Proc: All India Workshop on Gainful Employment for Women in Fisheries Field, organised by Societyof Fisheries Technologists (India), 7-8 March 1988 : 217-228.

FISHERY TECHNOLOGY PACKAGE FOR THE DEVELOPMENT OF COASTAL WOMEN

Mrs. P.J.CECILY
Central Institute of Fisheries Technology
Cochin-682029

ABSTRACT

The mechanisation of fishing vessels, introduction of different types of synthetic fibres for fish nets and modernisation of fishing gear and methods have revolutionised fishing resulting in substantial increase in the catches. This necessitated appropriate development in post-harvest technologies such as handling and storage, quality, standards, preservation etc. and the Central Institute of Fisheries Technology has played a key role in the R & D activities pertaining to these aspects. The paper deals with organisation of training programmes in the field of hygienic handling of fish/shell fish, preparation of diversified products and utilization of fish waste by conversion into useful byproducts with a view to opening up employment opportunities to coastal women. In collaboration with the Department of Science and Technology (Govt. of India), the Central Institute of Fisheries Technology has already trained three batches of 25 women each from coastal fishing villages Chellanam and nearby Vypeen islands.

The establishment of village level women cooperative societies, setting up of production units based on location-specific programmes, quality evaluation, market promotion of fish products are some of the areas requiring technical guidance and financial assistance from the Government/voluntary agencies.

INTRODUCTION

Fishing is one of the oldest occupations of mankind. As a result of the implementation of successive five year plans, India has achieved all round progress in the fisheries field as evidenced by the enhanced fish catches of both marine and inland sectors. Two-thirds of the fish catch in the country are brought ashore by the artisanal fishermen. The upliftment of small-scale fishermen has not received the attention it deserved in the earlier five year plans and meaningful schemes have been drawn up by Centre/State Governments in this direction only very recently. This included welfare measures such as providing them with better housing and drinking water facilities, proper training in handling modern fishing implements, motorisation of country craft, opportunities for co-operative movement and financial aid. The area I would like to highlight in this paper pertains to the fisherwomen who are equal to men population size and are completely dependent on these malefolk for all their needs, as they are devoid of any substantial occupation. In earlier days they could do some work on twine-twisting, mending of nets and sale of fish in the hinterland areas. The introduction of man-made fibres and ready made nets and development of motorable roads to the

interior places deprived these fisherwomen of their petty occupations. A large number of coastal women work in primary processing centres owned by middle men for peeling prawns./ Some of them, lured by the hope of employment, are forced to leave their home state to other parts of the country where they toil day and night. This is the specific area I would like to project before you. Organisation of some schemes for gainful employment of such women through the application of a fishery technology package can go a long way in providing them employment in their own states.

The role of Department of Science and Technology

The Department of Science and Technology, Government of India, plays a vital role in the development of weaker sections of the society. To mobilise Science and Technology expertise and accelerate the pace of rural development, priority areas have been identified by DST and a lot of thrust is being given on role of Science and Technology is improving the working conditions and providing opportunities for gainful employment for women. The sustained efforts of DST relate to training of rural tribal, coastal, urban and semi-urban women with a view to provide opportunities for employment/self-employment, bringing about technological improvement to reduce drudgery by developing utility-oriented equipment and processes, paying due attention to their health and nutritional needs.

Viable Technologies developed by CIFT

Though the processing methods, preservation techniques and quality control in respect of exportable varieties of fish, shrimp, lobsters, crabs etc.

/ and handling of fish.

developed by CIFT have been successfully transferred to the industry catering to foreign markets, little attention is paid in the maintenance of quality of fish used for domestic consumption markets. Improved technologies for curing , drying, smoking and preparation of diversified products out of low cost fish and utilisation of fish wastes by conversion into useful byproducts have been developed by CIFT. A sizeable portion of fish caught deteriorates owing to the practice of unscientific traditional methods of handling and storage. In the case of mechanised boats, it is a common practice that the low quality fishes amounting to 70% of the toal catch are disposed off at very low prices after sorting out prawns and quality fish that are of great demand for export. At times such low quality fishes are discarded into the sea from large fishing trawlers. If proper training is imparted to the unemployed fisherwomen in the utilization of low priced by-catch into nutritious products, it will result in gainful employment generation and improve their family income. This will also enhance the high quality protein intake among the people and thereby reduce the problem of protein deficiency and malnutrition. Fishing gear fabrication and mending based on improved designs developed by CIFT are other areas that can be tapped for employment generation.

