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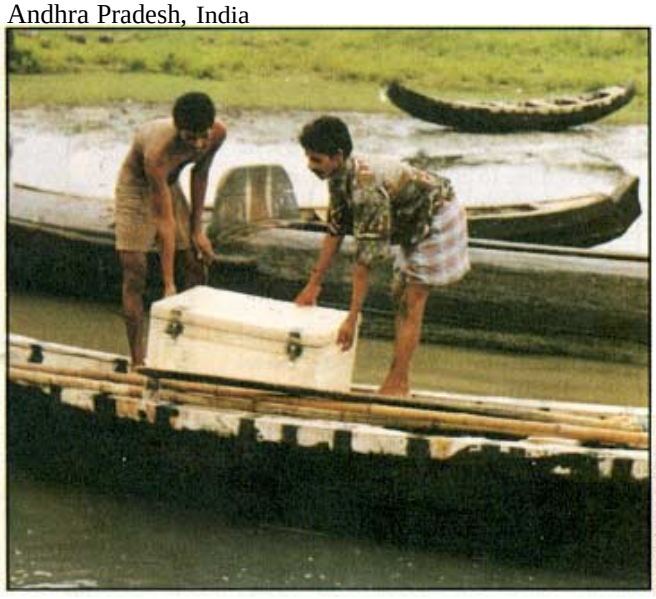
Ten Years After...

The Post-Harvest Project will complete its activities by March 31, 1991 ,after 10 years of service to artisanal fisherfolk communities, NGOs and fisheries departments in India, Bangladesh and Sri Lanka. This farewell issue of PHF News discusses the lessons and learnings of the past decade in post-harvest fisheries, and directions for the future.

Sri Lanka

Andhra Pradesh, India



Ashok Krishnaswamy

Bangladesh

Amalore

Tamil Nadu, India

Vijay Kumar

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EDITORIAL

Ten Years After...

by Duncan King

The DFID's Post-Harvest Fisheries Project will complete its activities by March 31, 1998. The Project Field Manager shares with readers his thoughts on what the project has contributed to post-harvestfisheries in India, Bangladesh and Sri Lanka.

The Post-Harvest Fisheries Project funded by the UK's Department of International Developmenthas nearly completed its third phase. The end of the third phase also marks the termination of the project that has worked with small-scale artisanal fisherfolk in the post-harvest subsector for the last ten years.

Operational activities will be completed by the end of March 1998 and the project will finally close its office in May. As this third and final phase comes to an end it may be appropriate to briefly look back on the past ten years.

The PHFP focuses on marine small-scale fishing communities. These communities usually suffer from natural disasters, environmental degradation, over-fishing and population pressures. Climatic changes, such as global warming, will also generate instability in coastal areas. Previous fishery capture and production-orientated practices placed a strain on the fishery resources. Therefore, it is essential that these resources be sustainably managed and their use be maximised. The project has pursued this aim by improving the efficiency of post-harvest handling. processing and marketing of sustainably produced products. However, the project has always taken a much broader approach in working with coastal communities by addressing issues that affect their lives and by pursuing sustainable livelihood strategies.

The project has always followed a process approach by developing, demonstrating and promoting new techniques. technologies, rpethodologies or ideas to help improve the conditions of small-scale fisherfolk communities. From the beginning, the PHFP has operated within the administrative umbrella mechanism of the Bay of Bengal Programme from offices in Madras, although it has remained very muchan independently funded and managed project.

The project accords high emphasis to improving the status and conditions of women from fishing communities and their participation in the development process.

The project has limited its field work to India, Bangladesh and Sri Lanka. which regarded post-harvest as priority areas. In India, only the east coast states were involved. This sharp focus has allowed for more effective use of the project's limited budget. It has also provided other countries in the region with information on post-harvest issues.

Strong Partnerships

The project has operated over a large geographical area in trying to address a diversity of development problems. Government staff have played a vital role in identifying key problem areas to be addressed and in facilitating solutions.

An important element of the project has been the strong partnerships formed in the three countries between the project, other donor projects, government departments and NGOs. The partnerships with NGOs have been crucial to the project's success. They have provided a vital mechanism for close interaction with the communities, especially those NGOs that have their origins in the fishing communities themselves.

Strong partnerships are also being forged between NGOs and governments; such partnerships are vital if development projects for coastal communities are to be sustainable in future.

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The approach adopted by the project has been flexible, reactive and catalytic. *Flexible* in the sense that it was very openly defined at the design stage, allowing the project to adopt a process approach to activity planning. The project had the scope to identify, design and appraise a series of sub-projects within a broad project framework.

Reactive in that the project's function was to respond to the needs of the coastal communities, or the needs expressed by other agencies as and when post-harvest problems became apparent.

Catalytic in that the project aimed at solutions to problems, developed methodologies for resolving them, and then mobilised local institutions to implement and disseminate ideas. The project then took the essential lessons and methodologies from the localised situation and made them regionally available. In that way, the benefits from project activities could reach a wider audience across the region.

Project's Three Phases

Since 1987, the project has gone through three phases. Phase one was from 1987 to 1989, phase two from 1989 to 1992. and phase three from 1993 to 1998. The emphasis of the project in the first two years was on identifying losses in the quality and quantity of fish landed, and in reducing or eliminating these losses. It was essentially a production-oriented approach that tried to identify losses primarily from a national-level perspective. It tried to define the type and extent of the problem regionally and explore possible technical solutions.

The second phase focused on the needs of the fisherfolk which it saw as primary stakeholders along with the consumer: A wide range of activities were carried out during this phase. New activities were also taken up – such as flying fish marketing, insect infestation control and tuna processing. The geographical focus at this stage of the project was predominantly India, with a few activities taking place in Bangladesh and Sri Lanka. The project identified post-harvest problems at both the macro and community levels, then identified technical solutions to overcome them. It worked with NGOs and government departments to encourage and support the transfer of these technologies.

The third phase changed considerably from the previous two phases. Some activities which were considered unsustainable were dropped, some others were radically restructured, and new activities were taken up. Fish marketing, anchovy drying and the use of ice have continued from previous phases but have expanded into new locations along the Indian coast. Fish smoking in Andhra Pradesh has proved to be an important activity.

The geographical focus of the work has expanded to include new projects in both Sri Lanka and Bangladesh. In Sri Lanka, work with cycle traders using ice has expanded from its base in St John's Market to wider use of ice boxes along the coast. In Bangladesh, the focus of the project has been on poor coastal communities in areas where inshore resources face over-exploitation. The project aims to increase the post-harvest income from landed catch and to assist fisherfolk to diversify into income-generating activities outside the sector.

A far greater emphasis has been placed on building the institutional capacity of local partner development agencies in the NGO and public sectors, and on designing methodologies to address the needs and capacities of these agencies as well as those of the fisherfolk. Post-harvest overview literature prepared by the project for each east coast state in India and for Bangladesh and **Sri** Lanka has helped improve awareness of post-harvest issues at the policy level.

Phase 1 of the project focused on reducing fish losses, phase 2 on technical solutions to post-harvest problems, phase 3 on improving the living standards of post-harvest workers.

Evolution of Project Strategy

The project has gone through an evolutionary process over the last ten years. Initially it was predominantly production-focused, trying to identify micro-level technical solutions for problems with national-level significance and regional-level transferability. In the second phase the emphasis was on attempting to promote such technical solutions at the community level. Fisherfolk were encouraged to adopt technical innovations from the project that were designed to benefit their lives. But the project assumed that fisherfolk accorded high priority to post-harvest issues. This assumption was not always correct.

Encouraging women to form groups, save money and obtain bank credit was an important project activity.

S. Jayaraj

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The successes and failures of the second phase led to a change of emphasis in the third phase towards a closer partnership with fisherfolk involved in post-harvest activities. This partnership jointly identified problems important to the fisherfolk, and developed solutions to those problems which had direct relevance to the needs, experiences and capacities of the fisherfolk. Greater emphasis was placed on assessingthe appropriateness of project interventions for the needs and priorities of the fisherfolk and less on the efficiency of technical interventions.

While retaining environmental concern, there was a shift in perspective from mainly technical and economic sustainability towards greater concern for social and cultural sustainability. The project has progressively shifted from a technology-centred approach to a people-centred approach. This has meant that while post-harvest interventions are still the main focus of the project, other issues often have to be addressed in parallel if a positive impact is to be achieved. This reinforces the realisation that fisherfolk are involved in a wide range of inter-linked and inter-dependent activities, only some of which relate directly to the post-harvest sub-sector. This shift in emphasis has led to greater ownership by the fisherfolk of the processes of change and has contributed to a substantial increase in the uptake of improved post-harvest processes in the third phase.

In early 1997, DFID commissioned a study on the impact assessment of the project. This provided a very detailed and comprehensive insight into the level of impact at various locations studied by the team. This concluded that the project has made significant improvements in its impact on the fishing communities of the three countries since it began. This was partly because of the change of emphasis in the third phase of the project but it is also because of the momentum the project had built up over this long timeframe. This has allowed a strong interaction with key partners and fishing communities,

Vijay Kumar

Apart from post-harvest technologies —such as use of ice boxes —the project promotes community organization, marketing, credit and socio-economic studies. The project approach to development interventions is holistic.

which has contributed to a much greater understanding of the relatively wide range of issues that concern fishing communities. With the considerable enthusiasm evinced by the fisherfolk as well. the demand for project support was very strong.

The falling catches from inshore resources in India played a significant role in raising the profile and relevance of improved post-harvest activities. In Bangladesh, inshore resource shortages increased the demand for income-generating opportunities for all fisherfolk outside of the sector. In Sri Lanka the improved well being of fish traders as a result of better use of ice and increased access to a range of other services through better organisation, prompted an expansion in demand interventions along the coast.

Overall Impact and the Future

Although the overall impact of the project has so far been small, it has created the conditions for very large impact in the future if the lessons learnt at the micro-level can be replicated on a large enough scale in a sustainable manner. This will be crucial if positive benefits are to be secured by coastal communities and is a key challenge facing the government and NGOs.

Even though this project will close, the scope for continuing work with coastal communities through DFID-funded support is very promising. In Bangladesh a mission last year suggested that DFID should consider expanding its support to coastal fishing communities. DFID is strategically placed to provide this assistance, given its long experience in working with inland fishing communities.

In India, a mission is planned for April 1998 to assess the scope for working with coastal communities through an integrated approach focusing on livelihood strategies.

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A tale of two tricycles

By B. Gomathi

Enabling womenfish vendors to reach the fish market by providing them with a tricycle seems a great idea. But it didn't work in Periakuppam near Mahabalipuram, Tamil Nadu —because there were management problems, a driver was difficult to find, the village men were hostile, and so on. However, when bicycles were made available to womenfish vendors in Nagapattinam, the result was much more successful. This article compares the two experiences.

Woman fish vendors certainly aren't the most blessed segment of society.

Their problems have been well documented. They have to reach markets quickly to sell fresh fish—they don't use ice to preserve it. But it's a daily nightmare. They have to walk long distances to a bus stop with heavy headloads of fish. The buses are infrequent and crowded, and the women don't exactly find themselves welcome. The passengers, the conductors and the drivers give the women a hard time, objecting to the foul smell, sometimes to wet and leaking containers. It's often only a bribe that gets them in.

