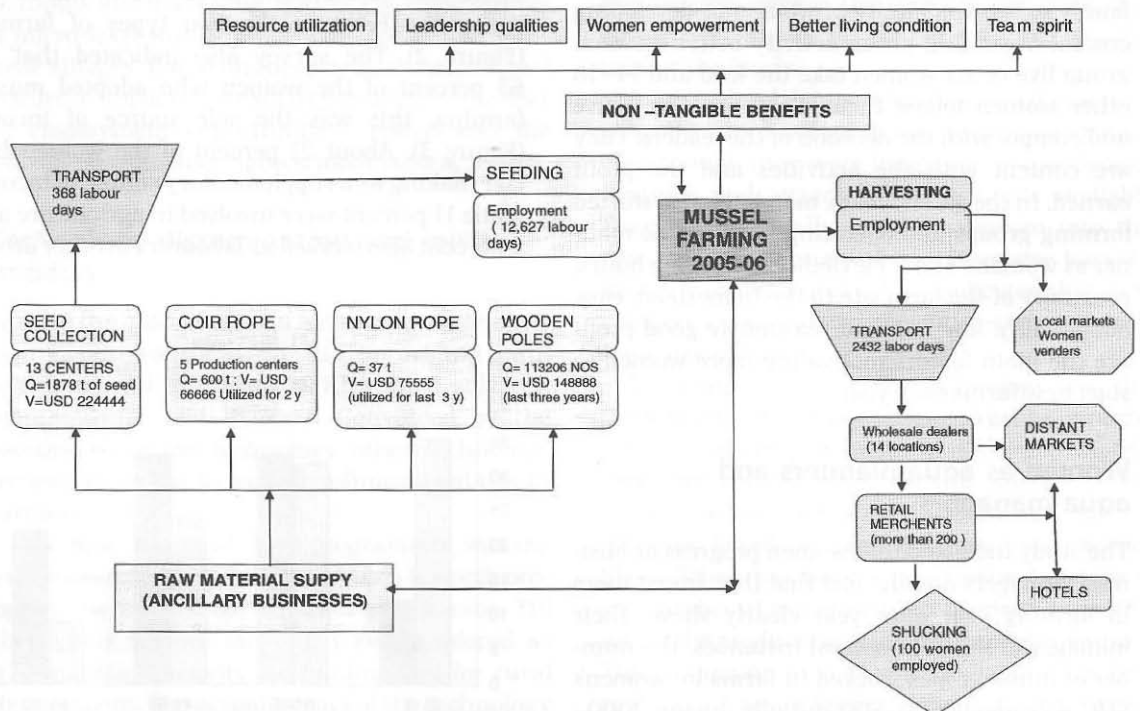


Figure 3: Occupation of women mussel farmers in Kasargod district



202 Figure 4: Flow chart showing the development of occasional employment generated in Kerala as impacts of mussel farming during the year 2005–2006

During the mussel farming season, several villagers, mostly men, get additional income for constructing the farm. Although the farmers themselves get involved, they hire extra labourers for farm construction and pay hire charges for their canoes. Similarly during harvesting, additional women labourers are involved to declump the attached mussel and to clean the mussels.

Mussel farmers of Kasargod district use coir rope instead of nylon ropes for seeding. There are five main coir spinning units in Kasargod which now have started producing thick coir ropes suitable for mussel farming. It is understood that the majority of the workers in these units are women and the basic process of converting coconut husk to ropes is done in this region itself. This indicated that indirectly, mussel farming has helped to increase the production of coir manufacturing industries, which means more employment for women in other supporting units.

Apart from seed and coir rope, loosely spun cotton cloth is also used in seeding mussels. This industry has also increased production with the development of mussel farming. Other businesses that have flourished are the wood/bamboo pole suppliers and nylon rope suppliers.

During the period 2005–2006, huge quantity (1,878 tonnes) of mussel seed worth US\$22,222 was supplied to the farmers. This study indicates that the social impact of mussel farming has spread even to the mussel fishers who reside away from the farm sites.

