ODA POST-HARVEST FISHERIES PROJECT
Overseas Development Administration

BOBP

NEWSLETTER OF THE BAY OF BENGAL POST-HARVEST FISHERIES PROJECT

PHF NEWS

ISSUE NO.4 OCTOBER 1995 FOR PRIVATE CIRCULATION

Fish Drying Racks: Some Questions Answered

THE DRYING RACK as promoted by the ODA Post-Harvest Fisheries Project is aimed for use by fishermen/women at village level and constructed with locally available materials — usually with old nets and casuarina poles, which are commonly available in most of the coastal villages, The dimensions given are suggestive, and could be changed to suit the availability of materials and the quantity of fish dried.

As the concept of drying fish on racks catches on increasingly all along the east coast of India, with some state governments and non-governmental agencies starting the activity, the drying rack itself changes from place to place in size and in the materials used for construction. Consequently, clarifications are sought on a few points from time to time about it. Some of the questions generally asked are sought to be answered here.

Q: What should be the ideal size and dimensions of a drying rack?

A: As mentioned, there is no particular size for a drying rack: you can decide the size based on the amount of fish you normally dry in one cycle. Generally, for every kilogram of fish that you dry, you will need about 2 sq. ft. of space. The first layer should be about 2½ to 3 ft. from the ground, so the fish cannot be reached by dogs, cats, etc. The second rack should ideally be at a height of 1½ to 2 ft. from the rack below. The height of the rack is decided by the height of the processor, who should be able to reach any part of the drying rack. The length and breadth of the rack must similarly be of a size for the processor to reach any part of the rack. Consequently, the breadth of the rack cannot ideally be more than 4 ft

Material for poles

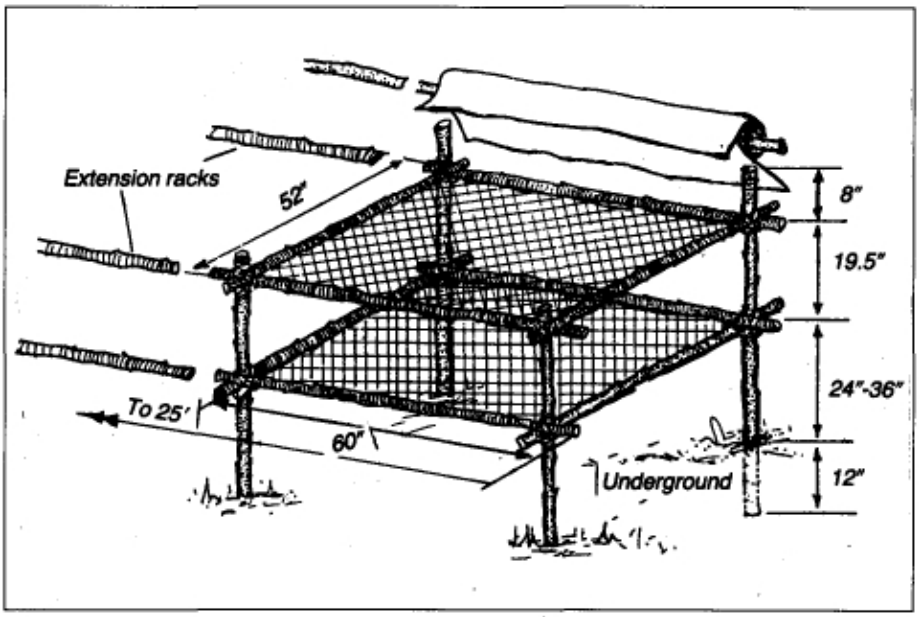
Q: What is the best material for use as poles?

A: Casuarina is available in most coastal villages and is also the cheapest material for the purpose.

If casuarina is unavailable or costly, any other wood material, with as few bends as possible, will do. Using RCC poles and metal bars will increase the expense considerably, making the whole activity economically unviable and also beyond the reach of most small-scale fish processors.

Q: But casuarina poles are weakened at the bottom frequently due to rotting and have to be constantly replaced. How can this be avoided?

A: You can avoid rotting of casuarina by coating the lower portion of the polethatgoes insidethesoil with tar and drying it thoroughly before erecting the rack. Tying the bottom ends



A simple fish drying rack made from local materials

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of the poles with polythene covers, preferably of thicker gauge, can also reduce rotting and increase the longevity of the pole.

