

Women in Fisheries in India

Proceedings of the Workshop on
Women in Fisheries in India
27 May, 1990



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**Edited by
Sudhindra R. Gadagkar**

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Foreword

Ours has been a man-dominated world from the very beginning. In earlier times, the role of women was largely restricted to the household and their participation in other spheres of activities was practically non-existent. This situation was mainly due to ignorance and a misconception about the skills of women and man's own conception of his superiority. This situation is very aptly reflected by the commonly used expression of "weaker sex" while referring to women. In spite of the very impressive technological and sociological progress the world has witnessed during the present century, women are yet to participate in various activities on an equal footing with men. Misconceptions, taboos and superstitions still persist in many of the under-developed and developing countries. This prompted the United Nations to declare the 1980s as the 'Decade of the Women', during which period activities were initiated all over the world to uplift the status, role and welfare of women. This declaration was due to the realization of the enormous loss of economic and social benefits by not involving women adequately in the development process in general, and the agricultural and rural sectors in particular.

The involvement of women in the fisheries sector in India in earlier times was largely restricted to retail sale of fish and simple indigenous methods of fish processing. The emergence of modern fish processing industries provided a new avenue of employment to innumerable women. Aquaculture as an industry is of very recent origin and is yet to involve women in any significant manner. With the meteoric growth of women's education in the country in recent decades, women have started entering all walks of life, including the various fisheries sectors, such as research, development, training, extension and industry, and have already made their presence felt. However, even though the integration of women in the fisheries mainstream is already on the move, there is still ample scope for further substantial growth. It was with a view to take stock of the present situation, identify the bottlenecks and constraints and formulate viable recommendations for fruitful and equitable involvement of women in fisheries that the Indian Branch of Asian Fisheries Society (AFSIB) decided to organise a Workshop on Women in Fisheries in India in May 1990, in conjunction with the Second Indian Fisheries Forum. The response received from all those invited to participate, particularly the lady experts in various fisheries sectors, was most heartening. The workshop saw the presentation of many useful papers and lively discussion, all of which led to the formulation of some valuable recommendations. It is hoped that this publication containing the proceedings of the workshop would prove to be a useful reference tool for all those concerned with fisheries planning, development, research, extension, training and industry.

I take this opportunity to record the Society's indebtedness to all the participants who contributed to the success of the workshop. A special word of thanks is due to Dr. Indrani Karunasagar, who was the moving spirit behind the organization of the workshop and to Shri. Sudhindra R. Gadagkar, who has done an excellent job in editing the proceedings. I also wish to commend the initiative of Dr. M.C. Nandeesh, the dynamic Secretary of AFSIB, in suggesting the workshop topic and for spearheading its organization and publication of the proceedings.

I would also like to place on record the Society's indebtedness to the Department of Women and Child Development, Ministry of Human Resources Development and

the Ministry of Agriculture, Government of India, and the Royal Norwegian Embassy (NORAD), New Delhi, for readily providing funding support for organising this workshop and in bringing out the proceedings.

H.P.C. SHETTY
Chairman,
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Preface

I take pleasure in presenting this special publication of the Asian Fisheries Society (Indian Branch), entitled 'Women in Fisheries in India'. This volume contains fourteen papers presented at the Workshop on Women in Fisheries in India, held at Mangalore on 27 May 1990.

A workshop, or indeed any forum on women in fisheries in the Indian context, assumes significance on three basic accounts: 1) the important role the traditional fisherwomen and fish workers play in the marine fishing industry and the fact that they are exploited despite playing such an important role, 2) the need for a greater involvement of rural women in all newly emerging fields, including coastal aquaculture, and 3) the limited role currently played by educated women in the field of fisheries, *vis-a-vis* the potential that exists.

It was in order to address these issues, raise questions, and look for solutions that the present workshop was conducted. The timing and venue of the workshop were made to coincide with the Second Forum of the Asian Fisheries Society (Indian Branch) to elicit audience participation from the knowledgeable gathering. Apart from the key-note address, thirteen selected papers were presented in this workshop. Many of the papers deal with problems faced by women in their traditional role of fish marketing and processing. They explain how the traditional fisherwoman today has lesser access to the resources due to the advent of mechanisation in fishing, net making, etc., and the entry of big businessmen into the field, and how the personal relationship between the fisherwoman and other market intermediaries has changed to a business-like one. Gender discrimination is seen both in the work place and at home. In this context, some authors describe her exploitation in the fishing industry despite the important role she plays. Similarly at home, in spite of the fact that it is invariably her income that bears a direct relationship to the nutritional status, health and education of the children, it is she who has to bear the brunt of all deprivations. Some papers point out the role of fisherwomen cooperatives in alleviating her plight while others describe the genesis of an organised movement and collective action by fisherwomen themselves for this purpose. In order to improve the economic status of fisherwomen a few authors have suggested several employment opportunities, particularly in aquaculture, where most rural women could be gainfully occupied. In the search for avenues for employment some authors have been involved in transfer-of-technology programmes, and have described their experiences. The need to include trained and experienced fisherwomen in extension activities and in policy making bodies, has been rightly stressed in some papers. They also emphasise the role of trained women in the fields of fisheries education, research and management. The thirteen papers in this volume follow the key-note address, in the general order described here.

A word regarding the editing is in order. As most of the papers were excessively lengthy and written in a rather conversational style, ideally they should have been sent back to the authors for modification based on written guidelines. However, as the time was very short when I was given the responsibility of editing the proceedings, I was asked to suitably reorganise and modify the written matter myself, as an alternative. In some cases I have taken the liberty of even changing the title of the paper to better reflect the text. It is my sincere hope that I have been able to

correctly interpret the views and opinions of the authors. I would request that any mistakes in interpretation are pointed out so that any later editions of this volume can be suitably revised. I also hope the modifications have resulted in making this volume more in keeping with standard publications of its kind, as far as style and presentation are concerned.

I would also like to make a note regarding the use of the word 'fisherwoman' in this volume. First of all, according to both American and British dictionaries, while the word 'fisherman' is perfectly valid, apparently a change in gender is not permitted. (Perhaps this fact aptly reflects her plight!) This necessitated rewriting the word as 'fisher woman'. However, since this usage seemed rather awkward, especially considering its frequent use in all the papers, I have retained 'fisherwoman' throughout. Secondly, throughout this volume, unless specified by the context, the word 'fisherwoman' must be taken to mean a woman engaged in the production, processing or marketing of fish, irrespective of the community she belongs to.

The publication of this volume has been inordinately delayed due to a host of reasons. Despite the delay, however, it is hoped that this publication contributes towards fulfilling the objectives set forth in the organisation of the workshop, and that the concerned authorities take due note of the recommendations and do the needful.

I would like to acknowledge the helpful suggestions made by Mr. Ramachandra Bhatta in editing the proceedings.

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Fisheries - A Feminist Perspective

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This paper speculates on the evolution of the commonly seen gender based division of labour in the fishing industry and questions the propriety of the inferior status generally conferred on the woman's role. The paper also questions the wisdom of the so-called modernisation programme in capture and culture fisheries, and advocates a way of thinking that would make any exploitation of natural resources more need based and less commercial.

It is well known that women have always been involved in various aspects of the fishing industry. There are instances where women have traditionally been equal partners to their menfolk even in capture fisheries, such as in Vietnam, Sri Lanka and some countries in South America, West Africa, the Caribbean, and the South Pacific. In some of these countries they are hailed as skilful navigators, and in some others they also participate in the construction of sea-going craft.

The norm, however, is that there is a gender based division of labour in this industry. Although it is likely that such a division of labour has evolved historically (a certain amount of specialization eventually becoming gender specific), there are other reasons too (not so logical, however) that have contributed to this. Thus the woman in Kerala is not allowed to step into the sea because she, being "impure" would "contaminate" it. Similar taboos and myths are seen in other countries too. Among Muslim communities women are confined to the house. In addition to taboos physical force, usually under the spell of intoxication, has also often been used by men to deny women equal partnership.

Women play their role in the system generally by marketing the fish or by making nets. Unfortunately such a division of labour invariably implies that the

woman's contribution is less worthy. However, as Alice Schlegel (Ed. *Sexual Stratification: A cross cultural study*. Columbia University Press, New York. 1977.) says "...under conditions of subsistence, the inter dependence and complementarity of the separate male and female domains of work is the characteristic mode, based on diversity, not inequality."

Much stress has lately been put on the need for women's participation in the process of development. Invariably this means finding some niche suitable for employment of women. In this context, it must be remembered that as a woman's work within the house fetches no remuneration, it is common practice not to take it into consideration, despite the time and labour involved.

Technology transfer and Modernisation

Modern technology was introduced into fishing in India apparently under the assumption that there were stocks of fish in the sea that could be caught in any quantity, and that the existing artisanal technology was inefficient for this purpose. Craft and gear were 'modernised' in order to catch large quantities of traditional as well as hitherto unexploited varieties for the domestic market and to earn the foreign exchange necessary for the import of newer technology. The introduction of modern technology did result in a boom, setting off a spurt in the construction of infrastructural facilities such as fishing harbours, large landing sites, cold storages and processing plants, apart from new markets and marketing infrastructure. Development became synonymous with modern technology that yielded high profits.

It is claimed that fishing workers too did benefit by the boom. The larger catches and exports brought added returns. This resulted in a flow of capital into the sector. New employment opportunities were created for women in processing plants and the large landing sites invited surplus labour from inland areas for other jobs. However, it is important to emphasise that as a result of the boom fisherwomen lost out in the traditional occupations of fish vending and net making. The large landings and the increased level of business in the fish landing centres meant that there was little time or patience for the fish vendor. Large truck loads of fish were carried away to distant and lucrative markets and there was little left for rural distribution. Secondly the new gear types, being machine made, ran the traditional net makers out of business. It was this, now largely redundant, work force that was lured into the processing plants to augment family incomes. The hitherto independent working fisherwoman was thus forced to accept low wages and the exploitative conditions of the processing plants.