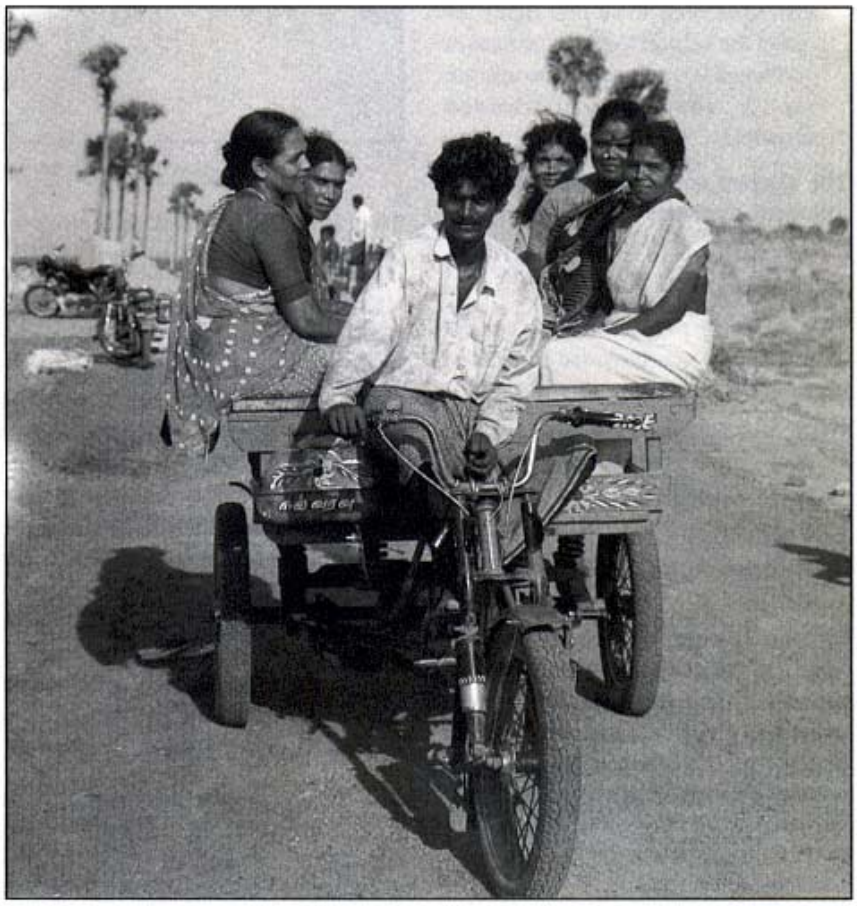
A tricycle for Periakuppam women

In 1994, the Post-Harvest Project made available funds for a motorized tricycle to assist women from Periakuppam village in Chengleput district, near Mahabalipuram. An NGO active in the village liaised with the project. A sangam or group of women was entrusted to manage the tricycle, with assistance and support provided by the NGO.

The tricycle's expected advantages were many. It would enable women to reach the market or bus stand, and in time; it would reduce the women's physical burden of carrying headloads of fish; they could return home early and attend to their children and their family; the tricycle would also be available for the village to provide any emergency service.

The problems

The NGO and the sangam tried to manage the tricycle operation as best as they could, but ran into many problems.



S.R. Madhu

The tricycle at Periakuppam

- **Finding a reliable driver:** Men in the village looked down on driving (particularly driving the women) as something beneath their dignity. The women were unable to defy conventional gender norms and drive the vehicle themselves. So they had to depend on a driver from an inland village on whom they had no control. There were incidents of some drivers disappearing with a couple of spare parts.
- **The cycle broke down frequently and needed repair** : Since the women were unfamiliar with the mechanics of a tricycle, they were cheated by the drivers as well as by mechanics who exploited their gullibility and ignorance. Some of the repairs were caused by the driver's carelessness.
- **Poor road** conditions: Continuous heavy rains had damaged roads,

aggravating the problem of repairs to the tricycle.

- **Lack of community support**: Male leaders of the community did not relish the fact that the tricycle had been handed over to a women's group and not to the village panchayat. They believed that women are not meant to manage machines.
- **Conflicts within the sangam** Sangam women quarrelled with each other over the heavy burden of repair costs which they had to meet. They also squabbled about first rights for use of the vehicle to reach the market – though it was supposed to operate on a first-come-first-served principle.

The sangam and the project tried the following measures:

- They tried to get the village panchayat to find a good driver.
- A training programme on engine mechanics was provided to women from the managing committee.
- A few men were co-opted into the managing committee to win their co-operation and support.
- The activity was periodically reviewed in an attempt to resolve conflicts

In spite of these efforts, the tricycle project at Periakuppam is plagued with problems, and the vehicle remains unused much of the time. A solution is elusive – perhaps because of unsatisfactory guidance from the NGO, the sangam's lack of cohesiveness, and poor support from the community, particularly the men.

Tricycles in Nagapattinam

In Nagapattinam, Tamil Nadu, the project's partner NGO was keen on introducing tricycles for women fish vendors covering six fishing villages where it is active. The NGO was confident that it would be able to tackle the kind of problems that were encountered in Periakuppam. The PHF project referred the NGO to the British High Commission, New Delhi. Funds were made available to the NGO under the British Partnership Scheme for the purchase of three tricycles.

A meeting of fisherwomen discusses the tricycle.

Two tricycles started operation in October 1996, a third in April 1997.

The NGO and members of its sangams in Nagapattinam undertook management of the tricycle in a meticulous fashion. (The sangams of this NGO are more cohesive and mature than those in Periakuppam.) They worked out the number of trips the tricycles would make to various places and the timings, the rates that passengers would pay, the parking places etc. A tricycle management committee of seven or eight members, selected from the sangam of the relevant village, but with one or two male members as well, was formed for each tricycle.

The committee meets frequently. The NGO has also deputed a field worker to take care of day-to-day responsibilities in managing the tricycles. Systems have been developed to manage the activity. Examples:

- Village leaders are involved with the tricycle operation, from the planning stage itself.
- Drivers are hired through the panchayats of fishing and inland villages.
- Management committee members carry out various responsibilities in rotation
- The committee organizes help with accounting. engine mechanics and simple repair. Training is given to committee members on engine mechanics. Initially the field workers maintained the accounts, now the sangam members do so.
- The NGO provides timely inputs whenever any problems arise.
- Petitions have been submitted to the authorities for getting village roads repaired to reduce tricycle breakdowns.
- The activity is regularly reviewed.

Lessons Learnt.

1. ***The group that manages such an activity must be strong:*** The "sangam" or women's group that manages a tricycle operation has to be strong and mature; it should be able to manage money, people and technology efficiently.
2. ***Co-opting male members:*** The activity requires the support of the community and of village leaders. Co-opting them into the management committee to ensure their co-operation would be wise.
3. ***Inputs concerning engine mechanics and repair:*** Training for sangam members on engine mechanics and repair is essential for the tricycle operation to succeed – so that they can attend to repairs promptly and do not get cheated.

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4. ***Management inputs:***

The sanganis should develop a sound administrative system for managing the tricycle. It would have to attend to

- The varying responsibilities of the Managing Committee Members
- Terms and conditions of drivers
- Regular checks on the condition of the vehicle
- Maintenance of records - income and expenditure (for petrol and repairs)
- Fares for transport of passengers and materials (fish baskets and other items) to different places, and timings of trips—to fish markets, to schools, cinema halls etc. — based on priorities.
- Limit on the number of passengers and the load per trip
- Maintenance of accounts and collection of fares.
- Returning the tricycle to its shed every evening, handing over the key to a responsible member.

3. ***Regular review:*** The Managing Committee should organize regular review meetings to thrash out problems concerning the operation of tricycle - the accounts. profitability, the condition of the tricycle, repairs needed, purchase of spare parts etc.

4. ***Initial working capital:*** It would take some time for a sangam operating a tricycle to get it going. Till then, the sangam would need some financial help to take care of initial maintenance. Once the activity stabilises, the sangam can take care of repair costs easily. To maintain the tricycle in a good condition, the sangam ought to have proper parking space (probably a shed with a lock) for protection from sun, rain and theft or vandalism.

At present, the NGO in Nagapattinam makes a modest profit from the tricycles. More importantly, the tricycles perform the function they were meant to perform —help and enable fish marketing by women vendors.

S.R. Madhu

Women from the fisherfolk community around Nagapattinam (above) also wanted a tricycle. Three tricycles now operate in villages of the area (below).

S.R. Madhu

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"It was worth it"

By Venkatesh Salagrama

The Post-Harvest Project's officer in Andhra Pradesh, who was responsible for introducing and extending technologies in that state, takes an irreverent look at the work done over the past 10 years and what remains of it.

What is the enduring contribution of the DFID Post-Harvest Fisheries Project to Andhra Pradesh? A couple of thousand ice boxes of different types and sizes, scattered all along a 1,000-km coastline? A few *permanent* drying racks? Or smoking bins? Or fish pickles?

One of the important questions that we who worked in the project faced regularly, and could not answer quite well, was: What exactly is the DFID Post-Harvest Fisheries Project? The answer varied depending on the occasion: a technical co-operation agency, a funding agency, a government agency (not Indian, of course), an NGO... But no answer was quite satisfactory. We talked about non-technical issues in technical workshops and *vice versa*. We couldn't help it. Where did the project fit?

"If the project had a lifespan of 50 years, the learning process would perhaps have been less vigorous."

In its one decade of existence, the project conducted hundreds of training programmes on value-addition and developing entrepreneurial skills. At the same time, for every programme it conducted, and for every promotional leaflet circulated, it sent a hundred letters to eager enthusiasts, imploring them not to jump into the value-addition business because... the reasons are too many to recount here. What in God's name was the mission of the project?

These questions become relevant in the context of the impending closure of the project. While talking of legacies might be too ambitious, it definitely is important to summarize the project's work in Andhra Pradesh. The answers to these questions perhaps represent the contribution of the project to the development of fisheries in general, and post-harvest fisheries in particular.

Ashok Krishnaswamy

The project carried out several post—harvest interventions with the fisherfolk community in Andhra Pradesh. Time community's response was excellent.

If the project had a lifespan of, say. 50 years, the learning process would perhaps have been less vigorous. Success or failure would have taken its time, and there would be a sense of inevitability to whatever happened. But with a span of 10 ten years, lessons had to be forced out, because response time was very low. New avenues had to be explored, new approaches taken and new programmes constantly initiated, providing a chaotic picture indeed, particularly in the first few years.

Non-Starters

The list of non-starters initiated by the project in Andhra Pradesh is impressive: there was the shark-skin extraction programme, which succeeded in producing leather that even the project staff were loathe to use; there was the sub-project to produce indigenous shrimp feed at low cost – the resulting product was more expensive than the imported feed; there was the programme for improved utilisation of shrimp trawl by-catch, where the improved produce was so much more expensive than the traditional product, that even dry-fish connoisseurs kept away from it; and then there was the Mother of all programmes - production of Masmeen - which very few had ever heard of, and fewer still had seen. The project's richest initial leamings were all from failures.

I remember those days of 1993-94, when one of my jobs was to sit on the beach watching the beach-seines being hauled in, inch by painful inch. I stood guard to quantify the catch, see its disposal patterns and work out the unit economics, to study the possibilities of

improving the utilisation of catches. It took the fishermen — nearly 80 people in all — about six hours of hauling, before the catch could even be *seen.* Out of sheer boredom, I would sometimes contribute my relatively insignificant mite to the pulling effort. I remember my first sight of a *live* sea snake. It was on the first day of my vigil: I had waited for nearly five hours before the bag came in. In my eagerness, I walked too close to the net, noting the contents. when I saw this supine creature moving languidly among the fish. It must have been about four feet long, and if I knew my zoology right, was one of the deadliest snakes in the world. Not that it mattered: its slithery body was enough to send a chilly sensation down my back. I suddenly jumped on to my bike, and rode off — away, away, as far away as I could.

"Today the project's work is not only widely known, but has influenced a large number of people to take post-harvest fisheries seriously."