Q: While it is true that the quality of the product is enhanced when dried on the rack, it is impossible to dry the entire quantities of fish landed during the glut season. It requires so many drying racks that it is impossible to construct that many, given the limited space available in the village for drying.

A: This is the most persistent and important question wherever the racks are demonstrated. It has to be answered in very general terms. According to data available, on an average a fish processor handles about 60-90 kg of fish in one cycle and goes for about 3-4 cycles per week. Only during peak landing seasons does one purchase quantities of more than 100 kg. On an average, in a year the processor purchases fish of over 100 kg only about 12-15 times for drying purposes. This, coupled with the fact that glut landings generally coincide with the North-East monsoon, means that the drying racks cannot be of much use during two months in a year.

A drying rack capable of holding 100 kg of fish in one cycle can be constructed for Rs. 1,000 and is sufficient for most of the year. Even if the rack-dried product were to fetch Re. 1 more per kg than the sand-dried product, the processor stands to gain about Rs. 140 a week (about 35 kg of product per cycle x 4 cycles a week) under normal circumstances when fish landings are sufficiently good. And, after all, this activity is mainly aimed at small-scale fish processors, who generally never purchase more than 100 kg anyway.

It can also be argued that, should the increased returns on the product made using the racks be so lucrative to the processors, they will definitely construct more of them — support or no support, space or no space. As of now, the activity is only in the initial stages in most areas, and it will be some time before the economic viability is established beyond any question.

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Appetite Dips as Fish Prices Soar

FISH is slithering out of the common man's menu. As the prices of this delectable species skyrocket, consumers in Madras, which boasts of a long coastline, are finding it increasingly unaffordable. Worse still, even the cold storage owners in the city have started deserting them.

According to reports from the wholesale and retail markets in the city, price rise of almost all varieties of fish has 'broken records'. The retail price of the popular seer fish, which had never crossed Rs. 100 per kg even during periods of acute shortage, now touches Rs. 120-l 50.

In the wholesale market, the less expensive sardine, which used to cost about Rs. 200-300 per 30 kg, has shot up to Rs. 1200-1300. The wholesale price of mackerel has risen to Rs. 25 per kg from Rs. 10, while that of white pomfret has soared to Rs. 220 per kg from Rs. 85 last year. Even the prices of cheaper varieties of fish like bekti, which used to sell at around Rs. 40 per kg, have doubled, leaving the palate of many unfulfilled.

As a spin-off, even fresh water species which did not have good demand in the metro have become costlier.

A news report from **G. Pramod Kumar** which appeared in *The Hindu,* Madras, of July 25, 1995 is reprinted here by courtesy of that newspaper.

The price rise has also prompted some hoteliers to dupe the customers by serving butter fish, a fresh water variety, as seer fish.

Fisheries experts belonging to the State and Central Government agencies and traders attribute the steep price rise to acute short supply created mainly by low catch in Madras and other areas of the State, fluctuations in supply from Andhra Pradesh, and increasing demand in overseas markets.

Traditionally, fish catch in Madras is low, leaving the market at the mercy of the supply from A.P. As the catch in the coastal areas bordering Kerala caters to the markets there (particularly during the monsoon), 90 per cent of the metro demand is met by A.P.

But of late, a large chunk of the produce in A.P. is being diverted to Bombay at better prices by traders who swarm the catching areas, fish merchants at Chintadripet and Royapuram wholesale markets say. Bombay traders shop even in Madras, making the supply shorter. Lured by higher prices, fishermen tend to ignore the local market.

Lucrative export markets

A major portion of the shipment to Bombay is being exported. Many of the species which previously had no takers

(continued on page 10)

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Fish Smoking in Andhra Pradesh: The Story So Far

MAY 31, 1995: the day we ended our trials on fish smoking at Ramannapalem village in East Godavari district of Andhra Pradesh. We were happy — and subdued. And we had reasons to be proud as well as humble.

Curious to think that exactly one year ago, on June 1, 1994, when we started the fish smoking activity at BCV Palem, another village about eight kilornetres away, we had no inkling of the things to follow, and the course they would take. There had been so many twistsandturnsalongthewaythatone had to pause once in a while just to get one's bearings right.

Something which started as a 'pre-pilot study' on a low key, to see the technical feasibility of making 'masmeen' (boiled, smoked and dried tuna — also known as Maldive fish or 'massee') locally, ended up with designing and perfecting a new smoking technique which had at once found acceptance from the smoking community. It is a rare thing, we are told, to be successful in projects of a developmental nature, particularly where a technical intervention is involved. People tend to be very suspicious about 'success' stories, and with ample justification too.

