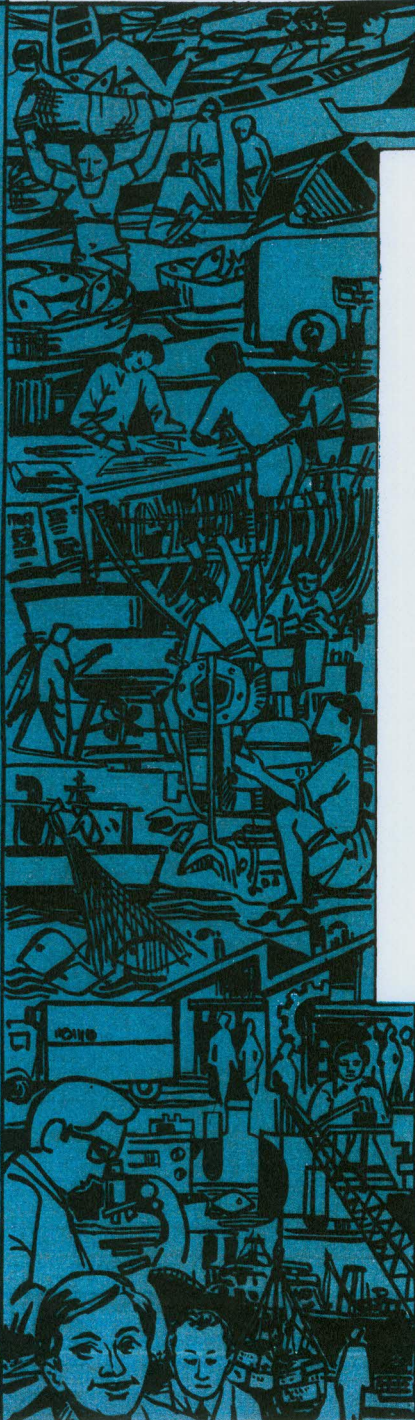




# Fish Technology newsletter

Vol. II No. 1 July 1979



( Left to right ) S/Shri. M. R. Nair, Joint Director, CIFT, L. Luis, Chittumala Block Development Officer, Dr. Abdul Kahar, Kundara Veterinary Surgeon and P. V. Prabhu, Scientist.

( Report on Page - 4 )



CENTRAL INSTITUTE OF FISHERIES TECHNOLOGY

MATSYAPURI P. O.

COCHIN - 682 029

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# Foreword

## EDITORIAL COMMITTEE

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Abbreviation : *Fishtech News*

Fish Technology Newsletter issued every month is intended to bring the fishery industry in India in touch with some of the important developments in fisheries technology resulting from investigations carried out at this Institute and elsewhere. It is not a research publication. Every effort has been earnestly made to express the ideas in non-scientific language. Its ultimate aim is the application of the results of contemporary research for the advancement of our fishery industry.

Fish Technology Newsletter does not owe allegiance to any manufacturer, patent, product or development agency unless otherwise specified. Its purpose is to open up a communication channel through which useful ideas can be exchanged, problems discussed and success shared. The process of exchanging views and opinions makes it easier to identify the real issues and that is where problem-solving begins.

We welcome contributions from any source which will help to achieve our above-mentioned aim. The sources of all such contributions will be acknowledged. We sincerely hope that the current events and informations contained in the columns "GLEANINGS FROM OTHER JOURNALS" and "LET'S TALK IT OVER" will be of interest to the Indian fishing and fish processing industries.

We also welcome suggestions from our readers for improvement in the contents and get-up of Newsletter. Any part of this publication may be reprinted in any language if the translation is true and the source is acknowledged.

Editorial Committee.

## LAB TO LAND PROGRAMME OF CIFT - 4

(One of the highlights of the Golden Jubilee Celebrations of the Indian Council of Agricultural Research being observed this year is a massive Lab-to Land - programme to which CIFT is contributing its mite. In the previous issues we had published reports on the training programmes on (1) Fish Plant Sanitation, Quality Control and Inplant Inspection held at Mangalore (2) a) Training programmes on filleting and freezing of fish b) Production from low cost fish, and c) Fish Plant Sanitation, Quality Control and Inplant Inspection held at Bombay and (3) Field Demonstration of Canning of clam meat and improved methods of fish curing held at Kumarakam and Calicut respectively. In this issue we publish a report on a two-day training programme held at Kumbalam in Quilon District )



*Frying of clam meat*

### **Clam meat processing :**

Clam meat is a food item rich in protein and minerals. The characteristic taste of clam meat contributed particularly by the presence of relatively larger quantity of glycogen makes it the gourmets' choice all over the world. Clam meat

processed in different styles is very popular in many overseas countries. However, due to lack of knowledge about its potential as a palatable protein-rich food methods of its preservation as staple processed products and the potential demands from within the country and abroad, no serious

attempt was made in its conservation and utilisation by application of appropriate technology.

