

FIRSTLINE EXTENSION PROGRAMME AT KANDAKKADAVU, ERNAKULAM

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There are four transfer of technology (TOT) systems in India, each having its own approach and thrusts on freedom from hunger and poverty. They are (i) the first-line extension system of the Indian Council of Agricultural Research, (ii) National extension system of the Union-Ministry of Agriculture, (iii) Rural development programme of the Union Ministry of Agriculture and (iv) the extension efforts of the non-government organizations (NGOS) (voluntary organizations). The first-line extension system of the ICAR has basically an institutional extension role, a catalytic role, a supportive or complimentary role as well as pressure role to accelerate the process of transfer of technology. It serves as a window of educational and research institutions through which the extension agencies as well as the farmers can gaze the latest agricultural technologies (C. Prasad, *Agricultural Extension Services, 40 years of Agricultural Research and Education in India*, ICAR, New Delhi, 1989, 238-267).

In order to serve its first-line role effectively, CMFRI carried out an Extension project entitled 'Planned change in a coastal village—a model for first-line extension programme' under the leadership of the first author from 1987 to 1990. The second author and technical staff of KVK and Fishery Economic and Extension Division were associated in the project. This extension project as a model of first-line extension programme was directed towards, opening the avenues of fishery technologies to extension agencies as well as fishermen through the process of planned change. The planned change derives from a purposeful decision to effect improvements in a social system and is achieved with the help of professional guidance. Without motivating the people for a change, their participation in programme planning and execution will be limited.

Area of operation

After doing a preliminary survey of fishing villages in and around Ernakulam, Kandakkadavu, coming under Chellanam Panchayat, Palluruthy Block of Ernakulam district was selected as the suitable area for implementation

of the project. It is about 20 kms away from Ernakulam in the southwest direction. The population is dominated by fishermen. Western side of this narrow sketch of land is the Arabian Sea and south-eastern side, vast stretch of backwater area where traditional prawn culture is being done.

Profile of the target population

Kandakkadavu village has 395 families. Because of practical difficulties only 165 families were contacted for the implementation of the project. The project work started with a benchmark survey of these families, to gather information on the resources available and to understand the socio-economic profile of the people and their felt needs. The human resource of the village was found consisting of a population predominated by youths.

It was observed that 46 per cent of the population had education upto primary class and 30 per cent upto higher secondary (Table 1). Land holding per household was found very low, 90 per cent having land less than 5 cents (Table 2). Area suitable for aquaculture worked out at about 100 acres which was usually leased out. While men were found engaged in fishing and related jobs, 95 per cent of the women were unemployed. In this area, duckery and poultry were predominant while cattle rearing was scarce.

TABLE 1. Educational level

Category	Number of persons	Percentage
Illiterate	5	0.56
Uneducated	54	6.01
Primary	411	45.73
Secondary	269	29.92
Higher secondary	129	14.35
Matriculate & above	20	2.22
Pre-degree & above	11	1.12
Total	899	100

TABLE 2. Land holding in cents (1 cents = 40 sqm)

Category	Number	Percentage
No land	2	1.21
3-5 cents	90	54.55
6-10 cents	71	43.03
above 10 cents	2	1.21
Total	165	100

About 100 fishing craft were owned by 65 families surveyed which included plank built boats and dugout canoes. The survey revealed that 27% of families operated dugout canoes and 57% plank built boats, collectively owned by a group of 20 or more fishermen. The most widely used fishing nets by the villagers was *Thanguvala* followed by *Neetuvala*, *Veesuvala* and *Chudavala*. Presently they aspire to own ringnets which they perceive most effective. The main problems identified were lack of marketing infrastructure, low price during peak season, lack of fish processing facilities, lack of employment facilities during lean season and lack of credit facilities for purchasing fishing equipments. The developmental potential for the selected families was worked out and presented in Table 5.