Well, to go back to the beginnings, it has to be admitted that masmeen was seemingly the most complicated, troublesome and tricky of all fish processing techniques, with so little coming out at the end of such a long process. (There were a few rare times when we had to overcome our hatred for the man who first thought of making masmeen, and admire his genius for thinking up such an intricate way of preparing fish for the table.) We are glad that we did not know until later that the fillets, after boiling, had to be smoked and dried alternately for anything up to 3-4 months. And the quality of the end-product depended on so many factors, many of them so totally out of control, that you are more likely to fail than otherwise. (Consider this: if large-mesh gill-net fishery, mainly targeting seer, with tuna as a by-catch,weretobeslack,thenumber of long-liner operations for sharks would rise. And as tuna is a much relishedbaitforshark,itbecomeseven more difficult to purchase than seer! No wonder the assumptions list for masmeen study was as long as a long line.)

In Andhra Pradesh, for one thing, tuna caught in gill-nets is dead for at least six hours before being landed, and no ice is ever provided to it on board. Now, for masmeen, one important condition is that only very fresh fish is used for processing. The delay in landing, coupled with the fact that the fish had to be transported another 25 kilometres by road (and what a road!), doomed the quality of the product even before processing could start in earnest,

A traditional kiln used for the smoking of fish

Then there were questions: do we removethebonesbeforeboilingorafter boiling? If you removed them before boiling, you disfigured the fillet and lost a lot of meat in the process. If you did it after boiling, the fish would *still* be disfigured and meat was *still* lost. How long did you boil anyway? Boil a little, and the skin won't be peeled off properly; boil more, you remove a few chunks of flesh along with the skin.

Cookery books, we learned, are the crookedest way to learn cooking: one authority asked that tuna be boiled for 45 minutes (which gets you an evil-smelling tuna soup, as we learned), and another suggested 1 2 minutes. One did away with smoking altogether, and another suggested a minimum smoking period of 24 hours. "Use salt and be demned,"boomed local processors. "If you don't, then that's it!" warned the authorities. Tie the pieces in toddy-palm leaves before boiling, it gives you a great flavour and also helps to retain the fillet in shape" was one sagely advice;apartfromdestroyingafewpalm bushes in the area, the advice did not amount to much, and the product still tasted like sawdust.

Non-stop rains

Just when we thought we were getting the hang of it, the monsoons came — right on time, exactly as predicted to the minute, literally wiping off the activity. Over the next few months, we actually tended to believe rather superstitiously, that the accuracy with which the monsoons had set in had moretodowithourpre-pilotstudythan with any improvement in weather forecasting techniques! After all, it rained whenever we bought tuna — and only when we bought it!

The sky would be cloudless, the bluest blue, for a couple of days. We go to the landing centre to purchase tuna.

It is hot. Only a very light breeze at the beach. We make our purchase, start on our journey to BCV Palem confidently. Before we are half-way through, the sky turns dark, then jet-black, it starts drizzling and then it rains non-stop for 24 hours, and we have no option but to resort to continuous smoking in the absence of sunlight. The resultant product not only looks, but also tastes, like charcoal. If the technique were to be found useless for processing tuna, so the joke went, the whole activity should be shifted to drought-ridden areas — it would at least generate abundant rains. Monsoon rains, following the intense summer heat, had never been so glumly received, at least by us. Under the circumstances, naturally, masmeen had to be, first temporarily and later permanently, shelved,

But, looking back, we realize that the intensity of monsoonal downpours gave us an opportunity to do what we did: make an improved bin, which had all the advantages of the traditional kiln, and at the same time overcame the shortcomings of the previous system [for more details, see *PHF News,* issue No. 2). Wefound that monsoons played havoc not just with the masmeen, but with all smoking operations in the area. And the largest quantities of fish and shrimp are caught during the monsoons! The bin was the automatic choice. And we started trials with the bin.

We procured fish/shrimp in the traditional way at the landing centres: bargaining, sometimes quarrelling, with fishermen and traders, like our fellow processors, getting jostled, pushed, shouted at, thumped on the backs, and sometimes cheated. And we smoked: it was no longer a dreary and drab exercise. We used the bin for smoking every traditional variety: mullets, croakers, eels, half beaks, shrimp, and more — fish like mackerel, sardine, etc., which had neverbeensmoked in the area. And we recorded data: smoking durations, weights of fish before and after smoking, temperatures at various stages, weight of firewood, materials used per cycle, what not! The woman processor in charge of the

A new-type smoking bin takes shape

activity, Mrs. Putramma, was a hard taskmaster: she encouraged and bullied, learned and taught simultaneously—a hard feat, but then she was 80! We were debating about ideal conversion rates, temperature regimes for various fish, ideal firewood combinations and the effectof body fat on smoking, while every processor in the village was looking on. "And we thought *we* knew everything," their looks seemed to be telling us, and we puffed up a little more.