Realising the magnitude of the problem and the potential it has in meeting the protein requirements, the Central Institute of Fishery Technology (CIFT) had been investigating the problem of long term preservation of clam meat in an appropriate form.

Canning has been found to be an ideal method of preservation and the institute have worked out "a home canning set up" involving the barest minimum of equipment and machinery and which is labour - oriented has been suggested for this programme.

A two-day field demonstration programme of canning clam meat was organised on July 21 and 22 at Kumbalam near Kundara in Quilon District. This was in co - operation with All Kerala Malsia Thozhilali

Federation, Quilon, Kumbalam Mahila Samajam and Chittumala Development Block. About hundred persons belonging to the weaker sections, mostly women, actively participated in the programme.

Inagurating the programme on July 21 in a function at Kumbalam St. Michaels High School, Kumbalam Veterinary Surgeon Dr. Abdul Kahar emphasised the need of giving wide publicity about the pro-

tein-rich content of clam meat.

Chittumala B. D. O. , Shri L. Luis presided.

Speaking on the occasion CIFT Joint Director , Shri M. R. Nair, said that about 1000 tonnes of clam meat could be made available from the Ashtamuti Lake only. But only a fraction of it was utilised, he pointed out. "The methodology evolved by the CIFT would help conservation of the otherwise wasted protein food , as also create employment potential for the rural population , thus improving the rural economic situation", he added .

Shri M. K. Kandoran , Scientist , welcomed the gathering and Shri K. K. Balachandran, Scientist expressed vote of thanks .



*Canning*



## MEETING AND APPOINTMENTS

The second Management Committee of CIFT held its first meeting on July 7 , 1979. Shri G. K. Kuriyan, Chairman of the Committee and Director, CIFT, presided.

Shri K. K. Lakshmanan joined as Supporting Staff Grade I at Calicut Research Centre of CIFT



*Participants*

# SMALL SCALE FISHERIES

The small scale fisheries comprising of the traditional fisheries and related activities as practised by the artisanal fishermen, play a significant role in the Indian Fisheries. About one million active fishermen employing their indigenous crafts and gears and following the traditional methods of fishing are engaged in the small scale fisheries of the marine region. It contributes to about

65 per cent of the total marine fish production of the country. On the inland fisheries side (fishing in the rivers, lakes and reservoirs) the small scale fisheries include almost the entire fishermen as well as the fish farmers and the entire inland fish catch.

The number of indigenous crafts and gears employed in the small scale fisheries of the country is as below:

## CRAFT

Catamarans	:	47,000
Dugout Canoes	:	47,000
Plank built boat	:	39,900
Shore - seine boats	:	17,000
Others	:	67,700

## GEAR

Drag nets	:	2,56,000
Gill nets/draft nets	:	5,98,000
Cast nets	:	4,24,600
Traps	:	7,45,200
Shore - seines	:	1,20,900
Others	:	4,16,800

Normally, the fishermen engaged in the traditional fishing carry out a day's fishing leaving the village in the early morning hours and returning to the landing centres during the course of the day. Fishing is carried out in the inshore waters extending to 10-15 km from the shore.

The gears such as shore-seines, inshore drag nets, gill nets and lines are operated with the help of crafts in the sea. Bag nets and stationary types of nets are fixed in the tidal region in the estuaries, back-waters and inshore sea with stakes or with floats and sinkers. Cast nets are operated both from the shores as well as in the

open waters.

Prior to the introduction of mechanised fishing boats, the entire marine catch of the country was produced by the traditional fishing. In 1974, traditional marine fisheries landed an estimated catch of 8,43,961 tonnes out of the total marine fish catch of 12,17,797 tonnes; in 1975, the contribution from this fishery was of the order of 9,15,058 tonnes in the total marine fish production of 14,22,673 tonnes. The pelagic as well as mid-water fish catches are almost entirely landed by the traditional fishery.