The promise of modernisation is added surplus. But as Maria Mies points out (*Patriarchy and Accumulation on a World Scale*, London, Zed Books, 1986), this concept of surplus is not based on material produced, but on what is stolen and appropriated through violent means from nature. Such 'production' usually does not spare even that part of the resource needed for regeneration, and therefore the resource does not get renewed sufficiently enough to be able to sustain further exploitation. In India this has been very clearly seen in the fisheries sector. By the late 1970s the catches began to fall. The fish had been over-exploited. The boom was over. Testimony to this can be seen all over the coast - silted landing sites, condemned ice plants, deserted fish drying yards, empty marketing halls and impoverished workers.

The major demand of the fish workers' unions today is, very rightly, to save the resources by banning destructive and over efficient technologies. However, the growth

oriented policies of the authorities have always considered increasing the efficiency of capture as the principal means of increasing production. It does not seem to have ever occurred to them that production means creating a resource that can recreate itself, and that in order to achieve this, the resource needs nurturing. Seen instead are over-exploited natural resources and polluted habitats.

Today, the new catch-word is culture fisheries. Planning estimates show extremely high increases of fish production through culture. This is certainly going to lure private entrepreneurs in large numbers, leading to greater privatisation of water bodies. The threat then, of the repetition of the deleterious ecological and other consequences of the green revolution are very real. What I am advocating therefore, is that both capture and culture fisheries be sustained by what I would term 'nurture fisheries'. This, I believe, can also be generalised as a feminist perspective. If developmental processes have to be life sustaining, then stress has to be placed on nurture - policies that do not bear immediate fruit and are perhaps not profit oriented in today's sense of the word. Nurture involves protecting and recreating the habitats, and the breeding and nursery grounds. It means regulating the fishery through legislation. It means caring for the natural flow of nutrients and preventing pollution. It means providing for need and not for greed.

Women Fish Vendors of South Kerala and Their Efforts to Organise

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Women fish vendors are among the most hardworking in Kerala. They are also among the most exploited. This paper describes the role played by these women in the fish marketing system in southern Kerala and recounts the numerous problems faced by them at each stage in procurement, transportation and marketing, apart from having to shoulder the major responsibility of ensuring the well-being of their families. The author also traces the evolution of collective action and organised protests by these women and describes some of their accomplishments.

Traditionally, fishing was the subsistence occupation of certain communities in Kerala. These fishing communities operated with conventional technology in their occupation. By the mid sixties, however, modern technology based on western models was superimposed upon the existing technology by the state, ignoring the possible impact of such a change on the socio-economics of the fishing communities. Predictably this modernisation model did not in any way bring the artisanal fishermen any benefit. On the contrary, their share of the returns declined. This paper looks at some of the effects of this modernisation on the womenfolk of the fishing communities and the efforts made by them to overcome their problems.

Women have always played an important role in the fishing industry by way of taking care of many of the shore-based activities, after the fish is landed. These include handling of the fish, salting, drying and marketing, apart from hand braiding of nets.

The marketing of fish by female vendors in Kerala is generally done in the following ways:

- a) **House to house sale:** Many small scale vendors go from house to house to sell fish, mainly in urban areas. Since visits are made to the same area every day, the vendors get to know consumer preferences and can make purchases accordingly. A cordial relationship usually exists between the vendor and the

families, with the vendor gutting and cleaning the fish for them and occasionally receiving gifts, apart from payment for the fish.

- b) **Licensed markets:** These markets, managed by *panchayats*, municipalities or corporations, accommodate a number of small sellers who are charged a certain amount for the privilege of a place in the market. The atmosphere in such markets is highly competitive.
- c) **Unlicensed markets/Hawking:** Some women sell fish at road sides and junctions where they can attract crowds. They are often harassed by the police for hawking at open places.

Problems encountered

Procurement of fish and transportation

Procurement of fish is a difficult task involving much investment and expenditure. The women often go to neighbouring districts to collect fish from fishing harbours, and return home only on week-ends. They make daily trips to the markets, and spend the night in the harbour or in railway stations in order to buy fish in the morning.

Fish is highly perishable and has to be sold quickly. But as it is generally not allowed in public transport it is carried as a head load by women (or on bicycles by men). Fish vending by women involves hours of hard labour, with head loads being carried long distances. A woman fish vendor may travel a distance of 20 to 30 km in buying, transporting and selling fish, thus spending 9 to 12 hours each day away from home. The distance travelled depends on the place of purchase. Those who can buy their fish from wholesale markets usually cover a distance of less than 10 km. However, those women who have to buy fish from the sea shore not only have to spend a lot of time as the boats arrive one at a time, but also have to cover very long distances, as the major consuming centres are usually far away from the sea shore. If the boats arrive late the vendors are forced to form small groups and hire a taxi each. It is important that they reach the market before the day's business gets dull and before the iced fish arrives, which is brought in large quantities from distant places and sold cheaper than fresh fish. This additional expense is a big drain on their income.

Some vendors hire cyclists to carry their fish to sale points and the vendors themselves travel by public transport. This also costs them heavily. Besides, some fish often gets stolen on the way. Those who go to harbours find it convenient to travel by train along with their fish, and some do. Since this is not permitted, however, they are harassed by checking squads and even the porters at the stations. To procure dry fish, these women often travel by lorries in groups, to places sometimes as far off as Mangalore, to avoid being cheated.

Working capital

Hitherto fish used to be traded mainly at the shore. The main problem of the fish vendor then was the uncertainty in the income from the day's sales, as the customers always have the choice of not buying any fish on days when the price or quality is found unacceptable. However, the vendor would obtain her fish from the traders on credit, and only had to be regular in making her payments in order to be given fish on credit again.

Recent years have seen decreasing amounts of fish at the beach. The vendors are therefore, being forced to move out to either wholesale markets or to fishing harbours in distant places. The trading in the new set-up is often with strangers and relationships are business-like. Fish is no longer given entirely on credit.

Female fish vendors are generally from poor families and rarely possess ready capital to buy fish every day. The only option left very often is to borrow. Friends, relatives and private money lenders are the usual sources of credit, with varying rates of interest. Although there are several special schemes with low interest rates for economically weaker sections, these women are unable to obtain loans from banks as they have no assets of their own to use as collateral. Private money lenders charge very high rates of interest. If Rs.100 is to be borrowed, only Rs. 90 is given in the morning and Rs. 101 has to be returned in the evening. Such high interest rates cut on the meagre income they earn, thereby forcing them to cut back on the requirements of the family.

Marketing costs

The quantity of fish handled and the costs involved show considerable variation. For example, several old women carry on the trade in small quantities merely to ensure their independence. Robust and enterprising young women on the other hand, even become wholesalers, buying in bulk and selling to other women vendors. Some vendors form informal groups and pool resources and carry on their trade.

The price paid for the fish depends upon the variety and the place of procurement, among other things. Marketing costs involve commission or fees to middlemen, market taxes, cost of ice, transportation charges, food, interest on loans etc. Transportation and food alone account for 60 to 80 percent of the marketing costs.

Market tax collection is a highly lucrative and exploitative business. The authorities usually auction the job of market tax collection to private contractors, who often demand two or three times the stipulated tax from the vendors. Women refusing to pay these unjust 'taxes' have been beaten up and their fish destroyed.

Others

The female fish vendor, despite her vital role in the fishing industry, not only faces various kinds of problems at each stage in her profession, but also has to hold on to the means of livelihood under constant threat of competition from sophisticated sales outlets such as refrigerated booths. Invariably, she undertakes the job of fish marketing in addition to the household responsibilities of cooking, raising children, and attending to the needs of an often abusive and wasteful husband.

At the same time she also has to care for any unsold fish that she has had to carry back home, finding the time and energy to clean and salt the fish, and to dry it the next day. To add to her problems, her financial responsibilities at home are many. For example, the repayment of debts incurred for weddings and other family functions as well for contingencies such as illness, are her sole responsibility. In order to carry out these responsibilities she has to be consistently efficient and successful at procurement of fish and its marketing.

These facts add up to make the life of the female fish vendor extremely stressful and with concomitant health problems such as back pain, headache and poor eye sight.

Efforts to organise

The 1982 census of fisherfolk in Kerala shows that the highest number of women fish vendors are in Trivandrum district followed by Alleppey, Quilon and Cannanore. The districts of Malappuram and Kozhikode in which the fishing labour is predominantly Muslim, show the least numbers.

The fishing workers in the southern districts are predominantly Christian, and till recently all social activity usually revolved around churches through religious organisations, in the mid 1970s, however, voluntary organisations in the area began to mobilise women to respond to local problems such as poor sanitation, lack of teachers in local schools, improper functioning of ration shops, etc. Although most of the women were illiterate such activities enabled them to take collective responsibility and to exercise leadership skills. This also brought them into contact with the authorities.

Later on, as problems common to them as women fish vendors began to be discussed, they discovered that the absence of both parents from home for many hours every day was severely affecting the education of their children. In order to reduce the time spent away from home, the women realised that they needed transportation. Public transport, however, was denied to them.

Responding to a problem of this size required resource mobilisation on a higher scale than ever before. A survey was undertaken to obtain information on the various details of the problem. Communication forms like street theatre were used to increase awareness and focus attention on the need for transportation. After about a year of preparation in 1979-80, women took to the streets demanding their right to transport facilities. It took 3 years of struggle, using various methods, for the authorities to agree to operate special transport for women fish vendors.

While this success instilled confidence in the collective movement, the whole process was also an important learning experience. In fact it was these women who were the mainstay of the subsequent fishworkers' movement in Kerala against indiscriminate and destructive technologies in fisheries. Women who were illiterate and without any decision making powers were now in a position to identify issues and problems and respond to them.

Other important problems that are being tackled by this organised force are the high taxes and the method of tax collection, and the inadequate basic facilities like drinking water, drainage, and lavatories in most markets.

In the process of these struggles as workers, the women began to be aware of the various problems they face as women too. There was an awakening to the fact that besides class contradictions in society, many other relations existed that were to the advantage of men. Issues like wife-beating, rape within marriage and other types of harassment began to be talked about and acted upon, with some success.

The process is slow, yet a promising one. Women fish vendors face many constraints like illiteracy, lack of time due to the double work burden, and extreme situations of poverty. Fisherfolk are among the poorest of the rural poor. Marine fisheries is often extremely hazardous and death is not uncommon, leaving the woman the sole provider of the family. In spite of these problems the women fish vendors of south Kerala, especially Trivandrum district, have shown the motivation for organised and collective work, and are to be admired for it.