Then we took the product to the markets — for marketing in the traditional way, yet make a huge profit. We would spread a sheet on the ground, make small heaps of our product, quote very high prices like all other fellow traders, end up selling at very low prices, unlike any other trader, get thoroughly discouraged; and, with those pitiful looks of fellow traders drilling holes into our backs, walk away from the market, swearing never to venture into the market again — only to return the next week. And the looks continued. And so on....

First hurdle crossed

But as they say, we held on. Week after week after week — until they started noticing the difference; asked us for information; visited BCV Palem for more details; requested demonstrations in their villages; and asked how much it cost to make the bin. Finally, when they said this bin did not suit them at all, and returned again the next week to say the same thing — was it to convince us or themselves, we wondered. By November 1994, when the pre-pilot study came to an end, the bin was a much debated subject in smoking quarters, with a lot of suggestions for possible modifications coming from them. Changes were accordingly made and, from the data gathered and studies conducted, the bin was found to be technically, economically and socially feasible. We crossed our first hurdle.

Basically, the women claimed that the bin saved on time, effort and working costs. The smoking duration came down from 15 hours in the traditional kiln to 5 hours in the bin. Production costs came down to less than 20 per cent that of the traditional kiln. (In the pre-pilot phase, we tried alternative firewood material — coconut husk, wood shavings and sawdust. In the next, 'pilot' phase, traditional firewood material — cowdung cakes, mangrove wood and wood shavings — were used.) It reduced post- processing losses (due to breakage, etc.), which stood at 20 per cent in the traditional kiln, to less than 5 per cent. The quality of the product is enhanced, which in turn increased the shelf life from 2-3 weeks to 6-7

weeks. While during this phase it could not be established that improvement in quality necessarily meant enhancement in value at the markets, there however were indications — like when the processor next door borrowed *'our'fish* consecutively for three weeks before we understood the reason: she used our product to spread over hers in the basket, so she could pass off the entire basket as 'top quality' product! From then on, we were only too happy to lend more fish to her. With the reduction in smoking time: more cycles were possible in thesame time, allowing for more product to be made. Most impcirtantly, with the bin the processing activity became much easier and healthier.

But, the women insisted, the size was too small for accommodating the quantities of fish/shrimp they smoked in one cycle, which is about 50 kg in a traditional kiln. The bin with its 14 kg capacity, for all its virtues, did not stand a chance. The prototype had been taken for the real thing, and it would take a lot of convincing to make them understand that the size could actually be bigger.

Final design

The next step was getting the women together, to discuss the follow-up and to decide the 'final' design. A square-shaped structure, they agreed, would be more easily manoeuvrable than a cylinder. "It should be like a fridge," said one of the processors. And the bin grew bigger and bigger.

Women fish** processors **at Ramannapalem seen with a full-size smoking bin

The flash of the welding gun blinded us for nearly one week — the time it took to make the skeleton of iron angles and clothe it with galvanized iron sheet, We were talking in inches, about thick gauges, heavy-duty flats, diameters and mesh sizes in sleep. When anyone asked what it was all about at the welding shop, we replied that it was an almirah for keeping files — to talk of fish and shrimp seemed so out of place there.

Finally, when the new bin was ready, we decided that enough was enough: we could not buy or sell any more fish. Since people seemed so interested anyway, why not leave the bin to them and let *them* decide whether they wanted it or not? The bin was installedatRamannapalem inearly April. And that was when we realized that we made ourselves redundant all of a sudden.

The women at Ramannapalem wouldn't allow us to show them more than the basic aspects of the bin; they took over the activity with so much zeal, as if they had been doing it since their childhood, that we were left to do no more than record data.

Our lower jaws sagged in an effort to contain all our astonishment, as everything went out of our hands — and into the hands of the processors. Their shrewd market instinct must have made them grasp its usefulness much before we did (after all, we were veterans by then and were a bit weary and wary too) and everything apparently clicked into place. The single bin at Ramannapalem had

become a much talked about subject in the smoked fish markets.