It is well known that the inshore sea where the traditional fishery is carried out are productive fishing grounds, and significant increase in fish production can be achieved by improving the gears and fishing methods. Organisation of the Planning Commission have indicated that the return per unit of investment of non-powered boats is twice that of the powered boats and generate almost seven times more direct employment opportunities than the mechanised boats. Considering the importance of this sector, authorities have recommended that not less than 15 per cent of the plan outlay on marine fisheries development should be earmarked for this sector.

(India Fisheries - 1947 - 1977)

# GLEANINGS FROM OTHER JOURNALS

## New Strategy in Prawn Culture

A new strategy for staggered stocking and fractional fishing in intensive marine prawn culture was evolved at a workshop on transfer of technology (lab -to-land) organised by the Central Marine Fisheries Research Institute in Cochin recently.

The strategy aimed at improving the production of prawn in culture ponds also to enable the prawn farmer to realise periodic returns to meet his requirements.

Based on the bench-mark survey completed at different centres, farm family plans had been prepared for each family or family groups adopted under the programme.

For putting the plans into action, the Indian Council of Agricultural Research would provide subsidy and credit facilities under the integrated rural development programme for their capital expenditure.

-Indian Express

## Notebook and Uniforms For Needy

In observance of the International Year of the Child, the staff of the Central Institute of Fisheries Technology have donated school uniforms

and note books to 43 needy children.

The gifts were given away by Shri M. R. Nair, Joint Director of CIFT.

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## Text Book on Fish Processing

CIFT will bring out a text book on Fish Processing Technology.

An Editorial Committee has been constituted with Shri M. K. Kandoran as Convener and S/Sh. P. V. Prabhu, T. K. Govindan, K. K. Bala-

chandran as Members.

The text book will be based on the proceedings of the summer Institute on Fish Processing Technology conducted at CIFT in May 1978.

••

## Varsity Plans Marine Culture Course

The Cochin University Syndicate has decided to institute courses leading to MSc. and Ph.D in marine culture.

The Syndicate took this decision after examining a proposal received from Dr. E. G. Silas, Director, Central Marine Fisheries Research Institute, Cochin.

A Centre for Advanced Studies (C A S) in mariculture has been sanctioned to the CMFRI, Cochin, under the joint auspices of the UNDP and ICAR. The project is to start during the current year.

The Centre will undertake running up courses of work-cum-research leading to MSc. and research leading to Ph. D. in mariculture. The expenditure for the courses will be met by the Central Government and UNDP.

The term mariculture denotes the culture of cultivable marine organisms in the inshore waters and adjoining estuaries and brackish waters. To augment fish production, great emphasis has been given to mariculture including coastal aquaculture, recently.

## LET'S TALK IT OVER

### **C. R. Chandra, Fish supplier, Vizag**

What is the device developed by CIFT for transportation of fish in good condition to distant markets.

#### **CIFT**

CIFT has perfected a technology for transportation of

fresh fish in insulated containers after preserving the fish in ice. Details of the recommended procedure are available in the pamphlet, Handling and Transportation of Fish published by CIFT.

### **Member secretary, Gujarat Water Pollution**

A major thrust has been given for the development of mariculture of fishes, prawns, mussels, edible oysters, pearl oysters for pearl production and seaweeds.

Mariculture could help considerably in the integrated rural development of coastal areas, provide jobs and help use under utilised or unutilised inshore and coastal derelict waters.

In view of these facts mariculture is given top priority in the national development programme.

The CAS will be able to play a vital role in this field.

- HINDU

### **Health From the Sea**

Drugs obtained from marine flora and fauna hold a special place in the pharmaceutical arsenal. So far, some 150,000 species of marine organisms have come under the medical research microscope, and it has

been found that sea sponges, for instance contain certain substances which kill off the majority of bacteria.

Among the other important discoveries are substances from octopuses and round-mouthed hag fishes used for the treatment of cardiovascular diseases; another found in the sea cucumber, which inhibits tumour growth; a blood coagulant found in sea snakes, which are abundant in the tropics; and an extract of starfish which produces an ointment that helps wounds to heal.