Fisherwomen's Problems and Their Social Participation in Chidambaranar District of Tamil Nadu

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One hundred and twenty fisherwomen from six randomly selected fishing villages in Chidambaranar district of Tamil Nadu were interviewed to elicit information about the problems they face as women belonging to an economically and socially backward community. The authors conclude that in majority of the cases family and social problems and the lack of social participation have prevented them from actively involving in community organisations and thus deriving benefits.

In India fisherfolk are considered members of a backward community. In particular fisherwomen have a low status in the social hierarchy. The present study was taken up to identify the problems encountered by fisherwomen in their families and in society, and to assess their social participation.

Chidambaranar district (Tamil Nadu) has 17 marine fishing villages of which 6 were randomly selected for the study, namely Alantolai, Chippikkulam, Pazhayakayal, Periathazhai, Ratchanyapuram and Vembar. Twenty households from each selected village were sampled, giving rise to a total sample size of 120 households. The study was confined to women from families that owned and operated traditional fishing crafts.

Problems encountered

The study revealed that the problems faced by roughly 95 percent of the respondents could be broadly classified into two categories: household problems and social problems. Finance (reported by 7.5 percent of the respondents) and marketing (11 percent)

were problem areas only for the few women who were earning members. Incidentally, respondents from Alantolai did not report any financial or marketing problems.

Household problems

Following are the household problems revealed by the study, with the percentage of respondents affected given in parentheses: alcoholism of the men-folk (66.67%), unemployment (64.17%), dowry (41.67%), school dropout among children (37.50%), matrimonial alliance problems (26.67%) and under-employment (16.67%). Percentages were lower for other problems like poor health, family disputes and debt.

There were found to be differences among villages too. For instance, dowry was seen to be a problem for a greater number of respondents in Ratchanyapuram and Pazhayakayal, perhaps because of the lower literacy levels among fisherwomen of these villages, whereas not many considered it serious in Vembar and Chippikkulam. Ninety percent of the respondents in Alantolai reported alcoholism of their husbands as a serious problem. The school dropout percentage was higher in Ratchanyapuram when compared to other villages.

Almost all these problems are a result of the low income levels of the households. It appears that if fisherwomen could contribute to the family income these problems could by and large be resolved. The problem of alcoholism can be tackled by proper counselling as the fishermen were found to be responsive. Campaigns on the evils of drinking must be periodically arranged in these areas by voluntary organisations.

Social Problems

Important social problems identified in the study were dowry (71.67%), non availability of adequate drinking water (62.50%), distance to hospitals (45.00%), inadequate transport facilities (23.33%), poor sanitation (13.33%), poor power supply (5.83%), video screening (5.83%), distance to schools (5.00%), lack of cooperation among villages (5.00%) and improper drainage (4.17%). Figures in parentheses against each problem refer to the percentage of respondents reporting the problem.

The problem of video screening was reported only in Alantolai and by 35 per cent of the respondents. The fisherwomen in Chippikkulam, Alantolai and Periathazhai complained that the hospital was very far away. Shortage of drinking water was reported in all villages except Ratchanyapuram and Pazhayakayal. (These two villages are close to the tributary of the river Thamiraparani.) Respondents from Chippikkulam and Alantolai complained about inadequate transport facilities. Proper drainage was a problem in Vembar.

Perhaps an effective way of solving social problems is to get the fisherwomen to form a voluntary organisation through which they would be able to redress their grievances.

Social Participation

Despite the presence of many community organisations like the *Gram Panchayat*, Fisherwomen's Training Centre, Fisherwomen's Cooperatives and Working Women's Forum, fisherwomen were found to participate only in the activities of the *Mahila Mandal*. Although membership was poor, (of the 120 respondents only 18 were members during the study period), it was, however, found that by and large, most members participated actively, did not miss meetings and made adequate use of the services of the *Mahila Mandal*.

The village Pazhayakayal had only one respondent as a member of the *Mahila Mandal*, while Vembar had seven during the study period. Four respondents in Chippikkulam, one of whom was an office bearer, two respondents in Alantolai and five in Periathazhai were members, and they all participated actively, attended all meetings and made good use of the services. The village Ratchanyapuram did not have a *Mahila Mandal*. Non members put forth several reasons such as inability due to other commitments, lack of interest of self, lack of interest of spouse, and lack of faith in the organisation.

In view of the problems these fisherwomen face both within the family and in society, it is important that they are properly motivated to participate not only in community organisations but also to open cooperative societies and other beneficial voluntary bodies.

Problems of Women Workers in the Fish Processing Industry

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Beena, D. 1992. Problems of Women Workers in the Fish Processing Industry. p. 19-20. In: Sudhindra R. Gadagkar (Ed.) *Women in Indian Fisheries*. Proceedings of the Workshop on Women in Indian Fisheries. 27 May 1990. Special Publication 8, 51 pp. Asian Fisheries Society, Indian Branch, Mangalore, India.

The activity of prawn peeling in the fish processing industry is labour intensive and is done exclusively by women. Ever since this activity was separated from freezing the workers engaged in prawn peeling have been subjected to much exploitation by the employers. This paper describes some of the problems faced by these women in three districts of Kerala.

The frozen prawn industry involves two major operations: pre-processing (peeling, done exclusively by women and highly labour intensive), and processing (freezing). It is difficult to accurately assess the number of women workers in prawn peeling sheds as their work is seasonal and casual, and there is much movement among peeling sheds. Estimates of prawn peelers in Kerala range between 10,000 (Kurien, 1985) and 25,000 (IIRDS, undated). My own estimate puts their number at not less than 25,000. Since such a large number of workers remain invisible in official records, it is necessary to study their problems and bring them to light. Hence this study. I have confined this study to three districts, namely Kollam, Alleppey and Ernakulam, where there is a concentration of processing plants involved in freezing of prawn.

Until the mid-sixties all the workers used to be directly employed by the exporters as both peeling and freezing were carried out in the same premises. Later, however, increasing demand for frozen prawn necessitated absorption of more labour, especially for peeling. This increase in labour in turn, led to an increase in production costs as well as managerial problems. These problems coupled with the new labour laws and the fear of trade unionism made the activity of prawn peeling less appealing to the exporters, who then proceeded to divest themselves of this responsibility. Henceforth peeling became a separate operation and was either sub-contracted or was got done through small ancillary units.

This decentralization of the peeling activity had a severe impact on its workers. Now out of the factory sector, they were forced to join the ranks of unorganised labour. Low investments for peeling sheds also made it an unstable industry. These facts gave the workers virtually no bargaining power.

The plight of the workers was worsened by the added competition from women belonging to other communities, who also began to seek employment in this industry. Caste barriers had broken down and the social stigma attached to fish processing considerably lessened, primarily due to the factory set-up and the introduction of technology in fish processing. A crisis in the coir industry during this period increased this competition and paved the way for further entry of other communities into fish processing. While traditionally fish processing was being done only by fisherwomen, a sample survey by this author revealed that as much as 33 percent of the work force in prawn peeling units belonged to other communities.

The wages in peeling sheds are very low and are paid 'piece rate' (a certain amount paid per unit work completed). This system is exploitative as it compels the worker to put in intense labour to earn the maximum possible income. Moreover, in most peeling sheds wages are cut for broken prawn and consequent loss in weight. The workers are therefore forced to handle the raw material with great care. The time spent in doing so robs them of some extra units that they might have otherwise peeled.

Another method by which workers are exploited is less obvious. The employers distribute slightly more than the prescribed quantity of prawn for peeling without increasing the wages. Workers who protest are sent away. There are instances when *en masse* protests by the workers have resulted in shifting of entire peeling sheds to other areas. Obviously therefore, protests are few.

In the busy season, work is generally between 5 am and 5 pm. In Quilon district the work is for 12 hours in the night, without a break. Such long hours of work in ice-cold surroundings often leads to headache, back pain, muscle cramps and skin problems. Most workers already suffer from anaemia, perhaps due to malnutrition. As they do not come under the purview of labour laws the workers neither enjoy job security nor any perquisite such as medical care.

Most of the workers are in the age group 15 to 34 years and under the control of a male relative. It is found that the employers often use these male relatives to forcibly keep the women workers in check.

The pathetic conditions of the workers in such a profitable industry can be traced to its foot-loose nature. Low levels of investment and technology facilitate frequent shifts in the location of the peeling sheds and change in employer. Unfortunately, therefore, the workers are usually left with little bargaining power to reduce their exploitation.

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Empowering Fisherwomen

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In this paper the authors trace the reasons for the marginalisation of fisherwomen in India in spite of their important role in post-harvest operations and in net making. Unfortunately most development programmes have been of little benefit. For their emancipation, the authors point out that fisherwomen first need to be empowered with a positive self image and decision making capabilities. This paper sketches a profile of fisherwomen of the country and deals with the concept of empowerment.

The Indian Fisherwoman - A Profile

In India, in the marine sector alone fisherwomen number about 11 lakh, inhabiting about 2500 coastal villages (CMFRI 1980). The common feature among these women throughout the country is the hardship, mainly economic in nature, that they face. Even such of these fisherwomen who are fortunate to be engaged in some economic activity generally face a host of problems. For example, there is little protection of wages or employment, as small-scale fisheries are usually managed based on unwritten rules. The perishable nature of fish, poor and costly transport facilities which do not permit them to buy fish directly from the landing centres, and competition from the organised sector add to the problems of the fisherwoman.

The annual income of a typical fishing household in India ranges from Rs. 2500 to 3500 of which 80 per cent is spent on food. Earnings are determined by type of fishing, access to markets, existence of supplementary sources of income and extent of indebtedness. The fishing villages are often remote and inaccessible, and with unproductive lands that are also subject to sea erosion. Housing is inadequate. Basic facilities such as hygienic drinking water and health services are often lacking. Since women-folk usually bear the brunt of these deprivations, fisherwomen have lately received much attention in developing countries and among international agencies supporting development efforts.