I got used to the snakes gradually, although not to the extent of calling them my friends. To the fisherfolk there I was initially a curiosity, perhaps even a suspicious character: the chap who wants to note down details of their catch. Later they got used to me — like I got to the sea snake. Nothing came out of the entire exercise, of course. Today, beach-seines themselves are dying out in the area. Erosion and industrialization have killed them. I often wondered whether my vigil was worth anything: in quantitative terms, the project gained nothing. Judging the qualitative aspects of the work, as we learned during the impact assessment exercises, is most often subjective, so little use in this instance.

But the surprising fact is: ultimately it all seems to have added up. Every single hesitant step, every wrong move and every miscalculation added up to an impressive body of work. Every shark leather project, every Masmeen trial, every beach-seine landing: it did fit into the overall framework. Today, the preject's work is not only widely known, but has influenced quite a large number

of people into taking post-harvest seriously. And the importance that people attached to the project is not for its promotion of post-harvest inputs as such, but for *the way it was done.*

Perhaps that is the most important contribution of the project: making a large number of people aware of, and concerned about, post-harvest fisheries. Over the last 10 years, PHF has emerged from its traditional fringe position and become the little new development buzzword. While the project cannot take all the credit for this, its work has definitely contributed to it. How did the project manage the turnaround? Where had all the failures gone?

The Turning Point

The turning point, it appears to me, came at the beginning of the project's Third Phase, starting in 1993. After the initial period of trying to promote ice boxes, drying racks et. al., the project switched to a radically different approach, inelegantly summed up as "bottom-up". After years of working as an "Ice Box Promoter" (which always conjured up images of a beefy Boxing Promoter), one was suddenly taken off-guard when asked to conduct a PRA exercise in a fisherfolk village. What on earth was PRA? It was not as though people were blind to ideas like getting the fisherfolk take decisions for themselves. It was the new terminology, and the strait-jacketing of old practices into new conceptual frameworks, which was frightening, and *challenging.*

The new approach offered some valuable advice. Firstly, do not be pro-active — let the people do the acting, *then* you step in with reactions ranging from sorrow to sympathy to ebullience. *Need Based Approach.* No more meeting targets of so many ice boxes sold to so many fishermen, like the representative of a pharmaceutical company: good riddance. Reactionary approaches may be taboo in politics. but in development it is okay.

Advice Two: let the people do the talking about what they wanted. *Participatory Approach.* You are just a facilitator. Listen and *don't* take notes. Take the most feasible option, discuss it to death with the people, then make them Go Get It, as the ad goes. In effect, it boils down to: get them to say what they want, and get them to *get* what they want on their own. So what was my contribution, one often wondered. We were supposed to Develop, with a capital D, weren't we? Who listens to someone who does not offer anything? But one had more than 200 people visiting the office every month just to pour out their hearts. All you needed to do was to lend an ear. Post-harvest fisheries came by the way: "By the way,

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would you like to try out....."(The participatory approaches did appear to be too systematic to allow the fisherfolk much of a say, but that is another matter.)

"On one memorable occasion, a fisherman likened our work to that of the Missionaries."

That is not to say that we became just a listening post, a shoulder for people to cry on. We had to convey the confidence that most problems were solvable. That we could, if required, deliver what was required. Rapport, trust, confidence: the three pillars of development. However, for a project with a short life, the confidence building could turn out to be a millstone around the neck. And it had to be ensured that the people went to the other sympathetic souls who had longer shelf-life than us, like government and NGOs, with the project merely taking on a mediatory. "catalytic role.

Which was easier said than done. To be able to say that you could deliver, or at least could attempt to deliver, you needed friends. And a friend is one who shares your beliefs. How do you get friends who shared your fanatical zeal for "post-harvestizing" all matters? By brainwashing them, of course. Sermonise incessantly. Make them learn making butter-fly cuts. Make them eat fish wafers. Make them sell fish pickles. And see the results for themselves. The project did training, seminaring, work-shopping and "symposizing" at every opportunity — from roof-tops, at the street-corners, at the landing centres, in hotels and even through street theatre performances. It brought out leaflets, newsletters, publications, reports and what not, circulated them to anyone who had the least interest in the sector. On one memorable occasion, a fisherman likened our work to that of the Missionaries. Good samaritans abroad want to take the creed of redemption to the heathen, so undertake a support programme. Perhaps the fisherman was right.

And the result was that, from 1995, the project had to constantly urge caution against too many agencies. with too little knowledge of all the factors involved, trying to do post-harvest work.

Ashok Krishnaswamy

Much effort was expended on developing an improved fish smoking bin. It led to several women raising their incomes.

The so-called technical interventions were the easiest part of the bargain: you could train the fisherfolk in barely one day in value-addition methods. It was only when it came to the credit requirements for undertaking the activities commercially, and to ensure proper marketability for the improved items that one faced the Grand Dilemma: To Do or Not To Do. There were things that the project could do, there were things that it could not. Both credit and marketing issues were slightly off-centre in post-harvest as far as conventional wisdom goes. and consequently, off-limits for a large part. The project could look at the state of things, try to discuss possible options. advise partners about possible pitfalls. but could do little else. Still, that the project has been able to raise a number of pertinent issues related to credit and marketing is not a chance occurrence.

Why Networking?

One of the important lessons that the project has learned is the usefulness of networking. There are agencies with the right ideas and there are agencies with the right kind of money, but there are few agencies with *both* the right ideas and the money to put them into action. Bringing them together is the simplest and often the easiest way to achieve the ideal balance. Linking agencies with good knowledge of post-harvest issues, such as the Department of Fisheries, with agencies which have thorough knowledge of the fisherfolk commmunities. such as NGOs, is another area where considerable effort has gone in. Bringing together the producer groups in different parts of the east coast of India is the third, rather unfulfilled. task of the project. The underlying principle, and one which it learned through experience, is the striking similarity between these agencies in their perceptions, problems and coping strategies. A lesson learned in one area seemed very well adoptable and replicable in another. This has its problems and pitfalls, but that is another story. Curiously, the linkage section also included establishing vertical linkages: bringing together people from various

ranks of an organisation, allowing them to brainstorm at various levels and opening opportunities for more frequent interactions, has indeed been a very fruifful exercise.

Lessons from Activities

Coming to the lessons from some of the project's activities. The project started off in Andhra Pradesh with the Use Of Ice Onboard activity in 1988. Promotion of specific ice boxes for specific fishing crafts did not yield a very good response: indeed, it yielded a very poor response. notwithstanding the generous subsidy component. The activity almost died a natural death in mid-1994, but it was the fishermen themselves who revived it. With fisherfolk requesting, asking for, *demanding* ice boxes at whatever price but not necessarily the same boxes promoted by the project, it not only survived, but went on to become one of the most successful activities for the project, opening opportunities for replicability elsewhere.

Moral of the story: Restrict awareness generation to concepts rather than specific tools. Exactly what kind of of ice box the fisherman uses is not as important as the fact that he uses one. Later, knowing there is a better and more cost-effective way of carrying ice into the sea, the fisherman does not need to be brainwashed into choosing the better option.

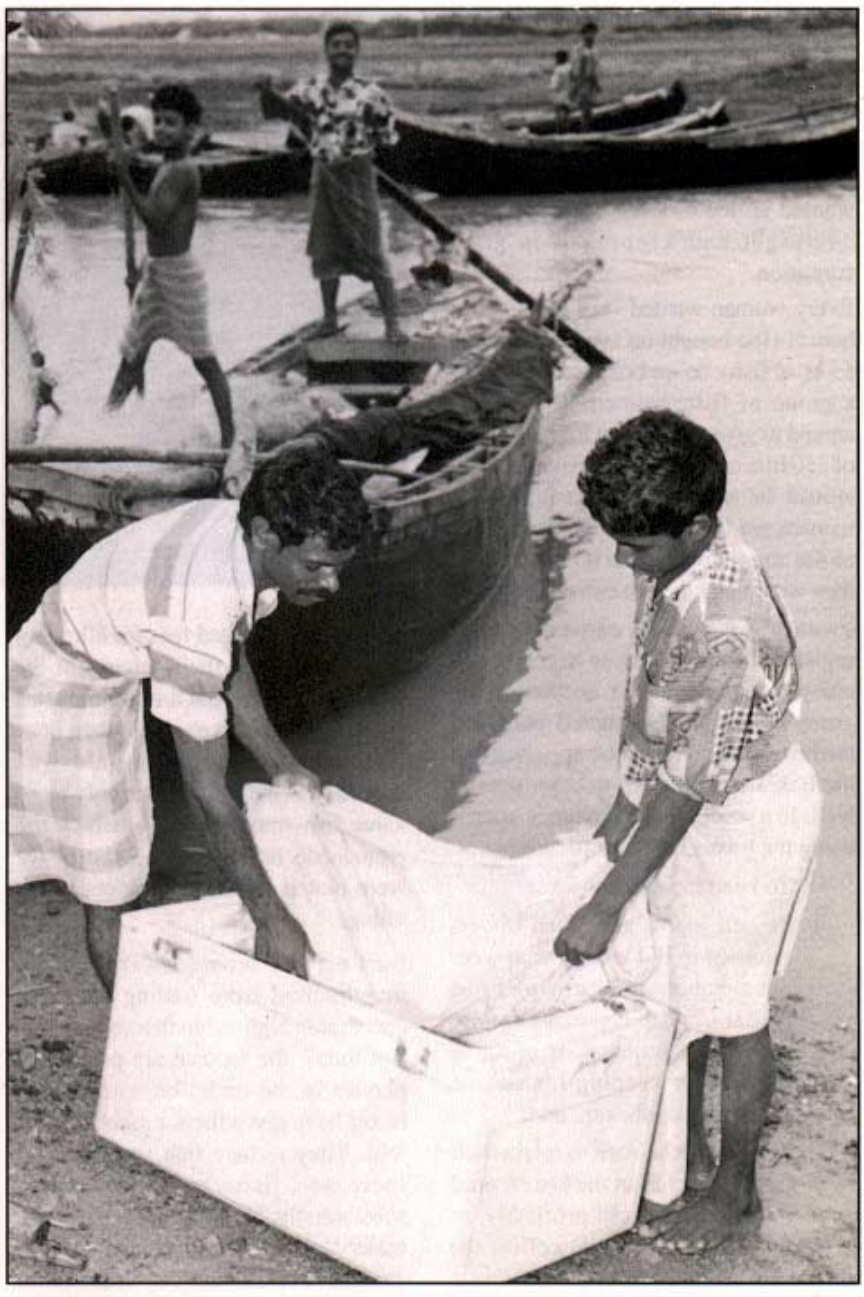
Another important project activity: introduction of the smoking bin. The fact that the activity started off as a pilot study to make the ill-fated, and Not-In-the Least-Lamented, Masmeen, and ended up developing an improved version of smoking method, provides a lesson in flexibility. The rather clumsy handling of the implementation programme for smoking bins by the agencies involved, holds lessons for all development agencies, irrespective of whether they are working in fisheries or atomic energy, on how *not* to implement a programme.

What has been discussed as learnings of the project is perhaps old hat to some of the agencies. Where the project came into its own is in trying out these approaches for taking the message of post-harvest to the people and the agencies. With little manpower (there were less than a dozen field personnel in the project), less money (the project's annual budget is about half that of any decent middle-level NGO), and least of all, time, there was one thing that the project had ample amounts of: the ability and opportunity to bring togetherthe approaches tried out in different sectors, hybridise them and bring forth a strategy for promotion of post-harvest fisheries sustainably.