DST-CIFT scheme, its objectives and methodology

Realising the gravity of the above situation the CIFT has taken up a scheme on 'Gainful Employment for Coastal Women' funded by the Department of Science and Technology, Govt. of India to train poor unemployed coastal women in groups selected by the Kerala State

Fisheries Department from different fishing villages in the field of post-harvest technology for periods of three months. The objective of the training programme is to impart knowledge on the causes of fish spoilage and methods of prevention or control of deterioration of fish due to bacterial action. The programme included practical training in the methods of hygienic handling of fish and shell fish, preparation of diversified products such as wafers, soup powder, cutlets, fish fingers, curries, pickles etc. By resorting to filleting and separating the meat from low cost fishes, their identity cannot be made out and many products of good consumer appeal and nutritional value can be prepared out of them. The production of fishery byproducts such as shark fin rays, fish skin, fish maws, fish meal, chitosan from prawn shell waste etc. paves the way to enhance foreign exchange earning of the country apart from providing livelihood for coastal women. A variety of quality dried fish, small sized prawns, squid and jelly fish find very good export market. After completion of the demonstration cum training programme, the trainees can produce diversified products on a semi-commercial scale and market them in villages and urban centres. This will result in the consumer acceptance of these products and enhance the per capita consumption of fish.

Progress and result

Three batches of 72 coastal women from three fishing villages of Chellanum, Kandakadavu and Vypeen Islands elected by Kerala State Fisheries Department were trained in the field of post-harvest technology.

The socio-economic status of the fisherwomen is given in Table 1.

Table 1. Socio-economic status

1. Area to which they belong

Urban	Semi urban	Rural
-	-	72

2. Educational level

Illiterate	Primary	Secondary	High school	Pre-degree	Degree
-	1	2	67	2	-

3. Economic status (Income per month in Rs. Approx.)

Below 100	100-300	300-500	500-700	700+
21	51	-	-	-

4. Age groups

Below 18	18-25	25-35	35-45	45+
-	47	25	-	-

5. Community

SC	Christian	Dheevara	Muslim	Ezhava	Others
15	24	24	6	1	2

Table 2 presents the cost of raw materials and ingredients required for conducting the three training programmes along with the sale proceeds of products sold during the training period. The capital investment and stipend of the trainees are not included.

During the three training programmes so far conducted products worth Rs.27575/- could be marketed through Kerala State Cooperative Federation for Fisheries Department (Matsyafed) and other retail outlet and the amount realised through sale proceeds could be utilised as revolving funds.

Table 2. Details of raw materials used for training programme

Sl. No.	Name of item	Expenditure Rs.	ps.	Sale proceeds
1.	Fish/shell fish	12,334	00	
2.	Maize starch	553	10	
3.	Tapioca starch	488	52	
4.	Salt	327	30	
5.	Oil	584	30	
6.	Vinegar	168	00	
7.	Garlic	495	70	
8.	Chilly powder	71	50	
9.	Turmeric powder	20	10	
10.	Potato	144	10	
11.	Green chilly	83	85	
12.	Ginger	171	40	
13.	Bread powder	150	99	
14.	Egg	123	25	
15.	Pepper	32	00	
16.	Clove	63	50	
17.	Cinnamon	47	30	
18.	Onion	74	90	
19.	Milk powder/sugar	79	15	
20.	Gas	421	74	
21.	Others	63	00	
22.	Bottle/Polythene cover	2,176	95	
		Rs.19,674	66	Rs.27,575 00

Organisational set up of Society

The first batch of 25 trained women organised an industrial co-operative society viz. "Cochin Vanitha Fish Processing and Allied Industrial Co-operative Society Ltd. S. IND(E) 93". Efforts are being made for setting up of a production unit and marketing outlets for products. The committee members such as President, Hon' Secretary, Treasurer and six members have been elected from among the members of the Society.

Table 3 presents the economics of production of fish products giving employment opportunities to the group of 25 women. An amount of Rs.5,000/- has been collected as shares from the members and an amount of Rs.20,000/- (four times share) has been expected as financial assistance from the industries Department to meet the non-recurring expenditure for the working of the society. The recurring expenses for the working of production unit is expected to be met as bank assistance. The Technical guidance would be extended by CIFT. A voluntary organisation, Centre for Research and Training in Poverty Alleviation and Women Welfare (CRATPAW) has been identified to do the follow up action and monitor the working of the society.