That is not to say that the bin was 100 per cent perfect in all respects, and we were the first to admit it. But the processors wouldn't. As processor after processor — all 14 of them in the village — used the bin continuously, they went on insisting that it couldn't be bettered. Initial euphoria, we thought. But gradually the area around the place where the bin was located acquired the look of a battleground, with heaps of fish and shrimp belonging to different processors being pre-dried, with the concentration increasing as they reached the bin, so that the minute the bin was emptied of one batch, another batch could be pushed into it. There were times when six cycles (for shrimp) were completed in a single day. We had a feeling that the data we were collecting was no more than an academic exercise. We suppose we were in the process of purging the activity, as well as ourselves, who, like most people, dread the word 'technology', of the attendant paraphernalia of technology.

Here it must be stressed that, basics apart, the bin is only a technique, an improvement over the traditional processing method; it was no invention of a few creative minds cooped up in their laboratories for years together to prove something, but the pooling of ideas of the many members in the fish smoking trade in the local villages. As for ourselves, we have to admit that we hardly knew anything about smoking, leave alone making masmeen, when we had started; and the women processors knew more about the new technique than we did before we ended.

Need-based activity

The purpose in writing this story is just this: one need not be a specialist, or phenomenally obsessed, to be successful; so long as an activity is need-based and is followed logically to wherever it leads, the result can very often be positive. At the same time,. if we seem to be constantly on guard here, it is because we have learned that two plus two rarely add up to four in this field.

Stories multiplied: the market price of fish/shrimp smoked in the bin increased by 20 per cent; people from 14 villages had on their own visited Ramannapalem to take a look at the new 'wonder'; we received representations for demonstrations from 26 villages; the Department of Forests was so happy with the fact that mangrove cutting as firewood for smoking had come down to negligible levels, that they wanted to assist the processors in purchasing bins; the District Collector visited the village, and was so impressed that he immediately issued orders for providing subsidy and loans to the women for purchasing bins (when he spoke to the women, they were so vociferous and unanimous about the usefulness of the bin that we were afraid he might think they had been coached what to say beforehand!); the District Rural Development Agency finalized action plans to provide one-third subsidy for making 100 smoking bins for providing to women; the Backward Classes Development Corporation arranged to provide margin money and loans to the women for the bins. We were told in no uncertain terms that until the new bins were given the trial bin would not be allowed to be shifted elsewhere, and the women claimed that if the institutional support took some time to reach them, they would share the full cost of the bins and get them made on their own; and so on . . .

The crowning glory, of course, was during a cyclone in May 1995: when the processors ran out of dry firewood, they simply dismantled the now-useless bamboo platform of 'their traditional kiln and used it for firewood in the bin.

A new bin

Meanwhile, yet another bin, a 'more standard' version, had been got ready. This time, we got rid of the 'welding' bit and the new bin was completed in three days-and was placed at Pallam, on the Godavari delta, the heartland of fish smoking. This new bin was sturdier and made operation even more easy. Once the initial reluctance had worn off, the story here too had been exactly like the one at Ramannapalem. In the two months since the bin was placed there, not once has the traditional kiln been lit by the processor who was provided with the trial bin. Within two days of starting the activity there, this woman flatly told us: "I don't know about the others, but I will make sure that you do not take away this bin before providing one for my own use."

The enthusiasm of the women processors was matched by the response shown by the administrative machinery, which swung into action immediately and is following up with the activity vigorously. In no time, there were so many agencies working that all we could do was to sit back and let things take their own course (and believe, or delude ourselves, that all those hundreds of people talking about the bin, were casting admiring glances towards us in passing).

Masmeen was a 'non-event' which pushed us to look around, explore, discuss, understand and devise. As the cliche goes, there is nothing to beat first-hand knowledge, and the burn scars on our hands are testimony to our having gained it the' hard way. Today the scars are not only evidence but also mementoes to be proudly carried for a long time. The demand for bins continues to grow, and even with our limited experience we could see that the demand was definitely not for the subsidies or loans, but for the *actual* thing itself. Just three bins in all, and one of them already redundant anyway, seem to have generated enough heat to get a major thing going there. It may be too early to jump to too many conclusions, but it can be safely said that the bin has generated enough enthusiasm among the processors for itself to run its course on its own.

VILLA RAMANA RAO
on deputation for pilot study on smoking of fish from the Andhra Pradesh Fisheries Department

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Partners in Progress : Story of an NGO with Fisherwomen Members and PHFP

PETTY fish trading is an occupation that is often resorted to by women from fishing communities when faced with extreme economic pressure. Earnings from this activity usually are the sole source of income for their families. The nature of this trade, however, varies along the coast.

