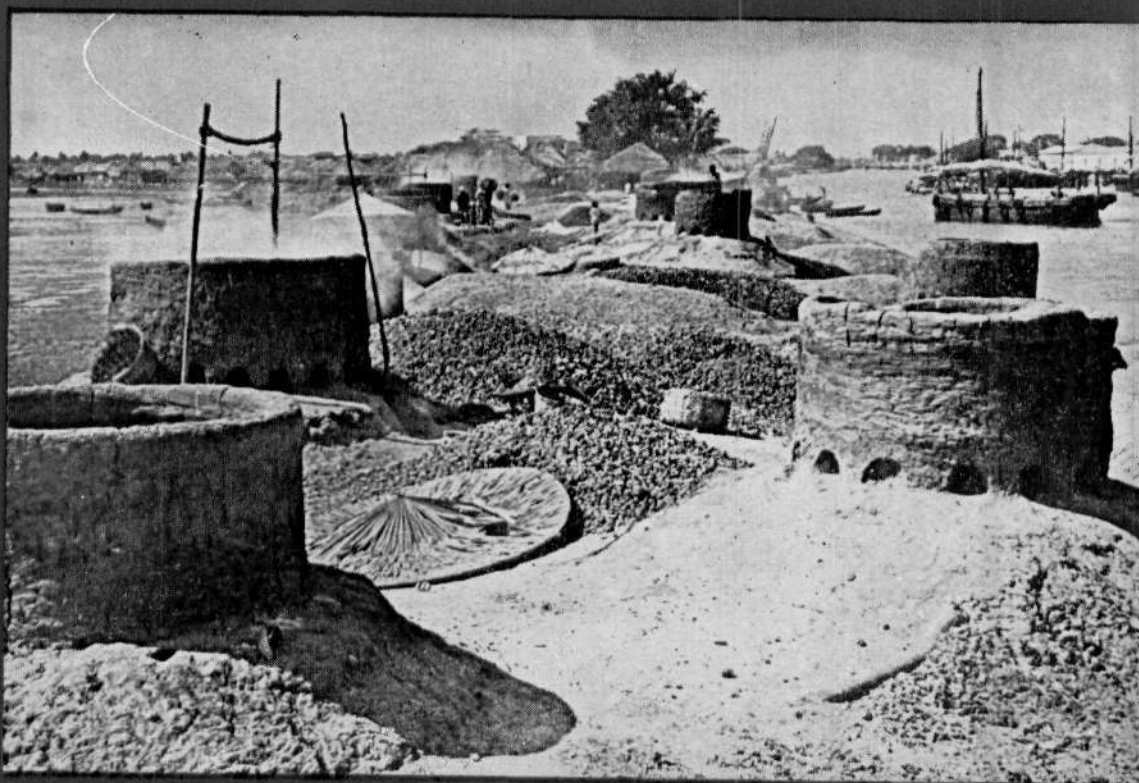




# MARINE FISHERIES INFORMATION SERVICE



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**THE MARINE FISHERIES INFORMATION SERVICE:** Technical and Extension Series envisages the rapid dissemination of information on marine and brackish water fishery resources and allied data available with the National Marine Living Resources Data Centre (NMLRDC) and the Research Divisions of the Institute, results of proven researches for transfer of technology to the fish farmers and industry and of other relevant information needed for Research and Development efforts in the marine fisheries sector.

Abbreviation – *Mar. Fish. Infor. Ser. T & E Ser.*, No. 59: 1984

## EARNING BY LEARNING AND DOING\*

Prawn farming is no longer a myth to the poor landless harijan farm labourers of the coastal villages of Ernakulam and adjoining Districts. Traditionally, prawn farming has been a monopoly of the rich, and the poor landless farm labourers are engaged by them for farm labour. Taking a prawn farm on lease for prawn farming needs high investment in terms of lease value of the field which an ordinary farm labourer cannot afford. CMFRI has been able to implement a much simple method of Scientific prawn farming which could be done even in small canal systems in coconut groves.

Mr. Satyan, a harijan youth belonging to Kuzhupilli, a remote village in Vypeen island lying at the coastal belt of Ernakulam District is one among the many landless labourers who are beneficiaries of the newly developed technology.