A detailed profile of the Indian fisherwoman is given below:

- a) **Demographic indicators:** The 1981 census shows a sex ratio of 933 females to 1000 males in the general population of the country. Kerala is the only state where the ratio is in favour of females. However, even in Kerala, the sex ratio is balanced in favour of males in the case of fisher folk, with a ratio of 972 females (marine sector) and 956 females (inland) to 1000 males (Anon., 1982). These imbalances can be attributed in some measure to the indifference towards women's health.
- b) **Literacy:** A good index of human resource development is the female literacy rate in rural areas. According to the 1981 census the literacy rate was 17 per cent and 47 per cent for rural and urban women respectively. Among fisher folk, the literacy levels of the women is even lower (Anon., 1982; Anon., 1987).
- c) **Employment status:** Along with being engaged in household chores from dawn to dusk, fisherwomen play an important role in retailing, auctioning, curing and drying, prawn peeling and collection of seaweed, apart from hand-braiding and repair of nets. Nevertheless, they suffer from a high degree of casualisation and marginalisation. It is estimated that even during the fishing season only about 25 per cent of the women obtain a regular income of about Rs.60 per week after working for six hours per day (Srinath 1986; Anon., 1987). Development programmes have unfortunately had little impact as they either were not meant specifically for the fisherwoman or they required her to be credit-worthy.
- d) **Health:** Nutrition is a crucial factor determining health. Fisher folk in India generally suffer from malnutrition and dietary imbalances. Cereals and fish comprise the major portion of the diet, and hence only 75 per cent of the calorie and 50 per cent of the protein needs are met (Srinath, 1987). Commonly seen disorders are malnutrition and vitamin A and B complex deficiency (Devadas and Nirmala Murty, 1979) apart from ailments like gastroenteritis and allergic bronchitis. Women are the worst affected and this is reflected by the imbalance in the sex ratio and their lower life expectancy.
- e) **Impact of technology:** While the introduction of mechanisation in the fishing industry seems to have benefited fisherwomen in some areas, as reported by Gulati (1979), it has had an adverse effect in many other parts of the country. For example, the introduction of mechanised fishing in Vypeen Island (Srinath, 1986) and the introduction of automation in net making (Vivekanandan, 1988) have reduced employment opportunities for fisherwomen considerably.

Concept of Empowerment

The word 'power' derives from Latin and means 'to be able'. 'Empower' in turn, means to render a person able by giving power, strength or competence. In the particular context of our analysis, the word refers to enabling the fisherwoman to exercise her right to lead a happy life. It does not mean educating a handful of women and rewarding them with administrative positions in developmental programmes.

It means preparing every woman to actively participate in the decision making process for a better livelihood. Empowerment is an active multidimensional process which should enable individuals to realize their full potential in all spheres of life. This power has to be acquired, sustained and exercised.

The average Indian fishing family today finds it difficult to earn a livelihood throughout the year. Therefore, the vast potential available among the unemployed fisherwomen needs to be tapped, which can be done by making them capable of

doing something remunerative on their own. This, however, requires that the women are motivated, have a degree of awareness, the ability to think critically and take decisions, and above all possess a measure of self esteem. These are some of the parameters of empowerment, and education the surest means to it, as spelled out in the Programme of Action for the National Education Policy, 1986.

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Role of Apex Institutions in Promoting Fisherwomen Co-operatives

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This paper cites several successful cooperative societies and highlights the role of apex bodies such as NCDC, MATSYAFED AND FISHCOPFED in alleviating problems faced by the hard-working fisherwomen in India, by promoting the cooperative movement among them.

It is a sad fact in India that the rich fisheries potential of the country is not reflected in the living conditions of the fishing community. The plight of the women folk is especially distressing.

Throughout the coast these fisherwomen make their way to the sea front before sunrise, and later carry a head load of around 20 kg to distant markets, invariably returning home after sunset. Unfortunately, most of the meagre profit made at the end of the day, after hours of toil, goes to the moneylender. What the fisherwoman trader obviously needs is control over her income so that it is she, and not the middle man or money lender, who makes a profit.

With this in mind, fisherwomen cooperatives that provided short term credit assistance, were organised in Tamil Nadu, Karnataka, and Maharashtra, in the last decade. A special feature in Tamil Nadu is that the sanction and repayment of loans is supervised by the borrowers themselves, with help from the local departmental officials. These fisherwomen who are no more at the mercy of money lenders are also justifiably proud of their role as decision makers in the activities of their society.

Another problem faced by fisherwomen is lack of proper transportation to and from the market. Public transport is generally denied to them, and they are over charged by private transport operators who have them at their mercy. It is to solve this problem that MATSYAFED in Kerala and some cooperative societies in Ratnagiri and Thane have introduced transport buses for the use of the member fisherwomen.

These women now not only commute with dignity but also save over ten rupees each day. This transport has now become so popular that they are getting crowded and some more buses need to be bought. An innovation in these cooperatives has been the replacement of the traditional cane baskets by aluminium containers which ensure that the smelly water does not leak out. Some cooperatives in Maharashtra have also endeavoured to provide facilities like housing and medical care, while pioneering welfare programmes relating to primary health, family planning and child care.

Apart from traders, employed fisherwomen can also benefit from cooperatives. In Gujarat for example, since local workers are found to be unskilled at or too slow in grading and peeling of prawn, workers from Kerala are employed for this purpose. However, in spite of their skill and utility, these women are not paid promised wages. Such instances call for the formation of cooperatives to at least ensure better bargaining power.

Cooperative Programmes for Fisherwomen by NCDC

The National Cooperative Development Corporation (NCDC) entrusted the National Cooperative Union of India (NCUI) with conducting a pilot scheme of education for members of fishery cooperatives in 7 maritime states and the Union Territory of Pondicherry. During this programme *Matsyanidhi*, a savings scheme, was started for the fisherwomen members of cooperatives in the Malpe region of Karnataka, and this has benefited many.

Cooperative Programmes for Fisherwomen by MATSYAFED

Thirty *vidyakendrams* have been opened in which fisherwomen have been given non-formal education. Similarly, at certain places in Andhra Pradesh, fisherwomen have been given basic education at adult education centres.

Apart from education MATSYAFED has also helped production by establishing several production centres (with an outlay of Rs. 25 lakh) to impart simple technologies to the fisherwomen relating to fish processing, curing and marketing. Production equipment worth Rs. 35,000 was given to each production centre and the fisherwomen trainees were given a stipend of Rs. 15 a day for 20 days. Of the sales proceeds 60 percent was distributed among the fisherwomen and the remaining 40 percent went towards the repayment of the loans for the equipment.

Further, it has set up two community peeling centres at Neendakara, the biggest fishing centre in Kerala, with the assistance of the Marine Products Export Development Authority (MPEDA), for peeling of shrimps in hygienic conditions. These sheds provide employment to about 200 fisherwomen.

Cooperative Programmes for Fisherwomen by FISHCOPFED

The National Federation of Fisherwomen's Cooperatives Ltd. (FISHCOPFED) has formulated the Cooperative Accident Insurance Scheme that has a 24 hour accident coverage and a sum assured of Rs. 15,000 in case of death or total disability. This scheme is being implemented in 18 states and more than 33 million fishermen have been provided insurance cover. 1358 claims have been settled and a sum of Rs. 1.86 crore has been disbursed to the widows of accident victims. Since fisherwomen also face a number of hazards in their profession, they too ought to be provided with an insurance cover against accidents. There is already such a demand from fisherwomen members of cooperatives in Tamil Nadu.

FISHCOPFED has also involved itself in spreading the message of family planning and child care among fisherwomen of 70 societies in 4 states, under a scheme, 'Health Care and Family Welfare' sanctioned by the Union Ministry of Health & Family Welfare.

Recently, a simple hand-operated net making machine that can easily be operated even by a physically handicapped person, was developed under the Bay of Bengal Project (BOBP) on the Development of Small Scale Fisheries. For transfer of this intermediate technology FISHCOPFED provides Rs. 500 as part of the cost of training one operator per machine. This will go a long way in helping fisherwomen gain employment.

In response to a request from the Union Ministry of Agriculture FISHCOPFED conducted a study in Tamil Nadu and Karnataka, entitled 'Study on the Role of Fisherwomen in the Development of Fisheries'. It also organised the 'National Conference on Involvement of Fisherwomen in Cooperatives' at Bangalore on 16th April, 1988. It was agreed in the conference that involvement of fisherwomen in cooperatives would give them the necessary institutional structure through which they could be provided credit, transport, marketing facilities, consumer goods etc.

A comprehensive human resource development programme for fisherwomen should be a mix of literacy campaigns, cooperative education, health care & family welfare, as well as transfer of technology. To ensure effective implementation, it is essential that such programmes be entrusted with an agency such as FISHCOPFED, that has the necessary expertise and competence in all these fields. Thus if fisherwomen are given due priority by the Union Ministry of Human Resources Development under the umbrella of cooperatives, we should then see a new era dawn in their lives enabling them to march into the 21st century along with their fellow citizens.

Employment Opportunities for Women in Freshwater Aquaculture

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In this paper the authors suggest a few avenues for increasing the employment opportunities for rural women through small scale aquaculture units. It is, for example, suggested that rural housewives can operate small backyard fish ponds where waste food and kitchen refuse can also be recycled. Apart from this, many other income generating small scale activities related with aquaculture production and marketing have been listed where women can be gainfully involved.

India possesses the second largest freshwater resource in Asia. However, a large proportion of this resource is yet to be utilised for aquaculture. Compared to agriculture many of the aquaculture operations are simple and women can easily undertake several of them. This will not only improve the economy of the rural population but also provide nutritious food. This paper discusses employment opportunities for women in aquaculture.

Fish production and backyard pond management

A characteristic feature of rural West Bengal, Orissa and Assam is that most houses have a small backyard pond, or a ditch that can easily be converted into one. These backyard ponds are commonly used for bathing and washing. Generally ranging from 100 to 1000 m² in area, they are ideally suited for fish farming by the women of the family, who can periodically fertilize the ponds with the cowdung they obtain during cleaning their cattle sheds, and feed the fish by dumping into the ponds all the spoiled food, left-overs and kitchen refuse. Thus, much of the organic waste produced by a family can also be profitably recycled through these ponds by the women folk. It can be easily seen that the costs of inputs in the form of labour, manure and feed are minimal in such backyard pond fish culture.

Under this kind of fish culture, it is possible to get a production of about 100 kg annually from a pond of 200 m² area. This quantity of fish will be sufficient to meet the requirement of a family. Further, the pond *bundhs* can be ideal sites for growing vegetables. The involvement of the family in all these activities will also generate a lot of interest among children, especially in aquaculture.

