

A case of informal shrimp farmers association and its role in sustainable shrimp farming in Tamil Nadu, India

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The sustainability of shrimp aquaculture is widely debated in many international fora owing to difficulties that arose during the early expansion of the industry. One of the contributing factors to localized failure of shrimp farming was 'self pollution' arising out of poor or inexperienced management and lack of cooperation among the neighboring farmers.

Many aquaculture experts are of the view that Small Farmers Groups (SFG) can play a very important role in managing the shrimp farms and environment. During a farm survey conducted to study the adoption of shrimp farming practices in Tamil Nadu, the authors came across a unique farmers association, at Tambikottai-vadakadu farm cluster in Pattukottai taluk of Thanjavur district, Tamil Nadu which manages a group of farms successfully. The experiences of this association contain many useful lessons that may benefit farmers elsewhere, and the functioning of the association is described below.

Tamil Nadu is blessed with 56,000 ha of potential area for development of brackish water aquaculture. However, the area under shrimp aquaculture during 2001-02 was only 9.5% and the total shrimp production was also very low.

Shrimp farmers and their expectations for the growth of shrimp farming

Shrimp farmers in Tambikottai-Vadakadu are basically agriculturists. However, shrimp farming is the main occupation for most (87%). The literacy status of farmers varies from Primary (20%), Middle (27%), Secondary school (33%) to Graduation levels (20%). Farm size and farming experience ranges from 1 to 30 ha and 2 to 10 years, respectively. Most of the farms were of improved extensive nature (87%). All the farmers

were active members of the shrimp farmers association. Most of them (80%) have not availed any credit assistance. Even though excellent access to mass media was available, they were of the view that aquaculture was given very limited attention except covering the anti-shrimp farming activists. Consultants, feed technicians and experienced fellow farmers were their technical advisors. The extension machinery of the Government departments was not influential among the farmers.

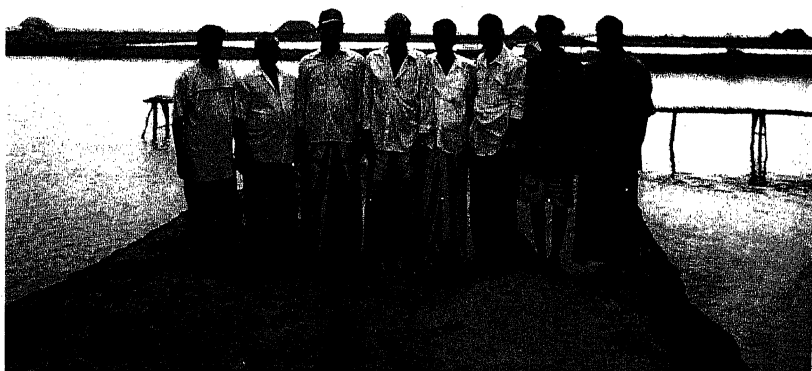
Shrimp farming and the role of Farmers' Association

Shrimp farming made its beginning in this area during 1990s with the initiative and active support from the Marine Products Export Development Authority (MPEDA). Due to its unmatched profitability, this enterprise has attracted many local farmers towards shrimp farming since then and the area under cultivation has increased considerably. This shrimp farm cluster has 160 ha of water-spread area owned by 26 managements. Most of the farms were

small in size with less than 4 ha area and growing only one crop per year during the summer.

Most shrimp farms in the area are managed by farm technicians (graduates in zoology with some training in shrimp culture and/or postgraduates with diploma in aquaculture) who stay on the farm around the clock. In addition to technicians all the farms employ Consultants alias Doctors (who had doctorate in marine biology or Zoology and/or proven experience in shrimp culture in their locality) who visit their clients' farms periodically (once in a week) to monitor the pond/farm parameters and counsel the farm technicians.

This farm cluster has a unique Farmers Association, which coordinates the entire shrimp culture operations including marketing. The association was formed by some of its more active members during the mid-nineties to counter the anti-shrimp lobby. When the farmers suffered crop failures due to disease outbreaks they became convinced that successful culture is possible only if all the farmers cooperate and adopt appropriate management practices together. Hence, they resolved



Some of the shrimp farmers

to strengthen the association so that it can supervise and control each and every operation in all farms and enforce necessary regulations. The association has self-regulated shrimp culture in the cluster since 1998.

Pond preparation and stocking

The association meets well ahead of pond preparation and form teams to supervise preparatory works. The Association forms teams for seed procurement. The stocking density and number of ponds to be stocked depending on the availability of water were decided in the meeting. Based on the requirements a team was deputed to book seed in bulk from one or two reputable hatcheries (near Marakkanam). The team was responsible for screening the seed for disease and transporting it to farm sites. The association does not permit stocking wild seed. When the number of shrimp ponds increased, more than one team was formed to procure quality seed. The supply of other inputs like feed is arranged on credit basis providing guarantee by the association. All the ponds are stocked simultaneously or within a week. If any farmer fails to stock within 10 days, he was not allowed to stock for next 60 days. The stocking density is @ 5 post larvae per square meter and the survival rate averages 80-90%. The total feed consumption is about 1.2 to 1.4 tonnes/ha with a feed conversion ratio (FCR) of 1.2 to 1.4.