Field level extension programmes

The field extension programme was launched keeping in view three main objectives (i) optimum utilization of available resources (ii) extension education to bring awareness of appropriate technologies and development programmes and (iii) to show ways and means for generation of supplementary source of income utilising technologies developed by CMFRI. A village level meeting was called prior to starting of the field work. Details of the project were explained to them in the meeting which was followed by a discussion regarding the prevailing situation and where they ought to reach. They were made to identify their

TABLE 3. Developmental Potential

	Response Categories	Frequency	Percentage
Persons attended any training programmes	Attended	10	6.06
	Not attended	155	93.94
Having interest to undertake scientific prawn culture	Interested	85	51.52
	Not interested	80	48.48
Willingness to take credit	Willing	120	72.73
	Not willing	45	27.27
Interest to send women for fisheries training	Interested	112	67.88
	Not interested	53	32.12

own felt and unfelt needs and the solution possible in the framework of the project. It was made clear to them that this was merely an educational programme and hence they would not expect any direct monetary benefits. The intention was that clients should never come forward to participate in the project for immediate monetary benefits but only for acquiring knowledge and skill. A fishermen forum was established in the village and office bearers were elected from them. This ensured peoples participation in the programme. Periodical meetings of fishermen forum were held to discuss ongoing programmes and future course of action. The office bearers and members of the Forum being community actualizers were of great help for the smooth running of the project. Extension education programmes were launched to disseminate scientific prawn culture, prawn seed collection, fish processings and to improve the standard of life.

TABLE 4. Extension programme in the village

Programme	Frequency	No. of participants
1. Seminar	1	150
2. Exhibition	1	500 (App.)
3. Field day & mass contact programme	1	1000 (App.)
4. Field trip	1	35
5. Film show	3	-
6. Group meetings	9	200
7. Training :		
7. 1 Fish processing	2	40
7. 2 Prawn culture	2	42
7. 3 Prawn seed collection	2	34
8. Demonstration :		
8. 1 Small scale prawn hatchery	1	250 (App.)
8. 2 Scientific prawn culture in homesteads	1	1000 (App.)
8. 3 Prawn seed collection	2	50 (App.)
9. Linkage programme (linking developmental agencies with local people)	Throughout the project	100
10. Fishery advisory programme for, prawn culture, fish culture, prawn nursery, fish capture, maintenance of craft and gear and conservation of fishery resources	" "	

The various field level programmes implemented in the village are discussed below.

Diversified products from low cost fish

This programme was intended to convert low cost fishes into value added products and to help in utilizing the fish for getting better returns when any bumper catch occur. The training programmes were conducted in each quarter of the project for groups of selected members from the project area. It included lecture-cum-demonstration on preparation of fish pickles, cutlets, wafers and dried fish.

During peak season, fishermen were forced to sell fish at throw away price because of its perishable nature. It was felt that a group of people could be trained in the preparation of diversified fish products and whenever availability of fish is less this group could engage in other activities like prawn seed collection, prawn farming, horticulture etc. The trained people were also given guidelines on how to start the commercial production on cooperative basis.

Prawn seed collection

With the introduction of scientific prawn culture, there is a great demand for prawn seeds. As it cannot be met with the existing hatcheries, the seeds have to be collected either from surf or from shallow back water areas. Earlier work at CMFRI had already shown availability of prawn seeds in large quantity in the back waters of Chellanam. Taking this into consideration, training programmes including lecture-cum-demonstration of prawn seed collection were organised. Very good response was obtained for this training programme as people were till then totally unaware of the scientific method of prawn seed collection, which is a very profitable enterprise. The economics of prawn seed collection worked out by Dr. M. M. Thomas *et al.* has shown a net income of Rs. 1,945 per unit, comprising three persons, for the season mid-December to mid-February assuming 10,000 seeds to be collected per day for 24 days in the season.

Scientific prawn culture

Training and field trip

The fisherfolk under the project were trained in scientific prawn culture through lectures, demonstrations and field trips. Classes



Fig. 1. Group discussion with fisherwomen in the village.



Fig. 2. A view of the village level meeting in connection with stocking of prawns.



Fig. 3. Demonstration of small-scale prawn hatchery.



Fig. 4. Training in collection of prawn seeds from surf.



Fig. 5. Stocking of prawns being done by the President, Chellanam Panchayat.

on prawn culture handled by the technical experts of Krishi Vigyan Kendra generated great interest and awareness among clients. A field trip arranged to show them the demonstration farms at Narakkal created further interest in adoption of the technology.