Small backyard ponds are also ideally suited for rearing carp seed, as mentioned by Sharma *et al.* (1988). Studying the involvement of womenfolk in aquaculture in rural Orissa, they also found that a backyard pond of 200 m² area could produce as much as 19,000 fry and 3,000 fingerlings, yielding a total income of Rs. 1,700 in a period of four months. The same pond could then be utilised to produce 35 kg of table fish. Even small ditches that retain water only for 2-3 months during the rainy season could be profitably used for seed rearing.

Women who do not have the advantage of a backyard pond can be gainfully employed in commercial fish seed production farms for carrying out various duties such as stitching and washing hapas, fertilizing ponds, feeding brood stock and seed, transferring fish eggs and packing fish seed.

Fabrication of fishing gear and baskets

The manufacture of fishing nets, fish traps and baskets for fresh fish transportation can be taken up by women as a cottage industry. A study conducted by Radheyshyam *et al.* (1988) in Orissa showed that, once trained, women could earn more from net fabrication than from agricultural labour. Women would also definitely benefit from the manufacture of large baskets for packing fresh fish with ice, as they are in great demand in all important fish production centres.

Preparation of fish products

With increased production of fish through aquaculture, it will perhaps soon become necessary to prepare ready-to-use fish products in order to protect the interests of the primary producer as well as to cater to the requirements of the urban consumer. The rapid pace of urbanisation is also likely to increase the demand for frozen fillets over the years, especially among upper and middle income groups. Similarly, preparations such as mildly fried and frozen fish should find a ready market in urban areas. Rural women can be suitably trained and employed in the preparation of such products. Certain species like silver carp and grass carp which do not fetch a good price when sold fresh, can be suitably processed and marketed in the value added form so as to increase the net returns from aquaculture.

Fish marketing

In India, while the retail marketing of marine fish has traditionally been done by women, freshwater fish has been marketed mostly by men. With greater industrialisation more number of cold storage and refrigerated outlets for fish and fish products are bound to be established. Since women are better suited for retail marketing of fish, they should be encouraged to manage such outlets, with suitable incentives such as loans for investment and working capital, at low interest rates.

Research and Administration

There have been a few women employed as aquaculture scientists in the country, but there has been no woman in the administrative or managerial sector. Since work in aquaculture seems basically field oriented, women in general are reluctant to seek employment in this area. However, several aspects of aquaculture, such as

nutrition, pathology, genetics, etc. are more laboratory oriented and hence, eminently suited for women scientists. Special incentives can perhaps be offered to female students to enter the Colleges of Fisheries in the country so that this lacuna can be filled and women given an opportunity to be equally involved in this field.

Aquaculture is a growing field in the fisheries sector. The global production from aquaculture is targeted at 22 million tonnes by the year 2000. If this target is to be reached the available and potential human resource, both male and female, has to be properly mobilised. Designing and implementing a number of training programmes exclusively for women are the initial steps to be taken by governmental agencies in India to ensure participation of women. These training programmes should be backed up with support from financial institutions for starting small-scale ventures in aquaculture. Many of the programmes can be effectively implemented through agencies such as fisherwomen cooperative societies. Participation of women in aquaculture will not only improve the economy of rural families, but also enhance their nutritional status.

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Employment Opportunities for Women in Coastal Aquaculture

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In India, women have always been involved in various aspects of marine fish production and marketing. As far as coastal aquaculture is concerned, however, their involvement has only been marginal. According to the author, any improvement in their participation in coastal aquaculture, as seen in many south-east Asian countries, is possible only by bringing about changes in the social norms that are prejudiced against them. This paper also suggests certain specific strategies that would help achieve the objective of Indian women realising their potential for employment in coastal aquaculture.

The role of women in fisheries has received a lot of interest in recent years, at the regional as well as global levels, as evidenced by the many scientific conferences and workshops, apart from the publications being brought out by several institutions on the subject. The present workshop is particularly important in the regional context, as it is being held in conjunction with the Indian Fisheries Forum. The large participation in this forum, of scientists and others concerned with fisheries development and management, should help development programmes for bettering the prospects of women in fisheries, in India.

Present role of women in coastal aquaculture in India

The involvement of women in coastal aquaculture is presently only marginal. Specific activities are as follows:

1. Collection of prawn seed from estuaries and backwaters (as in West Bengal, Andhra Pradesh and Kerala)
2. Labour in pond construction
3. Management of small ponds in the confined water prawn culture system as seen in Lake Chilka

4. Collection of land snails from agricultural fields for feeding prawns, as in the Chilka area
5. Artisanal feed preparation in some areas for pond culture of prawns
6. Attaching seed to ropes in mussel culture
7. Nucleus implantation in pearl culture
8. Net-making and fabrication of cages
9. Technical help in commercial shrimp hatcheries

Although the above listing appears extensive, women are actually involved only marginally in the various activities. Therefore, in order to increase their participation in this field, training programmes exclusively for women in various aspects of coastal aquaculture are occasionally organised by the *Krishi Vigyan Kendras*.

Among educated women, coastal aquaculture as a research career is attracting increasing attention, although at the professional level their number is still low compared to the number of women enrolling for post-graduate courses in the field. There are also a few women administrators looking after coastal aquaculture development programmes in the Fisheries Departments and Brackishwater Fish Farmers Development Agencies. However, since coastal aquaculture itself is in its early stage of development in India, it should be possible to plan for a more definitive role for women in this field.

Opportunities for women in coastal aquaculture

The success seen in coastal aquaculture in countries like China, Japan, Thailand and Philippines, is in no small measure due to the contribution by women at different levels of operation. Women have the same status as men in these countries and play an equally important role in developing and managing their coastal aquaculture. The high literacy rates and comparatively liberal value systems in these countries have given their women greater opportunities for a participatory role in various capacities in fish production through aquaculture (Baluyut, 1987). In contrast, what is commonly seen in the predominantly rural coastal areas of India are cultural values steeped in tradition, poor literacy, resistance to change, and socio-economic backwardness. This will have to change if a role similar to the one seen in the above countries, is envisaged for the rural women of coastal India.

If the present levels of employment of women in coastal aquaculture in India have to change, especially in a general situation of rising unemployment and acute competition for every available job, it may be necessary to look for specific opportunities which require technical skills in greater measure, where women would be equal to or possibly superior to men, given the same level of education and training. Such opportunities should also enable them to integrate economic activities with domestic responsibilities. A few examples of such avenues are listed below:

1. Backyard hatcheries for prawn seed rearing from nauplii to PL-5 (post larva - 5) or from PL-5 to PL-20
2. Live food culture, larval feeding, water quality monitoring, equipment maintenance and unit supervision in prawn hatcheries as well as in the envisaged mollusc hatcheries (oyster, pearl oyster, mussel and clam)
3. Nucleus implantation in pearl oyster culture, soiling and grading of pearls
4. Fish/shellfish seed collection, sorting and packing for transportation

5. Culture of seaweeds, oysters and clams in estuarine areas using simple techniques of seeding and transplantation
6. Post-harvest treatment of aquaculture produce requiring technical skills, such as preparation for freezing/canning of fish/shellfish, depuration of molluscs, and semi processing of industrial products of seaweeds
7. Extension education

Apart from the avenues listed above women with an education can play important roles as researchers and academicians, and as administrators in all fields of coastal aquaculture.

Policies and strategies

The will to improve the socio-economic status of women in our country and their representation in all spheres of activity has been clearly reflected in the several programmes for women as target groups. The regional and national fisheries development policy makers must also consider women as key participants in coastal aquaculture and in developing strategies for the implementation of specific programmes. Consideration may be given to the following issues:

1. Formal and non-formal education of target groups of women
2. Creation of awareness of potential for economic upliftment
3. Training programmes for improvement of skills and enterprise development
4. Leasing of water bodies to women
5. Establishment of demonstration farms/backyard hatcheries by women
6. Creation of extension units to be run by women
7. Establishment of 'aquaculture estates' for women with a centralised services sector and a decentralised production sector
8. A more liberal credit policy for aquaculture enterprises by women, as an incentive

In this context it is relevant to quote the concluding statement of the ADCP/NORAD Workshop on Women in Aquaculture (1987) :

"In summary, the Workshop recognizes a strong economic relationship between the growth of aquaculture sector worldwide and the growth of employment opportunities for women. Both can profit and benefit mutually. The need is for more well-directed efforts to involve women, and to confirm their impact on the industry."

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Employment Generation for Women in Fisheries

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Nair, M.R. and Kandoran, M.K. 1992. Employment Generation for Women in Fisheries. p.33-35. In: Sudhindra R. Gadagkar (Ed.) *Women in Indian Fisheries*. Proceedings of the Workshop on Women in Indian Fisheries, 27 May 1990. Special Publication 8, 51 pp. Asian Fisheries Society, Indian Branch, Mangalore. India.

The field of fisheries contains an immense potential for the participation of women not only in traditional occupations but also in the various avenues being created. This diversification not only employs the skills and energies of women for national development but also creates additional employment opportunities by identifying new technologies in harvesting fish as well as the post-harvest handling of the produce. This paper describes the efforts made by CIFT, Cochin, in transferring new technology developed by it in net fabrication and the preparation of various nutritious products from low-cost fish, to fisherwomen.

The Central Institute of Fisheries Technology (CIFT), Cochin, realising that it is the fisherwomen workers who not only have immense potential in the fishing industry but also the biggest role in ensuring the well-being of their families, has developed and transferred the technology for the fabrication of different types of fishing gear as well as the preparation of various value added products from low cost fish and shell fish. It has also developed improved and hygienic methods of fish curing and processing of mussel and clam meat. The main advantage of such technology is that it is easy to adopt, requires low capital investment and can promise self employment to a large number of rural poor, especially womenfolk. This transfer of technology to fisherwomen from various villages was done as described below.

Manufacture of fishing nets

Scientists from CIFT conducted a lab-to-land programme in Kuriyadi beach, Badagara, on the fabrication of modern fishing nets. Theory and practical classes were conducted in various aspects of design reading, cutting and tailoring of webbings, fabrication of nets etc. Eighty nine poor fisherwomen from the local villages participated in this programme which lasted for one month. Most of the trainees were below the age of 40 and literate, but without the habit of reading newspapers or listening to the radio.