In conclusion, the project staff would be the first to deny that the project has been able to explore every opportunity to the fullest. Far from it: it had not even touched upon many issues. For instance, it managed no more than a passing look at environmental issues, though environmental conservation is the current development *mantra.* Even in those concerns which it did champion, it could no more than touch the tip of the iceberg.

But for all that, it was worth it. Eminently so.

A few thousand ice boxes - including several hundred in Andhra Pradesh -are now being used by fisherfolk following the project's persistent efforts to promote ice.



Ashok Krishnaswamy

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Empowering women : A success story from Orissa

It began as a pilot activity to demonstrate the use of ice to women in Orissa. But it ended up as an income-generating venturefor women 's groups.

Sahana-Astaranga is a remote fishing village in Orissa. To go there, fisherwomen (petty fish vendors) walk 12 km from the nearest road. If it's raining, they hire a motorized vehicle, which takes an hour.

In 1995, the women of Sahana-Astaranga approached the DFID-PHFP, and requested assistance in fish marketing. Their problem was that by the time they took fish from the landing centre at Sahava-Astaranga to the market, fish often got spoilt. They wanted an ice box for storing the fish overnight and keeping it in good condition.

Every woman wanted very little ice for herself (she bought on average less than 15 kg of fish); an ice box was wanted for a group of fisherwomen. The Project agreed to give the women four ice boxes of 250 litre capacity each, provided these would be managed by groups. The women got the boxes in October 1995, on the understanding that if found useful, they would buy the boxes in six months.

Twenty six women came together, registered themselves as a group and started a common bank account in the group's name. As they started managing the boxes, it soon became apparent that the boxes could be put to other uses as well. In a short time, the women started using the boxes for three purposes:

a. To keep their fish overnight.

b. To sell ice to petty fish traders (women in the village who were not members of the group), cycle traders, and fishermen who carried small quantities of ice to the sea for keeping high-value varieties like shrimp, and,

c. To allow fishermen to retain their unsold catches in the boxes, until they could be sold profitably, or until traders came to collect the catches.

The women entered into an arrangement with the traders who brought ice into the village, brought fish and carried catches back. The traders would give the women ice free of cost; in return, the women would ensure supply of fish in good condition.

The women charged fees for allowing anybody to keep their catches in the boxes. (These were at differential rates – group members paid less than non-members). The money paid was deposited in the bank. When only high-value fish were landed – which the women do not deal in – the boxes were rented out to fish traders in the village.

Earlier, the women were totally marginalised from trading activities concerning high-value fish and shrimp. But today, the women are prominent players in the trade, because the ice boxes have given them a much-valued tool. They reduce fish spoilage and increase fishermen's incomes substantially. They also help petty fish traders and small-scale fishermen (who cannot afford to buy ice from elsewhere, their requirements being small).

Results:

After using the boxes for one year, the women's group bought one of the boxes at full price with the money generated by the boxes. They also erected a makeshift shed for keeping the boxes at their own expense. More importantly, the group started meeting regularly, and became a more cohesive unit over time. The fact that a group exists there has spurred local agencies like banksto look more sympathetically at their needs, and process their requests for assistance more favourably.

After completing trials of the boxes, the project withdrew three boxes from the group. The group paid Rs 3,000 and retained one more box. A sum of Rs 1,000 was deposited into a bank to fund future repair and maintenance of the box.

After a further year, the group was able to collect Rs 10,000 and buy two ice boxes of 500-litre capacity.

Appraisal of the activity and learnings:

This activity started offmainly as a pilot study to demonstrate the use of ice to women. But it was able to explore the full potential of ice as an income-generating venture for women groups. The fact that the exercise started on the basis of the women's felt needs, made it possible for them to widen the scope of the activity, and make it a successful community-level women's venture.

The major learning is how a technological intervention could lead to a more concerted forum for the women to solve, as agroup, their other problems – such as marginalisation in fresh fish sales, and access to institutional support.

– **Binod Mohapatra**

Assisting Set Bagnet Communities in Bangladesh: The Project Experience

By Shamima Nasrin Mili

In Bangladesh, the project tried out three models of institutional support for set bagnet communities, aimed at improving their incomes and living conditions. This article outlines the three models and the lessons learned; details of the activity are found in project reports.

The Post-Harvest Fisheries Project began work in Bangladesh with a study of set bagnet communities in coastal areas. Aims — poverty alleviation; and reducing the pressure on marine resources created by set bagnets, which are a resource-damaging gear.

During that study, the people of the community took part in a participatory appraisal and helped collect information. This helped to illustrate and demonstrate the benefits and advantages of the group-based approach.

The current phase of the project started in 1993. Its main purposes are:

- To develop a model of institutional support for assisting set bagnet communities through poverty alleviation, by addressing post-harvest fisheries and non-fisheries concerns, adopting the group approach.
- Enhance the capacity of NGOs and the Department of Fisheries (DOF) to meet the needs of set bagnet communities and strengthen the ability of fisherfolk groups/ associations.
- Enhance the incomes of artisanal fishing communities and petty fish traders and improve the quality of fish handled by them.

To develop a model of institutional support, three communities were selected:

- A traditional Hindu fishing community in Bakkhali, Chittagong, where the project would work with a medium-sized NGO.
- A tribal Buddhist fishing community in Rakhainpara, Cox's Bazaar through a grassroots level NGO; and
- A Muslim fishing community in Rehania, Hatiya — direct project intervention.

Several income—generating activities for women were introduced in Bangladesh through the project's partner NGOs.

Here are some basic facts about the three communities, and the three "intervenors".

North Bakkhali : CODEC

A medium-sized NGO, Community Development Centre (CODEC), serves as project counterpart in North Bakkhali (at Sitakurdu, Chittagong). Since its inception, CODEC has worked exclusively with coastal fishing communities. CODEC organized two male and two female groups among the set bagnet community and created a Revolving Loan Fund (RLF). The project's input was limited to training.

Rakkhainpara Community :AZAD

Rakkhainpara has a tribal Buddhist community that depends on fishing. AZAD. a local NGO in Kaurushkul, was assisting a Rakkhainpara community. During 1993-94, DFID-PHFP conducted a socio-economic study in Rakkhainpara which helped AZAD to

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build up rapport with the community. AZAD started activities in Rakkhainpara with Project support and organized some groups. In 1995, AZAD started a pilot project under DFID-PHFP with new objectives and goals. Two female, one male and two youth groups were organized in Rakkhainpara by the NGO.

Rehania Community: Direct Project Intervention

Rehania is a Muslim fishing community mainly inhabited by victims of river erosion. The project entered the community during 1993-94 with a socio-economic study. Pilot activities were started from 1995. Three female groups and one male group were organized. Various activities are going on to develop their socio-economic conditions.

Apart from these three examples of community institution building, the project enabled NGOs operating in coastal areas of Bangladesh to establish a network or common forum to work efficiently and effectively with coastal fishing communities. As a result "Coastal Fishing Community Network (COFCON)" evolved in 1997 with 31 NGOs as members.

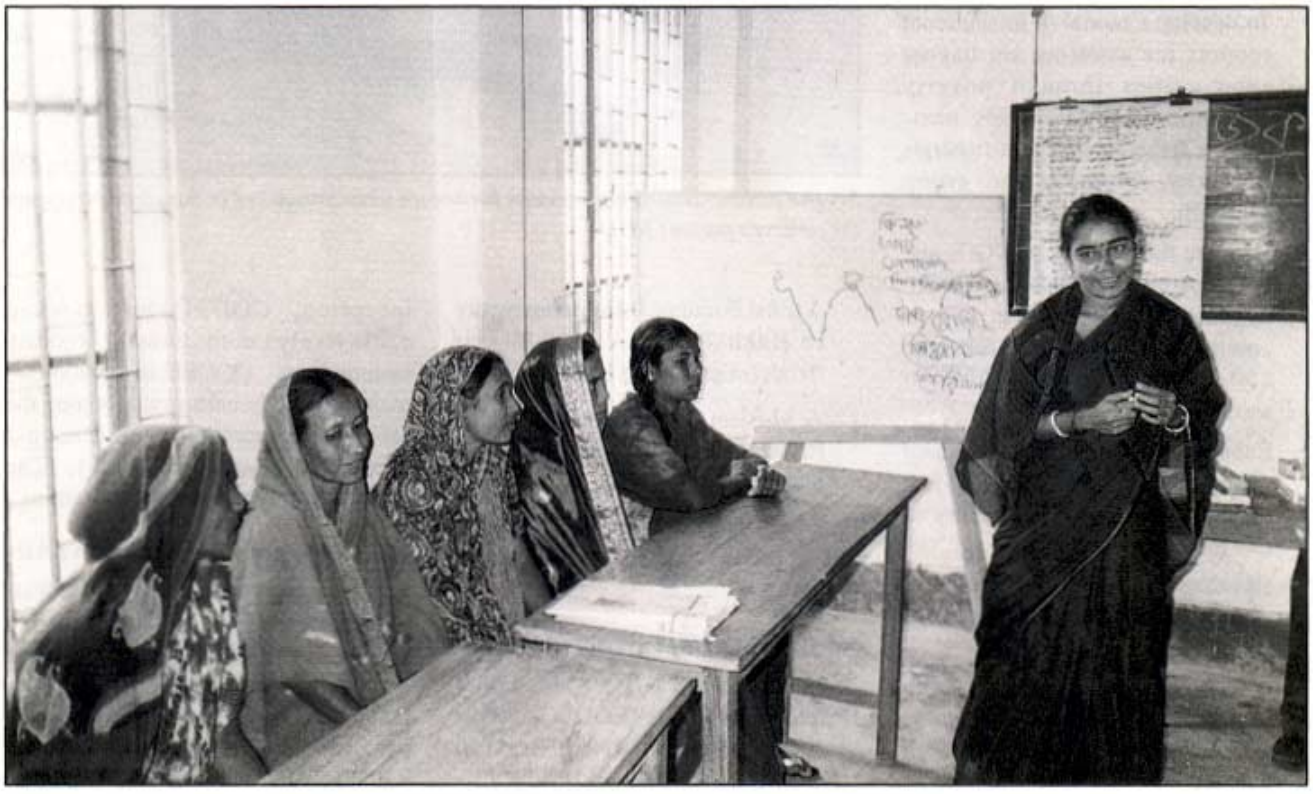
Lessons Learnt – About NGOs

1. Large NGOs are not very interested in small-scale project activities or in working with small NGOs.
2. Expectations among small grassroot-level NGOs, in relation to their capacity, are high.
3. Small NGOs lack skilled manpower. Staff training is necessary for a project working with them to achieve its goals.
4. Small NGOs are poor record-keeping. Training is necessary to help them maintain records and documents systematically.
5. Small grassroots-level NGOs often face cash crises. Some nominal funds followed by training, could enable them to increase their efficiency and utilise the knowledge gained.
6. Sometimes several NGOs work with the same community. The same person is therefore involved with more than one NGO. This has provoked conflicts between NGOs at the field level.
7. Administrative and management problems are very common among small local NGOs. They need assistance to overcome these problems.

An NGO network enables information to reach remote coastal areas efficiently, effectively and in quick time.

8. Small and middle-sized NGOs evince keen interest in implementing pilot projects. They are also more energetic in assisting target groups.
9. NGO co-ordination in the field is necessary to avoid overlaps, conflict and competition.
10. Individually, NGOs are unable to meet all the needs of coastal tisherfoik effectively and efficiently. A network or forum among coastal NGOs could enable effective and sustainable socio-economic development of coastal communities.

One of the many women's groups formed in Bangladesh through the project's partner NGOs. Savings and credit schemes, followed by income-generating activities, were introduced among them.