- HINDU

### **First Fisheries Complex in Co-op Field**

The first fisheries complex in the co-operative sector sponsored by nine Fishermens Primary Co-operatives will set up at Mararikulam, near Alleppy.

Several fish processing and ancillary units like canning factory freezing plant, ice plant and cold storage facilities are

### **control board**

What are the facilities available at the Veraval Research Centre of CIFT for waste water and Sewage analysis.

#### **CIFT**

CIFT Research Centre at Veraval is already testing water for its potability. The following tests are usually carried out.

(Continued on page - 11)

included in the complex.

Mr P. S. Srinivasan, Minister of Industries laid the foundation for the main factory building at Chethi, Mararikulam recently.

- Indian Express

### **Fish Breeding in Palghat District**

The Fish Farmers Development Agency at its meeting at Palghat decided to distribute 5,000 fingerlings per hectare area of tank in Palghat district. These would be brought to Kerala, from other States.

These decisions were taken at a meeting of the agency with its chairman, Mr Prithivisingh, District Collector, in the chair. The committee has formulated plans to train tank owners on how to equip the tank for fish breeding.

Demonstration plots would be prepared in Chittur taluk in selected tanks and 10 persons given were training in fish breeding. Financial assistance would be given to these persons.

- Indian Express

# NEW FISHING CRAFT FOR SURF RIDING AND BEACH LANDING

A simple, light-weight and long lasting fishing craft entirely built out of fibreglass-reinforced plastics (FRP) that can safely ride over the surf and land as well on the sandy-beach has been introduced on the East-coast of India as a prospective substitute to the traditional "Kattumarams"

## TECHNICAL SPECIFICATIONS

Overall length	18' - 0"
Maximum breadth	5' - 4"
Depth moulded	2' - 10"
Draft maximum under fully loaded Condition	1' - 8" at midship



*Stabilisers and stern tab*

1. The Craft is moulded entirely out of Fibreglass-reinforced plastics (fibreglass chopped strand mat/woven rovings and polyester resin) using rigid polyurethane foam as a sandwich core material.

2. The Craft is fully decked with ample space fore and aft for the stowage of equipments like oars, paddles, ropes, anchor etc. The deck is non-skid type and fitted out to provide any facility required to row,

*fish technology newsletter july 1979*

sail, scull and to motorize either with an out-board or inboard or a light inboard-outboard drive as the case may be. It can work as well with the conventional lateen sail.

3. The fish holds are insulated and can be used to carry iced fish in the most hygienic condition. Hatch covers are buoyant and could serve as floats in the event of need

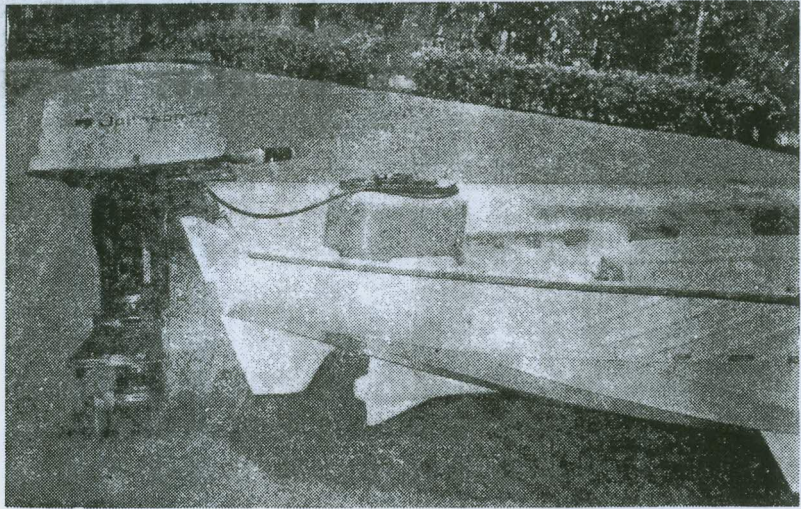


*Lifted by 4 men*

4. Freeing ports in the bulwark structure ensures that no water shipped remains on deck.

5. To prevent drift and provide an upright position on beaching, twin skegs are provided on the hull together with a fin to ensure directional stability.