Pond management

Ponds are monitored round the clock by observing the check tray and the behavior of shrimps. In order to reap successful crop for all, the association enforces some regulations on its members and it is considered the moral duty of all the farmers to follow them strictly. All the farms should have a reservoir of minimum 10% of its total water spread area and chlorination of reservoir is compulsory. All farms should employ technicians and consultants authorized by the association. If a farmer wants to try a new input, permission needs to be obtained from the association. If any disease problem arises during the culture, it must be brought to the immediate notice of the association. The association

recommends for premature harvesting or bleaching of the pond, based on the size of the shrimp/day of culture. The association also supervises the process of bleaching and reimburses the cost of seed and bleaching powder.

Harvesting, production and marketing

The association collects quotations from the available traders and decides the price for the produce on competitive basis. It bargains for better prices and advises the same to the members. The farmer can sell his produce according to his wish and bargain again with the available bidders to get more. Shrimp harvesting is normally done after 120 days of culture when they have attained 30 g size. In some cases the culture period is extended to 130 – 150 days to get a good size. Harvested shrimps are mainly handpicked from the outlet, cleaned, segregated, weighed and iced. Average production is about 1.5 tonnes/ha (30 tails/kg).

Creation and maintenance of common infrastructure

The association has created common infrastructure like a supply canal for sea water, approach roads, common inlet canals and drainage. The responsibility to maintain them properly has been bestowed on the members. However, the association bares the cost of repairs.

Membership and organization

Membership is compulsory for all farmers. A membership fee of Rs.500/- and monthly subscription of Rs.50/- per pond is paid to the association. A president heads the association with a secretary and a treasurer and all are elected democratically. While choosing the office bearers experience in shrimp farming and exposure to different agencies working with shrimp culture were given preference. An honorarium is paid to the secretary for carrying out the association work. The members share common expenses. Whenever some money was urgently needed either the association or office bearers spend it initially and recoup later. The association normally meets once per month, attendance at the meetings is compulsory and repeated absence warrants proscription. Resolutions are prepared and passed unanimously after detailed discussion.

Other activities

The association help its members to obtain licenses from the Aquaculture Authority by providing necessary documents obtained from revenue authorities, prepare their applications, and submit them to the District Committee and follow-up for their clearance. It adjudicates the disputes among members amicably through discussion and persuasion. It has close



Common infrastructure - inlet canal

contacts with district and regional level associations and deputed members for meetings and cooperates with them for promotion of shrimp culture. It maintains good rapport with the local people and it takes utmost care to prevent any negative impact on them. It also offers generous donations for festivals, schools and other charitable works. It interacts closely with the district administration and gets development schemes for the welfare of the local community.

Success of the association

The members as well as farmers from adjoining areas have been witness to the successful functioning of this association. Since 1998 they have raised successful shrimp crops and obtained good harvests. The farmers attribute their success to the association, which has ensured supply of quality seed, convinced the companies/suppliers for credit facilities for inputs and attracted new farmers into its fold as evidenced by the expansion of area under shrimp farming. The association has brought unity among the farmers, secured fair price for the produce, provided a platform for exchanging views, sharing their knowledge among the farmers and it has ensured harmony with the local people.

Strengthening the association

Registration of the association as a legal body under relevant government provisions will strengthen its activities. Even credit, insurance and licenses may be issued only to the association, which has holistic approach for development of sustainable aquaculture in the farm cluster. Financial assistance may be given to such groups for developing infrastructure like wastewater treatment plants, cold storage facilities etc. Farmers' representatives from the association may be included in the District and State level committees of the Aquaculture Authority to share their views in the planning process. Besides village level associations, there may be an active district level farmers committee and a dynamic farmers' federation at state level which can take care of the interests of shrimp farmers and function as an influential body. Accordingly the shrimp farmers associations should be



Scientist investigator with office bearers of shrimp farmers association

linked organically. The president and secretary of every association can become the members of the district committee and the president and secretary of all district committees can become the ex-officio members of the farmers' federation at state level. This will promote interaction and co-operation between the farmers and bring them under one umbrella for better benefits.

The association wants regular information through mass media on current price situation so that the farmers can get better returns for their produce. It was also of the opinion that hatcheries were responsible for majority of the mishaps and suggested safeguards through seed certification. It expected the Government to support the farmers through speedy issue of licenses, easy availability of credit, insurance and electricity. Establishment of aqua clinics and inputs testing/screening centers in coastal areas, closer interaction with research organizations, extension agencies and farmers, regulation of aquaculture and sensitizing anti-aquaculture activists about eco-friendly aquaculture were some other suggestions expressed by the association.

Employment

The association ensures that local or nearby villagers alone are employed in local shrimp farms. On an average, two permanent labourers are employed per hectare of farm for carrying out regular operations and they stay at the farm throughout the culture period. Casual laborers are engaged during pond

preparation, repairing of pond structures, dewatering, harvest and other routine works. Women are involved as casual labourers in pond preparation and harvesting. The villagers availed employment approximately for 60-75 days in a year in the shrimp farms.

Conclusion

The study has clearly indicated the following points.

- Farmers/farmer groups and their voluntary code of conduct are very important for sustainable shrimp aquaculture.
- Quality inputs and proper farming practices are essential for successful shrimp farming.
- Shrimp farming practiced with due consideration to environment and other stakeholders will help in eliminating social and environmental conflicts.
- The success of the Thambikottai-Vadakadu shrimp farmers association in sustaining shrimp farming is an eye-opener and more such Farmers groups/associations are the need of the hour. This could be assisted through provision of incentives by the government.

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