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11. Large NGOs do not seem interested in such a forum. It is small and medium sized NGOs without much experience, who sustain the forum.

12. At such a forum, NGOs acquire knowledge and receive support from experienced NGOs. This is evident from the network COFCON (Coastal Fisherfolk Community Network) formed in Bangladesh.

13. An NGO network enables information to reach remote coastal areas efficiently, effectively and in quick time.

Lessons Learnt – About Target Groups

1. Community groups should be formed on the basis of their cohesiveness and common interests.
2. Influential members of a community may try to corner all the benefits from a project's activities. The project should try to ensure focus on target groups.
3. A group can fold up quite easily for lack of proper leadership or cohesiveness, or lack of transparency in decision-making, particularly in handling financial matters.

Marketing channels should be established if alternative IGAs are to succeed. Without them, the IGAs cannot be profitable.

4. Personal differences could create conflicts and break-up of the group. Family problems and hindrance from in-laws may make a member withdraw from the group.
5. Transparency is essential about a group's objectives or about members' motives. This can sustain the group even after group leaders desert it.
6. Group activity should be participatory and closely monitored.
7. Group cohesiveness and solidarity are pre-conditions for any group activity. This will strengthen the confidence of beneficiaries.
8. 'A community group should be modest about what it can achieve from a development intervention. If it expects too much, it may suffer serious disappointment.
9. Any internal conflict should be resolved as soon as it is noticed.
10. Bringing about stability in a group requires an adequate time-frame, say 4 to 5 years.

E. Amalore

Several training courses were held for women from set bagnet fishing communities.

Credit and IGA

1. Women are creditworthy even amidst poverty and hardship. With a little support, they can overcome problems and contribute to the success of a group.
2. Credit without proper motivation and monitoring cannot help promote income-generating activities.
3. Innovative ideas on new IGAs could come from non-members. Ideas put forward by them should be carefully assessed before they are turned down.
4. Marketing channels should be established if alternative IGAs are to succeed. Without them, the IGAs cannot be profitable.
5. Market information is essential before one takes up IGAs.
6. Proper training on costing. accounting and record-keeping is necessary to make IGAs sustainable.
7. Female entrepreneurs require support from male counterparts for marketing or purchase of raw material, as women may not be able to travel as freely as men. Close co-operation between husband, wife and family members can ensure success.
8. Inculcating commercial aptitudes and skills into any community takes time.

Social Issues

1. It is very difficult for women to overcome the bias of tradition – which sometimes is exploitative.
2. Awareness-building on gender issues and on legal aspects is necessary for a group to learn self-respect and self-reliance.
3. Language could be a major development barrier. For example: A development project that enters a tribal area which has its own language could be handicapped if its staff do not know the tribal language.

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Looking Back Pictorially

A random pictorial sampling of project work in India, Bangladesh and Sri Lanka carried out in partnership with governments and NGOs.

1. *Mother and child from set bagnet community near Chittagong. Bangladesh.*
2. *Handloom weaving by woman from Rakkhainpara fishing community near Cox's Bazar in Bangladesh.*
3. *Nava fishermen of Andhra Pradesh use insulated fish box.*
4. *Rack-drying of anchovies in Andhra Pradesh, promoted by the project to improve fish quality*
5. *Ice box being used aboard the popular 18-footer of Sri Lanka.*

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Vijay Kumar

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George Mathew

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6. *Participants discuss "impact assessment" at a project seminar.*
7. *Bankers and fisheries officials discuss credit for fisherfolk at project-sponsored workshop in Tamil Nadu.*
8. *Bangladesh fisherwomen – they benefited from group formation, training, savings schemes and credit promoted by the project.*
9. *Fish marketing made possible by project-designed aluminium fish containers in Tamil Nadu.*
10. *Bicycle fish traders in Sri Lanka with insulated boxes designed and developed by the project.*
11. *Mat-weaving – income—generating activity by target group fisherwomen introduced in Tamil Nadu through ROSA, projec' s partner NGO.*
12. *Fish smoking in Andhra Pradesh through improved smoking bin, which enabled some women to improve their earnings.*

George Mathew

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Ashok Krishnaswamy

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Cycle Fish Traders : A new identity

by Chandra Silva

in Sri Lanka, the Post-Harvest Project helped hundreds of cycle fish traders. It encouraged them to form societies that gave them a sense of identity and improved their access to credit. it designed and developed insulatedfish boxes to improve the quality of fish sold by them and raise their incomes. The project's experiences, both positive and negative, are outlined in this article.

Thousands of small-scale mobile retail fish traders in Sri Lanka operate from major wholesale markets and fish landing centres along the coastal belt.

An estimated 8,000 cycle traders are involved in the retail fish trade, while over 800 operate from St. John's Fish Market in Colombo.

Of these 800, around 68% are push-bicycle traders and the rest are motorcycle traders. They live within Colombo city limits as well as in suburban areas up to distances of *15-20* km from the fish market.

A study revealed that, on a good fishing day. a motor cycle trader carries about 60 to 90 kg of fish and travels over 100 km. in the course of his marketing effort.

Background

Sri Lankans love fish. But a majority of fish consumers do not possess refrigerators and depend on mobile fish traders for their daily supply of fish. A trader normally sticks to the marketing route or territory that he has cultivated over a period of time. Besides casual buyers, each trader has many regular clients along his route. He tries to carry an assortment of fish varieties to satisfy consumer demand. He cuts the fish according to consumer requirements. To maintain good relations with consumers, he resorts to credit sales, though he himself has to borrow from moneylenders to continue his trade.

The cycle traders have no way of preserving any left-over fish. In the evening they are compelled to dispose of any unsold fish at reduced prices or face spoilage.

On an average, a push bicycle vendor carries between 10 and 30 kg of fish a day and a motor cycle trader between *25* and 50 kg. Assuming 10 kg. as the average, 8000 traders would be marketing as much as 80 mt. of fish per day. A handful of them use styro-foam boxes reinforced with wooden frames.

These boxes are unhygienic and have no insulation properties.

In 1991, the DFID-PHFP identified cycle traders as a target group for studying their social and economic conditions and identifying their problems, needs, aspirations and priorities. Aims:

- Improve their living standards and quality of life by raising their incomes.
- Reduce risks inherent in trading through improved post-harvest practices and technologies and also provide better-quality fish to consumers.

The cycle traders borrow money from private moneylenders at exorbitant rates of interest - 3 to 5% per day.

Formation of a Co-operative for Cycle Traders

The project decided, as a first step, to organize and unite the cycle traders operating from St. John's fish market by forming a society. Initially some trader-volunteers were selected and asked to carry the message to other traders. St. John's Fish Market Mobile Cycle Traders Co-operative Society was thus formed in 1992 with 31 members. An executive committee was selected from active members of the initial core group.

As these traders had several problems with the traditional fish containers in use, a hygienic semi-insulated fish box made out of fibreglass was designed, developed and issued by the project to some members for hands-on experience. Encouraged by the success of the Colombo experience, another cycle trader association was formed at a major fish landing centre in Negombo. Currently, the membership of these two societies stands at 303 and 353 respectively. Each society is an independent unit with well-defined rules and regulations and has its own manager

S.R. Madhu

Cycle fish traders at St. John's Fish Market in Colombo (lop right). Consumer bus from cycle trader (centre). Traders settle accounts with their society (bottom).

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and a member-executive committee elected annually.

Objectives of the Co-operative Society

- Organize the itinerant petty fish traders into a cohesive unit to give them a vocational and collective identity.
- Spur closer interaction among the traders and guide them towards a common goal through mutual co-operation.
- Improve the living standards of the members and enable them to win better social recognition.
- Provide better quality fish to consumers at reasonable prices.
- Establish linkages with government, non-government, banking and other institutions.
- Enhance access to credit and marketing.

The members of the cycle trader societies had no previous experience in running or managing an institution. Training and orientation programmes based on participatory methods were designed and developed to help them develop their skills.

These programmes focussed on:

- Needs and problem analysis.
- Leadership qualities.
- Awareness-building and motivation.
- Management, administration and report writing.
- Basic book keeping, accounting, banking and financial management.
- Micro-enterprise development.

In addition, technology-oriented workshops and training programmes were conducted with the help of the National Aquatic Resources Research and Development Agency.

Initially the two societies were assisted guided and supervised closely by the project-supported NGO, INASIA.

The training helped the members to overcome most of their problems and shortcomings, gain confidence and develop management skills.

A daily savings scheme was introduced. A member could save with the society whatever he could afford on a daily basis.

An instant loans scheme was also started. A member with sufficient savings could obtain a loan up to Rs. 1000 any morning, at 4% interest for 14 days. This scheme was operated by the manager, subject to availability of funds allocated from the savings capital.

Long-term loans were also available. These were essentially bank loans for the purchase of push bicycles and motor cycles, fish boxes, and for redeeming debts etc.

Besides the cycle traders, the project was successful in introducing fish trading to 37 unemployed youth living in Kandy and Matale districts. Ten multi-purpose co-operatives in Central Province provided loans to these people to take to fish trading on push bicycles. Most of these youth were new to fisheries – in fact they could not even make out one fish species from another. The success of this pioneering activity has led to demand from a large number of co-operatives in hinterland areas for fish marketing as an employment generation activity.

In general, a push bicycle trader selling 10-15 kg. of fish earns a net income of Rs. *250* to *350* per day. The income of a motor cycle trader is much higher than that of a push bicycle trader; he deals in higher volumes.

Links have been successfully established between the cycle trader associations and the Department of Fisheries and Aquatic Resources, the ADB-funded Fisheries Sector Development Project in Sri Lanka and commercial banks.

Membership Growth of the Two Cycle Trader Associations

Year	*Colombo*	*Negombo*
1992	31	–
1993	63	–
1994	105	–
1995	127	51

The societies tried to increase membership, so that more members would participate in savings and credit programmes, thereby improving the financial strength of the societies. Only a few members were active in credit and savings schemes. Further, many members did not have the capacity to participate systematically in savings and borrowings programmes.

The response to the membership drive was lukewarm. A survey revealed that a majority of the new members had joined the society to obtain substantial loan benefits, to build houses, buy motor cycles and push bicycles, buy refrigerators etc.

Many of the societies' members cannot satisfy commercial banks' lending criteria, nor can they take a big loan. The two societies, on the other hand, are unable to respond positively to the demands and aspirations of very poor members.

Lessons Learnt

- It is difficult to organize scattered informal groups of cycle traders into a society, ensure their participation and sustain the progress of activities.
- Bringing about attitude change is a slow process.
- The societies showed slow uptake of support. There was a need for continuous guidance, support and supervision.
- The societies suffered from over - dependence on the NGO and the project for management and financial support.
- Members gave a high priority to credit – it would help image building and the process of upward social mobility.
- Sharing of the societies' benefits among members was unequal.
- There was low priority among members for adoption of insulated fish boxes, because of comparatively high cost of the box.
- The societies helped reduce dependence of traders on private money lenders.
- There is negative impact on the stability and sustainability of a co-operative society when unqualified people are recruited for management positions.

Spreading the good word

The Post-Harvest Project has been pro-active in extending and disseminating its work. The tools used have been information, workshops and consultations, technical demonstrations where appropriate and village-level extension.

The project's information output so far includes 13 quarterly newsletters, 12 information bulletins (technical reports and summations of project activities), numerous extension leaflets in English and local languages, "post-harvest overviews" and four video films.

Lessons from the project's information output:

- The Newsletter, *PHF News,* has been popular. Informal comments by fisheries decision-makers have been positive, so have written requests for the newsletter. Issue No.12 on fish marketing inspired a request from the Director of Fisheries, Tamil Nadu—he asked the project to give his staff a detailed briefing on its work with fisherwomen.