Table 3. Economics of production of fish products

I. Non-Recurring Expenses

Machinery and Equipments	Existing	Proposed (Rs.)
a. Deep Freezer	Nil	30,000
b. Wet Grinder (5 lit Cap.)	-	3,500
c. Mixer	-	1,500
d. Dressing table	-	3,000
e. Polythene sealing machine	-	5,600

f. Fish cutting machine	-	5,000
g. Mincing machine	-	5,000
h. Weighing balance	-	1,800
i. Electric heater	-	2,000
j. Stove/Gas/Fuel	-	3,000
k. Utensils (steel/aluminium/ plastic etc.)	-	10,000
l. Drying platform & foot rest	-	3,000
m. Knive sets	-	2,000
n. Working dress & other facilities	-	4,600
o. Furniture	-	20,000
Total		1,00,000

II. Raw material for one month

	Rs.
1. Raw material (Fish/shellfish)	40,000
2. Ice	2,000
3. Packing materials (Glass bottles) Polythene cover etc.	7,000
4. Ingredients	6,000
Total	55,000

III. Staff salary/wages per month

	Rs.
1. Wages for skilled labourers/Technical Assistants	1,250
2. Wages for workers @ Rs.20/- for 25 workers for 25 days in a month	12,500
3. Salary of Secretary @ Rs.800/- p.m. (1 No.)	800
4. Salary of sales girls @ Rs.500/- p.m. (3 Nos.)	1,500

IV. Recurring Expenses	Rs.
1. Rent on Land & Buildings	3,000
2. Sale outlet rent	900
3. Propaganda & Advertisement	500
4. Electricity & water	1,000
5. Freezing hire charges	1,000
6. Packing	1,000
7. Transportation	2,500
8. Stationary	500
9. Miscellaneous	5,000
10. Repairs and Renewals/ Maintenance	300
11. Raw materials	55,000
12. Vegetable oil	3,000
13. Washing & cleaning powder/ sanitation	1,000
14. Staff salary/wages per month	16,050
15. Contingencies	1,000
Total	91,750

(Rupees ninety one thousand seven and fifty only)

Anticipated receipts for one month

1. Wafers @ Rs.45/- per kg.	15,075
2. Dried fish sales @ Rs.15/- kg. for 1665 kg	24,975
3. Dressed wet fish sales	15,000
4. Cutlet @ Rs.150/- per piece for 10,000 nos.	15,000
5. Fish/prawn pickle @ Rs.45/- per kg for 445 kg	20,025
6. Shark fin ray , fish meal etc.	9,925
	1,00,000

Gross Income	Rs.1,00,000
Less recurring expenses	91,750
	8,250
Less Depreciation (2.5%) of the item I	2,500
	5,750

(Rupees five thousand seven hundred and fifty only)

(Since Rs.5,750/- is expected to get as surplus amount per month, apart from giving employment opportunities to the coastal women, this project may be economically viable.

Constraints

Although the first batch of trainees formed a co-operative society in early as May, 1987 they could not start their activities due to non-availability financial assistances. In spite of the fact that the techno-economic feasibility report for starting production unit was submitted to the banking agencies/ District industries centre, as far no financial aid has been received. The scheme is envisaged in such a way that after completion of training they be given infrastructure facilities and financial aid from the Government side. Unless there are suggestions/standing instructions/orders for financial support to such co-operatives and watching their further progress in the field, the real objective of the scheme cannot be achieved fully.

Conclusion

It is essential that the State Governments should take more active and effective role in the implementation

of the scheme and providing the trained women infrastructure facilities like land, building and equipment, once they register into a co-operative society at village level. They may also be provided with the needed raw material from the fish catches of the Govt. fishing vessels on a priority basis. The types of fish and methods of processing differ from place to place depending on the fisheries and consumer preferences. The scheme on Gainful Employment for Coastal Women may be extended to the different maritime states as a viable proposition to generate income and provide rich protein food for the poorer sections of the society.

The technologies available for transfer of developmental activities in the different ICAR Institutes may be properly documented for adoption by the small-scale sector, so that location, specific programmes can be suitably integrated and supplemented for implementation to generate employment, especially to people belonging to lower economic strata. Probably an independent organisation has to be set up to undertake promotional activities in internal consumption of fish which may take care of the facilities to be provided at all stages right from landing areas onwards, funding for viable projects to enterpreneurs in artisanal sector, maintenance of wholesomeness of fish in market and retail outlets, organisation of welfare programmes, educational and recreational opportunities for fisherwomen and children which would induce them to follow the vocation without drudgery.