### **Women as mussel venders and mussel meat shuckers**

The study indicated that farmed mussel meat is sold in distant markets. About 10 percent of the farmed mussel is sold as shell-on mussel by women venders in the nearby markets. In several regions, the wholesalers employ women to shuck the meat. This shucked meat is usually supplied to hoteliers. Thus, during the harvest season occasional employment opportunities are created.

### **Remarks**

As far as India is concerned, mussel farming is a novel technology among farmers and adopting

a technology that is unconventional needed much motivation and support. The study indicated that financial support was also equally important to motivate villagers. At Kasargod repeated harvest by a few farmers in the beginning helped to remove the aversion inherent in the villagers and prompted them to adopt the technology.

The introduction of mussel farming and the formation of SHGs gave the unskilled and less-literate women an opportunity to expand their skills. The development of mussel farming in rural Kerala by women SHGs proved the fact that the rural poor in India have the competence and given the right support they can be successful producers of valuable goods. It helped the organization of rural poor into SHGs and in their capacity building.

The fact that women increased the farm area and intensity of farming shows that they became efficient aqua-planners and aqua-managers and it also proved that women are better carriers of development. Their prompt repayment of loans increased the faith of the bankers and the schemes of helping groups continued over the years. In the present study it was found that women are all-round players, right from planning to utilization of profit.

The academic background of the women farmers of an SHG shows that there are both literate and poorly literate women members. The disadvantages of being illiterate were covered up in the group by the women farmers who were better educated. This may indirectly imply that the women mussel farmer SHG is a 'community of women'.

The first and foremost impact of the mussel-farming technology was empowerment of women. The fact that mussel farming is the sole source of income for 63 percent of farmers indicates the high level of employment generation this technology has created. For another 37 percent this became an additional source of income. Apart from this the wide development of employment opportunities in the village enabled mainly the illiterate, senior citizens, unemployed youth and housewives to earn additional income during the seeding season. We narrate an interesting incident that happened in Cheruvathur village: We were

trying to promote a semi-automated seeding machine developed by us. This machine reduced the time taken to seed a rope. When we demonstrated the working of this machine at Kasargod, the mussel seeding women who were occasional employees indicated their apprehension as to whether this machine would take away their job of seeding. Their faces and voices reflected so much concern that we stopped promoting the machine in Kasargod.

The study on the age profile of the women farmers indicated that more young women are involved in SHG-operated units than in family farms. This indicates that more young women become self-employed, thereby reducing the level of unemployment and the impact it can have in eliminating poverty. They have risen far above the concept of 'collaborating spouse'.

One of the added advantages of development of mussel farming is that it promoted the sustained growth of other industries within the village as well as in distant locations. Kerala is a land of coconut palms and the husk of the nut is used to make ropes. With propagation of mussel farming the demand for these ropes increased and

women got an opportunity to spin more ropes at their homestead and the coir manufacturing units also started producing more. All these are areas where women are gainfully employed. Hence, the technology was able to promote effective utilization of other locally available natural resources.

Impact was also felt in distant locations such as in seed collection centres. The development of distant markets for farmed mussels and increased employment opportunities as mussel venders and mussel shuckers are positive impacts.

Poverty continues to be of primordial importance, particularly in the developing world (Wagstaff, 2002) and since women represent about 70 percent of the poor, developmental plans should be for raising women's access to resources, and also to increase their level of autonomy and decision-making powers. The experience in technology diffusion and adoption of mussel farming has shown that mussel farming can become a prime activity for alleviating poverty and empowering women through the formation of women's clusters or groups in developing countries.

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### References

- Frangoudes, Katia and Joan O'Doherty (2005) 'Legal Recognition of Women's Contribution in Fisheries and Aquaculture in the European Union', World Fish Center, paper presented at Global Symposium on Gender and Fisheries. pp. 139–148.
- Wagstaff, Adam (2002) 'Poverty and Health Sector Inequalities', *Bulletin of the World Health Organization* 80: 97–105.