Rural Organization for Social Action (ROSA), an NGO located in the former Danish port of Tranquebar [in Tamil, Tarangampadi] in Nagapattinam Quaid-e-Milleth district of Tamil Nadu, has been working for the past five years with these communities in the villages of Kuttiyandiyur and Pudupettai. As a part of its efforts to channel post-harvest activities through NGOs, ODA-PHFP entered into a partnership with ROSA.

Building/strengthening local-level institutions was one of the first steps taken by the ROSA-PHFP partnership. It was through these institutions that the project activities were to be undertaken. The major activities envisaged were: financial assistance in the form of savings and credit, improving market access, and providing training in better methods of handling and processing fish.

The villages of Pudupettai and Kuttiyandiyur have a combined population of about 3,000, with a large proportion being involved in the artisanal fisheries sector. The villages are connected to the town of Tarangampadi by a motorable road about 4 km away, and are served by a bus service that operates three times a day.

Fishing season

The part of the coast adjoining these villages is rich with small pelagics such as mackerels and sardines. The fishing season in the area, which starts from mid-April and extends to the end of October, can be divided into two parts. The period from mid-April to the first half of June is the time when high-value species such as prawns and seer fish are landed, while the period from mid-June to end-October is when low-value species such as sardines, mackerels, anchovies, flying fish and ribbon fish are landed. Sardines and mackerels are procured primarily by traders from Kerala. Petty fish traders also deal with these species. Ribbon and flying fish are usually dried and sold by petty fish traders who specialize in dryfish products. Most of the high-value species are procured by the large traders who extend cash credit to the fishermen in return for the fish captured.

It is during the off season (October to April) that credit requirements are high. Capital requirements are usually met by informal sources of credit. There are two forms used. The first form, known locally as *thavanai vatti,* is primarily used to meet consumption requirements. The rate of interest is high (70 to 80 per cent), but the payment period is long (between 60-90 days). The second form is taken exclusively for marketing purposes and is known as *chandai vatti;* it has a higher rate of interest (between 100 and 120 per cent) and a shorter repayment period (between 2 and 4 days). It needs to be noted that the latter form of credit is now dying out, but it does find application especially when the creditworthiness of petty fish traders is low. The petty fish trader's creditworthiness is also linked to her standing in the village society and her family, as it indicates her ability to muster funds.

Between villages there is considerable variation in the percentage of petty fish traders who come from households possessing fishing craft. In the villages of Kuttiyandiyur and Pudupettai, over 60% of the petty fish trader women come from households that possess a fishing craft, while in Tarangampadi it is much lower (38%). Just over half the women who are members of ROSA sangams come from households who possess a traditional craft (57%). A small proportion of the women come from households that possess mechanized craft.

Most of the petty fish traders have their own houses, which usually have a thatched roof. The better-off have a tiled roof and power supply. A few petty fish traders come from households which support a concrete roof. The houses had been constructed by the Department of Fisheries, and over the years gone by they. now need large-scale maintenance.

In the villages of Kuttiyandiyur and Tarangampadi, one can see a greater number of houses with tiled roofs. One reason for this is the diversification of income in the two villages where men have found work as deck hands on trawlers and in fishing harbours along the Tamil Nadu coast. Possession of consumer durables such as bicycles, transistors and radio-cum-cassette decks places the household high on the social scale. Predictably, very few of the petty fish traders possess such items. Access to electricity is also in line with this. On an average, about 10% of the households have access to power in these three villages.

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Three categories of traders

Petty fish traders can be classified into three broad categories on the basis of the value of their transactions and the distance between the fishing village and the markets accessed.

The first category, who form the vast majority, deal in low-value fish (turnover between Rs. 100 and Rs. 750) and access markets located within a 25-km radius from the fishing villages. These women come from nuclear households and are relatively young, with small children to look after; they usually come from households that do not possess a fishing craft and are not considered creditworthy.

The lack of transport, along with the low margins involved, results in the women carrying fish by headloads to the various markets. The low purchasing power of their customers makes any intervention in the form of provision of capital (to increase turnover) futile. These women usually procure fish landed by traditional fishing craft like catamarans which land fish around 7 to 8 a.m. in the fishing village. By the time the women complete their transactions and leave for the market, it is usually 9 to 10 a.m.