Satyan hailing from a family of 8 members is aged 23. He has studied up to eighth standard. The annual income of the family is around Rs. 1,800/-. Fishing and farm labour are the major sources of income. Satyan underwent the short-term training course on prawn farming conducted by the Krishna Vigyan Kendra of CMFRI at Narakkal in April 1980. Really this marked a turning point in his life. He was very much impressed by the feasibility of growing commercially important species of prawns in the canal systems. In the vicinity of his house his land lord is having a coconut grove of 1.5 acres with a canal system of about 52.5



Pl. 1. The prawn farm that provides livelihood for Mr. Satyan. All but some water logged canals in a coconut grove.

cents (2,100 m<sup>2</sup>). This highly potential water area was left unutilized till Satyan, the enthusiastic youth stepped into it. During his training period itself he had made

up his mind to try the new technique in this canal system. Meanwhile he approached the landlord and explained his ambition. Satyan, so trustworthy a youth had no difficulty in winning the confidence of his landlord and generously enough the landlord Mr. Moideen Haji released the water area to Satyan free of cost for growing prawns. Thus even before completing the training course he got the water area at his disposal. The staff of KVK visited the site and ascertained the suitability of the canal system for the purpose.

Soon after completing the training he embarked upon the ambitious programme. He got the fullfledged support of his father and two brothers who joined hands with him in accomplishing the culture operations.

Deepening and shaping of the canals were done by his own family members. Predatory organisms present in the water were fished out using cast net, drag net and bag net (*vattavala*). By the end of November the canals were ready for stocking. Juveniles of the



Pl. 2. "The gate way of prosperity" Mr. Satyan at work at the sluice gate of his prawn farm.

fast growing Indian white prawn *Penacus indicus* were collected from shallow brackishwater canals at Chathanadu, Pallippuram and other nearby places. Prawn seeds were transported to the culture site by country canoes. Plastic buckets and earthen pots were used as containers. Stocking was over by mid-December. A total of 9,500 juveniles ranging in size 30-60 mm were stocked. Growth studies were done regularly by sampling method. The staff of KVK paid frequent visits to his farm and monitored the culture work. By the end of March the prawns attained marketable size and harvesting was advised. Harvesting was done in presence of the KVK staff. It was also witnessed by a large gathering of local farmers and landless farm labourers. To the surprise of the crowd waiting, Satyan

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and his associates netted out 68 kg of *naran* (*P. indicus*) fetching an amount of Rupees 2,100/-.

Encouraged by his first venture he followed the same operation during the following year, 1981. During this period two crops were taken, mid-November to mid-February and early March to early June. During the year 1983 another technique of farming was tried. This method involved intermittent stocking and harvesting. Here, a partial harvesting was done after 2 months of first stocking, taking out only the marketable sized ones. Followed by the partial harvesting, juveniles at the rate of double the number of prawns harvested were stocked again. Thenceforth every month there was a partial harvesting and stocking as above. This practice was continued till the onset of monsoon.

Satyan feels that this method of intermittent stocking and intermittent harvesting is superior to single stocking and single harvesting method. The former would provide opportunities of realising income at frequent intervals whereas in the latter method one would have to wait for 3 months to get the return. Another advantage of this method he explained is that the commercially most important species of prawn *Penacus monodon*, which needs relatively longer period of culture could also be stocked along with *P. indicus* since this method allows a prolonged duration of culture. *P. monodon* could be retained in the canals even during the monsoon period since it has more tolerance to low salinities.

During the last prawn culture season November '82 to April '83 he successfully tried this type of culture. A total of 5,000 numbers of *P. monodon* and 7,000 numbers of *P. indicus* were stocked at different intervals during November '82—March '83 period. Harvesting was done intermittently from February to April '83. He got 35.75 kgs of *P. monodon* and 53.5 kg of *P. indicus* fetching a total of Rs. 2,685.40.

During this culture operation his prawn stock suffered substantial mortality due to "softness". As soon as he noticed this phenomenon he conveyed the matter to KVK. Soon Scientists and Technicians of the Institute visited his farm and advised immediate harvesting. But for this heavy loss his income would have been much better, Satyan concluded.