After receiving the training, about 30 fisherwomen formed a group and opened a society for the production and marketing of fishing nets. This society has been supplying nets and webbings to Government departments as well as private parties, and is now doing so well that earnings from net making frequently make the largest contribution to the family income. Whenever the number of work orders exceeds the capacity of the society, it employs other trained fisherwomen.

Production of diversified fish products

Fisherwomen from different parts of Kerala have been trained in the production of various preparations from low cost fish/shell fish, such as wafers, soup powder, pickles, cutlets, dried fish, shark fin rays etc. Training programmes were conducted directly by CIFT and also in collaboration with MATSYAFED, Department of Science and Technology, Govt, of India, and Krishi Vigyan Kendra, Cochin.

As in the case of the trainees for the fabrication of fishing nets, most of the women here too were from poor families, below the age of 40, and literate. However, the awareness level among these trainees was much higher with most of them reading newspapers and listening to the radio.

Again, as before many of the trained women have formed societies in different parts of Kerala for the production and marketing of fish wafers, pickles, cutlets and dried fish. While many societies have an arrangement with MATSYAFED and the Kerala Fisheries Corporation for the marketing of their products, some societies do their own marketing. However, it must be mentioned that while 94 to 98 percent of the women trained in the preparation of pickles and cutlets, and 60 to 70 percent of those trained in the preparation of wafers and dried fish, have all begun production, none of the women trained in the preparation of soup powder or shark fin rays, has started the production of these items.

Factors affecting adoption of technology

The following investigations were carried out in order to throw some light on the factors affecting the adoption of the technology transferred during the training programmes.

Knowledge gain and retention

In order to compare the efficacies of different extension methods a total of 89 trainees was divided into three groups and three teaching methods: 1) lecture alone, 2) lecture aided with charts and 3) lecture aided with slides, were administered, one to each group, to train them in the preparation of fish wafers and fish pickles. The knowledge gained was then measured and the extension methods compared. The results showed that 'lecture aided with slides' is the most effective method, followed by 'lecture aided with charts' and 'lecture alone', for both the topics. When the two products were compared, it was found that the production of fish wafers was better understood. This may be due to the larger number of ingredients as well as greater number of steps involved in the production process for the pickles.

As far as the age of the trainees was concerned it was found that younger women gained more knowledge from the training programme than older women. With regard to level of education of the trainees, as expected, educated women were found to gain more from the training programme. Further it was found that the combination of (younger) age and (higher) education was the best for maximum knowledge gain, and the combination old age and low level of education was the worst for the purpose.

The extent of knowledge retention in the women trainees showed a gradual reduction with the passage of time: 13 to 14 percent of the knowledge gained was lost 15 days after exposure, and 25 percent was lost 30 days after exposure. These results show that an immediate follow-up action after the training is required for effective adoption of the technologies sought to be transferred.

Attributes of the technology

The attributes of a technology as perceived by the trainees, play a significant role in its adoption. A large percentage of the trainees felt that the new technology was easy to understand and that the required management skills and physical facilities for adopting the technology could easily be acquired. Most of the trainees also felt that the preparation of the various products according to the methods taught was not in conflict with their values and beliefs and that the new methods were highly acceptable to their social system. They generally agreed that the new methods had several social advantages over the existing systems of utilisation of low cost fish.

However, regarding attributes involving investment and marketing, sixty to seventy percent of the trainees felt that while the investment involved in the production of the various fish products was high, the financial returns from the production of these products was only moderate and usually delayed. Most trainees also opined that they found it difficult to procure the necessary raw material, obtain loans in time, and market their products.

Constraints in production

The fisherwomen revealed the following as the major constraints that affect the establishment and functioning of small scale production units.

1. Lack of marketing facilities and information about potential markets
2. Inadequate training facilities and finance
3. Scarcity of fish and high cost of raw materials
4. Low prices of finished products in the market
5. Lack of community processing centres with proper facilities
6. Lack of suitable transport facilities
7. Lack of coordination and communication among various developmental agencies.

The constraints listed above are serious and all efforts should be made to remove them. At the same time, however, since the fisherwomen are the ultimate users of the transferred technology, and since they are bound to benefit from its utilisation, they must also show a receptive mind to the adoption of new methods, and must identify their problems and organise themselves to solve them, with the help of research and extension workers.

Fishery Technology Package for the Upliftment of Coastal Women

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This paper describes the training of 200 fisherwomen in post-harvest technology for low cost fish and shell fish, with financial assistance from DST. The training programme initiated by CIFT was later handed over to CRATPAW, a voluntary organisation. A co-operative society was formed from among the trained fisherwomen, who have, with help from CRATPAW and the Government of Kerala, been preparing and marketing various nutritious and inexpensive products. The author suggests that such training schemes be initiated in other states also.

The low income levels and the unstable living conditions of traditional fishing families in India are well known facts. When to the above, are added others such as illiteracy, lack of medical benefits, exploitative employers, low opportunity costs, a wasteful and ill-tempered husband, etc., the life of the traditional Indian fisherwoman becomes unenviable. Therefore, in order to alleviate their plight and to help them share some of the capital that can be generated in this industry, training was imparted to groups of selected fisherwomen in the form of a technology package. Following is an account of the same.

Objectives of the training programme

The aim of the scheme was to impart training in the utilisation of low cost fish by way of preparing diversified products for human consumption, thereby generating employment opportunities for women in coastal villages.

Selection of trainees

Twenty five fisherwomen belonging to different communities (with 20 per cent SC/ST representation) in the age group 18 to 35 years, and with a minimum educational qualification of eighth standard, were selected from fishing villages of Cochin after advertising in newspapers and All India Radio and conducting personal interviews.

The prescribed qualifications were relaxed for some distressed women such as young widows, unmarried mothers and experienced but currently unemployed fisherwomen.

Project staff

The programme was monitored by the Principal Investigator with the help of an Associate Investigator, a Project Officer, a Technical Assistant, and a Plant Assistant. Assistance was also received from the administrative personnel of CIFT.

Financial and other assistance

A sum of Rs. 4,66,900 for the 3 year scheme was received by CIFT as a grant from the Department of Science and Technology (DST), Government of India, for conducting six training courses. CRATPAW, a voluntary organisation, subsequently received a sum of Rs. 1,39,322 for conducting two training courses. Sales proceeds from the CIFT and CRATPAW training programmes were Rs. 51,985 and Rs. 43,538, respectively. A detailed financial statement is given in Appendix-I.

During the various stages of its implementation, help was received from various departments of the Government of Kerala, and central institutions such as Integrated Fisheries Project (IFP), Fishery Survey of India (FSI), and Marine Products Export Development Authority (MPEDA), among others.

Mode of training and Results

Each training course which was for three months, comprised topics such as procurement of raw material, hygienic handling and processing, preparation of diversified products and conversion of fish waste into useful by-products, retail packing, labelling, accounting and aspects of marketing. The trainees were given the opportunity to prepare the various products themselves on a large scale. Distribution of pamphlets in the local language, group discussions, factory visits and film shows were other aids employed in the training.

The training courses were conducted at the Kerala Fisheries Corporation Freezing and Icing Plant, Cochin, with their cold storage and other facilities taken on hire. Low cost fish from the catches of CIFT, IFP and FSI vessels were filleted and minced, and thus made to lose their identity, before being used as a base for preparation of nutritious value-added products like cutlets, wafers, soup powder, fish fingers, pickles etc. A sale counter 'MATSYAKANYA' was opened in Ernakulam with the assistance of the Corporation of Cochin for selling the various fish products prepared during the training period. The trainees were also able to find a market in cold storages, canteens of registered clubs and retail shops. It may be mentioned that these tasty products were received very well.

The trainees were also imparted adequate knowledge on marketing and book-keeping, thus making them capable of handling production as well as marketing - a novel idea in transfer of technology programmes.

Six such training courses were conducted under the direct control of CIFT during which period 150 women from 6 coastal fishing villages were trained within a period of three years. An amount of Rs. 51,985 was collected from the sale of these products. This was used to enhance the stipend of the trainees from Rs. 150 to Rs. 300 per month, with the approval of DST. After three years of successful implementation, the scheme was wound up on 31.7.1989.

Role of CRATPAW

Further training programmes and a follow-up on the marketing of the fish products made by trained women were entrusted by DST to the Centre for Research and Training in Poverty Alleviation and Women's Welfare (CRATPAW), a voluntary organisation. This organisation conducted two such courses, training a further 50 women from two more fishing villages. The sales proceeds from these courses (Rs. 43,500) were added to the project fund.

CRATPAW also helped set up a cooperative society named Cochin Vanitha Fish Processing and Allied Industrial Co-operative Society in May 1986 by the 25 members trained in the first batch. A society on the same lines in Kanayannoor taluk, and another exclusively for the benefit of the trained SC and ST women are also being formed. However, it was found that while the training programmes were successful in the transfer of technology, another major objective, namely to help the trainees make a living out of what they had learned, was becoming very difficult to achieve, due to lack of finances. Therefore, CRATPAW collected Rs. 3000/- (from the public) to help the society set up a small production unit at Ernakulam. CRATPAW also designed attractive packages and labels for various products of the society and helped overcome practical problems during packaging. Encouraged, the society has opened three sales counters in Ernakulam, which have fetched it a profit of Rs. 17,000 within a few months.

Government participation

Recognising the viability of the above programme, the Department of Industries, Government of Kerala, offered a financial assistance of Rs. 17,200. The society was also given a work shed on rent in the Industrial Estate, Malipuram. Managerial assistance was provided by appointing a secretary.

Enterprises such as the one described here not only help fisherwomen gain employment, but also provide ready-to-serve products from raw material that is otherwise wasted. These products are also hygienically prepared, tasty, nutritious and inexpensive. The streamlining of operations at each stage will make this a viable employment for coastal women. It may be stated that this is the first time that such a scheme has been developed and demonstrated for the welfare of coastal women in India. This experiment has also resulted in growing self confidence and perceivable personality development among the women. Such schemes must be initiated in other maritime states too.