6. The strength of the craft has been built into the



*Position and tilt of out board motor 20 H. P.*



*Positive bouyancy*

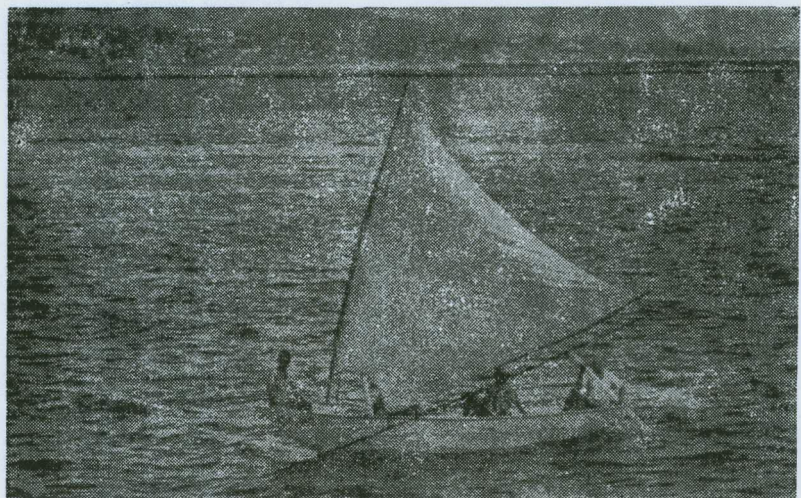
hull through the ridges of the clinker strakes that run as buttock lines fore and aft, plus the bulwark stringer amidship that gives longitudinal strength to withstand the rigours of beaching and grounding in the surf.

7. The Craft has been designed keeping in mind the safe operation, seaworthiness,

stability and rough usage with unsinkable characteristics

8. The Craft is light enough (300 kg) to be lifted and carried by four men forming its crew.

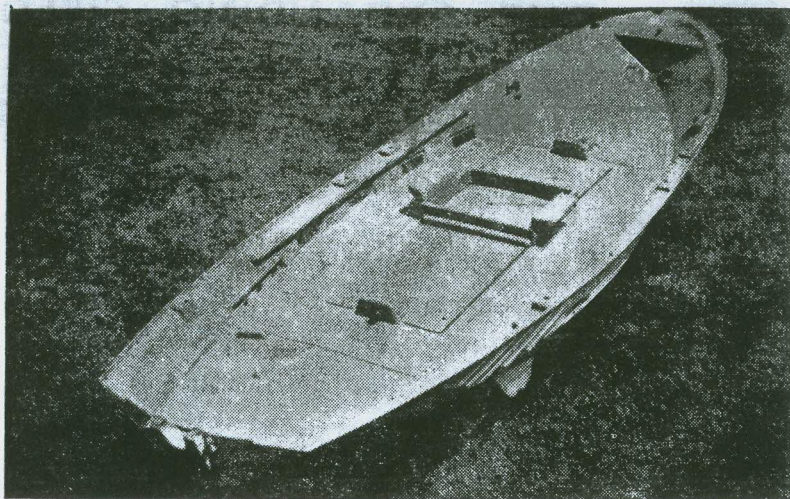
9. The Craft is suitable for operating the various fishing gear like gill-nets, long-lines,



*Craft under sail*

hand-lines, trolling lines, fish raps and boat seining.

10. The Craft is suitably coloured that is pleasing and permanent with no maintenance problems.



*Deck layout and features including fixed position for out-board fuel tank*

Note :- The above craft can be insured against marine perils, fire, theft and total loss (strike, riot, civil commotion risks etc.)

(Continued from page - 8)

- 1) Bacteriological analysis
- 2) Estimation of total temporary and permanent hardness etc. of water.
- 3) Estimation of nitrogen
- 4) Estimation of chloride

### HEROLD H. MERTES, GERMANY

I would like to know the places in India where sail boats are still regularly engaged in commerce fishing and trading.

### CIFT

The traditional fishing crafts of India are all of the sailing type using other rectangular or triangular sails rigged from a single mast or/mast and a boom.

The different major types of sail boats in the country are 1) Catamarans (15-25 ft) 2) Dug-out canoes (15-35 ft) and 3) Built-up boats(20-45 ft). They are mostly coastal and inshore in operation with sails and supported by oars, paddles

and punting poles. Similar crafts are also operated in the inland waters like rivers, backwaters, lakes and reservoirs.