- The Newsletter is suitable for top-level and medium-level contacts and decision-makers. Any agency that can regularly put out an attractive pictorial newsletter should do so. But it is a skill-intensive operation, and requires the services of a professional journalist and artist, computer facilities, a bank of usable action photographs, and a quality-conscious printing press.

  However, NGOs should try to put out at least a simple newsletter that periodically informs target groups about what it is doing. They should also consider as a first step a small factual brochure about their aims, activities and services.

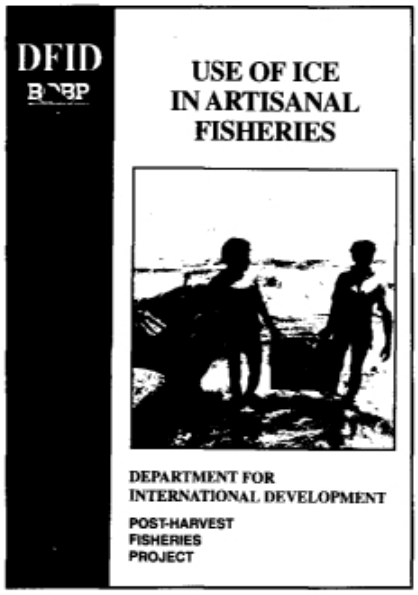
- What about other media? Nothing can match the impact of a good video film on an invited audience of donors or busy decision-makers. A video film's appeal is multi-sensory—to head and heart, eyes and ears. If you have 10 minutes to tell a VIP audience what you are doing and why it needs support, there is no substitute for this medium. A good video film would cost anything between Rs.1 lakh and Rs.10 lakhs (US $2,500 to US $25,000) depending on the video format and the field locations to be covered.

- Slides would be less expensive, but the impact of a slide show depends entirely on its quality. Attempt a slide presentation only if you have professional quality slides.

- The project's extension leaflets in English and other languages — about the use of ice, drying racks, smoking bins, etc.—have been widely disseminated. Such literature in local languages is essential while promoting a technology or technique among fishermenor fisherwomen. It is most effective when it follows a technical demonstration or a workshop. It is less effective as stand-alone material.

- The project's Information Bulletins are found on the libraries and bookshelves of fisheries institutions. It would be safe to assume that this literature makes less of an immediate impact than the newsletter and is read less widely. But the Information Bulletins are of great interest to subject-matter specialists. They are also invaluable as reference material, and are a useful input for policy-makers, decision-makers and experts, besides serving as a record of development.

  NGOs and fisheries departments too, should strive to document all their technical work and pilot activities. These would be useful for themselves and for others. With resources for development work dwindling, projects should learn from one another; effort, time and money should not be wasted in duplicating what has already been done elsewhere.



The project's extension leaflets in several languages, about use of ice etc, have been distributed widely in thefield.

- The project will also soon publish the final versions of various post-harvest 'Overviews' — factual and analytical summaries on the status of PHF in India, Bangladesh and Sri Lanka. These will be useful for fisheries institutions, libraries, officials, researchers and decision-makers.

- The project has conducted scores of workshops, particularly on technical issues and credit, and numerous seminars and consultations for middle-level fisheries department and NGO staff. These have helped considerably in raising awareness on post-harvest issues.

— S R Madhu

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Watch out for this Book of Guidelines on Post-Harvest Fisheries!

"The book contains facts and figures, do's and dont's, guidelines and checklists, lessons and insights... The idea is that it should help everyone active in post-harvest fisheries"

A 150-page book of guidelines on post-harvest fisheries—aimed at NGOs, fisheries officials, development projects and others concerned with interventions in post-harvest fisheries–is being prepared by the Post-Harvest Project. It distils the learnings of a decade **of project work** with artisanal fishing communities, NGOs, development agencies and governments in Bangladesh, Sri Lanka and India.

"What a project leaves behind, apart from its development work and impact on minds, is documentation," says Mr Duncan King, Project Field Manager. "This book is fairly comprehensive. It contains facts and figures, do'sanddont's, guidelines and checklists, lessons and insights... The idea is that it should help everyone active in post-harvest fisheries."

The book provides background information **on** post-harvest fisheries, discusses current technologies and practices, problems and solution options. It encourages a holistic and integrated approach among agencies that work with small-scale fishing communities,

The book is divided into three sections:

Section 1 outlines the relevance of post-harvest fisheries and its current status in south Asia. It discusses the post-harvest fisheries scenario at the macro-level in India, Bangladesh and Sri Lanka.

Section 2 covers three areas: the mechanics of institution-building in rural communities; training principles and methods; and women's issues.

Section 3 on enterprise development, the most detailed section in the book, discusses topics a small-scale entrepreneur should know before getting into PHF. It deals with technical, marketing and credit issues, the whys and hows of monitoring and evaluation.

Perhaps the most interesting feature of the book is its numerous case-studies, most of them based on project work. The lessons and learnings from these case studies are carefully set out. A number of sketches and photographs in colour offer visual relief.

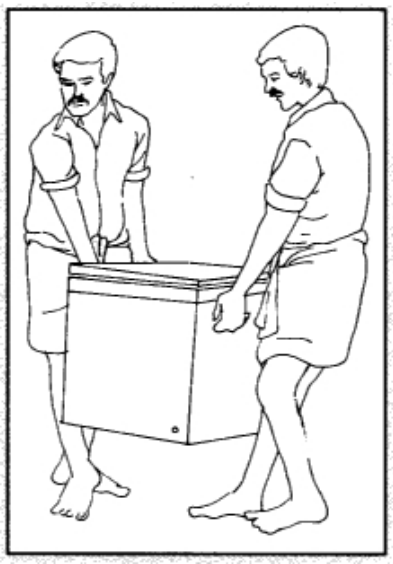
Evolution of the book

Work on the book began with a workshop held in Chennai in December **1996.' Project staff from Chennai,** Kakinada, Bhubaneswar, Dhaka and Colombo, plus representatives from the project's partner NGOs ROSA and Santhidan from India, and INASIA from Sri Lanka attended. Mr. Steve Jones from Cambridge, UK, acted as facilitator.

The participants debated approaches to the proposed book of guidelines. The consensus was that it should reflect lessons from project work. The lessons were discussed, and appropriate case studies to illustrate them proposed. A lot of writing was done at the workshop itself.

The workshop generated a draft document. An editorial consultant later scrutinized and edited it. Some of the case studies were expanded, rewritten or fine-tuned in co-operation with the original authors. The scope of the book was expanded to include a few experiences of other projects as well—and not just those of DFID-PHFP. Sketches were drawn and photographs selected to illustrate the book.

The resulting document was reviewed at another workshop in Chennai, held



5-7 January, 1998. Mr Steve Jones again functioned as moderator.

There was a lively debate on the structure **of the new document. One** view was **that** the case-studies should be rewritten to reflect the sequence of the participatory project cycle, which was described early in the book. But the consensus was against this idea.

Delegates went through the book page by page. They were frank, at times brutal, in throwing out case studies or descriptive portions that they regarded as weak or of marginal relevance.

This revised version is presently being edited and honed. More sketches are being prepared. A DTP operator is formating the materials on the project computer.

The book will be out in May. We hope readers find it useful and worthwhile.

— **S.R.M.**

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News Round-Up

PHF Mission to Bangladesh

A 2- member mission to Bangladesh, consisting of Ms A Holland, Coastal Management Specialist, DFID, and Mr Duncan King, Project Field Manager, DFID Post-Harvest Fisheries Project, visited Bangladesh last November. The aim of the mission was to carry out a brief situation analysis of the status of coastal fishing communities and consider whether further development support is justified and how best it could be delivered.

The team assessed the livelihood systems and institutional constraints as well as the short-term and long-term issues affecting coastal fishing communities. A report was submitted to the Aid Office, in Dhaka. It is currently being discussed within DFID in London.

Fisheries Technology Symposium in Cochin

A three-day symposium to evaluate the "advances and priorities in fisheries technology" was jointly held by the Society of Fisheries Technologists, India (SOFTI) and the Central Institute of Fisheries Technology (CIFT) in Cochin from February 11 to 13, 1998. The symposium focused on the advances made in fisheries in India and abroad by governments, private agencies and universities.

More than 200 delegates attended the symposium and presented 125 papers under six major topics. The meeting provided a forum for meaningful interaction among scientists, technologists and policy makers from India and abroad.

The project presented a paper on its experiences of work with artisanal fishing communities along the east coast of India. Three papers were also pres&nted under the DFID's Post-Harvest Fisheries Research Programme.

Sri Lankan Officers Visit India and Bangaladesh

Mr H S G Fernando and Mr T de Aiwis, two officers from the Sri Lanka Fisheries Sector Community Development Programme (sponsored by the ADB, the Asian Development Bank), were in India and Bangladesh recently. They visited DFTF-PHFP project sites in Paradip (Orissa) and Chittagong, Bangladesh, between 26 January and 10 February, 1998.

The ADB Sri Lankan Community Development Programme aims at reducing pressure on marine resources by motivating fisherfolk to take up alternative occupations. The visit of the two officers to India and Bangladesh was meant to acquaint them with similar work sponsored by DFID-PHFP.

"We found the project work with set bagnet communities in Bangladesh to be very useful," said the two officers. "We hope to replicate some of these experiences in Sri Lanka."

Bangladesh NGO team visits Post-Harvest Project Sites

Many NGOs in Bangladesh work with fisherfolk communities, but CODEC (Community Development Centre) is the only one that works exclusively with poor coastal fisherfolk. Since the level of awareness of post-harvest issues in Bangladesh is low, the Post-Harvest Project sponsored a visitto project sites in India by a couple of senior CODEC staff- Mr Kamal Sen Gupta, Director (Programmes) and MrAbdul Khaleque, Senior Manager (SpeciatProjects).

After a briefing by project staff in Chennai, the two visitors went to Kanyakumari. The chairman and the staff of Santhidan briefed them about its work in introducing low-cost post-harvest technologies and addressing social, economic, environmental and gender issues. They also informed the visitors about Santhidan's success in organizing fisherwomen groups and in

Women in Bangladesh set bag communities engage in mat-making (below) and other non-fishery income-generating activities. The visiting Sri Lankan officers found this project very useful for possible replication in Sri Lanka.

E. Amalore

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carrying out savings and credit programmes.

The visitors later toured Santhidan's field sites.

