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Impact of The Agricultural Technology Information Centre of Central Marine Fisheries Research Institute : Success Cases

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ABSTRACT

The impact of Agricultural Technology Information Centre (ATIC) of Central Marine Fisheries Research Institute (CMFRI) was investigated through analysis of eight cases. These successful cases were related to differnt aspect of technology such as dry fresh processing, shrimp farming, conservation of marine resources, diagnostic services, promotion of finfish culture, farm advisory services and crab culture. The above eight cases showed that a remarkable professional achievement, increased earnings and employment resulted through the motivation and support provided by the ATIC of MFRI.

The Agricultural Technology Information Centre (ATIC) of Central Marine Fisheries Research Institute (CMFRI) was established to provide a single window delivery system for the technological support available from the institute to fisherfolk and other interest groups under the funding of National Agricultural Technology Project (NATP) in 1999.

The CMFRI, one of the premier research institutes carrying our multi- disciplinary research in capture and culture fisheries in India functioning under the Indian Council of Agricultural Research (ICAR).ATIC acts as a bridge between the fisherfolk and scientists and thereby enhancing the linkage between the research and client system. It provides direct access to the farmers to avail the facilities from the institute at a nominal cost. The specific objectives are: (i) to provide a single window delivery system for the products and services available from CMFRI to the farmers and other clients, (ii) to provide a direct access to the fishermen to the institutional resources available in terms of technology advice and iii) to provide a platform for feedback from the end users to the institute. The present study was undertaken to document success cases of impact of of The Agricultural Technology Information Centre of Central Marine Fisheries Research Institute.

METHODOLOGY

Success case studies were elucidated from such fisherfolk who brought out a remarkable professional achievement, improved earnings and employment. Similarly Self Help Groups mobilized by various micro enterprises with the inspiration and support from ATIC also were taken into consideration for exploring the success cases.

RESULTS AND DISCUSSION

Technological products diagnostic service of ATIC

The technological inputs such as algal inoculums, zooplanktons and technological products such as shrimp feed, fresh shrimp meat, edible oyster meat, mussel meat, marine cultured pearls, sea weed products such as *agar agar*, jelly, pickles, value added fish products and dry fish products supplied by the self help groups of IVLP (Sathiadhas et al, 2003 & 2004) are the major items being sold through ATIC.

The major diagnostic services undertaken by ATIC include environmental monitoring, microbiological analysis, fish disease diagnosis, soil analysis, water quality analysis, feed composition analysis, electron microscopy works, fish and shell identification etc.

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Information input and farm advisory services

Information services were given on technologies available within CMFRI such as Scientific prawn farming, Crab farming, Mussel culture, Edible oyster culture, Pearl culture, Seaweed culture, Shrimp feed, Clam culture, Fish diseases, Small scale shrimp hatchery, Artificial fish habitats, Eco friendly prawn farming, Clam culture, Aquarium fish keeping, Marine fisheries management for Sustainable development etc. Some need based ICAR publications also are kept for sale in ATIC.

ATIC brought out some pamphlets such as Marine pollution, Seaweed recipes, Marine ornamental fishes, Self help groups in fisheries sector, Mud crab etc in three languages as technology information series for supplying to stakeholders at a nominal cost.

Technical services of ATIC

Awareness programmes and assistance to training on different technologies: ATIC organsies awareness programmes on Responsible fisheries management and movie shows for assistance to training on different fishery based technologies to the clients from time to time.

Phone calls/Personal enquiry: Phone calls received are regularly attended and the enquiry is mainly for the technical information on prawn farming, crab farming, fish disease diagnosis, small scale shrimp hatchery, feed, seed availability of fish, prawns, crab and other farm advisory services.

Letters: Request letters in different languages are mainly received for algal inoculums, PCR test, stereo-microscopic works, electron microscopy, zooplankton, feed composition analysis and technological services. As much as possible the queries are answered through letter correspondence with amble support of leaflets and bulletins.

Website: The web site **http.www. aticcmfri.org** developed is widely in use by the public and it essentially covers the following information:

(i) Package of practices of all the technologies developed by the institute.

(ii) Schedule of training programmes organized by the institute.

(iii) Value addition and post harvest technologies.

(iv) Technological inputs and services available in the institute.

(v) 'Ask the expert' facility in the web page whereby the questions of the farmers are sent electronically to the ATIC and answers given by the concerned scientists is posted on the web page.