Demonstration of scientific prawn culture in homestead water canals

It was observed that water canals extending from the back water through homesteads are left



Fig. 6. Harvest of prawns in progress.

mostly unutilized. In order to make people realise that these water canals can be used for prawn culture and thus supplement their regular income, demonstration of scientific prawn culture was carried out in one of such canals in the village. In order to emphasise the possibility of prawn culture in off season ie. March to June, it was decided to carry out the demonstration during that period. A field day and mass contact programme were arranged in connection with the prawn culture. The demonstration probably brought desirable changes in farmers. It was

more or less proved by the good strength of local people who came forward to adopt prawn culture in homesteads in the subsequent year.

Demonstration of small scale prawn hatchery

CMFRI has developed technologies for production of prawn seeds in small hatcheries which can be established within the limited financial means of local fishermen families. If a spawner is available such a hatchery can be set up at a very low cost. The project area having on one side sea and the other side being large prawn culture fields was felt having wide scope

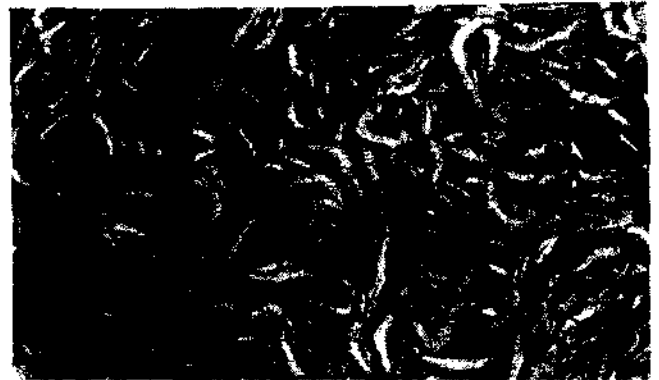


Fig. 7. A view of the harvested prawns, from the water canal.

for transfer of this technology. The demonstration attracted large number of local people who expressed their eagerness to adopt the technology but before that they wanted to be trained in identification of spawners and its transportation which are the first steps for establishing their own hatcheries.

Linkage programme

This programme was envisaged to link the fisherfolk with various developmental agencies. The Manager of the lead bank, The Union Bank



Fig. 8. Training women in preparation of diversified products from low cost fish.

of India was invited to the village to participate in a group discussion on the credit schemes available to fishermen and how to make use of them. 75 fishermen participated in the discussion with great enthusiasm and it could help them in knowing about new schemes for fishermen and clear their doubts regarding eligibility to get loans and their terms and conditions. The discussion also pointed towards the need for fishermen to save a part of their income during good season so that it can be utilized in the lean season rather than depending on money lenders. Under the same programme the fishermen were also linked with the Agricultural Officer so that seeds and fertilizers were supplied to them under the existing schemes of the Department of Agriculture.

Seminar and exhibition

A seminar on "Research and Development Activities in Fisheries" was organised in the village to bring awareness of research & development in fisheries and the role played by CMFRI in development and dissemination of technologies. More than hundred people participated in the seminar which was inaugurated by Dr. P. S. B. R. James, Director of CMFRI. Representatives of various fisheries departments participated in the seminar. An exhibition highlighting the activities of CMFRI was also organised in connection with the seminar.

Impact of the programme

Fisherfolk being a localite group were initially reluctant to come forward and participate in the project. Hence good rapport was established with a number of personal visits which made them to shed their inhibition and participate in the programme. The data collected after the period of operation of the project showed that programmes channeled through the Fishermen Forum made them really feel the participation and made it a project of, by and for the people.

The level of knowledge in each subject area was measured before the initiation of the programme and immediately after the programme was over. The difference proved a significant level of increase in their level of knowledge. The gain in knowledge can be attributed to the success of this project. The impact of the demonstration on scientific prawn culture also was considerable having brought desirable changes in their level of



Fig. 9. Project leader, assessing knowledge gain of fisherwomen as a result of training programme.

knowledge, skill, understanding and attitude of the clientele and brought change in their total behaviour to the new practice and adoption of technology. This was also proved by the good strength of local people who came forward to adopt the technology in the subsequent years.

This pioneer work at Kandakkadavu helped beneficiaries to identify their needs and enabled them to realise how to supplement their income using local resources. It improved the social system by giving new technologies, providing knowledge and skill to adopt the technologies, linking with developmental agencies and ushering in social change. It also helped to bring into notice the future need of such programmes and how fisherfolk gain out of it. Being purely an educational programme without subsidies and other monetary benefits and coming under the frame work of first-line extension programme, it served as a model to other extension agencies to start such programme and strengthen the dissemination of technologies to the grass-root level.

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