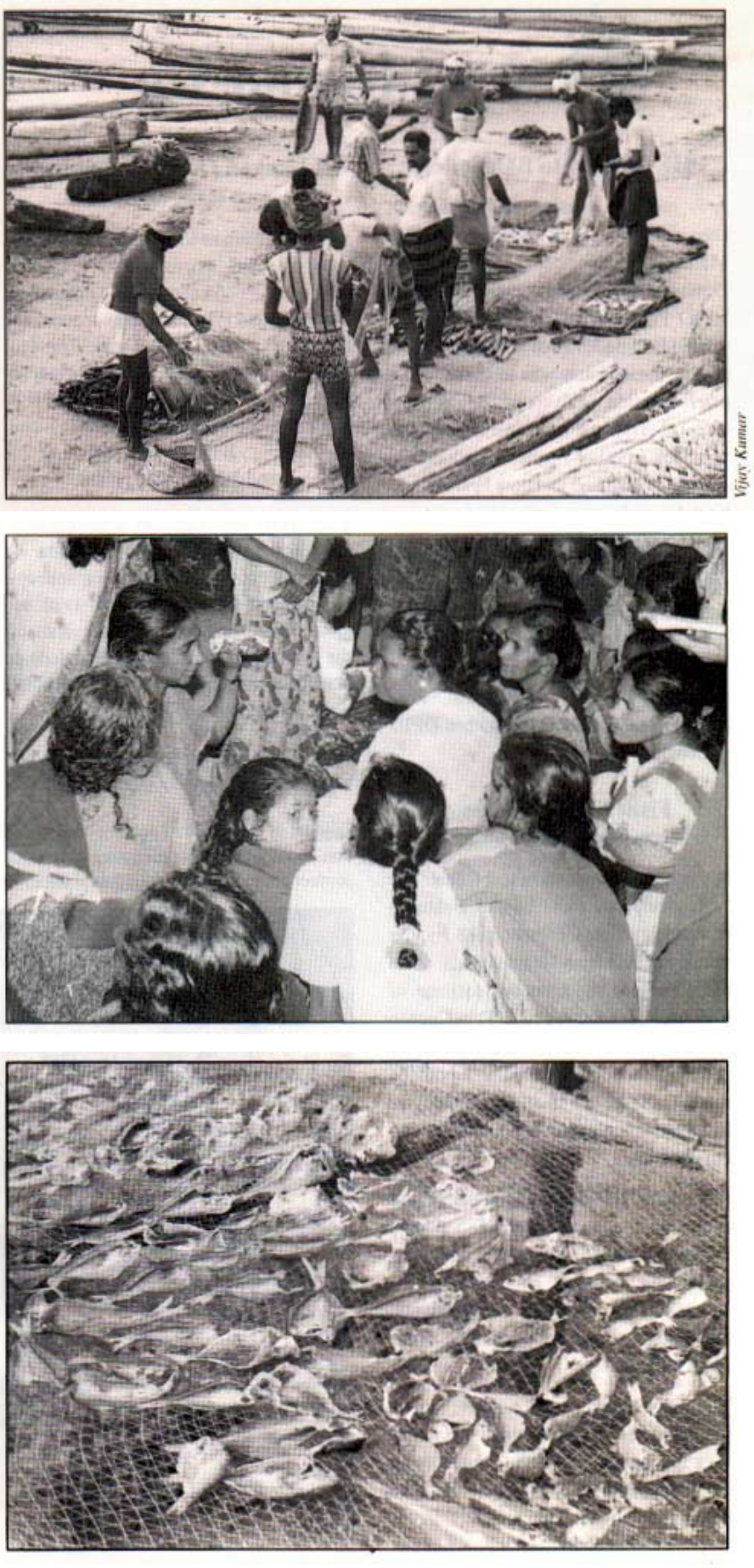
At **Vallavilai**, the visitors learned how petty fish traders use ice boxes to market fish in prime condition. Details of the ice boxes and the manner of usage were explained. **At Neerodi** the visitors observed a typical sangam meeting conducted by a group of fisherwomen. They asked many questions about sangam meetings. A street play organized by Santhidan climaxed the visit. The visitors noted down the lyrics of the songs sung in the play.

At **Maramadi,** Mr Sen Gupta and Mr Khaleque acquainted themselves with credit activities for fisherwomen. One of the community members presided over a weekly meeting; the visitors were impressed with the leadership skills acquired by the fisherwomen.

At **Kovalam**, the visitors went round an anchovy drying project site and saw rack-dried anchovies that were 11/2 years old, yet in good condition. They also visited the fisheries technological station of the Department of Fisheries and studied the research work on solar drying of fishes and other processing methods.

At a meeting with fisheries officials of the district, the visitors learned about the marine fishing regulation acts and other development measures undertaken by the Department of Fisheries.

The team enjoyed their visit to SIFFS in Trivandrum. Mr Satish Babu, Chief Executive, explained the organization's activities, He showed them the boathuilding yard that manufactures marine plywood ice boxes. The marketing operations of SIFFS also fascinated the visitors.



The visiting Bangladesh officers visited fishing communities in Kanakumari (right, above) assisted by the NGO Santhidan, which has received support from the Post-Harvest Project. They observed a women's group meeting (centre) and rack-drying of fish (bottom).

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Workshops Discuss Post-Harvest Fisheries— Learnings and Future Prospects

Three state-level one-day workshops are being held by the Post-Harvest Fisheries Project in Chennai, Bhubaneswar and Hyderabad in March 1998 to discuss the past work of the DFID-PHFP and how it can be carried forward in the future for the benefit of artisanal fisherfolk communities.

The Chennai function, held on March 13, 1998, was attended by some 75 people. They included fisheries officials, representatives from NABARD, central fisheries institutions such as CMFRI and MPEDA, state government agencies, the Fisheries College in Tuticorin, and fish worker organizations such as SIFFS and the International Collective in Support of Fish Workers.

Mr. Mohan Verghese Chunkath, Secretary for Fisheries, Tamil Nadu, inaugurated the workshop. Three special invitees Director of Fisheries Hans Raj Verma, NABARD Chief General Manager in Chennai S. Subramanian, and SIFFS Chief Executive V.Vivekanandan gave brief talks. Mr. Duncan King, Project Field Manager, DFID-PHFP, delivered a presidential address.

Four officials from Department of Fisheries Ms. S. Padmavathy, Mr. Sathiamurthy, Mr. S. Durairaj and Mrs.S. Amutha presented a strategy paper for implementation of post-harvest fisheries activities in Tamil Nadu. Mr. V. Vivekanandan of SIFFS, Trivandrum and Ms. R. Veronica of ROSA discussed PHF prospects for small-scale fisherfolk from the NGO perspective.

A discussion on future PHF prospects for small-scale fisherfolk, held in the afternoon, was facilitated by Mr. Vivekanandan, Mr. King and Mr. George Mathew.

Fr. Thomas Kocherry Wins Earth Trustee Award

Fr Thomas Kocherry has been chosen for the Earth Trustee Award, says a press release from the National Fishworkers Forum and the World Forum of Fish Harvesters. He has been lauded for his feat in setting up an alliance of eight million fishworkers in India, his outstanding success with the World Forum of Fish Harvesters and Fishworkers, and his efforts to stop factory fishing in order to preserve the marine ecology.

The Earth Trustee Award is given by the Earth Society Foundation – which the late Dr. Margaret Mead, one of the great anthropologists of all time – helped to found. It is given to individuals and groups for "outstanding effort to help nurture and replenish the earth," Previous award-winners include Greenpeace, the American Chestnut Society, U S Vice President Al Gore etc.

The award ceremony is scheduled to be held at the UN Headquarters in New York, during the Earth Day celebration on March 20, 1998. Dr Kofi Annan, UN Secretary General, will be the Chief Guest.

Monsoon Losses Workshop in Chennai Discusses Study Findings

The results of a series of exploratory studies on the extent of post-harvest fish losses that occur during the monsoon were presented to an audience of post-harvest fisheries specialists in Chennai, India, in February 1998. The studies were part of a DFID Post-Harvest Fisheries Research Programme project co-ordinated by the Natural Resources Institute of the UK and the College of Fisheries, Mangalore. The project specifically looks at losses to small-scale processors during the monsoon and what can be done to reduce them.

The aim of the two-day workshop was to discuss key issues which had arisen from studies conducted at coastal sites in Kerala, Tamil Nadu, Andhra Pradesh and Orissa. There were some 15 participants from the Central Institute of Fisheries Technology (CIFT), Cochin; College of Fisheries, Mangalore; Department of Fisheries, Tamil Nadu; DFID Post-Harvest Fisheries Project; and the Natural Resources Institute, U.K.

The research team of Prof Mohan Joseph (College of Fisheries), Mr Shiv Kumar (Catalyst Management Services Ltd., Bangalore) and Ms Jyothi d'Cunha (Institute of Social Work, Mangalore) presented an overview of key findings from the three months of field work they conducted during the 1997 monsoon season.

A number of issues that arose from the presentations were discussed. Some of these will form the focus of the next phase of the research. The effect losses have on the marginalisation of small-scale processors is an issue which that needs more investigation. Marginalisation is occurring for various reasons, the risk of loss during processing in the monsoon is one contributory factor – but it is difficult at this stage to draw any firm conclusions on just how important a factor it is.

The research team explained that losses were found to occur at all study sites during the monsoon, especially at the processing stage. However, in order to gauge the significance of losses, more data is required on the economics of small-scale processing and this is likely to form a part of the next phase of the research.

The project leader, Ansen Ward of the NRI, was pleased with the way the workshop had gone. He remarked: "We achieved the aim of the workshop and now have a number of issues to focus on in the next phase, which will be a series of case studies at selected sites".

The project will eventually focus on interventions to reduce losses in the monsoon and is due to end in March 2000.

– **Ansen Ward**

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DFID's Post-Harvest Fisheries Research Programme Addresses the Needs of Poor Fisherfolk in India

Fisheries institutions in India arefamiliar with the work of the London - based DFID Post-Harvest Fisheries Research Programme, which has sponsored several research studies in India. The work of this Programe will continue even after the closure of DFID-PHFP.

The UK Government's Department for International Development (DFID) has recently released a White Paper. In a foreword, the Secretary of State for International Development, Clare Short, describes the major concerns of the White Paper.

"It is, first, and most important, about the single greatest challenge which the world faces faces – eliminating poverty".

The White Paper aims to refocus the UK's international development effort on the elimination of poverty by encouraging economic growth that benefits the poor. It is about sustainable livelihood, human development and environmental conservation.

"An important part of the process Will be ensuring that we have the knowledge to achieve our development aims," says the paper. "Research work will be a key activity in gaining this knowledge."

The White Paper discusses the need to invest in research and in research capacity in developing countries, and to form and strengthen partnerships between the science community in the UK and internationally.

Over the years, substantive research has backed the fisheries development work of the UK government. There are four fisheries research programmes:

- Aquaculture
- Fisheries Management
- Fish Genetics
- Post-harvest Fisheries

Under these four programmes are a series of research projects which address particular constraints related to the productivity and productive potential of aquatic resources.

Post-Harvest Fisheries

In a world with a rapidly expanding population and a growing preference for fish amongst most consumers, the pressure on fisheries resources is increasing. With many of the world's resources at or near their maximum levels of sustainable exploitation there is little room for production expansion except for enhancing wild stocks, expanding aquaculture and better management of resources. Where improvements can be made is in the way we use the fish which we currently catch. Much of this fish is discarded as by-catch from fishing operations, or is reduced in volume, value or nutritional quality during processing, storage and transportation.

Dwindling fish catches everywhere dramatize the pressure on fish resources.

The Post-Harvest Fisheries Research Programme aims to address these problems through targeted research projects. The geographical focus of the research in West Africa and South Asia, particularly India. In India, the specific purpose of the research is to assist in increasing the efficient utilisation of small pelagic and coastal demersal species for human consumption.

Current Activities

At present three post-harvest fisheries research projects operate under the Programme in India. The first is concerned with developing, packaging and promoting value added technologies in small-scale fish processing. This has been looking at dried fish production and bulking, ice supplies for artisanal communities, and providing fish market information through the radio. The research was carried out through a partnership between the Natural Resources Institute (NRI) in the UK and Indian consultancy groups, NGOs, coastal communities, research institutes, and private and public sector fisheries operations.

Another NRI-managed project is looking at wet season losses in fish. It aims to assess the extent of these losses, and determine the impact of these losses on fish processors. It will also look at possible changes in practices which might reduce the losses. NRI are working in partnership with the College of Fisheries. Mangalore on this research.

Discard of bycatch from shrimp trawler — an example of wastage of resources.

The third project is managed by the School of Biological Sciences, University of Bristol in the UK, in partnership with the UK's University of Humberside and the Central Institute of Fisheries Technology, India. It aims to survey the blowfly species causing much of the spoilage in fish in India and identify and test possible designs of trapping and targeting mechanisms.