Successful cases

Dry Fish Processing: A case of women's self help Group at Elamkunnappuzha

'Janani' Self Help Group, Puthuvyppu Post, Elamkunnapuzha in Vypeen Island was conspicuous for the intervention of drying of fish through consultation of CMFRI. The group has 15 members and were engaged in the rack drying of fish. Drying of fish was not new to them since they were doing it on individual basis on a limited scale. They used to dry the fish in the traditional way. The President of Janani group, Mrs.Chandramathi Appukuttan says that, she settled at Elamkunnapuzha village after her marriage 20 years back. She became a part of 13-member women-group in 1997. They used to make use of the market surplus of bumper fish catch for drying purpose. The operational cost was less, but they could get very less profit as the unhygienic practices followed at that time caused high amount of wastage of fishes. Most of the dried fish were taken for own consumption. They also engaged in door-to-door selling of the products. The dried fish was mostly marketed at the local market. She says that, "It is our luck that our group is selected by the ATIC of CMFRI for marketing of the dried fish items. With the advent of this programme and inputs of IVLP, we process first quality fish on commercial basis. The products are marketed well in good packing conditions, replacing our earlier paper packing. The training given by the Scientists from CMFRI on dip treatment under IVLP has increased our awareness regarding the hygienic method of drying fishes using 'calcium powder'. They also gave information regarding new marketing outlets. The 'special racks' that were provided for the drying of fish helped us in maintaining the fish products in good condition and reduced the wastage of fish during processing. Now more and more people, especially women are coming forward to take up similar venture.

Shrimp Farming : A Farmer's success story at Elamkunnapuzha

Mr. Benny Figerado at Malippuram of Elamkunnapuzha is an active farmer who took up Crab Monoculture and Shrimp Farming based on CMFRI technology. Figerado, a matriculate, took around six acres of pond on lease for shrimp farming. Initially he was interested in active fishing and his father was an owner of two boats during 1980s. He could not sustain his fishing business for a long period as he met with heavy

losses. He shifted over to shrimp culture and his livelihood depended heavily on it. The shrimp culture practiced by him has improved over the years with the technical guidance given by CMFRI scientists through ATIC. He was made aware of the requirement of proper water exchange, farming, quality seeds for stocking, selection of uniform sized seeds, feed requirements and the feeding pattern in shrimp farming. The ATIC Sales outlet provided another opportunity for him to sell the fresh harvested shrimp at a reasonable margin. As the venture has boosted his morale to a great extent, he confidently says now that a reasonable profit can be generated through the supply of shrimp to ATIC and get good recognition and generate consumer preference for his farm produced shrimp.

Conservation of marine resources : A Case study of Theeram Turtle Protection Group of Kolavi Palam at Payyoli

Kolavi palam beach resorts of northern Kerala near Payyoli is popular for large gatherings of marine turtles during nesting seasons. A group of young nature lovers joined as 'Theeram Nature Conservation Society ' and large number of newspaper clippings appeared about this dynamic group conserving the sea resources. The peculiarities of the 'nature conservation society' when become known everywhere, the Kerala Forest Department, Kerala Forestry Project, Habitat Management of Turtle, NGO's like Malabar Coastal Institute for Training, Research and Action (MCITRA), Central Research Institutes like CMFRI, IISR etc started intervention to make aware the public about the necessity of conserving and managing sea turtles. Soon, in 1992, the awareness programmes clicked and from 1998 onwards the Kerala Forest Department extended assistance by building up two hatcheries and sheds and providing lanterns, torches and daily wages to six members. From this year onwards the activities of the society began to be carried out in an orderly manner after legal registration. They developed it as a breeding location for turtles and they conserve the natural sea resources. The group contacted the ATIC of CMFRI for learning the principles of Responsible Fisheries Management, Protection and conservation of mangroves to retain the biodiversity and sustainability of ecosystem. All the information bulletins on Sustainable Fisheries management, FAO code of Conduct on Responsible Fisheries, Bulletins of National Conferences on Marine turtles and the pamphlets on fishery based technologies were supplied to them by ATIC. Interactive meetings with the fisherfolk were arranged with active involvement of scientists and technical hands of CMFRI through ATIC in the Kolavi turtle nesting beach. The group members keep the statistics of the number of eggs hatched per nesting season. But most of the hatcheries disappeared due to severe sea erosion and the seashore breadth has reduced to 350 metres. In spite of all these impediments and obstacles, still the sincere efforts to conserve turtle by the group continues and more than 40,000 hatchlings were released in to the sea. (Vipinkumar, 2005) They expect a large arribada in the near future. The President of the group Sri. Surendrababu and Secretary Sri.Sureshbabu maintain contact ATIC of CMFRI for learning the technologies and putting into practice the principles of Sustainable management of marine resources. Interactive discussions with the active members of the group took place in ATIC and in the Theeram location on several occasions.

The group planted mangrove seedlings and they are being looked after by the group with extreme commitment for developing natural habitats. The group developed a nursery for forest trees of 35 different species with the help of forest department and about 30,000 seedlings are raised to develop it as a permanent infrastructure. They often organise awareness camps, project movies and conduct slide shows on nature protection and mangrove conservation.