There are also sailing crafts-built-up boats with carvel planking ranging in size from 60 - 120 ft OAL with single or multi-sails with mostly overhang rudders - employed for coastal cargo transport. Occasionally, auxilliary engines are also installed. Some of them sail from Indian ports to Gulf countries, Sri Lanka etc.

The Distribution of the different crafts and their approximate estimated numbers are given below :

1) Catamarans	- East coast of India and a little part of South West coast of India	45,000 Nos. (marine)
2) Dug - out canoes	West coast of India	40,000 Nos (Inland/Marine)
3) Built - up boats	Maharashtra coast, Gujarat coast, Palk Bay Gulf of Manaar ( East Coast ), Andhra Coast West Bengal coast	30,000 Nos ( Inland/Marine )
4) Sailing cargo vessels	Gujarat, Maharashtra, Tamil Nadu (Tuticorin)	1,000 Nos ( Marine )

# THE EXPANDING FIELD OF FRP

## ( Fibreglass - reinforced plastics )

Fibre glass reinforced - plastics has continued to sustain its pressure and scope of its application in a wide and various fields all over the world. Its claim to sweep the major share in all the markets of engineering materials seems to be quite modest. A study of the total production of FRP in recent years and consumption in various fields of applications will further strengthen its claim as the material of tomorrow.

### TRANSPORT :

In 1977, transportation topped the league of FRP consumption market in America. The volume of FRP, used mainly in cars and trucks, increased from 180,900 tonnes in 1976 to 209,100 tonnes in 1977. A further 12% rise is predicted for 1978. In U.K and Ireland 16.5% of the total production of FRP was used in this market in 1977; in France it was 20.5%, in Germany 11.8%; in Italy 10.7% and in Denmark 5%.

### MARINE :

Marine field remains one of the biggest markets of FRP

in U. S. A. and is the biggest in Denmark with 55% of total production going to it. In comparison to the consumption in 1976, FRP consumption in the marine field has increased by 9.6% in U. S. A. and a further increase of 8% is predicted. In 1977 in U. K. and Ireland the percentage of FRP consumption in the marine field was 17%; in France 13.3%; in Germany 6.4% and in Italy 10.7%.

### ANTI-CORROSION :

The application of FRP in anti-corrosion market in U. S. A. registered a 20% increase in 1977. In U. K. and Ireland, in the year 1977, 18% of the total FRP production was used in anti-corrosion market; in France 13.3%; in Germany 17%; in Italy 25%; and in Denmark 10%.

### CONSTRUCTION :

In the field of construction the volume of FRP consumption is the highest in France with 23.5%, in U. K. and Ireland with 18.5%; in Germany with

19% and in Denmark with 20% and it stands third in U. S. A. with 14.5%.

Besides the above areas a number of consumer items, electrical and electronic components are being made extensively out of FRP.

In India too, when the conventional construction materials like wood and steel for fishing boats are faced with rising cost and frequent maintenance problems, FRP boats will last longer with practically no problems on maintenance. More than one firm in India is now producing the required fibreglass and the resins.

The excellent corrosion resistance to sea water, much better impact strength, ability to manufacture complicated large shapes in single piece and light weight are some of the advantages which go a long way in selecting FRP as a material of construction for marine application including manufacture of life boats, fishing trawlers, patrol crafts, luxury yachts etc.



## P. V. PRABHU



Shri. Padmanabha Vasudeva Prabhu is Scientist S2 in-charge of the Processing Division, Central Institute of Fisheries Technology. Born on 10th June, 1936, Shri Prabhu had his early education in the T. D. High School, Cochin from where he passed his S.S.L.C. examination in first class. He underwent his college education in the Maharajas College, Ernakulam. He took his M.Sc Degree in Chemistry and Physics from the Kerala University with first class.

After a brief spell of teaching career in a private College Shri. Prabhu joined the Central Institute of Fisheries Technology on 10.8.1960 as Research Assistant in the then Processing Wing. On his pro-

motion as Assistant Research Officer (Processing) in 1962 Shri Prabhu was posted at the newly organised substation of the Institute at Veraval in Gujarat State to take up Investigation on aspects of fish processing and waste utilization. When the Institute was entrusted with the task of undertaking the compulsory pre-shipment inspection of processed fishery products meant for export, Shri. Prabhu was promoted as the Senior Inspection Officer - in - charge of the operational part of the scheme. In the infant days of the introduction of the inspection scheme under the stewardship of Late Dr. V. K. Pillai, Shri Prabhu had been greatly responsible for helping in streamlining the procedure of inspection as also instilling a sense of confidence and winning appreciation from the processors, in the systems introduced.