The second category of women handle high-value species such as prawns and seer fish, the total value being anywhere between Rs. 1,000 and Rs. 10,000. They procure the fish from trawlers which land at around 5 in the morning, usually at Tarangampadi. They leave for the market by 6 a.m., usually leaving together as they access distant markets such as Mayiladuthurai and Sankaranpanthal, located 60 km from their fishing villages.

The public transport system is the oft-used mode of transport. A fare of approximately Rs. 35 is paid to carry two baskets. This is inclusive of bribe (the cost of a ticket is Rs. 11) for permitting the carriage of fish on board. In most cases, the women carry two baskets to the market as it is the minimum quantity required to make a decent profit. These women use ice as the distance covered is long and the value of the fish handled is high. This results in the seepage of water from the baskets, which is objected to by the other commuters. During peak hours, these women are often prevented from boarding the buses. The consequent

Petty trader fisherwomen with fish purchased at landing site auctions prepare to leave for retail fish marketing and for salt dry processing

Post-harvest Fisheries Intervention:

Problems and Possible Solutions

The main aims of post-harvest fisheries activity are to focus on:

1. Maintaining in prime condition the fish caught, to obtain premium prices at first sate, and providing fish of high quality to consumers.
2. Preventing loss in quality of fish which will reduce the value of the catch.
3. Wasteful disposal of by-catch against targeted high-value catch. Most of the craft — large, medium or small craft that target for shrimps with trawl nets — have to handle nearly 80-85 per cent of their total catch as low-value by-catch. Large and medium-size vessels dispose of them overboard for want of cold/frozen storage space (such space is mainly used for high-value shrimps and partly for high-value fish). The small vessels bring the by-catch ashore without icing in a condition fit only for low-value fish meal. It is estimated that about 200,000 tonnes of fish are annually lost in this manner in the east coast of India alone.

A possible solution to this problem is intervention on board craft, and ashore on landing, marketing, transport, etc. Many organizations — governmental and non-governmental — have attempted and developed methodologies of intervention and provided, or have supported the provision of, facilities for them. This had depended on the available resources for manpower expertise, research development, dissemination/extension channels, and the astabiishment of community links.

Cases of success and constraints to success in post-harvest intervention have to be Identified and each of them tackled suitably, with a humanapproach in certain cases, to. achieve greater impact or success — financially and socially.

delay results in fish spoilage. On occasions, when there are more than five women going to these markets, they get together and hire a van; they usually pay around Rs. 150 to Rs. 200 for a one-way trip. On the return journey many of the women buy their household requirements.

The women in this category are in most cases over 45 years old and have grown-up children who are in a position to manage the household while they are away marketing fish. In most cases they have a grown-up daughter or son (who needs a large sum of money to meet dowry requirements or capital to acquire a craft). Dowry usually consists of a range of assets such as craft and gear, cash and jewellery, while the capital needed for the acquisition of craft is around Rs. 1.5 lakhs. The acquisition of a son-in-law or a fishing craft is usually a method by which the women are able to enhance their status within the fishing community, especially when they have lost their husbands.

The third category of women deal in dried fish. They are rather old (over 60 years) and have few social commitments. They are mostly the head of a joint family with many young women who stay at home to handle the processing. These women procure fish during glut landings, although there are instances when they utilize the catch brought in by the catamarans operated by the household. This permits procurement of fish at relatively low prices. They access such markets as Kumbakonam, which is 120 km from their villages.

The value of fish handled is between Rs. 10,000 and Rs.15,000. Consequently, the quantity involved is very large, and a van is usually hired for transport, though trucks are also used. In most cases, the markets accessed are weekly *shandies/fairs* where all manner of agricultural, marine and artisanal products are sold. Given the low procurement costs and the relatively long shelf life of dried fish products, the margins that can be obtained are sufficiently large for individuals to hire transport on their own.

Interventions

The above-mentioned information gathered over a period of time helped in:

- defining the target group
- understanding felt needs
- working out relevant interventions.

As mentioned earlier, itwas decided to bring the petty traders together into grassroot-level groups (sangams) so that project activities could be better channelled and managed by the partner organizations — the sangams, ROSA and ODA-PHFP. A total of 125 individuals were selected by ROSA as participants in the various schemes sponsored by PHFP from the three villages. They constitute 35% of the sangam population.

Since credit was found to be an important felt need among the petty fish traders, it was decided to form grassroot-level organizations with thrift and credit as the focus. Animators from ROSA began organizing the fisherwomen from these villages with specific focus on the target group.