Programme Management

The Post-Harvest Fisheries Research Programme is one of several of DFID's research programmes which are managed by Natural Resources International in the UK. Jock Campbell of Integrated Marine Management Ltd in Exeter in the UK, has recently taken over as Programme Manager, working with Natural Resources International on a part-time basis. He also works closely with other fisheries programme managers based at institutions in the UK.

"The Post-Harvest Fisheries Research Programme tries to ensure that research is demand-driven, that it addresses real problems concerning the productivity of the poor, and arrives at workable solutions to problems."

Uptake and Impact

An important part of the work of the post-harvest fisheries research programme is the dissemination of the research findings, their uptake and use. The Programme also aims to ensure that the research is demand-driven, that it addresses real problems which affect the productivity of the poor, and that it arrives at workable solutions to those problems. An important part of this process is the partnerships which the programme forms with local institutions, the private sector, NGOs and community groups in India and West Africa. One of the key partners of the Programme has been the DFID-PHFP based in Chennai, India. This has assisted with both the implementation of the research and the dissemination of research findings. The Project is due to end in June of this year. The Research Programme will, however, continue to work with other local partners in the South Asia region.

Further Information

If you would like further information about the DFID Post-Harvest Fisheries Research Programme, please contact Jock Campbell at the address below:

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Code of Conduct for Responsible Fisheries : Post-Harvest Aspects

by Ivor Clucas

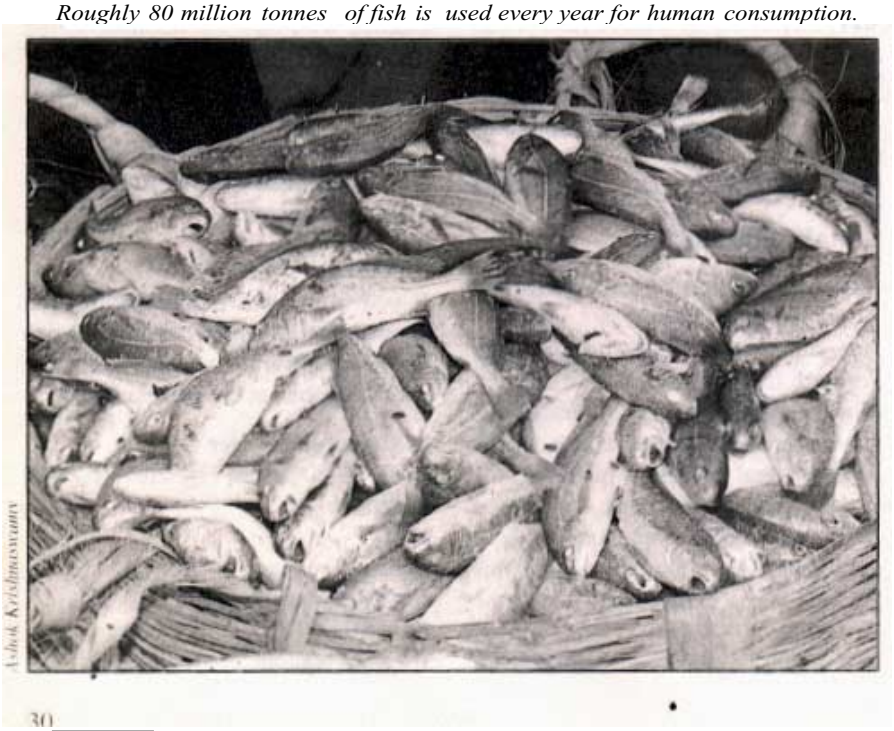
This is an excerpt from a paper presented at the Symposium on Advances and Priorities in Fisheries Technology, held in Cochin, February 11-13 1998. Copies of the full paper, and of the Code of Conduct, can be obtained from the author (Fishery Industries Division, FAO, Via delie Terme di Caracalla, 00100 Rome, Italy).

The Need for Responsibility in Post-Harvest Fisheries Activities

Fisheries have substantial social. economic, nutritional and food security importance. It is estimated that some 30 million people are employed world-wide in the primary production of fish (FAO Fishery Information, Data and Statistics Unit, 1997) with substantially more involved in ancillary industries such as boatbuilding, fishing gear manufacture, ice production, transport, processing and marketing of products. Rough estimates could put the number of people reliant wholly or partially on the fishing industry at *450* million if family members of those employed are included. The above publication estimates nearly 6 million fishermen in India (1994 figure), almost one fifth of all the fishermen in the world.

Landed value of the products from capture fisheries are estimated at over US $83.000 million with a further US $42,000 million from products of aquaculture operations. In terms of world trade in fish and fishery products, over US $52,000 million worth of products crossed State borders in 1995 (FAO 1997a). The export of fishery products has particular significance for some developing countries with 51 per cent of this cross border trade. The net receipts of foreign exchange of fishery exports from developing countries has risen from US *$5.1* billion in 1985 to US $18 billion in 1995 (FAO l997c and FAO l997d). Exports of fish and fishery products from India in 1995 earned the country US $1,240 million according to FAO statistics (FAO 1997a). with only just over US $7 million worth of imports. making the seafood industry a majornet earner o foreign exchange for the India.

Roughly 80 million tonnes of fish is used every year for human consumption.



World landings from capture and aquaculture fisheries have been between 100 and 110 million tonnes per annum in recent years with a high of 113 million tonnes in 1995. Of this, roughly 80 million tonnes is used for human consumption. The vast majority of the remaining 30 million tonnes goes to feed animals used for human consumption, or produce dairy products or eggs for instance, which enter the human food chain. (FAO l997a and FAO l997b). In addition it is estimated that there may be between 17.9 and 39.5 million tonnes of fish discarded at sea each year which are not recorded and do not appear in catch statistics (Alverson et al) bringing the total fishing mortality nearer to 150 million tonnes per year.

Large portions of the world's fishing stocks are fully exploited. Some are over-exploited or depleted and must therefore be allowed to recover if fish production is to be sustained at present levels. The growth of aquaculture has helped to some extent to alleviate the problem of static or diminishing supply From traditional resources. But with the growth of human populations, per capita supply will diminish and fish prices will rise. It is estimated that the demand for Fish for all uses will rise to 140 to 150 million tonnes by the year 2010 (FAO 1997c). As mentioned above, there are substantial quantities of fish caught. which in the absence of a ready market are discarded at sea. These discards could, if their retention does not have deleterious effects on the ecosystem, be

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a valuable source of additional food fish and assist in filling this protein gap.

The whole fisheries industry and infrastructure of world fisheries depends on the final sale of product, usually between retailer and consumer, where fish passes in one direction and money passes in the other. Without this final transaction taking place there would be no need for all the previous efforts that have been made to capture or raise the fish, process and preserve it, regulate or manage the fishery, have government and international bodies dedicated to serving the interests of the industry and the people involved in it.

Here then is one set of reasons why it is very important to ensure that, once caught, fish reaches the consumer by the most efficient means and that the final sale is transacted to the satisfaction of both the consumer and the seller.

A second set of reasons why there is a need to get fish to consumers with minimal loss and with optimal efficiency is that it represents a valuable source of nutriment to many people in the world.

Fish and nutrition

At a household and individual level fish is nutritionally important in that it provides a source of easily digested protein which has an amino acid profile containing essential amino acids, particularly lysine, not necessarily obtainable elsewhere. In addition the fat that fish contains is high in polyunsaturated fatty acids, particularly omega 3 fatty acids, which provide protection against cardiovascular disease, assist in brain and nervous system development, foetal and infant development and seem to offer some protection against diabetes, chronic infections and certain types of cancer.

Fish is also a source of vitamins such as B 12. A and E and is a major source of naturally occurring vitamin D. Fish contains important trace elements such as selenium and is low in sodium for persons with blood pressure problems. Nutritionally therefore fish has a lot of advantages. Where other sources of animal protein are scarce or expensive in less developed areas of the world, fish can be a most important source of dietary protein,

If discard of fish at sea is stopped, addizional fish would be available. The Post-Harvest Project tried out ways to utilize fish normally discarded by shrimp trawlers.

The contribution of fish to nutrition varies considerably from place to place depending on the eating habits and traditions of groups of people. On a worldwide basis, the FAO "Food Balance Sheets" (Laureti 1996) show that in 1993 the apparent supply of fish was 13.4 kg of whole fish per head representing 15.6 per cent of animal protein consumption. In low-income food-deficit countries only 9.6 kg of fish are available per head but that provides over 20 per cent of the animal protein intake, illustrating that fish are often relatively more important in these countries than other sources of animal protein,

There can be vast differences between countries depending on availability of fish, the availability of otherfoods and eating habits. In the Comoros Islands for instance 21.3 kg of fish is available per head per year representing 61.5 percent of animal protein intake. In India it is estimated that yearly supply is 4 kg per head representing 12.7% of animal protein consumption. The high proportion of pure vegetarianism amongst some sectors of the Indian populace probably means that the actual consumption of fish in the non-vegetarian population is substantially higher than 4 kg/annum.

In addition fish is generally not associated with taboos or religious restrictions linked with other animal products such as pig meat for Muslims and Jews or beef for Hindus. Fish may also be acceptable to those who will not eat meat from warm-blooded animals.

Articles Concerned with Fish Utilisation

The main articles of the Code of Conduct concerned with responsible fish utilisation are in Article 11.1 – 'Responsible fish utilisation'. There are however, other parts of the Code, which deal with matters concerned with the post-harvest sector of the industry. These include the reduction in the use of refrigerants which harm the environment, promotion of food safety in aquaculture systems and designing of boats to ensure appropriate fish handling systems.

The main articles set out the responsibilities of governments or states in assuring that the fishing industry serves the needs of consumers without detrimental effects on the environment and ensuring that the industry itself is assured of a viable future.

The main points are the following:

Responsibilities to the Consumer

- States have a duty to ensure safe, wholesome and unadulterated food for consumers.

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- Trade in fish should be fair and honest with consumers protected against fraud.
- States should set up safety and (QA) quality analysis systems which assure the consumer that fish products are safe and honestly traded — these should be based on standard procedures and incorporate HACCP.
- Countries should endeavor to harmonise their QA systems.

Responsibilities to the Industry

- The economic and social role of the industry is important in many countries and needs to be taken into account in formulation of policy.
- The economic and social impact needs to be assessed while formulating research programmes.
- Encourage those involved in the processing, distribution and marketing of fish and fishery products to minimise waste and to use bycatch fish where appropriate.
- Promote where appropriate the use of fish for human food rather than animal feeds
- Promote fish consumption generally.
- Promote value addition in developing countries.

Responsibilities to the Environment

- Environmental impact of alternative production methods should be taken into account in looking at the appropriateness of differing scenarios.
- Reduce the use of chemicals that are detrimental to the environment, such as pesticides.
- Reduce the use of wood in fish smoking
- **Look at** the energy efficiency of various processing technologies.
- Promote means of ensuring that protected species and stocks are not endangered by unauthorised exploitation

Concluding Remarks

One of the code's objectives is that it should establish principles for the elaboration of national policies, serve as reference for states for establishing appropriate legal frameworks. promote trade of fish and fishery products and promote research on fisheries topics. In this way the Code emphasises the responsibility of States in these efforts. But it must be realised that these responsibilities are much wider, embracing all sectors of the fishing industry and the communities with which they interact. These stakeholders would include NGOs, private companies, research, development, extension and training organisations, industry representatives and many others.

Article 2 of the code of conduct states

'The objectives of the code are to provide standards of conduct for all persons involved in the fisheries sector.'

Fish - vital for nutrition.

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