Acknowledgments

I am thankful to the Director, Central Institute of Fisheries Technology and Director, Department of Science and Technology, Government of India, for giving me permission to present this paper at the workshop on Women in Fisheries in India organised by Second Indian Fisheries Forum at Mangalore. I am also grateful to them for having given me an opportunity to take up the scheme on Gainful Employment for Women for the welfare of fisherwomen.

APPENDIX-I

Particulars of utilisation of DST funds for the implementation of the Scheme on Gainful Employment for Coastal Women executed by CIFT from 1-4-1986 to 31-7-1989 and by CRATPAW from 1-8-1989 to 31-3-1990

SI. No.	Head of Account	-Amount sub- mitted as per original proposal (Rs.)	Approved DST grant (Rs.)	Expenditure C.I.F.T. 1.4.86 to 31.7.89 (Rs.)	Statement CRATPAW 1.8.89 to 31.3.90 (Rs.)	Total ex- penditure from 1.4.86 to 31.3.90 (Rs.)
1	2	3	4	5	6	7
1	Salary	99,000	88,200	1,43,041	25,550	1,68,591
2	Honorarium	50,400	-	27,077	10,848	37,925
3	Stipend	1,35,000	1,01,250	1,26,890	25,110	1,52,000
4	Supplies & materials	75,000	75,000	36,341	41,287	77,628
5	Equipment & other facilities	53,000	45,000	52,020	6,758	58,778
6	Contingency	9,000	12,600	288,344	30,154	58,988*
7	Travel	10,000	9,000	5,465	5,678	11,143
8	Hiring charges	25,000	75,000	6,502	2,010	8,512
9	Charges for peeling shed	90,000	90,000	32,000	9,900	41,900
10	Retail booth	15,000	15,000	26,393	-	26,393
Total grant		5,61,400	5,11,050	4,84,563	1,57,295	6,41,858

* Includes expenditure on exhibitions conducted in Orissa, Kerala and Bombay.

Training of Women in Fish Processing and Fish Culture

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This paper describes a scheme funded by Ford Foundation, USA, and implemented in Fisheries College, Tuticorin, Tamil Nadu, wherein training in enterprise management was imparted to four batches of 15 fisherwomen each in fish processing, and to two batches in fish culture. A salient feature of this scheme was the 4 month follow-up period for each training programme in order to assist the trained women establish and run model units. Based on the experience gained the authors have also made suggestions for the successful running of such training programmes for fisherwomen and the gainful employment of the trained women.

New technology in various aspects of fisheries, agriculture and animal husbandry is being generated at a rapid pace, making it imperative to employ suitable extension education devices such as training campaigns and demonstrations, for the transfer of such technology to the end users. Keeping this in view Ford Foundation (USA) sponsored a scheme for training women in fish processing and fish culture in order to generate self employment for fisherwomen and rural women respectively.

This scheme was in operation at Fisheries College, Tuticorin, Tamil Nadu, for a period of three years, ending 31 December 1989. It had the following objectives:

- i) to select a few literate rural women with managerial ability and willingness to take up the organisation and management of fishery units
- ii) to train the selected women in fish processing or fish culture
- iii) to assist the trained women in running model fishery units by continued technical back-up

- iv) to evaluate the performance of such units, obtain feed-back and recommend specific action plans

Plan of work

Before organising each training programme a preparatory meeting was conducted among the faculty members of the college to identify the villages for the selection of participants and to choose the relevant training programme and resource persons for conducting the training.

After the villages were chosen, the panchayat president of each village, the presidents of co-operative societies and other village leaders were approached for conducting a survey among the women folk for the selection of participants. The actual selection of the trainees was done after assessing their socio-economic and educational status, and their capacity for the adoption of the technology transferred, apart from their training needs. A period of one month was earmarked for the process of identification of the participants. Such detailed pre-programme studies are necessary to make the training programmes successful and to minimise organisational problems.

The selected participants were then trained in fish processing or fish culture enterprise management for 15 days in the college. Each training programme was succeeded by a follow-up programme of 4 months to assist the trained women in establishing model units. The follow-up work included impact assessment, liaison with banks for loans, tie-up with co-operative societies or the Fish Farmers' Development Agency, and arranging for inputs such as fish seed.

Two batches of fifteen women were trained each year, and the above plan of work was repeated for every batch of trainees.

Training in fish processing

Four batches of fifteen fisherwomen each, were trained in fish processing in the college. Each batch was trained for fifteen days in hygienic handling of fish and in the preparation of fish pickles, prawn pickles, fish wafers, fish soup powder, shark fin rays, masmeen etc. In addition, guest lectures and panel discussions were arranged on topics such as government aid to fish processing industries, credit facilities available and the procedure to obtain them, and problems that might be faced in the marketing of the fish products. Officials from the concerned Departments/Units were the panelists who provided the required information. Training classes on packaging, branding, pricing, sales organisation and marketing communication were also conducted.

All the trained women were made to register with the District Industries Centre (DIC), Tuticorin. as a registration certificate from the DIC is necessary to avail financial assistance from banks and to market the products. The trained fisherwomen are presently engaged in the preparation and marketing of readily marketable products like pickles, wafers, soup powder and dried fish, depending on the availability of raw materials.

Assistance from Export Inspection Agency, Tuticorin, Directorate of Marketing and Inspection, Madras, and Central Food Technological Research Institute, Mysore, among others, was obtained to ascertain the required quality specifications for the products prepared by the trained women so as to make the products competitive in the market.

As it is very difficult to achieve a market penetration for cottage industry products, several voluntary agencies and government organisations were approached for help in marketing, and as a result Tamil Nadu Fisheries Development Corporation Ltd., Tuticorin. is now procuring the products regularly from these women. Further, to popularise the

products among the public, arrangements were made for the participation of the trained women in Farmers' Day celebrations and district handloom exhibitions. In addition, radio programmes and educational tours of trainees were also organised for their benefit.

Training in fish culture

Two batches of fifteen rural women each were trained in aquaculture, with an emphasis on freshwater fish culture and carp seed production. Officials from the Department of Fisheries, Fish Farmers Development Agency and the lead bank were invited to explain their respective roles in fish farming.

As a result of the training six species of carps are being reared for harvest by the women in village and temple tanks, which have been leased to the trainees by the concerned authorities.

Strategies for gainful employment

The outcome of the interaction between the faculty and trainees and a study of the problems encountered in organising the training and in the follow-up programmes helped to evolve the following strategies to provide gainful employment opportunities through improved or new training programmes tailored for fisherwomen:

1. Married women aged between 25 and 40 with a minimum of a high school education may be preferred for training.
2. Greater seriousness is imparted to the training programme if the trainees are made aware of their role in the development of the rural sector.
3. Trained women extension officers and workers should be preferred for providing extension service to fisherwomen.
4. Financial support by governmental and non-governmental organisations should be made easily available. However, the loan amount should be disbursed only as and when it is required for purchases, as otherwise it is liable to be misused, especially by other members of the family.
5. Since fish products are not very popular in the market, an appropriate marketing strategy should be evolved to popularise these products.
6. A cell to help fisherwomen in their entrepreneurial development may be set up in each district.
7. Above all, the menfolk must be won over into extending their cooperation in the enterprises of their spouses.

The trained women need a long term technical support for which it is necessary to provide a follow-up service on a sustained basis. This can ideally be done by dedicated women functionaries.

Training Campaigns on Fish Processing for Fisherwomen in Chidambaranar and Tirunelveli Kattabomman Districts of Tamil Nadu

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This paper describes an off-campus training programme for fisherwomen in the preparation and marketing of various fish products, conducted by the Fisheries College, Tuticorin, at a village in Tirunelveli Kattabomman district of Tamil Nadu. Comparing this training programme with those conducted on-campus, the authors feel that off-campus training programmes are more effective as they are easier to participate in and can also be made to address local problems.

It was during the on-campus training programmes sponsored by the Ford Foundation, that several suggestions were first received urging Fisheries College, Tuticorin, to utilise its extension infrastructure to also conduct off-campus training programmes for fisherwomen. Such training programmes, it was pointed out, would not only effectively transfer technology to the fishing community of Tamil Nadu but would also help generate self employment opportunities for unemployed fisherwomen.

A meeting of fish farmers was conducted by the college in October 1989 in which the participants, who were from all over Tamil Nadu, discussed various aspects of fisheries with experts from different institutions like MPEDA, CMFRI and the State Department of Fisheries. In response to a specific request made in this meeting a training programme was conducted in the village Koothankuzhi in the southern coastal belt of Tirunelveli Kattabomman district of Tamil Nadu from 12.2.90 to 18.2.90, and is described below.

The pre-programme study included the availability of space and raw material besides obtaining a sketch of the socio-economic profile of the village. The level of literacy was found to be low. Fishing was the major occupation in the village and the principal fishing craft was the catamaran, with or without an outboard engine. The major fishery resources available in the village were found to be prawn, lobsters, fish (mainly *Lethrinus*, tuna and seer fish), and seaweeds (*Sargassum*, *Ulva* and *Gracillaria*). These results were discussed with the faculty members of the concerned departments of the college.

Fifty fisherwomen were then selected from the villages of Ovari, Koothankuzhi and Idinthakarai based on criteria such as level of education, employment status and the economic level of their families. Two faculty members from the college accompanied by two field-level functionaries camped at the village throughout the training programme with all the necessary material required for the training. The teachers from the college visited the village on their respective dates and conducted both theory and practical classes in hygienic handling of the raw material as well as the preparation of products such as prawn and fish pickles, wafers, soup powder, oil, chitosan, masmin, isinglass, and fertilizer. Methods of packaging and branding were also taught. Visual aids such as charts, posters and blow-ups were used for better communication with the trainees. On the last day a post-training evaluation was conducted and certificates issued to the participants. The participants from each village were advised to organise themselves in groups and pul to use what they had been taught. Procedures for estimating cost of production and pricing of the products were explained. Credit facilities were also made available to them from commercial banks through the District Rural Development Agency.

The lessons learned from this training programme are that firstly, while on-campus training programmes are easier to conduct, they serve a limited purpose. For example, it was seen during the Ford Foundation sponsored training programmes that participation depended to a large extent on how close the prospective participants were to the venue of the training programme. Fishermen would allow their spouses to take part in the training programme only if their domestic chores were not affected. Many fisherwomen could not be given an opportunity to participate in the on-campus training programmes because their villages were far away from Tuticorin. The need for concluding training programmes on location thus arises. Such training programmes also have the advantage of being able to cater to needs that are specific to the location.