Diagnostic services : A success case of Kaliparambil hatchery, at Chellanum

A well-known hatchery named, as 'Kaliparambil Tiger Prawn hatchery' at Chellanum is particularly notable for the production of tiger prawn seeds and is frequently in touch with the ATIC of CMFRI for the various consultations on technologies of shrimp production. The well-equipped hatchery possesses an area of 40 cents and gained significance in the supply of shrimp seeds on requirement of the farmers. Detection of white spot virus priorly is inevitable in shrimp hatchery and the hatchery Proprietor Sri. K.X.John and the manger Sri.K.S.George systematically do the diagnostic tests at the ATIC of CMFRI such as PCR test, appropriate water sample analysis, pH test, Water analysis for P_H, salinity, dissolved oxygen and other environmental parameters, mud analysis etc. They approach ATIC for Algal Inoculum (Chaetoceros) for the feed purpose in the hatchery and are fully confident of the quality of Algal culture being supplied though the ATIC of CMFRI. The technician Sri.Sharavanan says that the production turn over is almost doubled in the last three years in this hatchery and they are thankful to ATIC for the diagnostic services offered at the right time.

Promotion of finfish culture : a farmer's success story at *Puthuvyppu*

Mr.Karthikeyan at Thirunilathu of Elamkunnapuzha having primary level of education, was a regular visitor of ATIC for the technology on 'polyculture of finfish (*Chanos chanos* and *Mugil cephalus*)'. He entered into the field of fish culture during 1996, in his own farm. He owns 42 cents of land. The location was very bushy obstructing the inflow and outflow of saline water from the sea. This resulted in silt deposition and increase in weed population. The bushy land was cleared and deepened for culturing fish. He constructed temporary sluices in the eastern corner of the pond. No additional labourers were employed; rather the work was done by the family members. His wife Mrs Isha engaged herself fully in the farm operations. Natural entry of various species of gray mullets, pearl spot, milkfish was allowed. Apart from this, selective stocking of *Mugil cephalus* was also done at times. No specific stocking rate was maintained in such selective stocking. The economic returns were very minimal and were inadequate to make both ends meet. Irregular stocking and feeding pattern might be the reason for the low yield and less profit during those periods. He contacted ATIC and made use of the technologies by becoming a member of IVLP programme during 2001. He says that, "I was given training regarding different aspects of finfish farming and I learned the importance of maintaining sluice gates for the proper water exchange. Stocking of fish and their feeding pattern were followed as per the suggestions of Scientists. My income earning from fish culture has increased from Rs. 32,000 /- to around Rs. 55,000 /-. I could manage to provide good education to my daughters. With no doubt in my mind I proudly say that all this is possible only because of IVLP and ATIC of CMFRI. "

Farm advisory services : A success case of water fry hatchery, at Kodungallur

Shyamlal, aged 42, and his wife Saji aged 39 are graduates in Fisheries Science and they have grown as successful entrepreneurs in marine hatchery venture named as 'Water Fry' in Kodungallur. Shyamlal started the entrepreneurial effort in hatchery business in 1997 from the experiences of marine hatchery named as 'Aquaplaza' in 1990 established as joint venture on partnership basis. Tiger prawn and Scampi are the major items of production here. 'Water Fry' possesses 30 million seeds/ year capacity and Shayamlal is producing right now to the tune of 20-24 million / year. Initial investment through bank loan was 15 lakhs. The couple solicited the cooperation and support of CMFRI scientists and were the regular recipients of algal inoculums and related farm advisory services. He employed a technician and 5 skilled labourers in the hatchery. Within a short span of time of about 9 years, the couple worked hard and they could reduce the bank loan amount to 5 lakhs. He has effluent treatment chambers installed by MPEDA's pilot project. Shaymalal and Saji, the dynamic couple in hatchery business themselves have undertaken mass culture of algal inoculums such as *Thalaseosera, Chaetoceros, Skeltonema etc.* and are producing up to 5 tonnes.

Crab culture & crab fatteuing : A farmer's success story at Malippuram

Sylvi Figerado (53) (Pathissery, Malippuram Po. Elamkunnapuzha) is a dynamic farmer who took up Crab Monoculture based on CMFRI technology. Figerado, a matriculate, took around 6 acres of pond on lease for shrimp farming. Initially he was interested in active fishing and he was an owner of two boats during 1980s. He could not sustain his fishing business for a long period as he met with heavy losses. His two male children were too young to support him economically during his difficult period. He shifted over to crab culture with the consultation of IVLP team of CMFRI. The regular farm advisory services on Crab culture and fattening were offered through the ATIC and his reluctance and negative attitude towards Crab faring was totally vanished. His wife Juliet aged 53, supported him in all his farming operations. They were aware of the requirement of proper water exchange, farming, quality seeds for stocking, selection of uniform sized seeds, farm requirements and the feeding pattern. In 2002 they earned a profit of 47, 000 /- from their pond in a single harvest. In the next lot they earned a profit of more than 50, 000 /-. That trend continued till date. Now the couple is confident that, whenever they are in need of money, they just sell crabs and get adequate amount all on a sudden. They proclaim that, crab farming is the best technology for obtaining maximum profit without much risk. Now Sylvi and Juliet have diversified the crab culture along with duck farming and vegetable cultivation in homesteads with bitter gourd and cowpea. The excreta of ducks became good organic manure for his homestead plot.

CONCLUSION

The eight success case studies were elucidated from such fisherfolk and self help groups show a remarkable professional achievement, improved earnings and employment with the inspiration and support from ATIC.