When the Indian Council of Agricultural Research launched the All India Co-ordinated Research Project on Transportation of Fresh Fish and Utilization of Trash Fish Shri. Prabhu was promoted as Technologist-in-charge of the execution of the Project from its Bombay Centre. Besides

being in-charge of the Co-ordinated project Shri. Prabhu was also in-charge of the Bombay unit of the CIFT in which capacity he was responsible for guiding, co-ordinating and conducting various research programmes undertaken there in addition to the administrative control of the unit. In 1976 Shri Prabhu was transferred to the Head quarters of CIFT in Cochin. He is now working as Scientist - in - charge of the Processing Division of the Institute.

Shri Prabhu has worked on all aspects of fish processing and preservation including curing/drying, canning, freezing, packaging, transportation, development of byproducts and diversified products from fish and shell fish and has published over a score of scientific papers on these subjects.

A founder member of the Society of Fisheries Technologists (India), Shri Prabhu was for some time the Asstt. Editor of the journal, Fishery Technology, published by the Society.

Besides, Shri Prabhu is a member of several committees constituted by the Director for the Institutes' management and takes active interests in matters connected with research as well as management of the Institute.

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*fishtechnology newsletter july 1979*

# SQUID FISHING OFF VERAVAL COAST ( GUJARAT - INDIA )

1 . Investigations conducted by the Veraval Research Centre of CIFT has shown potential squid resources off Veraval.

2 . Offshore areas (40m. and above depths) with crystal clear and blue waters were found more productive for cephalopods than the less clear and turbid inshore waters (below 40.m depths).

3 . Fishing for squids (*Lolige* sp.) and Cuttle fishes (*Sepia* spp.) from a lucrative business off Veraval, North West Coast of India. This new resource has attained importance since 1976 due to their demand in foreign markets.

4 . Analysis of the trawl catches obtained by the experimental trawl nets operated by the departmental vessel Fishtech No. 8 (15.2 m OAL with 165 h. p.) showed a catch range of 1 kg to 24. 4 kg. of Cephalopods per trawling hour constituting 0.70% to 32.00% of the total trawl catch during January 1977 to 1979. This indicates the scope of Cephalopod resources and for further exploitation.

5. Newly developed 32M large Mesh Demersal Trawl was found more effective for the capture of Cephalopods and landed the highest catch per

unit effort 100 kg per trawling hour at a depth of 40m in the month of October, 1978. Peak catch of Cephalopods was obtained in October, 1978 followed by February and March, 1979. *Sepia* spp. were found more predominant during October to December, while *Lolige* spp. were more prevalent during January to May. Offshore areas (40m. and above depths) with crystal clear and blue waters were more prevalent during January to May.

6 . Price of Cephalopods ranged from 30ps to Rs. 3/— per kg. at the landing site. Further investigations are being continued.

## CIFT PUBLICATIONS

English	Free/Priced	Rs. Ps.
1. Fish Technology Newsletter (monthly)	Free	
2. Annual Report	"	
3. Special Bulletin I 'An Account of the Inland Fishing Gear & Methods of India'	Priced	Rs. 10. 37 cost + Rs. 1 30 postage
4. Spl. Bull. II-Research in Fish Behaviour - A Review	Free	
5. Quality Control in Fish Processing	Priced	Rs. 4.00 cost + Rs.2.45 postage
6. Pamphlets on freezing, canning, drying prawns and fish, speciality and byproducts from fish, maintenance of boat hulls etc.	Free	
<b>Hindi</b>		
7. Matsya Technology samachar	Free	
Money orders and request for free publications may please be addressed to:- The Director, C. I. F. T., Matsyapuri P.O., Cochin-29.		

## **CIFT is at your Service**

*It transfers Fishery Technology by way of:*

- Demonstrations of Fishing and Fish Processing techniques evolved by it
- Answering Technical queries
- Supplying project reports and design drawings
- Training courses on fishing and fish processing

*Please contact :*

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