Meanwhile his landlord had also become very much convinced by this low cost technology of prawn farming. Impressed by the immense potentiality of his canal system he expressed his desire to have a share of the income. Satyan was only happy to part with a part of his profit. Since last year he has been paying an amount to his landlord towards the lease value of the water area.

Now Satyan is fully confident. He would be able to get some return from the venture at any time of the year. He has taken up prawn farming as a full time occupation which provides a steady and satisfactory livelihood. Encouraged by the feasibility of the technique he is planning to take a larger field on lease for scientific prawn farming, next year.

Establishing a peeling shed was a long cherished dream of Satyan. Thanks to the Department of Harijan welfare—Satyan is getting a loan of Rs. 8,000/- for this purpose. The continuous association he had with prawn farming has helped him a lot in convincing the financing agency. One of the main constraints that he confronts is the inadequacy of natural prawn seed resources. Due to the objection raised by local fishermen he finds it difficult to collect juveniles from brackishwater canals. Prawn seeds available from hatcheries are of the postlarval stage, usually, which require pre-stocking care in nursery confinements. Since Satyan does not have this facility he is not able to rely on hatchery supply.



## NEWS—INDIA AND OVERSEAS

### Welfare fund for fishermen proposed

The Ministry of Agriculture, Government of India plans to set up a National Welfare Fund for Fishermen and a National Fisheries Development Corporation during the financial year 1984-85. The fund will provide civic amenities like drinking water, medical and family welfare facilities, education and housing. There will be provision for educating children as well as active adults and for lean season relief and old age pension to fishermen after the age of 60. The NFDC will evaluate the viability of tuna fishing and will train Indian crew in the operation of sophisticated vessels and run the Minicoy Tuna Canning Factory at its full capacity.

Seafood News Letter 63 (5), 1984.

### Record fish production in 1983 in Japan

Japan's 1983 fisheries harvest totalled 11.9 million tonnes which was an increase of almost 5 per cent over the 1982 catch. Of the total catch the contribution from the marine side was 11.7 million tonnes. Japan has successfully maintained its fisheries catch above 10 million tonnes since 1979 and continues to land the world's largest catch.

Marine Fisheries Review 46 (3) 1984.

### The echosounder that sorts out fish

A new echosounder evolved by the SIMRAD can analyse echo returns and indicate the proportion of fish of various sizes in the form of bar-diagrams. The ES 380 colour sensitivity is said to be such that in some cases even species may be identified.

World Fishing, June, 1984.

### Algae clean fish ponds

The U. S. Department of Agriculture working with Haifa Technion, has developed a method of using

particular algae to clean fish culture ponds. It has been found that commercially raised fish grow faster and give higher yields in clear water. Electron microscopic studies revealed that certain unicellular algae used in the experiments, and normally found in the ponds, are encased in a gelatinous material. This enables the muddy particles to stick to the algae and to accrete in numbers until the whole conglomeration sinks. As a result, transparency of the ponds increased from about 2 cm to more than 30 cm in four weeks after treatment. It has been found that 4.5 to 9 kg of nitrogen and phosphorous fertilizer per acre encouraged growth of the algae.

World Fishing, March, 1984.

### Krill harvest by Japan

Japan harvested 32,000 tonnes of Antarctic krill during the year 1983/84 season. Ten large trawlers engaged in this fishery landed 23,000 tonnes of raw frozen krill, 8,000 tonnes of boiled frozen krill and 1,000 tonnes of meal and other products. Another two trawlers engaged in the Japan-Chile joint venture caught 3,500 tonnes. The use of krill in food is increasing and 70 per cent of last year catch went for direct consumption.

Fishing News International, 24 (6), 1984.

### Yacht paint toxins damage shell fish

Shell fish in estuary waters around Britain are under threat from the underside of yachts. Anti-fouling paints traditionally used on the hull of yachts are found to cause the death or deformity of significant numbers of shell fish. The paint which slowly releases toxins into the water inhibiting marine growth, contains tin based compounds which can in turn be deadly to many kinds of marine life and their larvae.

Marine Pollution Bulletin, May, 1984.