However, even for an off-campus training programme to be successful, it is extremely important that efforts be made to convince the fishermen that their spouses are to be engaged in an economically useful activity. Failing this, participation in the training programmes would almost certainly be very poor. It is also very important to encourage the participants to shed their inhibitions and air their views and doubts freely. Regarding the trainers, it was found that they often failed to differentiate between teaching and training, and would also frequently use the English language. These problems can be solved by exposing the trainers to effective communication in the vernacular. Lastly, the establishment of a well equipped training centre will facilitate the conducting of such training programmes in a large number of villages.

Women in Fisheries Research and Education

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It is commonly acknowledged that women succeed not only in conventional occupations but perhaps are actually more suited than men for jobs requiring patient and methodical work. Available data, however, shows that despite the participation of women in the field of fisheries research and education in India right from inception (the 1940s), the percentage representation of women has not increased from the 1 per cent seen in the beginning. This paper makes a few recommendations in order to tap this vast potential.

Beginning in 1947 Indian fisheries research has progressed appreciably. Reflecting the vast strides made in each area of research, we now have eight major research institutes including the National Bureau of Fish Genetic Resources, and one central educational institute which is now a deemed university. However, even today, more than forty years after the formation of research institutes in the country, the Indian woman fisheries research worker continues to be a rare commodity. There have also so far been very few opportunities to probe this question and to present the constraints faced by women scientific workers. This paper, therefore stresses some of these aspects.

A few women scientists were recruited in the Departments of Fisheries in the various presidencies and the various central fisheries research institutes, along with their male counter parts, in the very beginning. These women constituted approximately 1 per cent of the entire scientific cadre of this period, when institutions were just building up their research structure and staffing patterns. Despite their low numbers, however, they continually contributed to fisheries research in the country, notably in the fields of fisheries biology, systematics, botany, chemistry of soils and water, and capture fisheries. These women workers did not lag behind in field studies either. They trekked long distances along the various rivers, sampling catches and preparing inventories of fishing villages and fishing gears. They also had to brave social taboos at a time when few women would have willingly opted for professions other than socially accepted ones such as teaching.

In order to assess the present status of women in this field I have collected information from various institutions. This data shows that there are currently 174 professionally educated or trained women, working at various fisheries research institutes and colleges of the country. This means that the percentage contribution of women to the total work-force has not improved in spite of the fact that many women have been trained from as early as 1961 (with sponsorships from the respective state governments). The Central Institute of Fishery Technology, Cochin, is currently the largest employer of women, with 11 scientists. This is followed by the College of Fisheries, Mangalore (8), and CMFRI (5). CIFE and CICFRI have each employed 4 women, while KVK, Faculty of Fisheries, Ratnagiri, and Department of Fisheries, A.P. Agricultural University, have 2 female employees each. CIBA, FSI and CIFA each have 1 female staff member. Incidentally, the lone female staff member of CIBA, who retired in 1989 was also the first woman director of an ICAR institute.

The College of Fisheries, Mangalore, is the leading institute in teaching and research at both the under-graduate and post-graduate levels. This college and the Advanced Centre for Mariculture (CMFRI, Cochin) have imparted fisheries education to many women, several of whom have been recruited into various prestigious organisations. Fisheries College, Tuticorin has admitted many women students in the graduate course since 1984 and in post-graduate courses since 1988. The Cochin and Ratnagiri Colleges of Fisheries also have had a good strength of graduate and post-graduate women students. Among the other institutions CIFE has given away degrees and diplomas to as many as 61 women.

Thus there has lately been an improvement in the availability of professionally qualified women for recruitment. Perhaps this means that more women are being attracted to this field, and that traditional taboos are no longer valid. Whole new vistas are now opening up, such as in the fields of genetic engineering and biotechnology, where the patient and methodical work habits of women will be invaluable. Women themselves must therefore make greater inroads into these new and interesting fields.

It is heartening to note that women are becoming conscious of the need for a good professional education and a fulfilling career in their chosen field. Many women today are scientists, educators, extension workers and project leaders. Women are also beginning to be seen in the management cadre in financial institutions. However, although women have risen to the challenge of a career in fisheries research and education, some constraints still remain and must be considered seriously. Principal among them are the still persistent inhibitions among women about being employed in such a traditionally male dominated field, and the threat of dislocation due to transfers from place to place.

The following recommendations have been made to tackle most of the constraints and to formulate a more sympathetic and pragmatic approach for the utilisation of the vast potential of women fisheries researchers and educators.

- 1) Increasing the age of recruitment of women
- 2) Condoning any break in service incurred during maternity
- 3) Greater involvement of women in team work, as it is well known that teams work much better, and a combined team of men and women scientists will result in better turnover of work
- 4) Eradication of biases and reservations regarding research capabilities of women.
It must be realized that research is primarily an objective task for which the

aptitude is not gender based. Inclusion of at least one woman member in recruitment and other selection boards will help protect women from such biases.

- 5) Providing adequate transportation and accommodation to women working on field jobs
- 6) Providing greater training facilities for women in fields where methodical and patient work is required
- 7) Arranging for easier and greater mobility for women to move from one organisation to another, when necessary

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Women in Fisheries Management and Administration

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This paper elaborates on how women, who have always played an important role in the fishing industry, are now in a position to play a meaningful role in fisheries management and administration too, with the increasing number of women getting an education or training in this field.

The fishing industry in India has seen much progress in recent years and this development now calls for professionally trained manpower for both technical and administrative purposes.

Women have traditionally participated in most post harvest operations including marketing, apart from other activities such as net fabrication and repair. In the process they have developed a keen feeling for the industry and ingenious ways of managing the fish caught, so as to maximise their earnings.

As in most families living at subsistence levels, the woman plays an extremely important role in fishing families too, as a home maker. It is her thrift and ingenuity that often keeps the family together, as the men folk are generally wasteful. Therefore everything possible must be done to better the lot of these women. An ideal means of doing so is by forming fisherwomen's cooperatives.

As proof that such societies can be useful and successful, mention must be made of the *Mirkarwada Mahila Macchimar Sahakari Sangh*, that operates within a radius of 50-60 km from Ratnagiri, selling fish at various bazaar-day village markets. Managed entirely by fisherwomen, this society has purchased two trucks and two buses with assistance from NCDC, and has evolved its own transportation system in order to avoid the inconvenience of using public transport. Each member's fish is transported at night to a specified market, using the trucks. The women follow early next morning in the buses, get off at their respective markets, and are picked up on their way back, after the bazaar closes. Each market has services of loading,

unloading etc. organised by the society. This system has been working so well that fisherwomen in other places too have formed similar societies.

MATSYAFED of Kerala also deserves special mention, with its training and production centres and popular products such as 'Nutrifish'. The success of these cooperatives must inspire others, particularly unorganized and exploited women such as workers in the fish processing industry, to unite and start cooperatives where they can be their own masters.

The potential of educated women is obviously much more. Many educated women are employed as public servants, providing service in technical and administrative cadres. In the private sector, some women have proved to be exceptionally competent technicians and entrepreneurs, providing proof that women can also play important roles in technical and managerial aspects.

There are also a number of women in the field of fisheries research and education who have contributed significantly to the field. Young scientists of today have the advantage of a full education in fisheries and can be expected to contribute even further. An additional exposure to management studies should make these young professionals ideal planners and administrators.

Planning for growth in the fishing industry should be multi-faceted, making use of the potential in each person involved. Thus all hurdles and prejudices must be removed and women allowed to participate fully in achieving this goal.

Recommendations of the Workshop

This workshop came out with the following recommendations based on the papers presented and the discussion that followed. It is hoped that the concerned authorities will take due note of these recommendations and do the needful.

1. There is a need for creating more opportunities, with training wherever necessary, for gainful employment of women in the fisheries sector. Some suitable areas are feed management and water quality monitoring in culture ponds and hatcheries, seed collection, sorting and packing in hatcheries, culture of sea weeds and molluscs, fisheries data collection, scientific post harvest handling, and preparation of nutritious products from fish, shell fish and sea weeds.

2. With the advent of mechanisation women involved in traditional occupations such as basket weaving and net making have been adversely affected. Therefore efforts must be made to evolve a policy for the absorption of these women in the mechanised production process.

3. The Directorate of Fisheries in each state must formulate area specific model fisheries schemes for fisherwomen, with subsequent placement or self employment opportunities, in consultation with organisations like CIFT, BOBP, Colleges of Fisheries, financial institutions, etc. Further, women extension workers must be appointed to better reach the fisherwomen and provide technical assistance.

4. Similar to their counterparts in agriculture, fisherwomen too do not possess or control any worthwhile capital asset in spite of the fact that they generally contribute more to the family income than the men folk. Hence, viable project proposals exclusively for women in both traditional as well as emerging fields must be prepared for funding by financial institutions such as NABARD, Cooperative banks and Non Governmental Organisations. NGOs also have a role to play as consultants in the preparation of viable project proposals.

5. As women seem better suited to take up research in certain areas such as biotechnology owing to their patient and methodical work habits, they should be encouraged to qualify in these areas of expertise, in greater numbers.

6. Biases against women in the fields of education, research and management, must be eradicated, and women given equal opportunities for employment.

7. Fish processing, especially prawn peeling, is presently being done by women workers under conditions of severe exploitation by labour contractors. Therefore there is an urgent need for bringing prawn peeling too under the purview of labour laws, and for the plugging of existing loop holes that permit exploitation. The possibility of women cooperatives taking up prawn peeling must be explored.

8. The best protection against any form of exploitation is the resistance that comes from the victim. Women, in general, need to be made aware that it is within their powers to resist. Women fish vendors, in particular, must be encouraged to form associations for the retail sale of fish, to increase their bargaining power against exploitation at the hands of money lenders, middle men and private transport operators,

among others. Such associations would also act as a buffer against the inherent vagaries of the trade.

9. Women fish workers and vendors should be trained in hygienic handling of fish. Fish markets should be provided with proper sanitary facilities in order to protect the health of both seller and consumer.

10. It is extremely important that in order to obtain any lasting results in achieving a degree of emancipation, women at all levels must be encouraged to participate in developmental activities and decision making processes that involve them.