One of the initiatives was to link these petty traders to institutional credit as it would offer long-term sustainability. Self-help groups (SHGs) were formed by ROSA in the three villages. PHFP has sought to raise money to finance self-help groups using concessional credit provided by the National Bank forAgriculture and Rural

Group discussion among fisherwomen sangam members

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Development (NABARD) through the NGO. While providing finance to the self-help groups, NABARD lays down the condition that all members of SHGs have savings bank accounts. A total of 60 petty fish traders have been selected, and they constitute 48% of the participants in other programmes and 16% of the total sangam population. It is hoped that this scheme would cover more of the other members in the ROSA sangams.

Another intervention has been in the area relating to transport. Since many of the women access markets located at long distances from their villages, they are solely dependent on the public transport system. However, harassment from the conductors and complaints from the co-passengers about the fish odour make these journeys very difficult. The women try to solve this problem at their level by bribing the conductors. But this has not always been successful. It was then decided by the women to run an alternative mode of transport for themselves. Efforts are still continuing to formalize this system.

Related to the transport issue is the promotion of the fish container in these villages. The container, which was designed to facilitate easy transport of fish in public transport besides improving the social status of the petty fish trader, was demonstrated in these villages. About 21 women opted for it. However, its use is more for the marketing of prawns rather than fish. But the women, using their ingenuity, have put the containers to other uses like storing of valuables at home. Thus, in a generally resource-poor group, the fish container has become an asset.

Training programmes

Believing in people's capacity to learn has been one of the reasons behind the introduction of the training component in the project. Training needs assessments were conducted based on which training programmes were formulated for both the NGOs and the community. Most of the earlier programmes focused on knowledge and skill upgradation. Training on better fish-handling practices was undertaken to help the fisherwomen get a higher price for their fish through reduced losses. Added to this were programmes on project planning and management to help the partner NGOs focus their intervention better.

The present set of training programmes focuses more on attitude-building, especially with respect to trainers, helping them understand the community, analyze poverty situations better and in a non-judgemental manner so that they could learn to work with people instead of for them. Use of traditional and folk media is also being included so that interest could be generated among the communities to undertake post-harvest activities.

With these activities, the stage is being set for the introduction of technology. The grassroot-level groups would be the main actors, supported by the animators and the NGO. PHFP would be providing the necessary back-up by way of technical know-how and financial assistance. In course of time, however, it is hoped that roles would change, with people becoming the more active partners.

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ODA-PHFP: Madras

(Continued from page 2)

Appetite Dips as Fish Prices Soar

in the markets abroad have now found buyers, and same is the case with value-added products.

As a matter of fact, any fish worth its name now has buyers abroad. For example, even cheap varieties like sardine and fresh water species like catla are being exported now, let alone the products derived from them. In addition, increased demand in the export markets also pushed the prices up, making overseas business more lucrative. In the recent past, catla, which hardly had any market abroad, has found a large number of buyers in West Asia, and the export of tuna to Singapore has almost doubled, officials of the Tamil Nadu Fisheries Development Corporation (TNFDC) say.

The main reason for the traditionally low catch in Madras despite being blessed with a long coast is that the sea is a turbulent bay which is not conducive to the spawning of fish and their growth. The fishes prefer to nest in calmer regions. The currents also take them away.

Fishermen too are to be blamed. Instead of allowing the fishes to grow to full capacity for optimum yields, they catch even the fry. Small-sized seer and pomfrets available in the markets indicate this practice.

They also fish in the region during the spawning season which affects the reproduction and growth of the species. Experts advocate a ban on fish catch during this season, as practised in Kerala.

Another factor responsible for the constant decline of the harvest is the indiscriminate pollution of the coastal waters. Scientific studies have shown that mindless pollution also has an active role in making the sea barren. Though TNFDC officials say that the prices will come down after this 'lean season', wholesale and retail traders are hardly hopeful. The factors are not conducive, they say. No more bon *appetit* for poor fish lovers, it seems.

Edited and published by Duncan King for the Overseas Development Administration's Bay of Bengal Post-Harvest Fisheries Project-part of the Bay of Bengal Programme multiagency regional fisheries programme.
9 7 St. Mary's Road, Abhiramapuram, Madras-600 018. Phone: 4936294, 4936 188. Fax: 044-4936 102. Telex: 4 7-2 1138 BOBP
Designed and Printed by Nagaraj & Co. Pvt. Ltd., L. B. Road, Madras-600 04 1.

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